

FEASIBILITY OF STAKEHOLDER PARTICIPATION IN ORGANIZATIONS OF COMMON INTEREST FOR AGRICULTURAL POLICY MAKING

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Abstract: With the aim to describe a potential of stakeholders participating in agrarian policy making, the article analysis characteristics of the typical farmer who is interested in involvement into organizations of common interest. The analysis of the data received from 1108 representatives showed that although the willingness to cooperate in order to protect common interests is expressed by every second person, only a tenth of farmers participate in agricultural organizations. Higher intention to cooperate is expressed by middle-aged and better educated farmers rather than the youngest and the oldest as well as less educated representatives. In addition, men are keener on cooperating than women. It was also observed that stakeholder's initiative is related to the size and economic turnover of the farm. Statistical non-parametric tests and regression analysis on the sample allow to conclude that stakeholder participation in policy making in agriculture is insufficient in the case of Lithuania, therefore, institutional, procedural and managerial mechanisms are needed to balance the involvement of all stakeholder groups in to activities of common interests.

Key words: stakeholder management, cooperation, participative governance, cooperative behaviour, agricultural policy, public interest

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Introduction

Euroregions The issues of stakeholder participation, stakeholder management and stakeholder decision making significantly influence practice. According to scientists, the majority of organized activity fields give insufficient attention to stakeholder involvement into decision making and balancing different interests. In addition, the significance of stakeholder management in creating sustainable organizations and sustainable society is poorly understood. To solve the problem, various methods of stakeholder involvement into decision making processes are discussed (Neef and Neubert, 2011; Becu et al., 2008; Morselli, 2015). It is thought that it is purposeful to stimulate stakeholder involvement by creating collaboration relationships (Basco-Carrera et al., 2017), and in the case of public sector – by

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strengthening the implementation of participative governance, thus enabling stakeholder participation (Prager and Freese, 2009; Kożuch and Sienkiewicz-Malyjurek, 2016; Krom, 2017; Newig et al., 2017). Research on agricultural sector policy and economics, region viability etc. highlight that stakeholder involvement to, participation in and enabling for decision making processes is exceptionally important due to the specifics of agricultural policy (Halpin, 2017; Prager, 2015; Melnikienė et al., 2018; Morkūnas et al., 2018). Agriculture is supported by the state in the majority of countries. Moreover, support for agricultural sector is relatively one of the biggest parts of expenses in the EU budget. Therefore, regular evaluation of support effect is always relevant (Andersson et al., 2017; Hooks et al., 2017). It should also be noted that 80 percent of the EU territory consists of rural areas which contain nearly 50 percent of population (Eurostat, 2017). However, comparing to urban inhabitants, rural citizens are more at risk of poverty and social exclusion (Loktieva, 2016; Stanczuk-Galwiczek, 2018). Also, agriculture often experiences the lack of workforce due to migration to cities and emigration (Streimikiene et al., 2016; Rausser et al., 2018). Summing it up, it becomes clear that agricultural policy-makers must overcome complex and intertwined challenges. As partnerships and self-organizing alliances have an immense potential in solving the problem of conflicting values and orientations of different actors, stakeholder management and multi-stakeholder arrangements become of big interest in current political, managerial and scientific discourses. Considering the abovementioned factors as well as the fact that Baltic States experience difficulties in implementing the social inclusion priority described in the EU Rural development program (European Commission, 2016; Chmielewska and Horváthová, 2016; Stanczuk-Galwiczek, 2018), the research sought to find out the potential of stakeholder participation in organizations of common interest for agricultural policy making and to answer to what extent policy-makers can expect that farmers will adequately participate in solving the issues of agricultural sector development.

The article consists of 3 parts. The first part reviews the stakeholders' role in decision making as well as the principles of collaborative governance. The second part describes the methodology of empirical research. Results of the research are provided in the third part, and conclusions - at the end of the article.

Theoretical Background

Stakeholders' Role in Decision Making in a Context of Collaborative Governance

Collaborative governance is defined as structure and process of public policy decision making that involve stakeholders to carry out a public purpose (Newig et al., 2017). The concept was developed after traditional government practice failed. According to this concept, having the stakeholders included into the processes of decision making the social and economic efficiency of public policy would

increase (Ansell and Gash, 2007). Therefore, collaborative governance highlights stakeholders' participation and a process of working together by implying a two-way communication with an aim to enhance multilateral influence and interaction between all actors. Defining the stakeholders' participation, theory of classical democracy focuses to citizens' involvement; however, scientists include almost all activity with political motives under the concept. On a wider scale, participation in politics is comprehended as actions which are directed and influencing the results of policy. Meanwhile, on a narrower scale, participation in policy defines the citizens' activity which they purposefully carry out in order to influence the decision making on various levels of politics (Stone, 2004). The most important function of political participation is to provide the society with an opportunity to directly affect government's decisions. The importance of stakeholders derives from the importance of public interest. The interest is described as a necessity to satisfy a need. When individual needs of citizens are satisfied and the overall benefit is attained, would be said that the public interest is achieved (Trumpulis, 2010). It should be noted that national and international legislation defend people's private interests, thus the public interest must be compatible with private interest, and these two interests – common and individual - cannot be counter posed. Stakeholder participation serves as a communicational link between the society and people making the decisions (Riekašius, 2011). Hence, the initiative of various societal groups to communicate on their needs is welcome, and, in this context, the abundance of social groups is of highest importance. The participation of interest groups in decision making process is not always fluent, some problems are faced. According Žiliukaitė (2012), Dong et al. (2018), stakeholders' participation is not always effective due to internal reasons (e.g. passiveness of stakeholders themselves, non-cooperative behaviour etc.), external reasons (e.g. territorial gap) and negative experience of collaboration. These problems could at least partly be solved by institutionalization of stakeholder participation (Reed, 2008; Prager and Freese, 2009; Jovovic et al., 2017), which Pretty (1995) described as participation by taking initiative independent of external institutions. Wesselink et al. (2011) found varying and potentially conflicting rationales for participation, with instrumental and legalistic rationales dominating. An arena is required for the power of interest groups to take place. Participants decide the volume of interaction, the process leader and if all join decisions made will be actually implemented. Bindham (2009) emphasizes that although inter-sectoral and inter-organizational collaboration results seem quite good in general, they are worse in public sector due to a complicated process. In other words, the influential power of collaboration actors, including interest groups should be balanced procedurally. Finally, due to the content of stakeholder collaboration being the deciding factor on what issues is addressed and what outcomes are pursued, participatory process needs to be agreed upon between stakeholders at the outset (Reed, 2008; Saca, 2017).

In terms of stakeholder participation in policy decision making, the principal differences within sectors can be observed due to the unique governmental attitude to agriculture (Halpin, 2017). In all European countries, associations have frequent contacts with relevant ministry departments, and the involvement of agricultural interest groups is informal and non-regulated. In legal acts, balancing of interests is limited to general statements such as „relevant stakeholder groups shall be involved”, thus the involvement of interest groups is based on the influence of the association, personal characteristics and the decision of ministry staff (Prager and Freese, 2009). Lastly, speaking of stakeholders’ empowerment should be noted that it is not enough to politically rationale and acknowledge the value of stakeholders’ participation. There is a need to ensure an enabling environment and management support for pursuing productive collaboration. The starting resources, the stakeholders’ incentives to collaborate and the history of interaction between stakeholders determines if the process of collaboration will be effective and what results can be expected (Ansell and Gash, 2007; Purdy, 2012). Nevertheless, collaboration depends on inclusion of key stakeholders at most because weak inclusion of stakeholders undermines the legitimacy of collaborative outcomes.

Research Methodology

A survey of farmers was carried out. Population of Lithuanian farmers equals to N=138.9 thousand. Calculated representative population under statistical conditions of 5 percent error ($\epsilon=0.05$) and 95 percent ($p=0.5$) confidence level is $n=1059$. Respondents were selected using systemic sampling of research subcontractors’ database. 1108 interviews were found suitable for further investigations which satisfy defined statistical conditions.

Firstly, the obtained data was processed with descriptive statistical analysis. The percentage distribution of respondents' answers was calculated, comparing data between the groups by using χ^2 test (significance level $p < 0.05$). The sample size of the study allows ensuring that the statistical error of the results does not exceed 3.1 percent. Statistical analysis of data was performed using the SPSS 20.0. A two-stage variable χ^2 independence test was performed to determine whether the respondent's characteristics (sex, age, etc.) affect the distribution of answers to questions. The study involved 57.7 percent men and 42.3 percent women. The majority of surveyed farmers (38.3 percent) were respondents aged from 55 to 64; the second age group (27.6 percent) was farmers aged between 45 and 54, respondents of 65 years and older composed 23.9 percent. The smallest group of respondents is represented by youngest farmers: 1.1 percent is up to 35 years and 9.1 percent aged between 35 and 44. The majority of respondents (60.5 percent) had acquired secondary and vocational education; farmers with acquired Higher education composed 37.9 percent. The smallest group of respondents according to their education consists of respondents with basic education (1.6 percent). Socio-demographic data of survey participants can be seen in the Table 1.

Table 1. Socio-demographic data of survey representatives

	Variables	Frequency	Percent	Cumulative percent
Gender	Female	469	42,3	42,3
	Male	639	57,7	100
	<i>Total</i>	<i>1108</i>	<i>100</i>	
Age	<35	12	1,1	1,1
	35-44	101	9,1	10,2
	45-54	306	27,6	37,8
	55-64	424	38,3	76,1
	≥65	265	23,9	100
	<i>Total</i>	<i>1108</i>	<i>100</i>	
Education level	Higher	420	37,9	14,2
	Secondary, vocational	670	60,5	98,4
	Basic	18	1,6	100
	<i>Total</i>	<i>1108</i>	<i>100</i>	
Economic effectiveness of the farm (turnover, Eur)	< 4 000	445	40,2	40,2
	4 001–8 000	247	22,3	62,5
	8 001–15 000	181	16,3	78,8
	15 001–25 000	97	8,8	87,5
	25 001–50 000	70	6,3	93,9
	50 001–100 000	38	3,4	97,3
	100 001–250 000	21	1,9	99,2
	> 250 001	9	0,8	100
	<i>Total</i>	<i>1108</i>	<i>100</i>	

Further, the majority of respondents (44.8 percent) were farmers whose farm size is up to 20 hectares (ha); 32.1 percent – from 20.1 to 50 ha; 13.7 percent – from 50.1 to 100 ha. The smallest part of the respondents are farmers with farms of 100.1 to 500 ha (9.2 percent) and more than 500.1 ha (0.2 percent). By summarizing the general statistical characteristics of the survey, it can be stated that given data is representative. Additionally, the portion of research representatives in a context of total number of farmers in Lithuania is given in the Table 2.

Table 2. Rate of research representatives (by size of the farm)

Farm size (ha)	Number of farmers (N)	Portion of farmers participated in research (%)
<5	60267	0.2
5-10	27163	0.5
10-20	17483	1.4
20-50	11653	3.0
50-100	5462	2.8
100-500	4938	2.1
>500	503	0.4
<i>Total</i>	<i>127 469</i>	<i>10</i>

With the purpose to describe a typical stakeholder who is interested in involvement into policy decision-making for the development of the agricultural sector, five hypotheses were invented.

H1-5: A farmer's potential to contribute to the area organization in order to protect common agricultural interests depends on (H1) size of the farm, (H2) economic turnover of the farm, (H3) gender of the farmer, (H4) age of the farmer, and (H5) level of education of the farmer.

Thus, in order to investigate causal relationships between such factors as the size and economic turnover of the farm, gender, age and level of education of farmers, and qualitative levels of farmers involvement into organized rural community movements, definition of independent statistical variables was recalled. Consequently, as it happened in the case studies presented in the paper, rejection of a hypothesis stating that variables that represent certain attributes of farmers and their qualitative, provided in Likert scale, or Boolean responses are independent, allowed to accept the alternative hypothesis and to make a conclusion that there is dependence between the variables. As the variables were found to be intrinsically dependent, qualitative judgements based on augmented analysis of the data were derived. Recalling the following definition of stochastically independent X and Y variables, which states that the variables are said to be independent if the probability of every joint event can be expressed as the product of probability of occurrence of each event separately

$$P(X \cap Y) = P(X) \cdot P(Y) \quad (1)$$

we could then expand the logic to the conditional probabilities:

$$P(X | Y) = \frac{P(X \cap Y)}{P(Y)} = \frac{P(X) \cdot P(Y)}{P(Y)} = P(X) \quad (2)$$

and find frequencies based on the above assumption that the variables are independent. For performing statistical tests, the usual level of 5% statistical significance is chosen. Major steps of performing the analysis of data are the following:

Step 1. Probabilities are calculated using formula (2).

Step 2. Frequencies for the independent events are found based on probabilities p_{ij} obtained in Step 1.

$$f_{ij} = N \cdot p_{ij}, \quad (3)$$

where N denotes the total of respondents, while the pair of indexes i and j is denoting the event (the number of responses), index i is denoting the attribute of a farm, while index j is denoting the type of response.

Step 3. Differences of frequencies obtained in Step 2, and the ones obtained from interviews, namely O_{ij} , are calculated for each event $\{i,j\}$.

Step 4. Test statistics is calculated as follows:

$$TS = \sum_{ij} (f_{ij} - O_{ij})^2 \quad (4)$$

It is known that the sum of standard normally distributed stochastic variables is distributed in accordance with the χ^2 -distribution. The number of degrees of freedom for the distribution should be found logically counting only stochastic variables in the sum and excluding the ones that are of a fixed value because of some constraint. For example, an arithmetical sum equal to a certain constant automatically reduces the number of degrees of freedom by one.

$$V = \sqrt{\frac{\chi^2}{N(k-1)}}, \quad (5)$$

where N is the size of the sample; k is the smallest number of categories of stochastic variables in question. While Tschuprow's test is calculated by the formula:

$$T = \sqrt{\frac{\chi^2}{N\sqrt{(m-1)(n-1)}}}, \quad (6)$$

where m and n are numbers of categories of stochastic variables X and Y correspondingly. It is clear that both tests are equal for square tables of data, while they are slightly different for rectangular tables.

Step 7. Magnitude of strength of the χ^2 -test in accordance with results obtained in *Step 6* is estimated. We can make a qualitative evaluation based on the guidelines for such estimations, as are laid down in Cohen (1988). In case the value of the Cramer's V test V or Tschuprow's test T is around 0.1 we may assume a small dependence between the variables in question; in the case V or T is around 0.3 we may assume a medium dependence; while in the case V or T is around 0.5 we may assume a large dependence.

Step 8. Assessing the level of bias of the tests obtained in *Step 7* and correction of the tests both Cramer's V and Tschuprow's tests are known to be biased (Bergsma 2013). More precisely,

$$E[\chi^2] = \frac{1}{N-1}(m-1)(n-1)$$

Therefore, the following correction for both tests is to be made: from the result $\{(m-1)(n-1)\}/(N-1)$ should be subtracted. In the case of the negative result, zero value of the test is assumed.

Statistical non-parametric tests were performed for the given data. We used the data from 1108 questionnaires, which was presented in the form of aggregated Boolean responses of randomly chosen groups of respondents residing in rural areas. The respondents were asked to check the most appropriate in their opinion quality, which corresponds to their perception of their involvement in the particular activity, a particular motive for an activity, or a level of a historical individual response or initiative happened in the past related to the gathering social activity, to participation in rural community movements or organizations.

For testing hypotheses of dependence of variables, the probability theory of independent random variables was employed. It is known that in case if random variables X and Y are independent, probability of a related event $X \cap Y$ equals to the

product of probabilities of non-related events: $p(X \cap Y) = p(X)p(Y)$. A standard procedure of testing the null hypothesis of dependence of variables was performed based on the deviations squared between the observed frequencies and theoretical ones obtained in case if the variables were independent. It is known that probability distribution of the sum of n normally standard distributed random variables squared complies the χ^2 -distribution with the same n degrees of freedom as is the number of variables. The research data was given in tables, where values of variables are provided as related responses to questions. In our case variable X qualifies the responder, a farm or a farmer, while Y is a variable of response.

After statistical non-parametric estimation of dependence of variables, it became evident, with a satisfactory a-priori chosen level of statistical significance of 5%, that described variables are dependent. Nevertheless, an additional investigation is required for observing character of dependence of each pair of variables. For the purposes of our investigation we had to switch from values describing participation given in frequencies, which was suitable for the purposes of the statistical non-parametrical analysis, to a more suitable measure of involvement, namely a part of the farmers involved in each group, expressed in per cent. Graphically trends can usually be clearly observed. A fitted regression function with an acceptable deviation will be used for such an analysis. As a measure of significance of the model Fischer's statistical test for the linear regression will be used. It is known that the test statistics variable:

$$TS_F = \frac{R^2/(k-1)}{(1-R^2)/(n-k)}$$

is distributed in accordance with the Fischer's distribution with $k-1$ and $n-k$ degrees of freedom $F(k-1, n-k)$, where k is the number of parameters of the regression equation, and n is the number of points, where the function is defined. In our cases $k=2$. Therefore, if the obtained R^2 produces the value above the threshold of the corresponding F -distribution of the a-priori chosen level of significance (in our case 5%), we may reject the hypothesis that the regression coefficient is equal to zero. Or, in the case if an alternative non-linear function improves the goodness of fit, we use an equivalent of the standard deviation s_k of the fitted regression function from the observed values for estimation of goodness of fit and for making a choice of the analytic type of regression function. The measure is the square root of the sum of deviations between the fitted and observed data squared at all defined points of the X variable:

$$s = \sqrt{\sum_i (f_k(X_i) - Y_i)^2},$$

where i is the index denoting groups of respondents; X_i – values of the independent variable; Y_i actual numbers of respondents in each group i ; $f_k(X_i)$ are different analytical fitted functions.

Research Results

Stakeholders' Potential to Represent Agricultural Interests

Starting with research results on potential of representation of agricultural stakeholders' interests, it can be noticed that a rate of farmers' participation in organizations of professional area is extremely low. Even 85.6 percent of survey participants were not members of any organization and only near 10 percent of questioned farmers participate in the activities of organizations in agriculture (Figure 1).

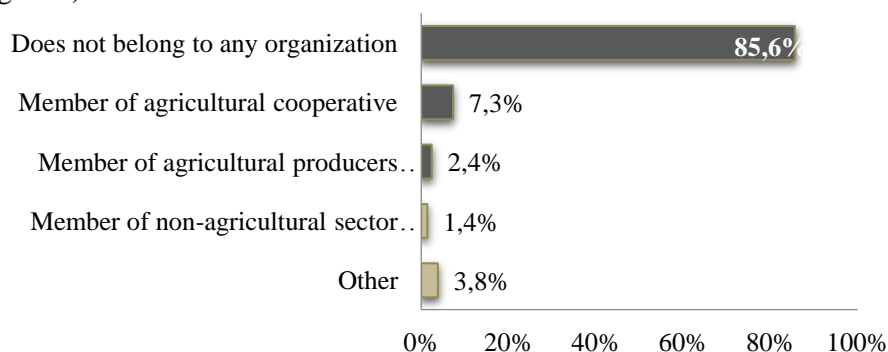


Figure 1. Farmers' participation in organizations of common interests

A similar portion of farmers have experience of cooperation initiation with the aim to protect common interests (Table 3).

Table 3. Distribution of answers to the question “Have you ever asked other farmers to cooperate with the aim to protect common interests?”

	Initiative of cooperation with the aim to protect common interests		Farmers' willingness to contribute to joint activity of common interests.	
	Frequency	Percent	Frequency	Percent
Yes	147	13,3	596	53,8
No	958	86,4	512	46,2
Other	3	0,3		
<i>Total</i>	<i>1108</i>	<i>100</i>	<i>1108</i>	<i>100</i>

Nevertheless, more than half (53.8 %) of survey participants is willing to contribute in case of joint activity were organized in their community or area of their professional expertise (Table 3). The contradiction between willingness (attitudes) and behaviour (practice) of farmers can lead to a question of what determines the situation that farmers do not enter organizations for joint activities although they have willingness for this. However, we didn't analyse this issue within particular research. Qualitative research might be proceeded in the future for helping to find an answer. Understanding the motives of stakeholders' behaviour might lead to more reasoned practice of stakeholders' inclusion into policy decision-making. As minority of farmers participate in any organization representing the agricultural

interests, it is important to comprehend characteristics of farmers to foreseeing ways to better engage stakeholders into agricultural policy decision-making. With this goal, research results based on analysis of statistical non-parametric tests are presented further. With the first question, we asked if the farmer consider his self a member of the community able to contribute to agricultural interests. In accordance with the standard procedure, we use probabilities for calculating theoretical frequencies (Table 4).

Table 4. Farmers' self-perception in relation to farm size (in ha)

The size of the farm (in ha); (variable X)	Responses, Y (frequencies; probabilities)			
	Y=Yes		Y=No	
≤5	84	0.097	112	0.083
5,1-10	108	0.099	92	0.085
10,1-20	156	0.147	140	0.126
20,1-50	157	0.133	112	0.114
50,1-100	52	0.044	37	0.038
100,1-500	27	0.017	8	0.015

Value of the corresponding test statistics for the χ^2 -distribution appeared to be 20.28. The number of degrees of freedom of the corresponding distribution is 5, the number of rows minus one, multiplied by the number of columns minus one. The critical value for 5 degrees of freedom for the chosen level of significance is 11.07, which is well below the obtained value of the test statistics. Values of Cramer's V and Tschuprow's tests appeared to be as follows: 0.14 and 0.09 correspondingly, which means a relatively small level of dependence of variables. We, therefore, with the chosen level of statistical significance, may reject the hypothesis that the variables X and Y are independent, and can conclude that *farmers' self-perception on ability to contribute to organization of agricultural interests depends on the size of the farm*. Landholders of smaller farms indicate a smaller rate of involvement versus larger farms.

In the Table 5, farmers' responses to the same question are provided and categorized by the gender. Again, for the purpose of testing a statistical hypothesis, let us assume that variables X and Y are independent. We find theoretical probabilities which sum makes up unity and use such probabilities for calculating theoretical frequencies and for performing the χ^2 statistical test. Value of the test statistics for the χ^2 -distribution appeared to be 6.13. The number of degrees of freedom of the corresponding distribution is 1, and the critical value for such a number of degrees of freedom for the chosen level of significance is 3.84, which is well below the obtained value of the test statistics.

Table 5. Farmers' self-perception in relation to gender

Gender (variable X)	Responses (frequencies; probabilities) variable Y			
	Y=Yes		Y=No	
Female	232	0.23	237	0.20
Male	364	0.31	275	0.27

Hence, we may reject the hypothesis that the variables X and Y are independent and can conclude that farmers' *self-perception depends on the gender*. Males are more self-confident than females. Values of both Cramer's V and Tschuprow's tests appeared to be 0.074, which means a relatively small level of dependence of variables. In the following Table 6 responses of farmers on their ability to contribute to community for the common interests are provided and categorized by the age of the farmer.

Table 6. Farmers' self-perception in relation to age

Age	Responses (frequencies; probabilities) variable Y									
	Never		Rarely		Sometimes		Often		Always	
<40	9	0.013	1	0.002	9	0.006	15	0.011	8	0.005
40-64	253	0.248	59	0.048	141	0.123	227	0.206	121	0.098
≥65	118	0.082	13	0.016	39	0.041	74	0.068	21	0.032

Value of the test statistics for the χ^2 -distribution appeared to be 25.67. The number of degrees of freedom of the corresponding distribution is 8, and the critical value for such a number of degrees of freedom for the chosen level of significance is 15.51, which is well below the obtained value of the test statistics.

We, therefore, may reject the hypothesis that the variables X and Y are independent and can conclude that *farmers' self-perception on ability to contribute to organization of agricultural interests depends on the age*. Values of Cramer's V and Tschuprow's tests appeared to be as follows: 0.11 and 0.09 correspondingly, which means a relatively small level of dependence of variables.

In the following Table 7, responses of farmers on their self-perception are provided and categorized by the level of education.

Table 7. Farmers' self-perception in relation to the level of education

Education	Responses (frequencies; probabilities), variable Y									
	Never		Rarely		Sometimes		Often		Always	
Higher	102	0.130	38	0.025	69	0.065	131	0.108	80	0.051
Secondary, vocational	270	0.207	35	0.040	118	0.103	179	0.172	68	0.082
Basic	8	0.006	0	0.001	2	0.003	6	0.005	2	0.002

Value of the test statistics for the χ^2 -distribution appeared to be 44.52. The number of degrees of freedom of the corresponding distribution is 12, and the critical value for such a number of degrees of freedom for the chosen level of significance is 21.03, which is well below the obtained value of the test statistics. We can conclude that farmers' *self-perception depends on the level of education*. Better educated farmers are more self-confident than less educated farmers. Values of Cramer's V and Tschuprow's tests appeared to be as follows: 0.14 and 0.12 correspondingly, which means a relatively small level of dependence of variables. In accordance with research results, it can be stated that farmer's self-confidence

in the context of participation in organizations of common interests isn't high. Nevertheless, more self-confident turned out to be better educated middle aged males who hold bigger farms.

Analysis of Farmers' Attitude and Behaviour Regarding Participation in Organizations of Common Interest

In the next stage of the research, we have compared the answers of survey participants according their attitudes and actual behaviour with the goal to verify whether the research is usable to predict the feasibility of farmer's participation in activities of common interests. Take the pair of variables X "The size of the farm" and the dependent variable Y "Actual farmers' involvement in cooperation for defending common interests". The variable Y is defined in the groups of respondents, therefore to define the discrete function we had to choose the following mid-values of sizes of farms as points of the independent variable: $X_i \in \{2.5; 7.5; 15; 35; 75; 300; 700\}$, all in hectares. Using available responses for the pair of chosen variables we construct the linear regression function $Y = 0.13X + 6.33$ ($R^2=0.96$) (Fig. 2). After a brief analysis it became evident that function well describes the character of dependence. For the case $TS_F = 116.07$, which is well above the corresponding 5% threshold $F(1,5)=6.61$.

For exposing the *desired* level of farmers' involvement in cooperation for defending common interests we analyse responses to the question "Are you willing to contribute to activities of common interests?". The independent variable X in this case is the same. It describes the size of the farm and is expressed in hectares. Using available responses for the pair of chosen variables we construct the linear regression function $Y = 0.07X + 49.16$ ($R^2=0.92$) (Fig. xx). After a brief analysis it became evident that well describes the character of dependence. For the case $TS_F = 58.86$, which is well above the corresponding 5% threshold $F(1,5)=6.61$.

Then, we switch to the independent variable X "Turnover of the farm" and use the same dependent variable Y "Actual farmers' involvement in cooperation for defending common interests". As the variable Y is defined in the groups of respondents, we had to choose the following mid-values of sizes of farms as points of the independent variable: $X_i \in \{3; 6; 11.5; 20; 37.5; 75; 175; 400\}$, all in thousand. Using available responses for the pair of chosen variables we construct the linear regression function $Y = 0.11 X + 9.12$ ($R^2=0.90$) (Fig. 3). After a brief analysis it became evident that calculations function well describes the character of dependence. For the case $TS_F = 56.05$, which is well above the corresponding 5% threshold $F(1,6)=5.99$. For exposing the *desired* level of farmers' involvement in cooperation for defending common interests we analyse responses to the question "Are you willing to contribute to activities of common interests?" The independent variable X in this case is the same. It describes the size of the farm and is expressed in hectares. Using available responses for the pair of chosen variables we construct the linear regression function $Y = 0.07X + 49.16$ ($R^2=0.92$) (Fig. 3). After a brief analysis it became evident that function well describes the character of dependence.

For the case $TS_F = 6.57$, which is above the corresponding 5% threshold $F(1,6)=5.99$.

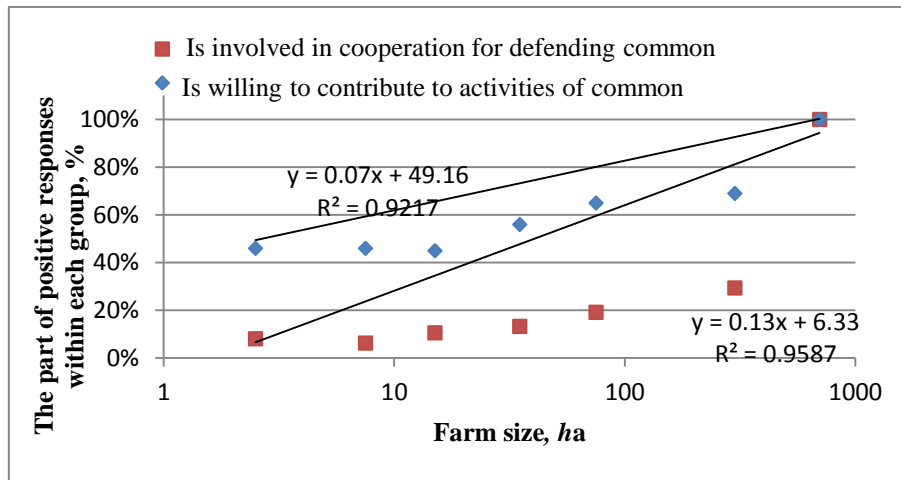
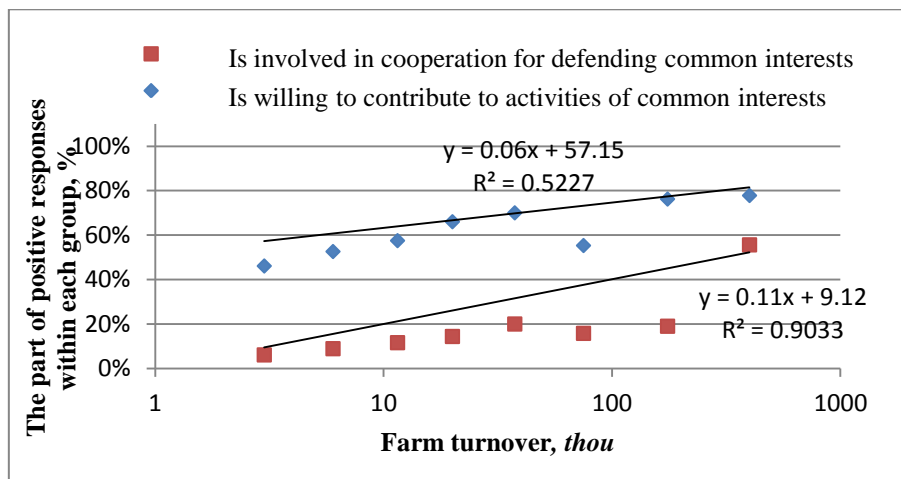


Figure 2. Farmers' willingness to contribute to activities vs their involvement into actual processes of cooperation in the context of *farm size*



The independent variable is depicted using the logarithmic scale

Figure 3. Farmers' willingness to contribute to activities vs their involvement into actual processes of cooperation in the context of *farm turnover*

For the pair of chosen variables after a brief analysis it became evident that the logarithmic function $Y = 0.156 \ln(X) - 0.115$ ($R^2=0.96$) sufficiently well describes the dependence. The corresponding measure of fit $s_1 =$ The alternative best-fitting linear regression function $Y = 0.001 X + 0.267$ ($R^2=0.86$) has a worse measure of deviation from the estimated function.

Next, take the independent variable X "Age of the farmer" using the same dependent variable Y "Actual farmers' involvement in cooperation for defending common interests". Again, the variable Y is defined in the groups of respondents, therefore we choose the mid-values of age of farmers within the groups, as points where the independent variable of observed cases is defined: $X_i \in \{30; 40; 50; 60; 70\}$. Using available responses for the pair of chosen variables we construct the linear regression function $Y = -0.91 X + 105.67$ ($R^2 = 0.88$) (Fig. 4). The function well describes the character of dependence as $TS_F = 22.29$, which is above the corresponding 5% threshold $F(1,3) = 10.13$.

For exposing the *desired* level of farmers' involvement in cooperation for defending common interests we analyse responses to the question "Are you willing to contribute to activities of common interests?" The independent variable X in this case is the same. It describes the age of the respondent farmer. Using available responses for the pair of chosen variables we construct the linear regression function $Y = -0.05 X + 16.08$ ($R^2=0.03$) (Fig. 4). For such a small R^2 performed test statistics reveals a non-acceptable result for describing the trend $TS_F = 0.09$, which is below the corresponding 5% threshold $F(1,3)=10.13$ meaning that we cannot be assured with the a-priori chosen 5% degree of significance of that the regression model describes the relationship between X and Y . An additional analysis of the coefficient of correlation between the age and willingness to participate, which in our case appears to be $\rho_{xy} = -0.17$, implies an additional requirement to check the test statistics $TS = -5.74f$ or correlation of two bivariate normally distributed variables. It is beyond the left-hand 5% threshold of the t -distribution with 3 degrees of freedom $t_{cr} = -3.18$. We may still conclude that willingness to contribute to activities of common interests somewhat negatively depends on the age of the farmer, in spite of the fact that the linear regression did not describe this relationship acceptably well. Dependence is the following: younger and middle-aged farmers are slightly more willing to contribute to the activities comparing to farmers in oldest and youngest farmers groups.

Finally, we use the independent variable X "Education" while using the same dependent variables Y "Actual farmers' involvement in cooperation for defending common interests" and "Willingness to contribute to activities of common interests" as we did in the above cases. We have to agree to define only three points of the independent variable related to three stages of education, numerically $X_i \in \{1; 2; 3\}$ or $X_i \in \{E; BSV; H\}$, where E denotes the elementary education; BSV basic, secondary, and vocational altogether; and H denotes the higher education.

As there are only 3 points, where the independent variable is defined, it is close to impossible to employ the same techniques to statistically estimate feasibility of the regression model as we outlined above. For the named case of 3 points and 2 parameters in the regression equation Fisher's test statistics has to be extremely high to make the model feasible. In fact, the corresponding 5% threshold $F(1,1) = 161.44$ is rarely achievable.

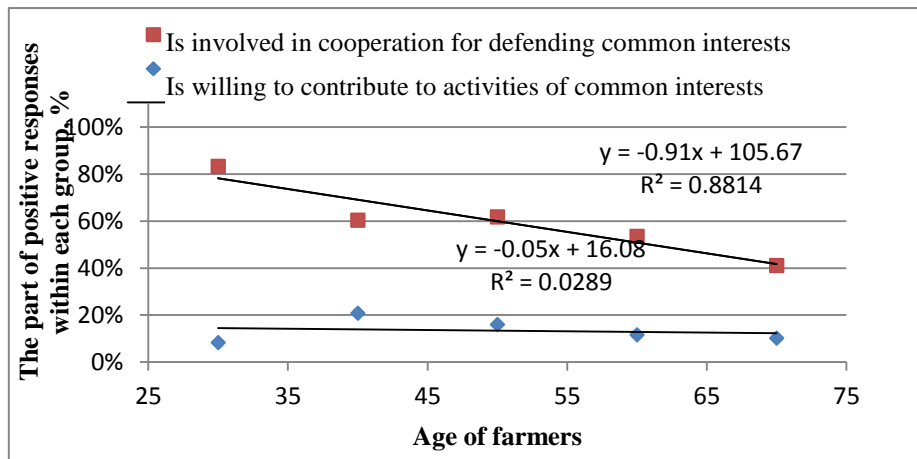


Figure 4. Farmers' willingness to contribute to activities vs their involvement into actual processes of cooperation in the context of age

For the case of only 3 points we have to draw estimations based on graphical analysis. Nevertheless, using available responses for the case of actual farmers' involvement pair of chosen variables we constructed a quite feasible linear regression function $Y = 10.25 X - 10.6$ ($R^2=0.99$) (Fig. 5) for which we have $TS_F = 284.71$ which is above the corresponding 5% threshold $F(1,1)$. Nevertheless, we again point out that the trend in the case of the small number of only 3 groups involved in the investigation has to be derived primarily by observing the graph. For exposing the *desired* level of farmers' involvement in cooperation for defending common interests the independent variable X is the same. The constructed linear regression function $Y = 9.09 X + 33.68$ ($R^2=0.91$) (Fig. 5). In spite of the large R^2 test statistics does not produce a large Fisher's test statistics $TS_F = 9.81$, which is below the corresponding 5% threshold $F(1,1) = 161.44$.

Nevertheless, observing the graph we can state that education has an influence on farmers' attitudes as well as on behaviour. More educated individuals are more active and present more positive attitudes to cooperation comparing to less educated persons. As can be seen, farmers' willingness to contribute for activities of common interests is much more expressed rather the real engagement.

Conclusions

The study showed a huge difference between farmers' intentions to cooperate and a real initiative to participate in activities based on common interests. As a result, it is complicated to describe the potential of stakeholders unambiguously. The contradiction between farmers' attitudes and behaviour related to the cooperation should be researched additionally to better understand the motives of stakeholders' behaviour and to build more reasonable stakeholder management in agrarian policy making.

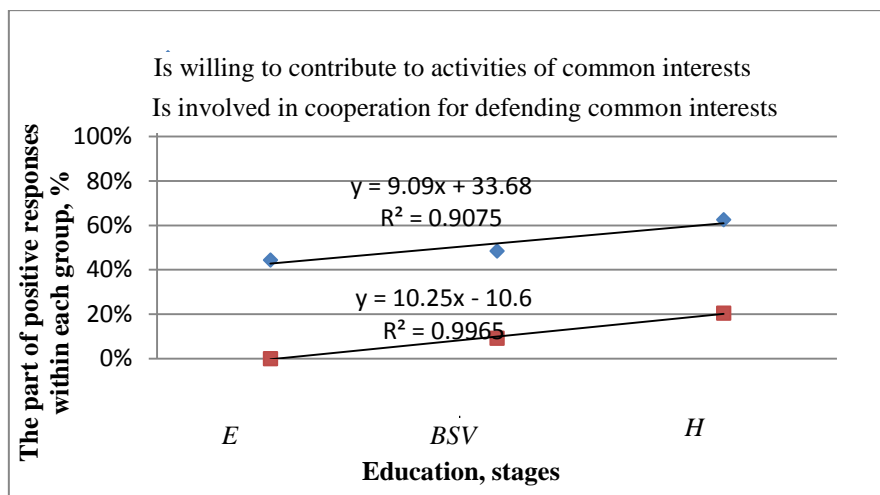


Fig. 5. Farmers' willingness to contribute to activities vs their involvement into actual processes of cooperation in the context of level of education

Moreover, distinctive research results are evident about importance of relation management for inter-organizational and inter-sectorial collaboration with the aim to implement participative governance concept into the practice in general. Nevertheless, although farmers are not highly active in cooperation for common interest representation, research results allowed to characterise a typical stakeholder who is concerned with the development of the represented sector. That would be a middle-aged, better-educated man, a bigger landowner. In more details, according to our research, farmers under 35 years old and over 65 are much more passive comparing to the farmers between 35 and 65, also gender and education matters: men are more keen on cooperating for common interests than women as well as better educated individuals vs less educated persons. The farm size and economic turnover are also significant to feasibility of stakeholder participation in organizations of common interest. Representatives of biggest farms and those having biggest turnover might be predicted as the most active stakeholders.

At the end, we can conclude that stakeholder engagement into the processes of agricultural policy making as well as balance of stakeholder representation in the area is insufficient in case of Lithuania. Institutional, procedural and managerial mechanisms are needed to balance the involvement of all stakeholder groups into activities of common interests and lobbying activities as well. Without targeted policy and managerial solutions, it cannot be expected that the common agricultural policy will be effective as it seems adjusted after biggest landowners' interests because it lacks the voice of small landowners.

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UDZIAŁ INTERESARIUSZY W ORGANIZACJACH BĘDĄCYCH PRZEDMIOTEM WSPÓLNEGO ZAINTERESOWANIA W ZAKRESIE TWORZENIA POLITYKI ROLNEJ

Streszczenie: Celem artykułu jest przedstawienie potencjału interesariuszy uczestniczących w kształtowaniu polityki agrarnej, dokonano analizy cech typowego rolnika, który jest zainteresowany udziałem w organizacjach będących przedmiotem wspólnego zainteresowania. Analiza danych uzyskanych od 1108 przedstawicieli wykazała, że chociaż co druga osoba wyraża chęć współpracy w celu ochrony wspólnych interesów, tylko jedna

dziesiąta rolników jest członkiem w organizacjach rolniczych. Większą intencję współpracy wyrażają rolnicy w średnim wieku i lepiej wykształceni niż najmłodsi i najstarsi oraz mniej wykształceni przedstawiciele. Poza tym mężczyźni wyrażają większą chęć współpracy niż kobiety. Zaobserwowano również, że inicjatywa zainteresowanych stron wiąże się z wielkością i obrotem gospodarczym gospodarstwa. Statystyczne testy nieparametryczne i analiza regresji na próbie pozwalają stwierdzić, że udział zainteresowanych stron w kształtowaniu polityki w rolnictwie jest niewystarczający w przypadku Litwy, w związku, z czym potrzebne są mechanizmy instytucjonalne, proceduralne i kierownicze w celu zrównoważenia zaangażowania wszystkich zainteresowanych stron w działania o wspólnym interesie.

Słowa kluczowe: zarządzanie interesariuszami; współpraca; rządzenie partycypacyjne; zachowanie kooperatywne; polityka rolna; interes publiczny

对农业政策感兴趣的可行性

摘要:旨在描述一个对普通农民主题感兴趣的典型农民的主题。1108年农业传统中的公众分析。更高的合作意愿比最年轻和受教育程度最低的人更好。此外，男性比女性更热衷于合作。还观察到农民正在变成一个农场。统计非参数。我对这些因素中的任何一个都不感兴趣。共同利益的活动。

关键词:利益相关者管理;合作;参与式治理;合作行为;农业政策;公共利益