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THE EFFECT OF TRUST ON THE PERFORMANCE AND STATISFACTION OF CO-OPERATIVE MEMBERS AT THE „PAPRIKAKERTÉSZ" PRODUCER ORGANISATION[1]

EFEKTY WPŁYWU ZAUFANIA NA OSIĄGNIĘCIA I SATYSFAKCJĘ CZŁONKÓW SPÓŁDZIELNI PRODUKCYJNEJ „PAPRIKAKERTÉSZ"

Key words: affective trust, cognitive trust, cooperation, group cohesion, satisfaction

Slowa kluczowe: zaufanie afektywne, zaufanie kognitywne, współpraca, spójność grupowa, satysfakcja

JEL codes: Q12, Q13

Abstract. The paper examines the impact of trust in an agricultural marketing cooperative. The aim is to explore how the trust among members and between members and management affect the commitment of members towards the cooperative (group cohesion) and their satisfaction with the cooperative. Trust is examined from two dimensions: cognitive and affective. Our results have clearly proved that trust has a positive impact on group cohesion and satisfaction. According to the experiences, however, the impact of examined dimensions of trust is differentiated: the statistical models regarded the impact of affective dimensions on group cohesion and members' satisfaction more important than the impact of cognitive dimension.

Introduction

The producer organisations (POs) in the leading fruit and vegetable producing member states of the European Union have a key role in the coordination of the marketing channel. The POs in the fruit and vegetable sectors of EU-15 countries have represented a determinant market power from the late 1990`s and as the result of permanent development they managed about one-third of the total fruit and vegetable market in 2000 [Biró, Rácz 2015]. This share had grown to more than 40% by 2010. The activity of individual countries is very different; the market share of POs in the fruit and vegetable market is rather varying: according to data from 2010, the Netherlands and Belgium are outstanding because the market share of these organisations is around 90% in these countries, but significant – more than 50% – share can be observed in Ireland, the Czech Republic, Sweden and Germany, too. This ratio was – in this time – around 20% in Hungary [Biró, Rácz 2015]. Although – as far as we know – more recent international data are not available, it can be presumed that there have been no major changes or restructuring in these countries in the last few years. In case of Hungary, the estimated ratio of POs was 20.11% in 2015 [Government of Hungary 2016] and it refers to the low level of development of producer organisations in the Hungarian fruit and vegetable sector. This low level of development of Hungarian POs can be led back to several possible reasons, out of which one is probably related to trust issues [Baranyai 2016]. Thus, the aim of the present paper is to empirically test the role of trust in the producer organisations. More specifically, this paper focuses on the impact of trust on cooperative members' performance, satisfaction and their commitment of remaining cooperative members. Examining the impact of trust in business relations is very important because the role of cooperation will be increasingly appreciated not only among horticultural farms but also among the stakeholders of agriculture [e.g. Baksa, Vásáry 2014, Erdeiné Késmárki-Gally 2015] and other sectors of national economy [e.g. Grotte 2016].

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Theoretical background

Trust is especially important in human relations, which explains why it has been put in the centre of interest of several disciplines in the recent years. As subject of research is a relatively new phenomenon in the field of economic sciences, although a large number of publications have been published and several trust approaches have been drafted in the last 25-30 years (see for example Paul Wilson's comprehensive paper [Wilson 2000]).

Daniel J. McAllister [1995] says that trust among the members of an organisation can be developed on affective and cognitive basis. The author describes the affective-based trust as emotional tie among members, while the cognitive-based trust is formed from the practical experiences of willingness to trust. M.H. Hansen et al. [2002] have constructed a similar definition for the dimensions of affective and cognitive trust. They underline that both dimensions come from social interactions, but the nature of cognitive trust is more objective, while the affective trust is more subjective.

Members can join the cooperative for several reasons, including economic (e.g. better prices), security (e.g. more secure/stable input-output markets) and social reasons (e.g. interactions with other members). M.H. Hansen et al. [2002] state that the trust among members is more affective, while between members and management it is more cognitive because – in their opinion – the performance of management can be assessed objectively through the profitability of the cooperative and the achievement of the cooperative's objectives. The authors highlight that there are no clear boundaries among these in the practice: the trust among members and in the member-management relation can be characterized with affective and cognitive features as well.

The trust among members may lead to the development of so-called group cohesion. According to the definition by Kenneth Bollen and Rick H. Hoyle [1990] group cohesion is "an individual's sense of belonging to a particular group and his or her feelings of morale associated with membership in the group". Both the cognitive components (e.g. past experiences with group members, expectations from membership) and affective components (e.g. moods, feelings, emotions) can play important role in the formation of group cohesion. The authors have concluded from their research that trust among members – which can rather be described with affective characteristics – was more important in the development of group cohesion. Thus group cohesion ultimately presumes a high level of affective-based trust.

Cooperation is a process, which is developed by the parties in order to realize mutual benefits. According to the related literature, the higher level of cooperation helps the coordination of activities performed by economic stakeholders and this also improves the individual performances of cooperating partners [Smith et al. 1995]. The successful cooperation, however, requires high levels of trust among members and in the member-management relation, too. M.H. Hansen et al. [2002] say that both types of trust have positive impact on the satisfaction and economic performance of cooperating members. They also presumed that stronger group cohesion positively affects the feeling of satisfaction regarding membership in the cooperative, too.

According to the theoretical considerations, we separately test the role of trust on group cohesion and members' performance and satisfaction. We pay special attention to the distinction between cognitive and affective trust. Hypotheses 1-3 deal with the relationship between trust and group cohesion, whilst hypotheses 4-6 focus on the impact of trust on members' performance.

H1. Trust among members (cognitive and affective) will have a greater effect on group cohesion than trust between members and management of cooperative (cognitive and affective).

H2. Affective trust among members has a greater impact on group cohesion than cognitive trust among members.

H3. Affective trust between members and management of cooperative has a greater effect on group cohesion than cognitive trust between members and management of cooperative.

H4. Both types of trust (cognitive and affective) at both levels (among members and between members and management) have positive impacts on the members' performance and satisfaction from their cooperative membership.

H5. Affective trust (at both levels) has larger effects on the members' performance and satisfaction from their cooperative membership than cognitive trust (both levels).
H6. Group cohesion has a positive impact on the members' performance and satisfaction from their cooperative membership.

Material and methods

A questionnaire survey was used to collect data among the members of PAPRIKAKERT PO Producer and Sales Ltd needed to test the hypotheses in the previous section. A total of 144 responses were returned, which represented a response rate of 59%. The survey and questionnaire was prepared on the basis of papers by M.H. Hansen et al. [2002], Lajos Bakucs et al. [2007] and Gyula Dudás and Imre Fertő [2009]. The variables and methodology from their works were applied, thus ensuring the comparability of results. The questions in the survey are presented in table 1. The respondents could rate their answer on a scale from 1 to 7 for each of the questions, thus indicating how much they agree with the given statement (1 – do not agree at all, 7 – totally agree).

Table 1. The questions of the survey
Tabela 1. Pytania w ankiecie

Cognitive trust: I used a business-like approach to determine if I could trust other cooperative members/I used a business-like approach to determine if I could trust cooperative management/*Zaufanie oparte na wiedzy – kognitywne: zastosowałem podejście podobne do biznesowego, aby ustalić, czy mżna zaufać innym członkom spółdzielni/użyto podejścia biznesowego, aby ustalić, czy można zaufać zarządzającym spółdzielniom*
Affective trust: I feel that other cooperative members are trustworthy/I feel that cooperative management is trustworthy/*Zaufanie intuicyjne – afektywne/Czuję, że inni członkowie spółdzielni są godni zaufania/ uważam, że zarządzanie spółdzielczości jest godne zaufania*
Group cohesion: I feel a sense of belonging to cooperative/*Spójność grupy: czuję poczucie przynależności do spółdzielni*
Performance and satisfaction: my cooperative membership has resulted in increased profits/*Skuteczność i satysfakcja: moje członkostwo w spółdzielni przyniosło większe zyski*

Source/*Źródło:* [Hansen et al. 2002, Bakucs et al. 2007, Dudás, Fertő 2009]

Following the works of authors referred above the examinations were made with hierarchical regression models. László Sajtos and Ariel Mitev's book [2007] was used as methodological background for the construction of regression models. Special attention was given to the correct methodological application. Mária Székelyi and Ildikó Barna's book [2008] was the basis for selecting appropriate statistical procedures to test the variables involved in examinations and the constructed models as well. Due to methodological reasons, the following control variables were also involved in the individual models: farm size in hectares, number of years that the respondents had been members of the cooperative and the highest level of education of farmers (1-12).

Results

The main outputs of hierarchical regression models testing hypotheses H1-H3 are summarized in table 2 (Section A). The independent variables – in order to explain Group Cohesion (GC) – were added to the model in the following order: (1) three control variables, (2) cognitive trust among members (CT – mem), (3) affective trust among members (AT – mem), (4) cognitive trust between members and co-operative management (CT – man), (5) affective trust between members and co-operative management (AT – man).

The first hypothesis (H1) presumes that the trust among the members has greater impact on group cohesion within the cooperative than the trust level between members and management. According to our outcomes (both the cognitive and affective) trust among members can explain 58,4% of GC

Table 2. Results of hierarchical regression analyses
Tabela 2. Wyniki analiz regresji hierarchicznej

Independent variables/ *Zmienne niezależne*	Section/*Sekcja* A dependent variable/ *zmienna zależna:* GC			Section/*Sekcja* B dependent variable/ *zmienna zależna*: P&S		
	Beta Coef.	Beta (CI95%)		Beta Coef.	Beta (CI95%)	
Step 1/*Krok 1*	$R^2 = 0.021$; (F-sig. 0.659); $dR^2 = NA$			$R^2 = 0.009$; (F-sig. 0.884); $dR^2 = NA$		
Land size/*Powierzchnia gruntów*	0.064	-0.253	-0.380	0.124	-0.219	-0.467
Members year/*Rok członkostwa*	0.149	-0.152	-0.451	0.000	-0.327	-0.326
Education/*Wykształcenie*	0.095	-0.198	-0.388	0.030	-0.287	-0.347
Step 2/*Krok 2*	$R^2 = 0.275$; (F-sig. 0.000); $dR^2 = 0.254$			$R^2 = 0.128$; (F-sig. 0.000); $dR^2 = 0.119$		
Land size/*Powierzchnia gruntów*	0.037	-0.223	-0.296	0.093	-0.179	-0.366
Members year/*Rok członkostwa*	0.111	-0.136	-0.359	-0.044	-0.304	-0.216
Education/*Wykształcenie*	0.030	-0.211	-0.271	-0.044	-0.297	-0.209
CT – mem	0.603**	0.409	-0.797	0.690**	0.486	-0.894
Step 3/*Krok 3*	$R^2 = 0.605$; (F-sig. 0.000); $dR^2 = 0.330$			$R^2 = 0.502$; (F-sig. 0.000); $dR^2 = 0.374$		
Land size/*Powierzchnia gruntów*	0.017	-0.187	-0.221	0.079	-0.168	-0.325
Members year/*Rok członkostwa*	0.031	-0.165	-0.227	-0.103	-0.340	-0.134
Education/*Wykształcenie*	0.009	-0.181	-0.198	-0.060	-0.289	-0.169
CT – mem	-0.007	-0.240	-0.226	0.241*	0.041	-0.523
AT – mem	0.766**	0.545	-0.988	0.565**	0.297	-0.833
Step 4/*Krok 4*	$R^2 = 0.647$; (F-sig.: 0.000); $dR^2 = 0.042$			$R^2 = 0.544$; (F-sig. 0.000); $dR^2 = 0.042$		
Land size/*Powierzchnia gruntów*	0.037	-0.153	-0.227	0.098	-0.139	-0.335
Members year/*Rok członkostwa*	-0.029	-0.214	-0.156	-0.160	-0.392	-0.071
Education/*Wykształcenie*	0.007	-0.169	-0.183	-0.061	-0.281	-0.158
CT – mem	-0.175	-0.411	-0.062	0.081	-0.213	-0.376
AT – mem	0.606**	0.381	-0.831	0.412**	0.131	-0.693
CT – man	0.316**	0.139	-0.492	0.301**	0.080	-0.521
Step 5/*Krok 5*	$R^2 = 0.705$; (F-sig. 0.000); $dR^2 = 0.058$			$R^2 = 0.589$; (F-sig. 0.000); $dR^2 = 0.045$		
Land size/*Powierzchnia* gruntów	0.052	-0.127	-0.231	0.114	-0.114	-0.341
Members year/*Rok członkostwa*	-0.067	-0.243	-0.109	-0.201	-0.424	-0.023
Education/*Wykształcenie*	0.022	-0.144	-0.188	-0.046	-0.257	-0.165
CT – mem	-0.145	-0.369	-0.078	0.113	-0.171	-0.396
AT – mem	0.370**	0.113	-0.627	0.160	-0.167	-0.487
CT – man	0.073	-0.151	-0.297	0.042	-0.243	-0.327
AT – man	0.383**	0.146	-0.621	0.409**	0.108	-0.711
Step 6/*Krok 6*				$R^2 = 0.672$; (F-sig. 0.000); $dR^2 = 0.083$		
Land size/*Powierzchnia gruntów*				0.084	-0.121	-0.289
Members year/*Rok członkostwa*				-0.162	-0.365	-0.040
Education/*Wykształcenie*				-0.058	-0.248	-0.132
CT – mem				0.196	-0.063	-0.454
AT – mem				-0.051	-0.362	-0.259
CT – man				0.000	-0.257	-0.257
AT – man				0.190*	0.010	-0.370
GC				0.572**	0.303	-0.841

Source: own calculation (* $p < 0.05$; ** $p < 0.01$)
Źródło: obliczenia własne ($p < 0.05$; ** $p < 0.01$)*

variance, while the trust level between the members and management can explain only 10%. In the final model, however, the partial impact of affective trust is significant in both relations, there is no real difference between beta values (0.370 vs. 0.383); moreover the confidence intervals (CI95%) are also greatly overlapping. On the basis of the above hypothesis H1 has been rejected.

Our hypothesis H2 says that the level of affective trust among members has greater influence on Group Cohesion than cognitive trust. The affective trust explains 33% of variance in our model, while cognitive trust explains only 25.4%. Furthermore, in the third iteration, the value of significant coefficient (0.766) belonging to affective trust also supports the confirmation of hypothesis H2.

According to Hypothesis H3, the affective trust in the member-management relation has a more positive effect on group cohesion than cognitive trust. Our results support this hypothesis for two reasons: the cognitive trust entering in the fourth round increased the explained variance by 4.2%; while this value was 5.8% in case of the affective trust involved in the last round. Finally, only the partial impact of affective trust appears to be significant in the member-management relation of the ultimate model. Therefore hypothesis H3 is confirmed.

Table 2 (Section B) shows the results of statistical models constructed for testing the second group of hypotheses. The hypotheses (H4-H6) in different aspects presume the impact of trust and group cohesion on the performance and satisfaction (P&S) of members in terms of their cooperative membership. The independent variables are involved in the models according to the data in the table.

The fourth hypothesis (H4) presumes that both types of trust (cognitive and affective) have positive impact on P&S at both levels (among members and in the member-management relation). Our results support this hypothesis only partly: the trust types, which are involved in individual iterations have significant and positive impact on the independent variable (step 2-5), but in the final model (after step 6), only the partial impact of affective trust between members and management can be statistically proven.

According to the presumption described in hypothesis H5, affective trust has greater impact on P&S than cognitive trust in both relations. The affective trust dimensions introduced in Step 3 and Step 5 iterations explain 41.9% of P&S heterogeneity, while in case of cognitive trust in Step 2 and Step 4 this value is 16.1%. Although only the positive effect of affective trust between the members and management has proved to be significant in the final model but the cognitive trust among members (Step 2) increases the explanation ratio by 11.9%, while affective trust increases it by 37.4% (Step 3). The cognitive trust between members and management explains 4.2% of P&S variance (Step 4) and this value is 4.5% in case of affective trust (Step 5). On the basis of all these, hypothesis H5 has been confirmed.

Finally, hypothesis H6 presumes that GC has a significant and positive impact on the P&S of the membership. The hypothesis H6 can be clearly confirmed. GC introduced in the last iteration increased the explanation ratio by 8.6% and its partial effect is also significant (beta: 0.572).

Conclusions

The study examines the role of trust in an agricultural marketing cooperative operating in the Hungarian vegetable and fruit sector. More specifically, our research aimed to analyse the impact of trust on the commitment of members towards the cooperative and their satisfaction with the cooperative membership. The trust in two dimensions (cognitive and affective) was the subject of research in two relations (among the members and between members and management).

On the basis of the outputs of our research the following theses (T) can be drafted: T1: The trust (both affective and cognitive) among members and between members and management has considerable impact on group cohesion. Our calculations, however, indicate that the level of trust among members is slightly more important in the development of group cohesion and out of trust dimensions the affective trust has stronger effect. T2: Group cohesion is determined by the level of affective trust among members to a greater extent than cognitive trust. T3: The role of affective trust between members and management is stronger than the role of cognitive trust in the development of group cohesion. T4: Trust has a significant effect on the satisfaction of members within the cooperative. T5: Affective trust has a greater impact on the satisfaction

of cooperative members than cognitive trust. Our results, however, also prove that affective trust influences satisfaction mostly in the member-management relation. T6: Group cohesion has a substantial impact on the satisfaction of cooperative membership.

Our research is a case study; therefore the findings cannot be generalized – or only to a limited extent – to all producer organisations in Hungary. It is important to note, however, that L. Bakucs et al. [2007] and G. Dudás and I. Fertő [2009] have made research in this area in different organisations with the same methodological approach. Their results significantly overlap with the outcomes of the present research and this enables some generalization. Of course, further research is needed to clarify the role of trust in the success of producer organisations.

Bibliography

Baksa Adrienn, Vásáry Miklós. 2014. *Aktualitások A Közös Agrárpolitikáról: A változások oka és eredménye* (Information about the common agricultural policy: the cause and result of the changes), Mezőzombor: Innosco Közhasznú Alapítvány.

Bakucs Lajos, Imre Fertő. 2007. *The impact of trust on cooperative membership performance and satisfaction in the Hungarian horticulture*. [In] 104th seminar. of The International Association of Agricultural Economists. Budapest, September 6-8. 2007.

Baranyai Zsolt. 2016. Factors of trust in Hungarian agriculture – some experiences based on Sholtes' model. *Annals of the Polish Association of Agricultural and Agribusiness Economists* XVIII (4): 14-19.

Bíró Szabolcs, Katalin Rácz. 2015. *Agrár- és vidékfejlesztési együttműködések Magyarországon* (Agricultural cooperation and rural development in Hungary). Budapest: Agrárgazdasági Kutató Intézet.

Bollen Kenneth A., Rick H. Hoyle. 1990. Perceived cohesion: A conceptual and empirical examination. *Social Forces* 69: 479-504.

Erdeiné Késmárki-Gally Szilvia. 2015. Application of a modern marketplace in the European agribusiness. Agroeconomia Croatica. *Journal for Research in Agricultural Economics and Rural Sociology. Croatia* V (1): 41-50.

Government of Hungary. 2016. *B/13320. Számú jelentés az agárgazdaság 2015.* évi *helyzetéről* (A report on the status of the farm in 2015). http://www.parlament.hu/irom40/13320/13320.pdf, accessed 01.07.2017.

Grotte Judit. 2016: Most recent challenges in the Hungarian hospitality Industry. *International Journal of Business and Information Technology* 9 (1): 24-28.

Hansen Mark H., John L. Morrow Jr., Juan C. Batista. 2002. The Impact of trust on cooperative member retention, performance and satisfaction: an exploratory study. *International Food and Agribusiness Management Review* 5: 41-59.

Dudás Gyula, Imre Fertő. 2009. The effect of trust on the performance and satisfaction of co-operative members at the „Zöld Termék" Producer Organisation". *Gazdálkodás* 23:49-55.

McAllister Daniel J. 1995. Affect- and cognitive-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal* 38: 24-59.

Sajtos László, Ariel Mitev. 2008. *SPSS Kutatási és adatelemzési kézikönyv* (Manual of SPSS analysis and analysis). Budapest: Alinea Kiadó.

Smith Ken G., Stephen J. Karoll, Susan J. Ashford. 1995. Intra- and interorganisational cooperation: toward a research agenda. *Academy of Management Journal* 37: 7-23.

Székelyi Mária, Ildikó Barna. 2008. *Túlélőkészlet az SPSS-hez* (Survival kit for SPSS). Budapest: Typotex.

Wilson Paul N. 2000. Social capital, trust, and the agribusiness economics. *Journal of Agricultural and Resource Economics* 25 (1): 1-13.

Streszczenie

Przedstawiono wpływ zaufania do spółdzielni rolniczych ich członków. Przeanalizowano, w jaki sposób zaufanie pomiędzy członkami spółdzielni oraz pomiędzy członkami i kierownictwem wpływa na zaangażowanie członków w rozwój spółdzielni (spójność grupowa) i ich zadowolenie ze współpracy. Zaufanie było badane z perspektywy dwóch wymiarów: poznawczej i emocjonalnej. Wyniki dowiodły, że zaufanie ma pozytywny wpływ na spójność i satysfakcję grupy. Z doświadczenia wynika jednak, że wpływ badanych wymiarów zaufania był zróżnicowany – modele statystyczne uwzględniały wpływ wymiarów emocjonalnych na spójność grupową i satysfakcję członków silniej niż wpływ wymiaru kognitywnego.

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