



# Position and Role of Social Supermarkets in Food Supply Chains

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## Abstract

**Background:** Social supermarkets were developed in Europe after the economic crisis 2008-2014. Their purpose is to decrease food waste that occurs in traditional food supply chains and to ensure access to food to socially endangered citizens.

**Objectives:** This paper analyses the general perception of consumers regarding the mission and purpose of social supermarkets in four Central Eastern European (CEE) countries: Croatia, Poland, Lithuania, and Serbia. **Methods/Approach:** The paper brings the results of the survey research conducted in the observed CEE countries measuring attitudes towards the relevance and the role of social supermarkets.

**Results:** There is a positive attitude regarding the existence of social supermarkets in all the analysed CEE countries. Less than 10% of respondents claim that there is no need for such organizations. In Croatia, Lithuania, and Poland examinees claim that reduction of food waste rather than reduction of poverty should be emphasized as a mission of social supermarkets. **Conclusions:** Social supermarkets require improvement of a legal framework, welfare system integration, and implementation of state monitoring. Moreover, larger involvement of religious communities, national and local governments, as supporting institutions is observed as a necessity in all the countries.

**Keywords:** supply chain; social supermarkets; food distribution; CEE

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## Introduction

As a new type of organization, social supermarkets emerged as the answer to the recent economic crisis across Europe (2008-2014) when the number of people living at risk of poverty or social exclusion increased rapidly (EU, 2014a; EU, 2014b; EU, 2014c). They are focused on those groups of customers who have low income or who are in severe material deprivation. There are numerous examples of social supermarkets across Europe, but their level of development and type of operational activity varies from country to country. As they are an emerging type of organization, there is no common definition of social supermarkets because it should be broad enough to integrate all the variations, which are developed and existing in different markets. Moreover, social supermarkets are not sufficiently analyzed in the literature nor explored in primary research, but we can find a lot of different definitions and determinations of the term social supermarkets.

A social supermarket is defined as "a small, non-profit oriented retailing operation offering a limited assortment of products at symbolic prices primary in a self-service manner. Authorized for shopping are needy people only. The products are donated by food production and retail companies free of charge, as they are edible but not marketable due to small blemishes. Achieved profit is reinvested into social projects" (Leinbacher et al, 2011). Holweg and Lienbacher (2011) define social supermarkets as food-oriented retailers selling food to a restricted group of people living in or at risk of poverty. By definition given in Holweg and Lienbacher (2011), social supermarkets are nonprofit organizations that base their activity on volunteerism and charity and if they generate any profits they use them for charitable activities. According to Maric and Knezevic (2014), a social supermarket is a new retail format that fosters positive social change by fulfilling the material needs of the socially disadvantaged groups and allowing them to preserve their dignity in an environment where they can choose various kinds of goods at extremely low prices. Some social supermarkets are offering goods free of charge as explained by Knezevic and Skrobot (2018).

In addition, (Schneider et al., 2015) emphasize three types of benefits of social supermarkets: (1) social benefits, (2) environmental benefits, and (3) economic benefits. Social benefits are observed through: reduction of food insecurity and life quality improvement of socially endangered citizens, improvement of their social inclusion, growth of self-confidence in communication with others, and fostering a feeling of belonging to a certain community by treating their users as clients rather than charity users, what strengthens their sense of dignity. On the other hand, environmental benefits are related to food waste reduction throughout the distribution of food surplus from companies and individuals to final users. Finally, economic benefits are concerned with better reallocation of scarce household budget because users can purchase products at lower prices in social supermarkets, while companies that donate surpluses improve their cost efficiency by decreasing handling and warehousing costs for goods with low stock turnover ratios.

Maric et al. (2015) state that "social supermarkets represent a specific form of social entrepreneurship because they are a voluntary non-profit organization and a special form of retail which supply socially vulnerable individuals with necessities" and they claim that social supermarkets should be observed as a specific form of social innovation. Because they promote the strengthening of social capital, social cohesion and develop social responsibility among all stakeholders involved in the distribution of food to socially endangered citizens. Moreover, building on the definition of social enterprise given in Dees (1998) and Dees and Anderson (2003), Maric and Knezevic (2014) argue that social supermarkets are the subset of social enterprises because

they strive to make positive social changes and create social value throughout social innovation.

Klindzic et al (2016) analyze and define the role of social stakeholders, which enable daily function and support the development of social supermarkets. They isolate the following types of stakeholders: (1) individuals (social entrepreneurs, volunteers, users, and donors), (2) organizations (in non-profit and in profit sector), (3) society (government and local community). For each group of stakeholders, they explain the position, role, and responsibilities regarding social supermarkets' operation.

Besides, when defining social supermarkets there is a discussion on their role and characteristics as a new retail format (see Lienbacher, 2012; Bogetic et al, 2018). This discussion is taking into account elements of the retail mix such as assortment, prices, location, service, and promotion, and establishing distinction towards other retail formats, especially towards convenience stores, hard discounters, and traditional supermarkets.

However, all definitions of social supermarkets emphasized selling or distributing goods to people in severe material deprivation. Moreover, according to analyzed definitions, social supermarkets can be viewed as a new type of intermediaries within the food distribution chain because they have been developed to transfer surpluses of food or products to people in need. Therefore, we can conclude that the purpose of social supermarkets is twofold: The purpose of a social supermarket is twofold: (1) the poverty reduction through the distribution of food to people in need and (2) reduction of inefficiency in traditional (dominantly food) supply chains trough removal of surpluses of produced goods.

Therefore, the paper is structured as follows. Firstly, social supermarkets are explained as a new intermediary in food supply chains. Secondly, the research sample and methodology are explained. The primary research took place during April and May 2018 in four Central and Eastern European (CEE) countries: Croatia, Serbia, Poland, and Lithuania. Thirdly, the research results on attitudes of consumers towards social supermarkets as a new type of organization within the food supply chains are discussed and elaborated. Finally, conclusions, implications, and limitations of the research are given. Due to its geographical scope of interest, the paper represents a valuable contribution to understanding this new phenomenon from the perspectives of the under-researched European region.

## Social supermarkets as new intermediates in food supply chains

Christopher and Ryals (1999) gave one of the commonly cited definitions of the supply chain. They define the supply chain as „the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer". Schroeder and Meyer Goldstein (2018, p. 5) define supply chain as a "network of manufacturing and service operations (often multiple organizations) that supply one another from raw materials through production to the ultimate consumer."

As a managerial discipline, supply chain management aims to improve the coordination of goods, information, and financial flows within individual companies (internally) and between companies that are participants in a certain supply chain (externally) (see Lysons and Gillingham, 2003; Emmet and Crocker, 2009; Van Wheelee, 2015). Similarly, Monczka et al. (2015) emphasize that supply chains are composed of interrelated activities that are internal and external to a company. Booth (2014) also distinguishes internal and external perspectives of supply chain claiming that supply

chain is a series of activities that deliver an outcome to internal (a colleague) or external recipient (a customer).

According to Bailey et al. (2008) and Hughes et al. (1999), successful companies seek to establish an integrated supply chain by applying, the so-called, helicopter perspective to their supply chain (see Bailey et al. 2008). Thus, by applying the concept of integrated supply chain management, business strategy is developed upon the complete picture of related suppliers and customers to reduce costs and increase value to the consumer at the level of the entire chain rather than at the level of individual companies. Moreover, Monczka et al. (2015) claim that integrated supply chain management developed in the twenty-first century and relies on a cooperative approach in supplier relationship, on strategic purchasing orientation, and on intensive usage of information technology (integrated Internet linkages, shared databases, enterprise-wide systems, cloud computing, intensive use of mobile devices, etc.).

Pullman and Zhaoui, (2012) argue that the food supply chain is formed of interconnected companies on the way of food from farm to the table of the consumer. The structure of the food supply chain is specific concerning the supply chains of other types of products (eg. cars, shoes, clothes, or electronic products). In such a supply chain participants are agro-producers: farmers, gardeners, herders, fishermen, growers of various fruits and vegetables. They can sell their products (see Pullman and Zhaoui, 2012): (1) directly to consumers, (2) an intermediary organization (wholesale, retail, HORECA i.e. hotel, restaurant, catering, etc.) or (3) as a raw material to the manufacturing industry that will turn it into finished food products and distribute to the market. In addition, the manufacturing industry can sell its products to consumers directly or can use one or more intermediaries to reach the final consumer. In Figure 1, see arrows depicting the flow of goods in traditional supply chains. Besides, Zeljko and Prester (2012) emphasize that supply chains should include other organizations that are, either directly or indirectly, related in receiving and fulfilling requests of consumers and/or facilitation of goods, money, or information flows. Examples of those organizations are transporters, warehouses, banks, IT companies.

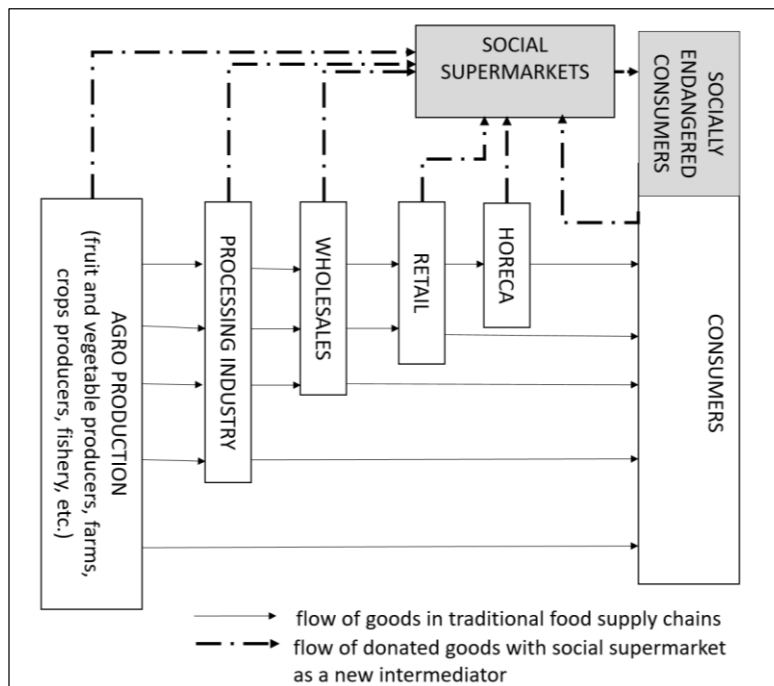
Similarly, in sequential approach, Lipinski et al. (2013) explain the 5 basic processes in the food supply chain: (1) agricultural cultures are sown then, animal husbandry or harvesting is done, in advance, (2) the produced food is stored and distributed to the market, or goes further to processing. Then (3) in the processing phase, raw materials are transformed into the finished food products that are packaged and stored and. Finally, (4) through a market distribution system are delivered to the final consumer who is going to (5) consume them.

Food loss and food waste can occur at any company involved in food supply and at any stage of the food supply chain. Lipinski et al. (2013) claim that food loss occurs in the stages of production, storage, processing, and physical distribution as an unintended consequence of business processes or technical limitations in storage, transport infrastructure, packaging, or marketing activities. While, usually, food waste occurs in retail or at the stage of consumption (at the point of the final consumer), and it is the result of negligence or a conscious decision to throw food away (Lipinski et al., 2013).

Additionally, Lipinski et al. (2013) and FAO (2011) elaborate that there are significant differences between developed and developing countries at stages of the supply chain in which food losses and food waste occur. In Europe, more than half of the food is wasted at the stage of consumption (52%) and about a quarter in the production stage (23%). Moreover, Principato et al. (2015) are adding that food is wasted in the early stages of the food supply chain due to limits in technical, financial, and

managerial resources. On the other hand, in the final stages, food waste appears due to adverse storage methods, poor planning before buying, impulsive purchase of large quantities of food, food spoilage, inadequate quantity of preparation, etc. More data on food waste occurrence can be seen in several studies (WRAP, 2007; FAO, 2011; Stefan et al., 2013; Principato et al., 2015; Parfitt et al., 2010, Koivupuro et al., 2011).

Figure 1  
The flow of goods in the food supply chain



Source: Authors' work

The social and economic consequences of food waste are reflected in the uneven distribution of food between the developed and developing parts of the world, but also in the uneven distribution of food between members of society within a certain country. Therefore, new organizations are emerging to deal with this problem of the modern economy and society.

One type of such organization is social supermarkets. Within the context of the food supply chain, they position themselves as an intermediary between traditional members of food supply chains and consumers who are in material deprivation (see Figure 1 – the flow of donated goods). Therefore, we can say that social supermarket serves as leverage trying to establish an equilibrium between the appearance of food surpluses and food waste in the traditional supply chains and the appearance of food poverty among the population in a given area on the other side (Knezevic et al, 2017).

## Data and methodology

### Research instrument and data

For the social supermarkets' study, a web survey was conducted. In primary research there are several questions to be answered when approaching social supermarkets as a new type of organization within food supply chains in CEE countries:

- (RQ1) Is there a need for such type of organization in the CEE region?
- (RQ2) What should be emphasized as a mission of such an organization?

- (RQ3) Is the attitude towards the concept positive or negative as we are dealing with the concept implemented in post-communist countries?
- (RQ4) What is the perception towards existing legal frameworks and state support regarding this type of organization?
- (RQ5) Is there a difference in perceptions regarding the country where the survey was taken?

Due to a specific and sensitive topic, it has been decided to apply a non-probabilistic survey approach to selecting respondents. In that way here snowball sampling was used (Kish, 1995). In the first phase, the hyperlink to the web questionnaire was sent to overall 20 scientists who work at universities in Zagreb, Split, Belgrade, Niš, Cracow, Katowice, Poznan, Gdansk, and Vilnius. So, respondents from four different European countries were observed: Croatia, Lithuania, Poland, and Serbia. In the following step, those scientists have shared the web questionnaire hyperlink to their colleagues and/or students, which have shared the hyperlink further and so on. The survey answers collection period was from April to May 2018. At the end of the survey overall 419 completed questionnaires were collected.

The web questionnaire consists of a brief description of social supermarkets as a new form of organization within the food supply chain: "Social Supermarkets are non-profit organizations that aim to distribute surpluses of produced food to people who are in material deprivation. Primarily, social supermarkets raise donations in groceries and organize their distribution to poor citizens (people in need) offering them the possibility to choose needed stuff from a social supermarket's assortment. They distribute groceries at extremely low prices or free of charge. The collected money is further used to finance the everyday operation of social supermarkets (e.g. to pay rent for used space or to buy necessary equipment) or to replenish assortment by buying the new food at low prices from suppliers. Now, when we briefly inform you about the scope of activities of social supermarkets, please answer a few questions regarding this form of organizations." (Research questionnaire, 2018). Then followed questions were divided into several groups. The first question group consisted of some demographic questions like gender; age and working status of respondents (see Table 3). After that are followed general questions about the social supermarkets (see Table 5 and Table 6). In that group, it can be found 11 questions from which 10 questions are given on Likert scale from Joshi et al. (2015). In the following group of questions, it can be found 5 questions, all given in Likert scale form, related to social supermarket managers, but those questions are not in the focus of this paper. The final group of questions emphasizes the role of frameworks and institutions in the social supermarket area and it consists of eight questions all given in Likert scale form (Table 8).

### *Statistical methods*

Due to using a non-probabilistic selection method and relatively small sample size, all conclusions are limited to the observed respondents only. In addition, the design of questionnaire questions vastly limited the possibility of using different statistical approaches to the analysis of collected data. Therefore, to inspect differences between the respondents in the four observed countries, the main emphasis in the analysis will be given to descriptive statistics methods. The vast majority of questions are given in Likert scale form. Because of that non-parametric chi-square tests for equality of three or more proportions will be applied as well (Bolboacă et al., 2011).

## Validity

Before the differences between the countries will be examined, the internal consistency of the 10 general social supermarket variables is observed. The internal consistency is inspected by using Cronbach's alpha and by observing respondents on a country level and overall.

Table 1

Reliability analysis of generally on social supermarkets variables

Country	No of responses	Cronbach's alpha	Standardized alpha	Average inter-item correlation
Croatia	117	0.5729	0.5768	0.1246
Lithuania	71	0.6181	0.6216	0.1460
Poland	123	0.6194	0.6217	0.1454
Serbia	108	0.5057	0.4934	0.0901
Overall	419	0.5869	0.5875	0.1269

Note: number of variables = 10

Source: Authors' work

The results from Table 1 have shown that the internal consistency here is poor to questionable (George and Mallery, 2003). For example, in the Croatia case, about 57% of the variability in the sum score is true score variability between respondents concerning the concept common in all items. In other words, the used variables turned out not to be so good and consistent in measuring the concept of social markets in general. These results are speaking in favor of observing and analyzing each variable separately rather than all together.

Table 2

Reliability analysis of framework and institutions variables

Country	No of responses	Cronbach's alpha	Standardized alpha	Average inter-item correlation
Croatia	117	0.6266	0.6451	0.1977
Lithuania	71	0.5717	0.5578	0.1415
Poland	123	0.5733	0.5577	0.1431
Serbia	108	0.6586	0.6560	0.2032
Overall	419	0.6345	0.6286	0.1842

Note: number of variables = 8

Source: Authors' work

The main results of conducted reliability analysis, where eight variables related to framework and institutions were included, are given in Table 2. The resulting Cronbach's alpha is ranging from 0.5717 to 0.6560. In this case, the conclusion about poor to questionable internal consistency can be made (George and Mallery, 2003).

## Analysis and discussion

### Analysis of respondents' main characteristics

In the conducted web survey participated overall 419 respondents from which 117 being from Croatia, 71 from Lithuania, 123 from Poland, and 108 from Serbia. Table 3 shows distributions of respondents by country of their origin and according to their main demographic characteristics.

According to Table 3 majority of respondents in all four observed countries were females. The highest share of females in the total number of respondents in a country

was achieved in Croatia (74%) whereas the lowest share of females was registered in Poland (58%). When the age structure of respondents is observed it can be concluded that in Serbia (81%), Poland (66%), and Croatia (54%) the majority of respondents were younger than 25 years. On the other hand, the majority of respondents in Lithuania (52%) were aged from 25 to 40 years. The distribution of respondents' age is explained if respondents' working status is closely observed. Namely, the majority of respondents in Serbia (72%), Poland (59%), and Croatia (56%) are students who are just studying or who occasionally work. The vast majority of respondents in Lithuania are not students but respondents who are employed (70%).

Table 3  
Main demographic characteristics of respondents

Country	Variable	Characteristics	No of respondents	% of respondents
Croatia	Gender	Female	87	74
		Male	30	26
	Age	Less than 25	63	54
		25-40	43	37
		More than 40	11	9
	Working status	A student who is just studying	21	18
		A student who occasionally works	45	38
		Employed	47	40
		Unemployed and retired	4	3
Lithuania	Gender	Female	51	72
		Male	20	28
	Age	Less than 25	18	25
		25-40	37	52
		More than 40	16	23
	Working status	A student who is just studying	9	13
		A student who occasionally works	9	13
		Employed	50	70
Unemployed and retired		3	4	
Poland	Gender	Female	71	58
		Male	52	42
	Age	Less than 25	81	66
		25-40	26	21
		More than 40	16	13
	Working status	A student who is just studying	31	25
		A student who occasionally works	42	34
		Employed	50	41
Unemployed and retired		0	0	
Serbia	Gender	Female	74	69
		Male	34	31
	Age	Less than 25	88	81
		25-40	18	17
		More than 40	2	2
	Working status	A student who is just studying	57	53
		A student who occasionally works	31	29
Employed		20	19	
Unemployed and retired		0	0	

Source: Authors' work



Respondents' rating of their economic situation in relation to the average of their country is given in Table 4. In all four countries, most respondents rated their economic situation as an average one in comparison to the average of their country. However, whereas in Lithuania (56%), Poland (54%), and Serbia (56%) the majority of respondents have selected the "average" option. In Croatia, 47% of respondents stated that their economic situation is average concerning the average of their country. If the respondent's distributions about a perceived economic situation are observed, it can be concluded that the distribution tends to be negatively skewed because more respondents have chosen the answers from the right side of the scale ("above average" and "significantly above the average") than those from the left side ("significantly below the average" and "below the average").

Table 4

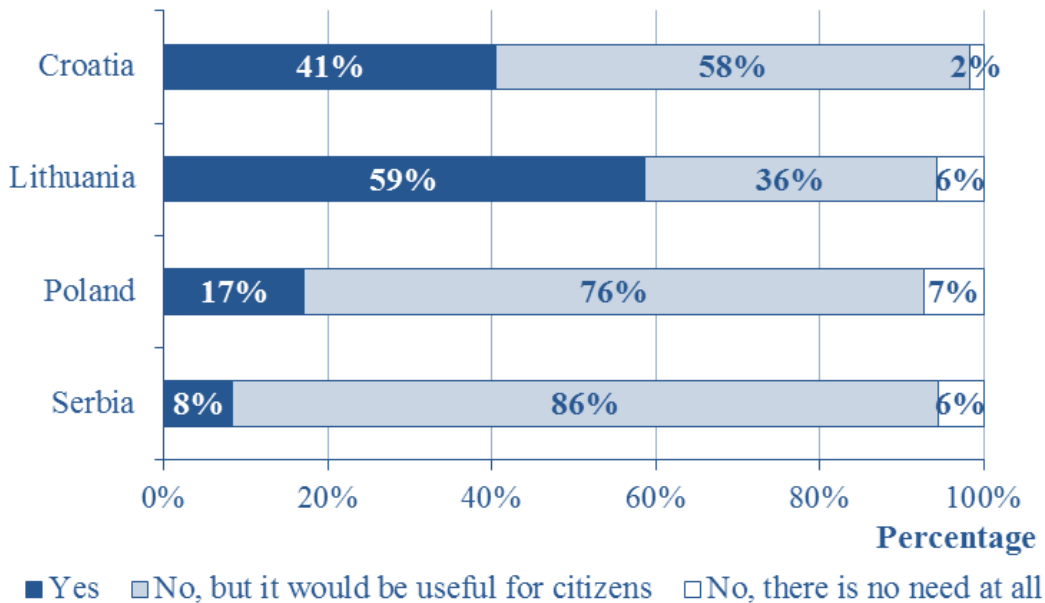
Respondents' rating of their economic situation concerning the average of their country

Perceived economic situation	Country			
	Croatia	Lithuania	Poland	Serbia
Significantly below the average	2%	3%	1%	3%
Below the average	14%	15%	13%	16%
Average	47%	56%	54%	56%
Above average	32%	24%	27%	25%
Significantly above the average	5%	1%	6%	1%

Source: Authors' work

Figure 2

Social supermarkets presence



Source: Authors' work

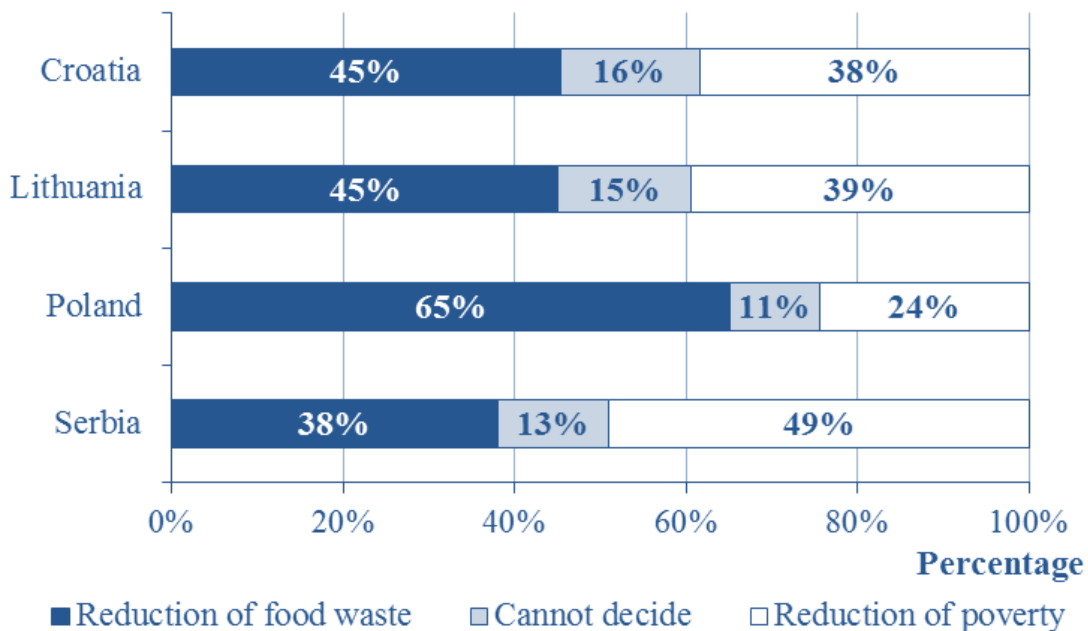
When it comes to the question about social supermarkets presence in their city, most respondents from Lithuania (59%) confirmed that there is a social supermarket in their city. On the other hand, only 8% of respondents from Serbia know that there is a social supermarket in their city. However, 86% of respondents from Serbia have emphasized that there is a need for a social supermarket. Figure 2 are shown the distributions of answers in more detail.

*Analysis of social supermarkets in general*

After the basic demographic questions, the respondents were asked general questions about social supermarkets. In that way, they were asked about the top priority of the social supermarket mission. The distribution of answers is shown in Figure 3.

According to Figure 3, the highest share of respondents who think that reduction of food waste is the top priority of social supermarket mission can be found in Poland (65%). On the other hand, the highest share of respondents who think that reduction of poverty is the top priority of social supermarket mission can be found in Serbia (49%). The share of respondents, who cannot decide what the top priority of social supermarket mission is, seems to be quite similar in all four observed countries. In addition, Croatia and Lithuania have almost the same distribution of respondents' answers regarding this question.

Figure 3  
The top priority of social supermarket mission



Source: Authors' work

Except for the question about the top priority of social supermarket mission, in this part of the questionnaire respondents had to answer 10 more questions about social markets in general. All questions were given in the Likert scale form. The scale has consisted of five items where item 1 means completely disagreeing with the statement whereas item 5 means that the respondent is completely agreed with the given statement. Table 5 shows the main descriptive statistics results of generally on social supermarkets variables on the country levels and overall. Due to the nature of the Likert scale, those results are given just to get a sense of answers distributions and for comparison with other countries and overall.

Table 5  
Main descriptive statistics results of generally on social supermarkets variables

Variable	Country	No of respondents	Mean	Standard deviation
Social Supermarkets have a noble purpose and mission because they return dignity to poor people.	Croatia	117	3.87	1.02
	Lithuania	71	3.42	1.04
	Poland	123	3.61	1.01
	Serbia	108	3.83	0.97
	Overall	419	3.71	1.02
I often see volunteers doing fundraising or collecting food for poor people.	Croatia	117	2.81	1.16
	Lithuania	71	3.51	1.07
	Poland	123	2.74	1.11
	Serbia	108	2.38	1.21
	Overall	419	2.80	1.20
If I had a social supermarket nearby, I'd like to volunteer there.	Croatia	117	3.11	1.14
	Lithuania	71	2.44	1.22
	Poland	123	2.71	1.16
	Serbia	108	3.45	1.20
	Overall	419	2.97	1.23
When foodstuff is collected at a local school, at a university, or a shopping mall, I usually donate.	Croatia	117	3.54	1.13
	Lithuania	71	2.93	1.42
	Poland	123	3.39	1.19
	Serbia	108	3.42	1.33
	Overall	419	3.36	1.26
In addition to the distribution or sales of groceries, there is a large scope for expanding the services of social supermarkets through the organization of education, workshops, etc.	Croatia	117	3.67	0.96
	Lithuania	71	3.37	1.00
	Poland	123	3.34	1.01
	Serbia	108	3.58	1.13
	Overall	419	3.50	1.03
Social supermarkets may harm ordinary retailers because if people get food for free, the amount of food bought in the classic stores diminishes.	Croatia	117	2.52	1.30
	Lithuania	71	2.51	1.16
	Poland	123	2.70	1.14
	Serbia	108	2.62	1.23
	Overall	419	2.60	1.21
Sometimes users (citizens in need) misuse the goodwill of others. They are just expecting free stuff without any effort.	Croatia	117	3.65	1.07
	Lithuania	71	3.55	1.03
	Poland	123	3.60	1.10
	Serbia	108	3.59	1.08
	Overall	419	3.60	1.07
I have seen or heard in the mass media about some examples of social supermarkets and the reportage was very encouraging, I liked the concept very much.	Croatia	117	3.58	1.21
	Lithuania	71	2.77	1.12
	Poland	123	2.69	1.40
	Serbia	108	2.56	1.36
	Overall	419	2.92	1.36
I fear to donate money or foodstuffs because some affairs with humanitarian actions occurred recently, I'm afraid that my donation will not end in the right hands.	Croatia	117	3.68	1.14
	Lithuania	71	3.17	1.23
	Poland	123	2.98	1.14
	Serbia	108	3.38	1.19
	Overall	419	3.31	1.20
The social supermarket should be extremely active in the usage of social media and Internet communication in general.	Croatia	117	4.32	0.78
	Lithuania	71	3.92	0.97
	Poland	123	3.84	1.01
	Serbia	108	4.27	0.87
	Overall	419	4.10	0.93

Source: Authors' work

In Table 6 the results of conducted chi-square tests for equality of three or more proportions of generally on social supermarkets variables are shown. Due to fact that the five-item Likert scale was used and that the sample size is relatively small, to fulfill

the prerequisite of the chi-square test used, in the analysis of equality of proportions responses “agree” and “completely agree” are merged and observed together.

Table 6

Chi-square tests for equality of three or more proportions of generally on social supermarkets variables, responses “agree” and “completely agree” observed together

Variable	% of responses				Emp. Chi-square	p-value
	Croatia	Lithuania	Poland	Serbia		
Social Supermarkets have a noble purpose and mission because they return dignity to poor people.	65%	49%	57%	69%	8.2752	0.0407*
I often see volunteers doing fundraising or collecting food for poor people.	30%	48%	26%	19%	18.6865	0.0003**
If I had a social supermarket nearby, I'd like to volunteer there.	38%	18%	24%	51%	27.6233	<0.0001**
When foodstuff is collected at a local school, at a university, or a shopping mall, I usually donate.	54%	35%	50%	55%	7.8166	0.0500**
In addition to the distribution or sales of groceries, there is a large scope for expanding the services of social supermarkets through the organization of education, workshops, social events, etc.	57%	41%	42%	53%	7.9290	0.0475*
Social supermarkets may harm ordinary retailers because if people get food for free, the amount of food bought in the classic stores diminishes.	26%	18%	26%	25%	1.7225	0.6319
Sometimes users (citizens in need) misuse the goodwill of others. They are just expecting free stuff without any effort.	59%	54%	61%	56%	1.1795	0.7579
I have seen or heard in the mass media about some examples of social supermarkets and the reportage was very encouraging, I liked the concept very much.	58%	24%	32%	31%	30.7845	<0.0001**
I fear to donate money or foodstuffs because some affairs with humanitarian actions occurred recently, I'm afraid that my donation will not end in the right hands.	62%	45%	35%	49%	17.2619	0.0006**
The social supermarket should be extremely active in the usage of social media and Internet communication in general.	85%	68%	65%	81%	18.0006	0.0004**

Note: Sample size according to countries : Croatia=117, Lithuania=71, Poland=123, Serbia=108; \*\* statistically significant at 1%; \* 5%

Source: Authors' work

The results from Table 6 are showing that, at a significance level of 5%, the null hypothesis can be rejected in eight, from 10, cases. In other words, at eight variables the structure of respondents who are agreed with the given statements in a country is different than in other countries. Only at variables “social supermarkets may harm ordinary retailers because if people get food for free, the amount of food bought in

the classic stores diminishes” and “sometimes users (citizens in need) misuse the goodwill of others – they are just expecting free stuff without any effort” seems not to be statistically significant differences in proportions of respondents who are agreeing with the statements between the observed countries.

### Frameworks and institutions

In the last part of the questionnaire framework and institutions related to social supermarkets are investigated. To do that eight questions defined in Likert scale form are used. Again, five-item Likert scale forms were used with items ranging from completely disagree (code 1) to completely agree (code 5).

Table 7

Main descriptive statistics results of framework and institutions variables

Variable	Country	No of respondents	Mean	Standard deviation
Laws in the field of food waste in my country are good enough.	Croatia	117	2.21	1.04
	Lithuania	71	2.68	0.79
	Poland	123	2.44	1.06
	Serbia	108	2.06	0.92
	Overall	419	2.32	1.00
Social supermarkets should be controlled by state bodies as they contact a very vulnerable group of citizens.	Croatia	117	3.42	1.23
	Lithuania	71	3.31	1.02
	Poland	123	3.05	1.15
	Serbia	108	3.28	1.11
	Overall	419	3.26	1.15
There should be a significant improvement in the legal framework related to the operation of social supermarkets.	Croatia	117	4.15	0.75
	Lithuania	71	3.59	0.87
	Poland	123	3.73	0.92
	Serbia	108	3.99	0.96
	Overall	419	3.89	0.90
Social supermarkets should be integrated into the social welfare system.	Croatia	117	4.05	0.98
	Lithuania	71	3.89	0.89
	Poland	123	3.50	1.10
	Serbia	108	3.91	1.09
	Overall	419	3.82	1.05
Social supermarkets should be partially financed from local government budgets.	Croatia	117	4.08	0.97
	Lithuania	71	3.15	1.15
	Poland	123	3.21	1.22
	Serbia	108	3.97	1.10
	Overall	419	3.64	1.18
The local government or national government should provide facilities for social supermarkets.	Croatia	117	4.13	0.91
	Lithuania	71	3.49	0.95
	Poland	123	3.49	1.08
	Serbia	108	4.12	0.98
	Overall	419	3.83	1.03
EU funds are too complex and too demanding and inflexible in supporting this kind of activity.	Croatia	117	3.39	1.11
	Lithuania	71	2.90	0.93
	Poland	123	3.26	0.96
	Serbia	108	3.17	1.00
	Overall	419	3.21	1.02
Religious communities should support the work of social supermarkets.	Croatia	117	4.26	0.98
	Lithuania	71	3.31	1.17
	Poland	123	3.68	1.13
	Serbia	108	3.92	1.24
	Overall	419	3.84	1.17

Source: Authors' work

In Table 7 main descriptive statistics results of framework and institutions variables are provided. The given results can be used for describing distributions of respondents' answers and for comparison between the countries and with overall level.

Table 8

Chi-square tests for equality of three or more proportions of framework and institutions variables, responses "agree" and "completely agree"

Variable	% of responses				Emp. Chi-square	p-value
	Croatia	Lithuania	Poland	Serbia		
Laws in the field of food waste in my country are good enough.	11%	13%	13%	5%	5.2684	0.1532
Social supermarkets should be controlled by state bodies as they contact a very vulnerable group of citizens.	54%	34%	39%	45%	8.9203	0.0304*
There should be a significant improvement in the legal framework related to the operation of social supermarkets.	80%	56%	63%	68%	14.2226	0.0026**
Social supermarkets should be integrated into the social welfare system.	79%	69%	61%	68%	8.8736	0.0310**
Social supermarkets should be partially financed from local government budgets.	76%	37%	46%	69%	42.7853	<0.0001**
Local government or national government should provide facilities for social supermarkets.	81%	45%	55%	78%	39.1397	<0.0001**
EU funds are too complex and too demanding and inflexible in supporting this kind of activity.	43%	20%	34%	30%	11.3181	0.0101*
Religious communities should support the work of social supermarkets.	84%	42%	61%	69%	36.0318	<0.0001**

Note: Sample size according to countries: Croatia=117, Lithuania=71, Poland=123, Serbia=108\*\* statistically significant at 1%; \* 5%

Source: Authors' work

The results of conducted chi-square tests for equality of three or more proportions for framework and institutions variables are presented in Table 8. To obey the chi-square test demands, responses "agree" and "completely agree" were observed together here as well. According to the results, at a significance level of 5%, the null hypothesis can be rejected in seven, from eight, cases. So, at seven variables the structure of respondents who agreed or completely agreed with the given statements in a country is different than in other countries. Only at variable "laws in the field of food waste in my country are good enough" differences in proportions of respondents who are agreeing with the statement between the observed countries seem not to be statistically significant.

## Conclusions

Social supermarkets emerged across Europe during the economic crisis 2008-2014 as a solution to the increasing problem of poverty. As a new type of organization, they distribute food to consumers in need and they find their position at the end of the food supply chain. Also, they positively contribute to a reduction of food waste that occurs

in traditional food supply chains. In the primary research, we addressed and discussed several research questions.

The first research question is: Is there a need for such type of organization in the CEE region? Findings show that there is a strong positive attitude regarding the existence of social supermarkets in all analyzed CEE countries (Croatia, Lithuania, Poland, and Serbia).

The second research question is: What should be emphasized as a mission of such an organization? In all given countries, examinees claim that reduction of food waste should be emphasized as a mission of social supermarket rather than reduction of poverty. Only in Serbia, examinees claim that poverty should be prioritized in the mission of social supermarkets.

The third research question is: Is the attitude towards the concept positive or negative as we are dealing with the concept implemented in post-communist countries? Generally, there is a positive attitude regarding the concept of social supermarkets. In all given countries, examinees agree and strongly agree with the claim "Social supermarkets have a noble purpose and mission because they return dignity to the poor people". Moreover, in all countries, (except Lithuania) majority of examinees agree or strongly agree with the claim "When foodstuff is collected in a local school, at a university or a shopping mall, I usually donate". However, there is a certain concern regarding the misuse of goodwill of others from social supermarket users and fear that those donations will not end in the right hands.

The fourth research question is: What is the perception towards existing legal frameworks and state support regarding this type of organization? Examinees agree that there is a wide space for improvement of a legal framework, welfare system integration, implementation of state monitoring and control systems when we deal with social supermarkets as a new type of intermediary organization. Moreover, in all countries, examinees seek for larger involvement of national governments, local governments, and religious communities as supporting institutions for social supermarkets. Regarding EU financing, only in Lithuania majority of respondents do not agree with the claim that "EU funds are too complex and too demanding and inflexible in supporting this kind of activity".

The fifth research question is: Is there a difference in perceptions regarding the country where the survey was taken? There are differences in perceptions regarding countries. There are only a few claims where differences in proportions of respondents who are agreeing with the statements are not statistically significant. From Table 6 we can observe that out of 10 statements there are only 2 where the p-value is higher than 0.05. In addition, From Table 8 we can observe that out of 8 statements there is only one statement where the p-value higher than 0.05. Therefore, we can conclude that the level of agreement with given statements on social supermarkets differs regarding the country where the survey was taken.

The research results can be useful for social supermarket managers, policymakers, and traditional food supply chain managers as the study deal with an emerging form of intermediary organizations at the end of the food supply chains. The study can be useful for managers in traditional supply chains when consider implementing sustainable practices regarding food waste, then for managers in social supermarkets when considering improvements of their existing strategies and operations. Besides, findings can be used as a basis for future scientific research within the fields of food supply chains, social entrepreneurship, corporate social responsibility, and sustainable development in CEE countries.

There are certain limitations of the study. First of all, it deals only with four CEE countries (Poland, Lithuania, Croatia, and Serbia), so in the future, more countries

should be involved to observe more data and to enable further comparisons in the region. In addition, there are rather small samples per country. Therefore, further research should be broadened by involving a larger number of respondents from various age and socio-demographic groups. Finally, the more complex statistical methods could be applied to discover more complex relationships and causalities within the collected data.

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