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IDENTIFICATION OF DIFFERENCES IN THE SOCIO-DEMOGRAPHIC CHARACTERISTICS OF FARMS PARTICIPATING AND NOT PARTICIPATING IN SHORT FOOD SUPPLY CHAINS. EMPIRICAL STUDY IN POLAND[2]

Key words: farms, short food supply chains, social characteristics, demographic characteristics, social capital, Poland

ABSTRACT. The main aim of the research was to identify the differences in socio-demographic characteristics between managers of small farms in Poland who do and do not participate in short food supply chains (SFSCs). The analysis was based on the results of a survey conducted in 2023 among 199 respondents – farmers in Poland. Selected social and demographic variables were analysed. For the demographic ones, there were used: gender, age, education of the farm manager, and number of members on the farm. In turn, the level of social capital characterising farmers was described by participation in continuing education, participation in organizations, cooperatives, associations, clubs, etc., and participation in events, concerts, festivals, etc. A chi-square Pearson's test of independence was used to compare two groups of farms in terms of the analysed variables. The strength of the relationships was measured using the V-Cramer convergence coefficient. Research revealed that among the social and demographic variables, gender and education were significant. Hence, among farms participating in the SFSCs, there were significantly more farms owned and managed by women and managers of those farms were better educated than managers of farms not participating in the SFSCs. Moreover higher level of social capital, particularly perceived through the involvement of farm owners or members of a household in lifelong education and membership in organisations, cooperatives, or associations was also a distinguishing feature of farms participating in the SFSCs.

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INTRODUCTION

The system of food production, distribution, and consumption has been changing for years. The traditional market structure in agriculture (which is often used as an example of perfect competition market structure) gets a new form due to its linkages into the food value chain that is typical of different types of imperfect competition in the upstream and downstream markets (monopsony, oligopsony) [Bečvářová 2005]. The industrialization of agri-food systems, capital-intensive and highly-specialized forms of production, and the dominant position of the retail sector lead to the loss of the bargaining power of farmers in the food value chains and to detachment between producers and consumers. Consequently, small farms do not have much influence on the price of their raw materials or products while selling them, and most of the added value of products is taken over by the abovementioned concerns, treating it as a kind of middlemen's margin. Such a mechanism in the food economy is common in countries with a fragmented agrarian structure and with a large number of small farms. So it can be stated that small farms have become incompatible with changes in the current food system and are excluded from the possibility of participation in the long food value chains and from the value creation in such chains. In response to this process, an alternative business model, so-called short food supply (value) chains (SFSCs), began to develop [Renting et al. 2003], initially in a spontaneous, bottom-up manner, over time it also became more institutionally supported.

There is no one universal definition of short food supply chains (SFSCs). Short food supply chains are the ways of food distribution within the local food supply system, which is the alternative food system to the conventional food system [Marsden et al. 2000, FAAN 2010, Darolt et al. 2016]. SFSCs embrace the shortest possible distance between the producer and the consumer and a limited number of intermediaries. The number of intermediaries, physical distance, social relations, knowledge exchange, locality, governance involvement or identification and traceability are some of the criteria used to formulate the definitions. However, they all have one thing in common: there are limited numbers of intermediaries between the consumer and the farmer or food producer [Kneafsey et al. 2013, Matysik-Pejas et al. 2017, Jarzębowski et al. 2020]. SFSCs are also covered by a definition in Article 2 of Regulation (EU) No 1305/2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD), which entered into force with the reformed Common Agricultural Policy for 2014-2020. SFSC is defined as "a supply chain involving a limited number of economic operators, committed to cooperation, local economic development, and close geographical and social relations between producers, processors and consumers".

The importance of the SFSCs can be evaluated from different perspectives which is reflected in literature. The general role of short food supply chains (and local food systems)

for producers and consumers [Kawecka and Gębarowski 2015, Petropoulou 2016] or the direct and indirect support of the SFSCs on the sustainable development of agriculture and rural areas and farm sustainability are most often analyzed [Michalský and Hooda 2015, Petropoulou 2016, Matysik-Pejas et al. 2017, Enjolras and Magali 2018, Jarzębowski et. al 2020]. Some studies are considering the resilience of SFSCs to adverse shocks, like e.g. economic crisis or COVID19 [Leat and Revoredo-Giha 2013, Fałkowski 2015, Jacobi et al. 2018, Vroegindewey and Hodbod 2018, Kangogo et al. 2020] or reducing the vulnerability of farmers participating in SFSCs [Yang and Liu 2018, S. Aday and M.S. Aday 2020, Garnett et. al. 2020, Matthews 2020, OECD 2020]. Since the SFSCs are less integrated in the international market on the output side and oriented more toward production for domestic/local markets, they might be less affected by international trade disruptions [Van Hoyweghen et al. 2021], however short supply chain is not always equal to local system. That is why the philosophy of the European model of agriculture, which is implemented through Common Agricultural Policy (CAP) programs is supporting the creation of SFSCs [EC 2021].

Participating in the SFSCs seems to be an attractive instrument to increase farm's competitiveness in the agri-food market. But from the farmers' point of view engagement in SFSCs is connected with benefits as well as with cost [Gołębiewski and Bareja-Wawryszuk 2016]. Development of SFSCs is fairly moderate and some farmers do not want to engage in SFSCs. Hence, the question is what are the reasons? Next to the success factors of getting involved in SFSCs, the barriers are indicated, which are often connected with product market or administrative arrangements [Kawecka and Gębarowski 2015, Petropoulou 2016, Benedek et al. 2018, Jarzębowski et al. 2020]. However, the non-participating in SFSCs can be also determined by the social and demographic characteristics of farmers and social capital.

Thus, the main aim of the research was to identify the differences in socio-demographic characteristics between managers of small farms in Poland who do and do not participate in SFSCs. While some social and demographic futures of farmers are relatively well established in empirical research between farmers participating in SFSCs (they are metric parts in questionnaires), the social capital is rather neglected. But what is worth to underline, social capital can be treated as an important factor of farms development, especially in the case of the deficit of other forms of capital [Michalewska-Pawlak 2010, Rivera et al. 2018b], which is the case of small farms. Social capital can have a positive effect in building market orientation which is undoubtedly connected with farmers' engagement in alternative links with consumers such as SFSCs. This research is part of a broad study devoted to the role of short food supply chains in functioning of small farms during the crisis time (post-pandemic period). In the paper, the focus is on social and demographic factors only that can differentiate SFSC-farmers and non-SFSC-farmers with particular attention to social capital.

RESEARCH MATERIAL AND METHODS

In the primary research the PAPI (Paper and Pencil Interview) method with an original survey questionnaire was employed. The survey questionnaire included, among other things, questions identifying the respondents and related to social capital. The survey was conducted by the authors of the manuscript, among small farm owners, with some declaring that they participate in short supply chains (so-called SFSC-farmers) and some declaring that they do not (so-called non-SFSC-farmers). A small farm was assumed to be a farm up to 20 ha of UAA and with an Standard Output SO of up to EUR 50,000. The area criterion was established as a result of a brainstorming session among experts, while the economic size of SO results from the classification of farms used by FADN (so-called medium-small farms up to EUR 50,000). The farms for our survey were randomly selected. The study assumed that farms participating in short supply chains are those that use the following distribution methods: direct farm sales, neighbourhood sales, bazaar and market sales, delivery to consumers' households, own retail shop, delivery to external units (local retail shops, restaurants, bars, educational institutions, hospitals), box system. The statistical analysis of the results included 199 correctly completed questionnaires. The survey was conducted between July and November 2023 throughout Poland. Database is available at: https://doi.org/10.18150/LISSRH.

Considering the social and demographic characteristics of farmers, the authors' questionnaire included gender, age, education of the farm manager and number of members on the farm. There was also assumed that social capital or, better, an individual's social capital is understood as a network of social connections of an individual and which may contribute to the economic benefits obtained by the individual [Bourdieu 1986]. Social capital can be also understood as trust, cooperation skills and social relations [Kwilinski et al. 2019]. In this research social capital was described by three variables such as:

- participation in continuing education (any member of farmer's household or manager of farm), strengthening social bonds by this type of activity,
- participation in organizations, cooperatives, associations, clubs, etc. (any member of farmer's household or manager of farm),
- participation in events, festivals, concerts, etc. (any member of farmer's household or manager of farm).

During the interviews, questions were always asked directly about the household manager and his/her family (spouse and adults living in the same household). If at least one person from the farmer's household (e.g. spouse) participated in education/organizations/events, this was considered a "yes" answer in the farmer's household members category. At the same time, the answer "yes" was given when it concerned systematic participation in a given system, and not e.g. a one-off course, event, etc. (see Tables 3 and 4). In the analysis, some variables were on nominal (gender) and in ordinal (age and education of

the farm manager, number of members on the farm) scale. To calculate the significance of the differences between SFSC-farmers and non-SFSC-farmers, the non-parametric chi-squared test was used. The chi-square test of independence assesses whether a relationship exists between two variables, that is, whether the observed distribution of observations within one variable depends on the other variable. The purpose of this analysis is to determine whether the obtained discrepancies are large enough to conclude that they depend on the second variable and no other factors, i.e. the influence of other variables or random factors. To determine the strength of the relationship between two variables, φ coefficient was used. It is used to determine the level of dependence between two nominal variables or a nominal and ordinal variable [Brzeziński 2021]. Crame's V coefficient results in values between 0 and +1 (inclusive), the closer the score is to 0, the weaker the relationship between the studied characteristics, and the closer it is to 1, the stronger the relationship between the studied characteristics namely, weak effect: up to 0.10, moderate effect: up to 0.30, medium-strong effect: up to 0.50, and strong effect: above 0.50 [King and Minium 2020, Brzeziński 2021]. In the calculation process the program PS IMAGO PRO was employed.

RESEARCH RESULTS

Across the survey sample, farm managers were by far outnumbered by men (76.4%). However, among the farms participating in the SFSCs, there were notably more farms owned and managed by women (38.3%) compared to farms not participating in the SFSCs (10.5%) (see Table 1). Further analysis revealed that this difference was significant and that the strength of the relationship between owner gender and participation or not in SFSCs was moderate at 0.327 (see Table 2). This allows us to conclude that on farms participating in SFSCs, women are more likely to be the owners and managers. The comments are compatible with the results of the theoretical and empirical studies devoted to the role of women in agriculture and in the alternative food supply chains, especially in the SFSCs.

Table 1. Characteristics of a survey sample of farms participating and not participating in SFSCs by selected demographic and social characteristics

Participation in SFSCs	Gender [%]		Age of farm manager (average)	Number of members in a farmer's household (average)
	woman	man		
Yes	38.3	61.7	47.47	3.82
No	10.5	89.5	47.12	3.97
Total	23.6	76.4	47.29	3.89

Source: own elaboration

There is something like "re-emergence" of women farmers, that occurs as the response to the negative effects of agricultural industrialization in the context of consumers' trust and needs [Ball 2020]. According to some researchers [Sachs et al. 2016, Unay-Gailhard and Bojnec 2021], the relatively high level of women's involvement in SFSCs can be grounded in a desire for caring relations, a belief in the empowering potential of direct marketing and an urge to change gender relation in local food systems. Female farmers are perceived as ones who possess the social skills or interpersonal nature to succeed in SFSCs [Charatsari et al. 2020]. The SFSC can be also used as a frame for women to develop their new skills and active role on the farms [Wright and Anness 2016, Annes et al. 2021]. There are no large-scale empirical studies devoted to the role of female farmers in alternative food networks [Azima and Mundler 2022], although there are some for European countries that confirm that women are more likely than men to be involved in direct sales, organic farming or other forms of value-added agriculture [Annes et al. 2021]. Women farmers are not only more likely to focus on SFSCs, but they prefer face-to-face sales channels that give them opportunities to interact with consumers [Azima and Mudler 2022] and vindicate the ethical, agroecological, and cultural dimensions of food [Nigh and Cabañas 2015].

The analysis of the difference between the farm owners' education levels led to the conclusion that the non-participating farmers have lower level of education. This was due to the fact that 6% of managers of the non-SFSC farms had primary education. In addition, there were 11% fewer owners of non-SFSC-farms with higher education in comparison to farmers participating in SFSCs (see Figure 1). On the other hand, the number of farms' managers with agricultural education was 7% higher in the non-SFSC-farms comparing to the SFSC-farms. The difference was also statistically significant (for p-value less than 0.1), with a V-Cramer coefficient at 0.198 (see Table 2).

Table 2. Pearson's chi-square independence test statistic between socio-demographic variables: gender, age, education, number of farm's members and farmers' participating or not participating in the SFSCs

Participation in SFSCs	chi-squared test	df	p	V-Cramer coefficient	Dependence
Gender of farm manager	21.281	1	< 0.001	0.327	yes
Age of farm manager	43.246	46	0.588	-	no
Level of education of the farm manager	7.792	4	0.099	0.198	yes
Agricultural education of the farm manager	0.624	1	0.429	-	no
Number of farm members	4.395	7	0.733	-	no

Source: own elaboration

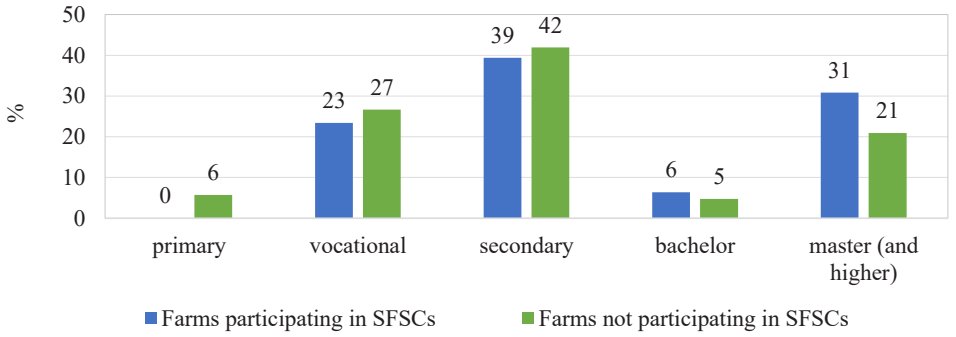

Figure 1. Percentage distribution of farmers participating and non-participating in SFSCs according to the education level

Source: own elaboration

This result is consistent with the conclusions contained in the work of Chrysanthi Charatsari et al. [2020]. The authors indicate that willingness to participate in SFSCs is affected by the level of farmers' education which translates into higher competencies in management, entrepreneurship, marketing, networking and cooperation. Moreover, these competencies increase even after involvement in SFSCs. Similarly, in the study by Marcello Stanco et al. [2019], farmers participating in short supply chains are characterized by higher education than average, who value creating a direct and lasting relationship with consumers to provide information about the quality and authenticity of their products. Also, Zsófia Benedek et al. [2018] argue that SFSC-farmers are better educated, more open to cooperation, have specific investment plans for developing their farms, and who are specifically looking to directly interact with their customers to avoid middlemen. Further, authors' analysis indicated that for the other two demographic variables, i.e. age of the manager and the number of farm's members, differences were not statistically significant.

The relationship between farmers participating and non-participating in SFSCs and variables describing the level of social capital was also evaluated. The preliminary analysis allowed us to conclude that farmers participating in SFSCs are characterised by definitely higher levels of social capital. In the cases of the SFSCs-farms, participating in continuing education by members and managers of farms was more than 2 times higher than in the cases of the non-SFSCs-farms (see Table 3). At the same time, both members and managers of the SFSCs-farms were characterised by a significantly higher engagement in organisations and associations (by about 20 percentage points – p.p.) or any social events (by about 10 p.p.) in comparison to the members or managers of the non-SFSC-farms. The indicated differences in each of these social capital elements between two analysed groups of farms, i.e. participating and not participating in the

Table 3. Structure of the sample of farmers participating and non-participating in SFSCs according to social capital characteristics

Participation in SFSCs	Participation in [%]					
	continuing education		organizations, cooperatives, associations etc.		events, festivals etc.	
	members of household	manager of farm	members of household	manager of farm	members of household	manager of farm
Yes	57.4	50	61.7	55.3	85.1	80.9
No	28.6	24.8	42.9	37.1	72.4	66.7

Source: own elaboration

SFSCs, were statistically significant. The strength of the relation between social capital characteristics and farmers was the highest for participation in continuing education. The lower relation was identified for participation in organisations and the lowest for participation in social events (see Table 4).

One can say that SFSCs-farmers are more "socialised" in comparison to non-SFSCs farmers. This study confirms the positive impact of social capital on building market orientation in the form of alternative food networks such as the SFSCs. Some studies indicate that social capital plays an important role in various agricultural and nonagricultural value chains [Trigkas et al. 2021, Stępień et al. 2022] and SFSCs are

Table 4. Pearson's chi-square independence test statistic between social capital variables and farmers' participating or not participating in the SFSCs

Participation in SFSCs	Who participate	chi-squared test	df	p	V-Cramer coefficient	dependence
Participation in continuing education	member of farmer's household	16.953	1	< 0.001	0.292	yes
	manager of farm	13.602	1	< 0.001	0.261	yes
Participation in organizations, cooperatives, associations, etc.	member of farmer's household	7.054	1	0.008	0.188	yes
	manager of farm	6.603	1	0.010	0.182	yes
Participation in events, festivals, etc.	member of farmer's household	4.742	1	0.029	0.154	yes
	manager of farm	5.107	1	0.024	0.160	yes

Source: own elaboration

developed on proximate spatial relations, social relations, and small-scale production [Watts et al. 2005]. As SFSCs bring farmers closer to the consumer, trust, cooperative skills and social relationships – qualities that describe social capital – are needed [Kwilinski et al. 2023]. Trust is also related to participation in social life, involvement in volunteering and social interactions [Trigkas et al. 2021]. In authors' research, this aspect was reflected in the participation of the SFSCs-farmers in long-life education, various organisations and social events.

As was mentioned above, the empirical studies confirm that social capital increases farmers' market orientation (involvement in SFSC can be considered as such an orientation). Such observations were made by e.g. Nikoleta Jones et al. [2008], Maria Rivera et al. [2018a] and Marios Trigkas et al. [2021]. However, research shows that the level of social capital of Polish farmers is relatively low and should be strengthened [Smędzik-Ambroży and Sapa 2022] as communities with strong social capital can use their endogenous resources [Farkas 2021]. Assuming the social attitudes of women, their role in building social capital seems important, as they are also open to vocational training, technological know-how, and union membership [Haugen and Brandth 1994].

SUMMARY AND CONCLUSIONS

Short food supply chains can be seen as an alternative business model, especially for small farms. The shortening of supply chains can be a strategy to conquer, to a certain extent, their weak market bargaining power. Although participation in the SFSCs seems interesting for farmers, such activity is undertaken only by some farmers. As part of a survey among Polish small farmers, there were identified socio-demographic differences between farmers participating and not participating in the SFSCs. According to authors' research, in the group of SFSCs-farmers there were more female farmers, managers were more educated and both, farm managers and farm members were characterised by higher level of social capital.

Building close relationships with food customers in SFSC can be easier, especially for educated women and people who are engaged in social relations. That seems logical and also acknowledges that apart from objective reasons (like e.g. regulations) for entering the SFSCs, subjective or better soft factors can be important. Thus, supporting women's competitiveness and strengthening the role of women in alternative networks can assist the further development of the SFSC. But also enhancement of all forms of social capital can be helpful. In this context education and training could support also the awareness of the importance of the social linkages within short food supply chains. Hence, encouraging women's social involvement, such as participation in cultural events, training, courses, and membership in agricultural, industry or social organizations can be meaningful.

BIBLIOGRAPHY

Aday Serpil, Mehmet Seckin Aday. 2020. Impact of COVID-19 on the food supply chain. *Food Quality and Safety* 4 (4): 167-180. DOI: 10.1093/fqsafe/fyaa024.

Annes Alexis, Wynne Wright, Michelle Larkins. 2021. "A woman in charge of a farm": French women farmers challenge hegemonic femininity. *Sociologia Ruralis* 61 (1): 26-51. DOI: 10.1111/soru.12308.

Azima Stevens, Patrick Mundler. 2022. The gendered motives and experiences of Canadian women farmers in short food supply chains: Work satisfaction, values of care, and the potential for empowerment. *Journal of Rural Studies* 96: 19-31. DOI: 10.1016/j.jrurstud.2022.10.007.

Ball Jennifer A. 2020. Women farmers in developed countries: A literature review. *Agriculture and Human Values* 37: 147-160. DOI: 10.1007/s10460-019-09978-3.

Bečvářová Věra. 2005. Agribusiness – the scope as well as the opportunity for contemporary agriculture. *Agricultural Economics* 51 (7): 285-292.

Benedek Zsófia, Imre Fertő, Adrienn Molnár. 2018. Off to market: but which one? Understanding the participation of small-scale farmers in short food supply chains – a Hungarian case study. *Agriculture and Human Values* 35 (2): 383-398. DOI: 10.1007/s10460-017-9834-4.

Bourdieu Pierre. 1986. The forms of capital. [In] *Handbook of theory and research for the sociology of education,* ed. John Richardson, 241-258. Westport: CT, Greenwood.

Brzeziński Jerzy M. 2021. Testy istotności różnic i wskaźniki wielkości efektu ES – wybrane zagadnienia. [W] *Metodologia badań psychologicznych* (Tests of significance of differences and indicators of ES effect size – selected issues. [In] Methodology of psychological research), 205-234. Warszawa: PWN.

Charatsari Chrysanthi, Fotis Kitsios, Evagelos D. Lioutas. 2020. Short food supply chains: the link between participation and farmers' competencies. *Renewable Agriculture and Food Systems* 35: 643-652. DOI: 10.1017/S1742170519000309.

Darolt Moacir Roberto, Claire Lamine, Alfio Brandenburg, Maria de Cléofas Faggion Alencar, Lucimar Santiago Abreu. 2016. Alternative food networks and new producer-consumer relations in France and in Brazil. *Ambiente & Sociedade* 19 (2): 1-22. DOI: 10.1590/1809-4422ASOC121132V1922016.

EC (European Commission). 2021. *Farm to Fork strategy*, *for a fair, healthy and environmentally-friendly food system*, https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_pl#Strategy, access: 10.02.2024.

Enjolras Geoffroy, Aubert Magali. 2018. Short food supply chains and the issue of sustainability: a case study of French fruit producers. *International Journal of Retail and Distribution Management* 46 (2): 194-209. DOI:10.1108/IJRDM-08-2016-0132.

FAAN. 2010. *Local food systems in Europe. Case studies from five countries and what they imply for policy and practice*. Facilitating Alternative Agro-Food Networks. European Union's Seventh Framework Programme. Graz: IFZ.

Fałkowski Jan. 2015. Resilience of farmer-processor relationships to adverse shocks: The case of dairy sector in Poland. *British Food Journal* 117 (10): 2465-2483. DOI: 10.1108/BFJ-12-2014-0433.

Farkas Tibor. 2021. The role of the social capital in rural development. Case study analysis of village research camps in Romania and Hungary. *European Countryside* 13 (3): 584-598. DOI: 10.2478/euco-2021-0033.

Garnett Philip, Bob Doherty, Tony Heron. 2020. Vulnerability of the United Kingdom's food supply chains exposed by COVID-19. *Nature Food* 1: 315-318. DOI: 10.1038/s43016-020-0097-7.

Gołębiewski Jarosław, Ola Bareja-Wawryszuk. 2016. Znaczenie sprzedaży bezpośredniej w Polskim rolnictwie (The importance of direct sales in Polish agriculture). *Roczniki Naukowe SERiA* 18 (3): 82-88.

Haugen Marit S., Berit Brandth. 1994. Gender differences in modern agriculture: the case of female farmers in Norway. *Gender and Society* 8 (2): 206-229.

Jacobi Johanna, Stellah Mukhovi, Aymara Llanque, Horacio Augstburger, Fabian Käser, Claudio Pozo, Mariah N. Peter, José M. F. Delgado, Boniface P. Kiteme, Stephan Rist, Chinwe I. Speranza. 2018. Operationalizing food system resilience: An indicator-based assessment in agroindustrial, smallholder farming, and agroecological contexts in Bolivia and Kenya. *Land Use Policy* 79: 433-446. DOI: 10.1016/j.landusepol.2018.08.044.

Jarzębowski Sebastian, Michael Bourlakis. Agnieszka Bezat-Jarzębowska. 2020. Short Food Supply Chains (SFSC) as local and sustainable systems. *Sustainability* 12 (11): 4715. DOI: 10.3390/su12114715.

Jones Nikoleta, Malesios Chrisovaladis, Iosifides Theodoros, Sophoulis Costas M. 2008. Social capital in Greece: Measurement and comparative perspectives. *South European Society and Politics* 13: 175-193. DOI: 10.1080/13608740802156687.

Kangogo Daniel, Domenico Dentoni, Jos Bijman. 2020. Determinants of farm resilience to climate change: The role of farmer entrepreneurship and value chain collaborations. *Sustainability* 12 (3): 858. DOI: 10.3390/su12030868.

Kawecka Agnieszka, Marcin Gębarowski. 2015. Krótkie łańcuchy dostaw żywności – korzyści dla konsumentów i producentów żywności (Short food supply chains – benefits for consumers and food producers). *Journal of Agribusiness and Rural Development* 3 (37): 1-7. DOI: 10.17306/JARD.2015.47.

King Bruce M., Edward W. Minium. 2020. *Statystyka dla psychologów i pedagogów* (Statistics for psychologists and educators). Warszawa: PWN.

Kneafsey Moya, Laura Venn, Ulrich Schmutz, Bálint Balázs, Liz Trenchard, Trish Eyden-Wood, Elizabeth Bos, Gemma Sutton, Matthew Blackett. 2013. *Short food supply chains and local food systems in the EU. A state of play of their socio-economic characteristics*. EUR 25911. Luxembourg (Luxembourg): Publications Office of the European Union; 2013. JRC80420.

Kwilinski Aleksy, Kazimierz Pajak, Oleksandr Halachenko, Svitlana Vasylchak, Yaroslav Pushak, Paulina Kuzior. 2019. Marketing tools for improving enterprise performance in the context of social and economic security of the state: innovative approaches to assessment. *Marketing and Management of Innovations* 4: 172-181. DOI: 10.21272/mmi.2019.4-14.

Leat Philip, Cesar Revoredo-Giha. 2013. Risk and resilience in agri-food supply chains: The case of the ASDA PorkLink supply chain in Scotland. *Supply Chain Management* 18 (2): 219–231. DOI: 10.1108/13598541311318845.

Marsden Terry, Jo Banks, Gillian Brostow. 2000. Food supply chain approaches: exploring their role in rural development. *Sociologia Ruralis* 40 (4): 424-438. DOI: 10.1111/1467-9523.00158.

Matthews Alan. 2020. EU Food system strengths and vulnerabilities during Covid-19. *Euro Choices* 19 (3): 4-12. DOI: 10.1111/1746-692X.12300.

Matysik-Pejas Renata, Jerzy Cieślik, Anna Borecka, Elżbieta Sowula-Skrzyńska. 2017. Lokalne systemy żywnościowe i ich znaczenie dla obszarów wiejskich (*Local food systems and their importance for rural areas*). *Roczniki Naukowe SERiA* 19 (5): 143-148. DOI: 0.5604/01.3001.0010.6223.

Michalewska-Pawlak Małgorzata. 2010. Możliwości i bariery rozwoju kapitału społecznego na obszarach wiejskich w Polsce. [W] *Kapitał społeczny. Interpretacje, impresje, operacjonalizacja* (Opportunities and barriers to the development of social capital in rural areas in Poland. [In] Social capital. Interpretations, impressions, operationalization), eds. Monika Klimowicz, Wiesław Bokajło, 185-202. Warszawa: CeDeWu.

Michalský Marián, Peter S. Hooda. 2015. Greenhouse gas emissions of imported and locally produced fruit and vegetable commodities: A quantitative assessment. *Environmental Science and Policy* 48: 32-43. DOI: 10.1016/j.envsci.2014.12.018.

Nigh Ronald, Alma A.G. Cabañas. 2015. Reflexive consumer markets as opportunities for new peasant farmers in Mexico and France: Constructing food sovereignty through alternative food networks. *Agroecology and Sustainable Food Systems* 39 (3): 317-341. DOI: 10.1080/21683565.2014.973545.

OECD. 2020. Food supply chains and COVID-19: *Food Supply Chains and COVID-19: Impacts and policy lessons*, https://www.oecd.org/coronavirus/policy-responses/food-supply-chains-and-covid-19-impacts-and-policy-lessons-71b57aea/, access: 15.10.2023.

Petropoulou Eugenia A. 2016. The role of short food supply chains in Greece – what opportunities for sustainable, just and democratic food systems at times of crisis? *Sociology and Anthropology* 4 (5): 337-346. DOI: 10.13189/sa.2016.040506.

Regulation (EU) No 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No 1698/2005. Official Journal 2013, L 347, 20.12.2013.

Renting Henk, Terry K. Marsden, Jo Banks. 2003. Understanding alternative food network: Exploring the role of short food supply chains in rural development. *Environment and Planning A: Economy and Space* 35: 393-411. DOI: 10.1068/a3510.

Rivera Maria, Karlheinz Knickel, Ignacio de los Rios, Amit Ashkenazy, David Qvist Pears, Tzruya Chebach, Sandra Šūmane. 2018a. Rethinking the connections between agricultural change and rural prosperity: A discussion of insights derived from case studies in seven countries. *Journal of Rural Studies* 59: 242-251. DOI: 10.1016/j.jrurstud.2017.07.006.

Rivera Maria, Karlheinz Knickel, José María Díaz-Puente, Ana Afonso. 2018b. The role of social capital in agricultural and rural development: lessons learnt from case studies in seven countries. *Sociologia Ruralis* 59 (1): 66-91. DOI: 10.1111/soru.12218.

Sachs Carolyn E., Mary E. Barbercheck, Kathryn J. Braiser, Nancy Ellen Kiernan, Anna Rachel Terman. 2016. *The rise of women farmers and sustainable agriculture*. Iowa City: University of Iowa Press.

Smędzik-Ambroży Katarzyna, Sapa Agnieszka. 2022. The role of small farms in creating social capital in rural areas – case study from Lithuania, Poland and Romania. *Annals of the Polish Association of Agricultural and Agribusiness Economists* 24 (1): 255-267. DOI: 10.5604/01.3001.0015.7104.

Stanco Marcello, Marco Lerro, Giuseppe Marotta, Concetta Nazzaro. 2019. Consumers' and farmers' characteristics in short food supply chains: an exploratory analysis. *Studies in Agricultural Economics* 121 (2): 67-74. DOI: 10.22004/ag.econ.292232.

Stępień Sebastian, Katarzyna Smędzik-Ambroży, Marta Guth, Andreea Muntean, Silvia Maican, Carmen Pastiu. 2022. The importance and determinants of market integration of small family farms in selected countries of Central and Eastern Europe. *Economic Research-Ekonomska Istraživanja* 35 (1): 5757-5776. DOI: 10.1080/1331677X.2022.2037445.

Trigkas Marios, Maria Partalidou, Dimitra Lazaridou. 2021. Trust and Other historical proxies of social capital: Do they matter in promoting social entrepreneurship in Greek rural areas? *Journal of Social Entrepreneurship* 12 (3): 338-357. DOI: 10.1080/19420676.2020.1718741.

Unay-Gailhard Ilkay, Štefan Bojnec. 2021. Gender and the environmental concerns of young farmers: Do young women farmers make a difference on family farms? *Journal of Rural Studies* 88: 71-82. DOI: 10.1016/j.jrurstud.2021.09.027.

Van Hoyweghen Kaat, Anna Fabry, Hendrik Feyaerts, Idrissa Wade, Miet Maertens. 2021. Resilience of global and local value chains to the Covid-19 pandemic: Survey evidence from vegetable value chains in Senegal. *Agricultural Economics* 52: 423-440. DOI: 10.1111/agec.12627.

Vroegindewey Ryan, Jennifer Hodbod. 2018. Resilience of agricultural value chains in developing country contexts: A framework and assessment approach. *Sustainability* 10 (4): 916. DOI: 10.3390/su10040916.

Watts David C.H., Brian Ilbery, Damian Maye. 2005. Making reconnections in agro-food geography: Alternative systems of food provision. *Progress in Human Geography* 29 (1): 22-40. DOI: 10.1191/0309132505ph526oa.

Wright Wynne, Alexis Annes. 2016. Farm women and the empowerment potential in value-added agriculture. *Rural Sociology* 81 (4): 545-571. DOI: 10.1111/ruso.12105.

Yang Juan, Haorui Liu. 2018. Research of vulnerability for fresh agricultural-food supply chain based on bayesian network, mathematical problems in engineering. *Mathematical Problems in Engineering. Open Access:* 6874013. DOI: 10.1155/2018/6874013.

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IDENTYFIKACJA RÓŻNIC W CHARAKTERYSTYCE SPOŁECZNO-DEMOGRAFICZNEJ GOSPODARSTW UCZESTNICZĄCYCH I NIEUCZESTNICZĄCYCH W KRÓTKICH ŁAŃCUCHACH DOSTAW ŻYWNOŚCI. BADANIA EMPIRYCZNE W POLSCE

Słowa kluczowe: gospodarstwa rolne, krótkie łańcuchy dostaw żywności, cechy społeczne, cechy demograficzne, Polska

ABSTRAKT. Głównym celem badań była identyfikacja różnic między rolnikami małych gospodarstw w Polsce, uczestniczących i nie uczestniczących w krótkich łańcuchach dostaw żywności (SFSC), z uwzględnieniem kapitału społecznego. Analizę oparto na wynikach badań ankietowych przeprowadzonych w 2023 roku wśród 199 respondentów – właścicieli małych gospodarstw rolnych w Polsce. Analizie poddano wybrane zmienne społeczno-demograficzne, takie jak: płeć, wiek, wykształcenie kierownika gospodarstwa oraz liczba członków gospodarstwa rolnego. Poziom kapitału społecznego charakteryzującego rolników opisywano przez ich uczestnictwo w kształceniu ustawicznym, w organizacjach, spółdzielniach, stowarzyszeniach itp. oraz w wydarzeniach i festiwalach. Do analizy danych empirycznych wykorzystano test niezależności chi-kwadrat Pearsona. Siłę wykazanych zależności zmierzono za pomocą współczynnika zbieżności V-Cramera. W badaniach wykazano, że ze zmiennych społecznych i demograficznych istotne były płeć i poziom edukacji. Wśród gospodarstw uczestniczących w SFSC znacznie więcej należało do kobiet oraz było przez nie zarządzanych, również kierownicy tych gospodarstw byli lepiej wykształceni w porównaniu z kierownikami gospodarstw nieuczestniczących w SFSC. Ponadto cechą wyróżniającą rolników uczestniczących w SFSC był wyższy poziom kapitału społecznego, szczególnie postrzegany przez zaangażowanie właścicieli gospodarstw rolnych albo ich członków w kształcenie ustawiczne i zaangażowanie w organizacje, spółdzielnie lub stowarzyszenia.

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