

Vilma Atkočiūnienė,
Jurgita Zaleckienė, Rita Toločkienė¹

Jurgita Zaleckienė, Rita Toločkienė¹



620/732

Abstract: Scientists and practitioners note a lack of knowledge and clear understanding of strategies and organisational structures designed to provide local, biologically valuable, seasonal food to society. The development of short food supply chains is a farmer-driven decision that depends on the knowledge and expertise of the farmer, the demand for local products, and the potential for customer involvement in value creation. This study aims to identify the preconditions for co-creation and to develop a conceptual model of co-creation in short food supply chains. The research methods included analysis of scientific literature, logical analysis and generalisation, semi-structured interviews with farmers and customers, and case studies. The study identified co-creation conditions and benefits: accessibility; involvement, interest, honesty, openness; meeting expectations and goals; dialogue and communication skills; and interaction between farmers and customers. The ecosystem of the short food supply chain is shaped by the farmers and customers, with additional contributions from other stakeholders, including local government and non-governmental organisations. Customers are also value creators, making it important for farmers to establish conditions for mutual interaction and dialogue.

Keywords: co-creation, short food supply chain, interaction, farmer and customer behaviour

Santrauka: Mokslininkai, praktikai pastebi, kad trūksta žinių ir aiškesnio supratimo apie naujas strategijas ir organizacines struktūras, skirtas aprūpinti visuomenę vietiniu, biologiškai vertingu, sezoniniu maistu. Trumposios maisto tiekimo grandinės kūrimas yra ūkininko sprendimas, kuris priklauso nuo ūkininko žinių ir patirties, vietinių produktų paklausos ir klientų dalyvavimo kuriant vertę galimybių. Tyrimo tikslas – nustatyti prielaidas bendrakūrai ir sukurti konceptualų bendrakūros vystymo trumposiose maisto tiekimo grandinėse modelį. Taikyti šie tyrimo metodai: mokslinės literatūros šaltinių analizė, loginė analizė ir apibendrinimas, pusiau struktūruoti ūkininkų ir pirkėjų interviu, atvejo analizė. Tyrimu nustatytos bendrakūros kūrimosi sąlygos ir nauda: prieinamumas; įsitraukimas, suinteresuotumas, sąžiningumas, atvirumas; lūkesčių ir tikslų tenkinimas; dialogo ir bendravimo įgūdžiai; gamintojų ir vartotojų sąveika. Trumpą maisto tiekimo grandinę sudaro ūkininkai ir klientai, taip pat prisideda kitos suinteresuotosios šalys – vietos valdžios institucijos ir nevyriausybinių organizacijų. Klientai taip pat kuria vertę, todėl ūkininkams svarbu sudaryti tam tikras sąlygas abipusiam bendravimui ir dialogui.

Raktiniai žodžiai: bendrakūra, trumpoji maisto tiekimo grandinė, sąveika, pirkėjų ir ūkininkų elgsena

Highlights

- The development of the short food supply chain follows the principle of network cooperation.
 - Co-creation involves a wider range of stakeholders in the short food supply chain, which can be involved in any stage of the value creation process.
 - Co-creation creates value for all stakeholders in the short food supply chain and reflects their perspectives.
 - Stakeholder engagement in the co-creation process can evolve from weak to strong engagement, becoming the driving force and competitive advantage of farms.
-

1. Introduction

The scientific literature describes co-creation in short food supply chains in a variety of ways. The process of co-creation and its development are examined in diverse contexts, resulting in a multifaceted approach among researchers and practitioners. Co-creation refers to how the relationship between the farmer and the customer is established, what value is generated for the actors along the chain, and the roles of both the customer and the farmer in this value creation (Bakanovė et al., 2012). Researchers (Konečný et al., 2016; Atkočiūnienė et al., 2021) have identified the following challenges in organising short food supply chains: a lack of entrepreneurship and new skills, an aging farming community reluctant to initiate genuine value creation, a lack of mutual trust, strong seasonality of the products sold, an imbalance between supply and demand, and difficulties in developing marketing schemes capable of communicating product attributes and engaging customers in the co-creation process through communication tools.

The decision on the real value of a product is collegial and reflects a diversity of viewpoints (Bakanovė et al., 2012). In the development of short food supply chains, the product's value is initially shaped through interaction with customers and subsequently with other stakeholders. Customer engagement largely depends on the business models used in the development of the short food supply chain, and direct interactions can be supported by physical, virtual, and psychological contacts and relationships within the marketing processes, where the aim is to understand customers' expectations as much as possible and to generate value in their consumption experiences (Grönroos et al., 2013). The elements of product value creation identified by scholars – dialogue and acquisition, risk assessment and transparency (Prahalad et al., 2004), affordability, risk and reward, and fairness (Grönroos et al., 2013) – constitute the core principles of the product co-creation process. According to the researchers, farmers should establish certain preconditions to ensure dialogue with the customer.

The role of customers is changing: they are becoming not only buyers, but also creators. Accordingly, innovations must be integrated into the activities of the short food supply chain systematically, not fragmentarily. A clear structure is required to systematically create value at the social, environmental and economic levels, otherwise cooperation remains spontaneous, irrational or insufficiently involving all key participants. There is a lack of methodological foundations for strengthening social ties, building cooperation, distributing responsibilities, and coordinating interests, which are necessary for the smooth functioning of the short food supply chain.

The scientific problem lies in the lack of new knowledge on the patterns of co-creation, its value for farmers and customers, and the challenges of co-creating value in short food supply chains. This problem can be formulated through the following research questions: What are the preconditions, conditions and benefits of co-creation in developing a short food supply chain? What conditions create a favorable environment for co-creation processes? How do co-creation elements and conditions interact to shape co-creation processes in short food supply chains? What requirements for the co-creation process can be addressed in the development of short food supply chains?

This research aims to identify the condition of co-creation and to develop a conceptual model of co-creation in short food supply chains. It draws attention to why developing co-creation is important from both farmer and consumer perspectives, and to what is required to build long-term relationships between participants in the short food supply chain. The empirical study focuses on the sales link of the chain, where farmers and customers interact directly.

Farmers are among the most important participants in the short food supply chain because they shape supply, providing customers with fresh, locally grown, and locally produced food. They are also integral to rural areas, not only producing commercial food, fibre, and other raw materials but also supporting the vitality of rural communities. Agriculture is the dominant economic activity in rural Lithuania, especially in regions with fertile soil. Kaunas, the country's second-largest city, is located in such a region in central Lithuania. In 2024, more than 12,000 farms were operating in Kaunas County (Lithuanian agriculture..., 2024). Fertile lands provide favourable conditions for the intensive development of various agricultural activities, including the cultivation of cereals, berries, fruits, and vegetables, as well as beekeeping, dairy farming, poultry farming and beef cattle farming. Studies conducted by scientists

(Lankauskienė et al., 2022; Atkočiūnienė et al., 2019) show that many farms in Kaunas county are involved in short food supply chains. However, the largest concentration of consumers remains in the largest cities. As a result, most farmers try to sell their products through various sales channels in the country's two largest urban centers – the capital Vilnius and Kaunas.

2. Theoretical background

2.1 The preconditions for co-creation formation in the short food supply chain

The scientific debate has seen evolving approaches and perspectives on co-creation. Researchers (Prahalad et al., 2004) have identified four elements of product value creation: dialogue, acquisition, risk assessment, and transparency. Other scholars have sought to identify and analyse the main stakeholder groups in co-creation: companies, producers, farmers and customers (Boyle, 2007; Ramaswamy, 2011; Atkočiūnienė et al., 2021). Co-creation can be understood as a transformation in product knowledge generated through partnerships between farmers and customers (Atkočiūnienė et al., 2021). When both parties are active, they can directly influence each other (Handayati et al., 2015), and their two-way interaction promotes dialogue, resource sharing, and learning.

Although farmers and customers are commonly identified as the most important stakeholders in co-creation, researchers (Bakanovė et al., 2012; Handayati et al., 2015; Frow et al., 2015) have broadened this perspective by advocating for a network approach. They argue that co-creation involves value creation not only through the farmer-customer interactions but also through engagement with communities of consumers, suppliers, and partners. This precondition for co-creation is also recognised in subsequent studies. The co-creation process also exhibits characteristic features of innovation. It integrates information, knowledge and skills from different institutional environments, thereby encouraging the participation of multiple stakeholders (Ramírez-Montoya et al., 2018). Other researchers (Pokojski, 2020) define co-creation as a process in which farmers cooperate with other stakeholders to create value. In this context, co-creation functions as a mechanism to expand their knowledge base and facilitate innovation processes (Secundo et al., 2019).

Entrepreneurs can use co-creation to foster growth. By initiating and facilitating the co-creation process, entrepreneurs collaborate with other stakeholders to obtain the resources they lack, such as knowledge, information and technology. The term co-creation refers to the collaboration among a wider circle of stakeholders who converge in a shared activity – the short food supply chain. It involves farmers, producers and service providers collaborating with customers, managers, employees, and other stakeholders to create product value (Portuguez-Castro, 2023). Other scholars (Payne et al., 2008; Handayati et al., 2015) have taken a similar approach, noting that value creation is a joint interaction between customers and organisations, with deep integration of producers in the product design and production stages. In the view of the authors of this paper, however, value creation also takes place at the sales stage, particularly when the farmer and the customer meet directly. In such cases, the value of direct exchange is created and 'transferred' or 'returned' to other stages of the supply chain, such as product development and production. Direct selling also has a broad social impact, contributing to identity development and strengthening social ties, while simultaneously delivering economic benefits (Lankauskienė et al., 2022; Peterson et al., 2019).

In summary, co-creation can only be achieved through mutual action and by creating space for it to take shape. It involves a larger circle of stakeholders coming together in a connecting activity – the short food supply chain. However, the customer remains one of the most important elements in the entire food supply chain, as it is the customer who determines the real value of the product. Customers are increasingly recognised not just as consumers of products but also as a driving force and a source of competitive advantage for companies (Durugbo et al., 2014; Fan et al., 2020). They can also be involved in any stage of the value creation process. In a long food supply chain, producers typically decide which goods to produce or which services to provide, and they largely determine the potential value offered to the customer. By contrast, in short food supply chains, value is created through interactions – first with customers and then with other stakeholders – so that the decision on value is collegial and reflects

a diversity of perspectives (Bakanovė et al., 2012). The existence, accessibility, openness, involvement, participation, and dialogue of stakeholders are essential preconditions for the formation and strengthening of co-creation (Figure 1).

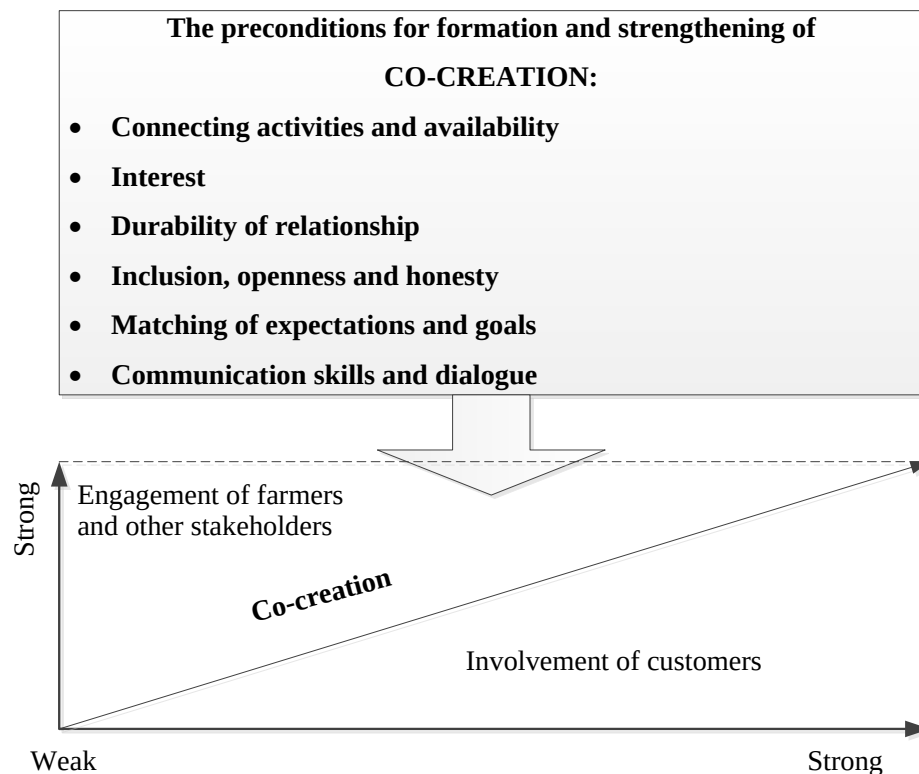


Fig 1. Preconditions for the emergence and consolidation of co-creation in short food supply chains. Source: made by authors according to Bakanovė et al., 2012; Ramírez-Montoya et al., 2018; Secundo et al., 2019; Fan et al., 2020

The development of short food supply chains promotes more authentic relationships between farmers and customers (Nazzaro et al., 2017). To a large extent, customer engagement depends on which business models are applied in the development of the short food supply chain: business-to-consumer (B2C), business-to-business (B2B), business-to-government (B2G), or consumer-to-consumer (C2C). The present study examines cases where the business-to-consumer (B2C) model is the main one. The value created by farmer should be in line with customer needs and expectations. If customer objectives, expectations, capabilities, and resources do not correspond, value is not created fully or at full capacity, and the relationship becomes unsustainable. Therefore, weak customer engagement in the co-creation process and limited participation are recognised as major challenges (Durugbo et al., 2014). Thus, it can be assumed that co-creation can be evaluated in terms of the durability of the relationship. Durability is one of the preconditions for co-creation, yet it is highly subjective, as what is valuable to one customer may not be to another (Grönroos et al., 2013).

Direct interactions can be supported by the creation of physical, virtual, mental contacts and relationships, which act as windows through which farmers can enter the customer's sphere of value creation and become value co-creators (Grönroos et al., 2013). As creators of value, customers of local products always have a unique perception of value shaped by their individual experiences and contexts, yet farmers should create conditions that enable meaningful dialogue. Dialogue is more difficult if farmers and customers do not share similar attitudes, access to honest information, or values.

Researchers have highlighted contemporary characteristics of product value creation by calling for a shift from marketing activities to process-oriented management (Grönroos, 2023). This involves moving from a focus on value creation, where value is assumed to be contained in the offers made to customers, to a focus on consumption value creation, where the aim is to learn as much as possible about customers'

expectations in order to shape value within their consumption processes. In a co-creation framework, product value logics can be well recognised and considered in the planning and design of offerings.

2.2 Patterns in the development of the short food supply chain as a source of co-creation

The development of short food supply chains creates preconditions for increasing farm innovativeness (Riccaboni et al., 2021) and for strengthening farmers' position in the supply chain (Atkočiūnienė et al., 2021). In essence, short food supply chains create preconditions for the survival and viability of small and medium-sized farms, which is directly linked to the EU objectives of the Common Agricultural Policy (CAP) and the Green Deal (Szabó et al., 2023). They also generate wider community benefits, as new jobs are created in both agricultural and non-agricultural sectors.

Local food production initiatives are often based on organic and environmentally sustainable agricultural methods (Sroka et al., 2023), creating an important link between local products and consumers in local markets. They further deliver ecological benefits associated with short supply chains, including promoting biodiversity, reducing food miles and carbon emissions, and achieving sustainability goals (Touch et al., 2024). However, these benefits are strongest in markets close to the place of production, diminishing as distance increases. Short food supply chains are intrinsically linked to circularity, which is particularly important for the agri-food sector in the context of increasing food consumption due to global population growth, lifestyle changes, the expansion of consumer society, and spreading health awareness (Krstić et al., 2024).

The development of short food supply chains is based on the exchange of food products between farmers and customers and on the trusting relationships that emerge (Paciarotti et al., 2020). Thus, in the short food supply chain, value is created through partnerships in line with the principles of the co-creation process – dialogue, accessibility, risk-benefit, and fairness (Prahalad et al., 2004; Grönroos et al., 2013). Short food supply chains are characterised by a minimal number of intermediaries and direct links between farmers and customers (Kneafsey et al., 2013). Stakeholders in short food supply chains, by facilitating co-creation, can strengthen farmer-customer communication: both parties can provide information and advice, thereby generating higher added value (Umaran et al., 2022). In this way, farmers can potentially earn higher incomes, and customers can better meet their food needs. Researchers (Grönroos et al., 2013; Grönroos, 2023) also point out that farmers in the supply chain should be more proactive and motivated to play their role to meet both customer needs and their own.

At each stage of the short food supply chain, additional value must be created. One of its key features is that real product value emerges through the interaction between farmers, customers, and other stakeholders. As products are sold along the chain, they also generate exchange value, which depends on the type of product sold along the short food supply chain – individual, cooperative, or collective. We assume that the value created in the short food supply chain links – in product development or production (on the farmer side) – largely determines the *potential* consumption value of the product. However, the *real* consumption value is realised by the customers in the exchange process through co-creation (Grönroos et al., 2013; Szabó et al., 2023). It can be further assumed that where there are many farmers and customers, the exchange value should theoretically be higher, because there are more different stakeholders. Exchange value is not only created between farmers and customers, but also separately among farmers and among customers.

Different levels of customer involvement can be identified in short food supply chains (Prahalad et al., 2004). Engagement is categorised as persuading customers through promotions and advertisements (customer engagement), collaborating in the development of new services or products (co-design), using technology to order, purchase, and exchange resources (self-service), solving problems on their own (problem-solving), and creating experiences (customer experience) (Gebauer et al., 2013). In the short food supply chain, especially in direct sales where farmers and customers meet, resources are pooled and value is added to products through the co-creation process. However, participation is determined by the perceived balance between benefits and costs (Grönroos et al., 2013).

The local food market can be seen as a two-way or multilateral network and the common sphere as a medium linking farmers, customers and other stakeholders, thereby contributing to the conditions for the emergence and consolidation of co-creation. Local food markets based on partnership, cooperation or clustering have the potential to create economies of scale by enabling networked stakeholders to work together. Short food supply chains are becoming equally economically important, as they are more closely associated with circularity and sustainability due to lower environmental burdens (transport, production methods, emissions), healthier food products, farmer-customer relationships, and behaviours that strengthen local economies (Kiss et al., 2019). Local markets also promote social justice – restoring relationships between participants brings them closer together and strengthens mutual understanding (Quinn et al., 2025). This, in turn, fosters respect, trust and commitment, encouraging harmonious relationships within communities and participants' involvement in a more democratic food supply (Jia et al., 2024).

Identifying co-creation as a social innovation (Stoker, 2006; Secundo et al., 2019; Milici et al., 2021) in the short food supply chain can involve long-term outcomes that fundamentally change the relationships between short food supply chain developers and other stakeholders (Umaran et al., 2022). Relationships between farmers and customers evolve into roles and rules among the stakeholders involved, and extend beyond the immediate needs of the co-creation process participants, contributing to broader societal needs as well. Stakeholders, therefore, become “co-creators” and are expected to contribute valuable information to the design of public services (Stoker, 2006). Hence, in all short food supply chain business models, the process of co-creation is crucial. It is usually a collaborative process between the farmer and the customer, whereby both parties reshape and expand each other's boundaries of activity, i.e., a process that can be described as learning, improvement, co-creation, or product development, all of which increase the value added to the jointly created product.

3. Methodology

The complexity of the subject, the lack of established proposals and methods for measuring and evaluating co-creation have led to the use of different methods and sources of information gathering in this study. The theoretical framework was based on the analysis of scientific literature sources, logical analysis, and generalisation. The theoretical analysis provided the methodological basis for the empirical study.

The authors of the article conducted empirical research in Kaunas, Lithuania's second-largest city, at the end of 2024 and in the spring of 2025. The research field was chosen based on the principle of convenience. The principles of anonymity and voluntary participation encouraged respondents to participate in the study and answer questions openly.

The study was conducted from the perspective of the stakeholders involved in the short food supply chain. The sources of information were farmers and their customers, and the 4 individual cases were the locations of meetings within the short food supply chain. Different methods were used to collect information: semi-structured interviews with farmers, case observation (each case observed twice), and structured interviews with customers.

The cases of cooperative and collective short food supply chains were examined. Farmer interviews and case observations took place at four meeting points: 2 farmers' markets (one mobile, one stationary) and 2 specialised farmers' produce stores, at the end of 2024 and spring 2025. Criteria for case selection were continuity (in operation for at least 3 years), convenience, and accessibility for both customers and researchers. To ensure compliance with ethical research principles, the cases were coded A, B, C, and D. The general characteristics of the cases are presented in Table 1.

Tab 1. General characteristics of the studied cases. Source: made by authors

Description	Open to customers (number of days per week)	Assortment of products	Number of customers per hour ¹	Serving customers
(A) Organic farmers' cooperative store. Product suppliers: 12 farmers (Cooperated sales)	6	Milk and milk products; fresh, frozen, smoked meat products; vegetables (fresh, preserved); soft drinks (juice, tree sap); oil; honey; cereal and seed products	2 (observed on a weekday)	Employed worker
(B) Family mill and bakery (Cooperated sales)	6	Cereal products (groats, flour) and bread, pastry products	2 (observed on a weekday)	Family members of the business owner
(C) A farmers' market in a housing estate, initiated by private investors and local customers. 8 – 5 farmers trade regularly (Collective sales)	6	Milk and milk products; fresh, smoked meat products Vegetables (fresh, preserved); oils; honey; cereal and seed products	15 (observed on a weekday)	The farmer and/or members of his family, employed workers
D) A mobile farmers' market organized on the initiative of the Lithuanian Family Farmers' Union in a car park at a shopping center near the Old Town. Around 40 to 50 farmers sell their produce. This particular location is open on Saturdays. On the other days of the week, the mobile market is set up in other places in the city (Cooperated sales)	2	Milk and milk products; fresh, smoked meat products Vegetables, fruit, berries (fresh, preserved, fermented); beverages (juice, tree sap); oil; honey and other bee products; cereal and seed products; fish and fish products; flowers; other	Around 100 (observed on Saturday)	The farmer and/or members of his family

¹ Average over both observations

Observation and interviews with farmers were coordinated. Observations focused on working hours, the sales environment, product range, the number of customers per hour, and the salesperson relationship with the customer (attention to the customer, responsiveness to questions). The interview was guided by a set of 10 pre-prepared questions:

1. In what ways and channels do you organise the sales of farm products?
2. Who sells farm products: the farmer/farm family member or an employee?
3. Do you have loyal customers?
4. How do you encourage customer loyalty?
5. How and what kind of relationship do you build with consumers?
6. How important is it for you to establish a relationship with consumers?
7. Do you ask consumers for their opinions about products?
8. Do consumers express their expectations regarding a new product or the product development/sales process?
9. Do you feel that a customer community is being created?
10. Why do you think it is important to communicate directly with customers?

The number of informants in this study is 11 (A-1, B-1, C-3, D-5). The informants were coded as I1, I2, I3, etc. Additional information was obtained from secondary sources, such as websites and press articles.

A structured interview approach was used to find out customers' views on the value of buying food directly from farmers and on the importance of value creation. Customers who agreed to participate in the case studies were selected as informants. In total, 71 informants agreed to take part in the study and shared their views. All informants were asked the same set of questions: How often do you buy products directly from farmers? What are your motives for buying? Do you express opinions about products and your expectations of the farmer? What kind of relationship do you have with farmers? Do you recommend farmers to others? The opinions of the informants are presented in a summarised form, highlighting the most recurring statements. The data were aggregated through analysis and synthesis, and the methods of logical abstraction and insight were applied.

Limitations of the study. 1) Theoretically, co-creation involves the development of relationships between multiple stakeholders; this paper has been limited to the relationship between the farmer and the customer within the B2C model; 2) Rural areas and businesses operate in the context of reciprocal and integrative rural-urban relations. Most customers whose needs shape the demand for agricultural and food products are concentrated in cities. The growing urban demand for local products delivered through short food supply chains stimulates structural changes in farms and rural areas. Therefore, the second largest city in Lithuania – Kaunas – was chosen as the field of empirical research, as it offers the necessary infrastructure, including five permanent farmers' markets and mobile markets.

4. Results

The study identified different forms of marketing in the short food supply chain, both cooperative and collective, such as farmers' shops and stationary and mobile farmers' markets. Mobile farmers' markets in Kaunas are organised on different days of the week at logistically convenient locations across the city, accessible by both public and private transport.

The typical portrait of a farmer is that of a farm member (owner or family farmer) aged 40 to 50 years, located within a radius of up to 50 km from Kaunas; in other words, farms are located in the districts of Kaunas, Jonava, Kaišiadorys, Prienai, or Kėdainiai. Two typical customer portraits were identified. The first is a 35–45-year-old resident of Kaunas (male and/or female) with children. The second is a couple aged 55–70. The shopping baskets observed in the cases studied could also be categorised into two types: small baskets, with an average of 2–4 products (cases A and B), and large ones, with an average of 10 different products (cases C and D).

Both sides of the short food supply chain have their own objectives and expectations: for farmers, it is to sell and make a profit, and for the customers, it is to buy the products they want or need. Farmers' interest in meeting customer expectations is reflected in the messages they convey on the shop floor, e.g., 'Home of Value Food' (A), 'From Seed to Bun' (B), 'From the Field to Your Table' (C). In the meeting spaces, the stakeholders in the short food supply chain contribute to the value of the exchange, as reflected in the summary answers given by the informants (farmers and customers) (Table 2), but often without being thought about and without the value being measured in concrete terms.

The results of the study confirmed that the availability of farmers is very important. Most of the investigated cases (A, B, C) are available to customers every working day and on Saturdays. Case D operates once a week in the same location on Saturday, and in another location in the city on Sunday. Trade is carried out not only in physical spaces, but also on the Internet (B, A). Social networks, such as Facebook, are used for information and advertising, as they are deemed to be <...a very successful means of disseminating information> (I1).

Tab 2. Attitudes of farmers and customers involved in the sales chain of short food supply chains towards the creation of exchange value in the co-creation process. Source: made by authors

Conditions and values of co-creation	Customer attitudes	Farmer attitudes
Availability	<visit the market 2–4 times a month>; <order products in advance>.	<weekend days when the number of customers is higher> (I7, I8, I9, I10); <every weekday and Saturday> (I1, I2, I3, I4, I5).
Engagement, interest, honesty, openness	<possibility to purchase various, fresh and high-quality food products>; <exclusive production>; <it is important for us that the products come from Lithuanian farms>; <clear product path>.	<we accept advance orders, so we can plan production volumes more clearly> (I1, I4, I8, I9, I10); <fresh products from Lithuanian farms> (I1, I4, I6, I7, I8, I9, I10); <I can tell you when we will have the products you want in the store> (I1, I2). <we give discounts and gifts to loyal customers> (I2, I6, I10).
Meeting expectations and objectives	<pleasant shopping process itself>; <visiting the market is a family weekend tradition>; <we visit together with other family members and/or children>; <we supply ourselves with products for the whole week>.	<although it still happens that we run out of baked goods, product freshness and small volumes have always remained our value> (I1) <we offer fresh and quality products every week> (I4, I5, I6, I7, I8, I9); <wide selection of Lithuanian flour, flakes, semolina, seeds> (I1).
Dialogue and communication skills	<we can taste products, especially new products>; <we're not just talking about products>; <email or otherwise we do not receive information about new products through indirect channels>; <the farmer often asks if we liked the new product>; <I very rarely share a message on social networks about the farmer's products>.	"<...>it is very important to maintain a friendly and nice relationship with the customers. Product sales depend on communication, if the communication is pleasant, there is a high probability that the customer will buy the product<...>. (I1). <customers express their expectations for product development> (I5, I7).
Interactions between farmers and customers	<we know the farmer and his family members>; <we can order products by phone in advance, if necessary and upon agreement, the farmer delivers the products to our home>; <I recommend the products to others>.	<cannot not go because they are waiting> (I6, I7, I8, I9, I10); <users rate our products> (I1, I2, I4, I7, I8, I9, I10); <we have the opportunity to get to know the customer and their expectations> (I1, I6, I7, I8, I9, I10); <put in the shopping basket of regular customers> (I7, I9); <we suggest tasting products> (I2, I6, I8, I10); <we accept advance or custom orders> (I1, I2, I4, I8, I9, I10).

The obtained research results confirmed that successful mutual operation and exchange value creation between farmers and customers depend not on a single condition but on a combination of interrelated factors. All cases studied can be classified as cooperative or collective sales. In the public space, these outlets are presented as “farmers’ markets”; however, exclusively farmer presence was observed only in the case of D. Only three farmers or their family members were met in case C: <too little flow of customers> (4), <it is not economically worthwhile for farmers to stand at one place of sale all day>(I4), <I hire an employee, and I devote my time to farm maintenance and production for production>(I5), <it is more profitable for farmers to spend time on production and deliveries to more outlets> (I3, I4, I7).

In case A, customers were attended to exclusively by a hired employee. In case B, only family members worked at the outlet, and through their dedicated efforts managed to build and maintain a <community of loyal users> (I1). Observations revealed that in cases where the farmer or producer personally served the customers (D), the relationship between them was noticeably stronger. It can be assumed that this is due to the producer’s own greater interest and their constant dialogue with customers. For example, one farmer explained that <through communication, we get to know our customers, we remember customers’ faces, and we already know the contents of their shopping baskets. With such a close relationship, we can remind the customer what else to purchase, thus helping the customer if they forget to purchase something> (I8). Customer informants in these cases were more active and more willing to participate in the research and express their opinions. This suggests that not only the availability of farmers, but also their involvement, interest or dialogue, are important conditions for the co-creation to form and develop.

Although the farmers’ market (D) was open only two days a week, it attracted the highest number of customers. This shows that case D best met the expectations and needs of the customers. The atmosphere

in case D was distinct – lots of farmers interacting with each other and with numerous customers created a lively, open meeting place for producers and consumers. Unaffected by natural conditions, it provided a setting where people could take their time, communicate, negotiate, taste, exchange contacts, and only then buy and sell.

By contrast, case A resembled a shopping center into which random customers happened to stumble. More detailed information about farmers could be found on the Internet or on product labels, but not by asking the salesperson, who, although polite and pleasant, communicated in a very formal manner. During the observation, the salesperson paid more attention to paperwork, handling matters over the phone, but not to communicating with customers. When the researcher inquired about one or another producer, it was recommended to contact the manager of the cooperative.

In case C, other activities (e.g., education or calendar holiday events) were organised in an effort to build a community of customers. According to the informants (I3, I4), "<...> a more active participation of the community is noticed with each educational event <...>." However, this was not organised by farmers themselves but by the managers of the trading space (market). The study revealed that in cases where customers interacted with hired workers rather than farmers, these employees lacked knowledge about both the farmer and the product being sold, and, in most cases, displayed a lack of elementary interest.

The results of the research confirmed the theoretical statements that the formation of co-creation and the creation of exchange value requires a whole complex of conditions and the involvement of the main stakeholders – farmers and customers. On the other hand, both farmers and customers are still not fully aware of their importance in the formation of exchange value. In particular, older farmers often believe that a quality product alone is a guarantee of long-term relationships with customers. Similarly, customers also do not always realise their role in the creation of exchange value, something that is confirmed by the answers of the informants "<...> we do not receive expectations from customers regarding the development of new products...> (I3, I4, I6, I10).

Nevertheless, several responses demonstrate instances of customer influence and farmer responsiveness: "<...>when the customer expressed the opinion that he would like to buy cured meat strips, we ... produced them and delivered them to the point of sale at the agreed time <...>." (I6); "<...> we sell fresh pork sausages. When the customer asked for ready-made minced pork with the same spices, we produced the minced meat that the customer wanted <...>" (I6), <farmers are very creative and offer new products themselves>, "<...> customers often express their expectations about the product < ...>" (I2, I7, I8, I9). This suggests that the culture of exchange value creation is still being formed, because the organization of the short food supply chain is a relatively new phenomenon in Lithuania.

A conceptual model of factors that enhance co-creation in the development of short food supply chains has been developed. In the model, the authors of the article combine the factors determining co-creation in the short food supply chain, which directly influence and can work if there are suitable conditions: availability, involvement, interest, honesty, openness; meeting expectations and goals; dialogue and communication skills; interaction between farmers, producers and customers. It also integrates insights from other researchers about the factors that influence co-creation (Figure 2).

We defined the requirements for the co-creation process that can be fulfilled in the development of short food supply chains based on the insights from prior researchers (Ramaswamy et al., 2018; Schmutz et al., 2018; Kiss et al., 2019) and recent empirical findings:

- Stakeholder engagement in the co-creation of value, thereby expanding opportunities for farmers to obtain additional resources that are generated through interactions with customers.
- Dialogue and interest, integrating innovations into short food supply chains activities systematically, not fragmentarily.
- Creation of stakeholder platforms in the digital space (e.g., through platforms, participatory tools, open data systems) for short food supply chains that act as intermediaries between markets (bilateral or multilateral networks), farmers or consumer groups. They can create an environment of

interaction between people, processes and artefacts, providing opportunities for participation, enhancing the efforts of co-creating stakeholders, and helping to generate mutually valuable results.

- Trust, which is built through openness and honesty.
- Perception and evaluation of value, recognising that the value of a product is subjective and varies depending on individual experience and interests of stakeholders in short food supply chains. Stakeholders can learn together and gain more information and knowledge about food and its origin (Schmutz et al., 2018).
- Continuous learning and development, which brings together the capabilities of individual, social and business communities to generate new co-creation values in the short links of the food supply chain. For example, circular economy principles related to food chains include reducing waste and excess, reusing food, recycling nutrients, and promoting more diverse and efficient dietary patterns (Garnett, 2011).
- Satisfaction and motivation, achieved by building short food supply chain capacities together with other (private, public, non-governmental) sectors, applying circular economy principles (Kiss et al., 2019) to ensure self-sufficiency in local, health-friendly food products, increase value and well-being in the economy and in society in general.

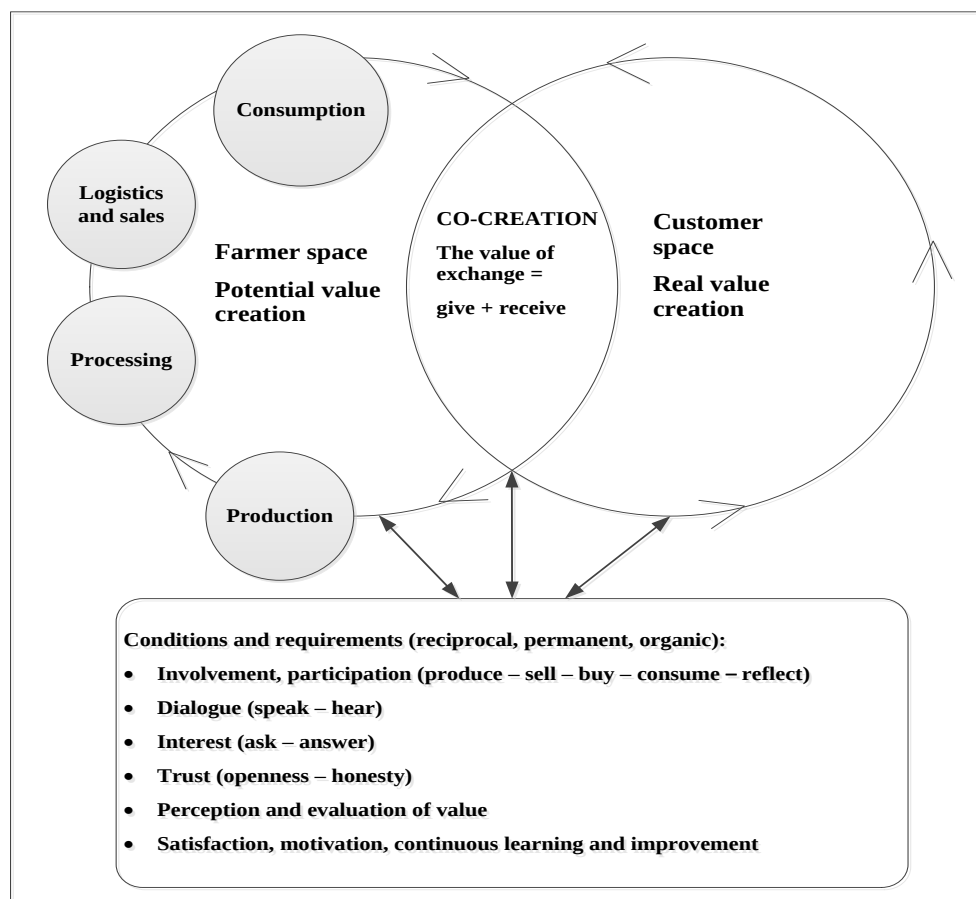


Fig 2. A conceptual model of co-creation through the development of short food supply chains. Source: made by authors

5. Conclusions and Discussion

The conducted study complemented the research in this area and allowed identification the conditions necessary for the formation and strengthening of co-creation. The involvement of farmers in the short food supply chain is determined by the identification of opportunities in the market and the available infrastructure. The conducted study confirmed prior research insights (Portuguez-Castro, 2023; Ramírez-Montoya et al., 2018; Frow et al., 2015) that co-creation reflects the attitude of those involved and creates

value for all stakeholders who, in one way or another, contribute to the development of the short food supply chain. The characteristics of the selected cases show that the development of the short food supply chain is based on the principle of network cooperation. It is not only the main participants, the farmers and customers, who are interested in the development of the short food supply chain; other interested parties are also involved, including the farmers' cooperative, the consumer community, private investors, and the Lithuanian Family Farmers' Union.

The study findings confirmed that farmers seek to expand their knowledge base through collaboration, using various mechanisms to exchange knowledge that promotes value creation for stakeholders (Portuguez-Castro, 2023). Stakeholder engagement is very important as it facilitates the resolution of resource issues and various management challenges. For example, the approval of both the city authorities and the manager of the supermarket was required for farmers to temporarily trade in the parking lot of the supermarket. Engaging in the development of a short food supply chain helps create synergistic effects and benefits for all stakeholders: for farmers, a free trading place and customer flows, and for customers, valuable, accessible and fresh food products. The shopping centre and the city authorities, in turn, also receive additional benefits, such as voters' support, the reputation of a "friendly, liveable" city, and additional customers of goods and services, since farmers who come to the city purchase the products they need in large supermarkets or make use of other city services.

The findings confirm that the relationship between farmers and customers evolves into roles and rules among the stakeholders involved and extends beyond the immediate needs of the participants in the co-creation process (Stoker, 2006), with various stakeholders becoming "co-creators" in the development of a public service.

The study also confirmed the results of previous research (Handayati et al., 2015; Bakanovė et al., 2012; Payne et al., 2008) showing that value is created primarily in interaction with customers. This was reflected in the informant statements: "<...> we offered customers to buy sauerkraut with pineapple. It was unexpected for customers <...> customers didn't even think that such a product could be produced;> "<...> we used to pour sauces into containers with a capacity of 1 l, but customers wanted smaller containers. Bottling into smaller (0.5 l) containers >" (I2) was started. The study revealed that the farmer's involvement and direct relationship with the customer is no less important in the exchange process. Thus, we can say that greater interest of the farmer tends to stimulate the interest of the customer, although the participation is determined by the balance between values and incurred costs (Grönroos et al., 2013).

The literature analysis of the co-creation concept helped to redefine the short food supply chain, a strategy that helps to accelerate the transition to circular economy in the food production, processing, sale and consumption chains, when the production and consumption of food products is carried out in a relatively small geographical area (territory), the number of intermediaries in the chain is minimal (or absent), and the farmers and customers interact directly, exchanging information, knowledge and skills through the co-creation process.

Based on the results of the empirical study, it was found that the main drivers of co-creation are the farmers themselves. When farmers participate in sales of local products, in markets or other outlets, they create more connections and thereby creating more favorable conditions for the formation and development of co-creation.

The involvement of farmers, customers and other stakeholders in the co-creation process in the short food supply chain can range from weak to strong. The conditions for formation and strengthening of co-creation may depend on such factors as connecting activities, availability, interest, inclusion, openness and honesty, matching of expectations and goals, communication skills, and dialogue.

As a result of the empirical research, the perspectives of farmers and customers participating in the sales chain in the short food supply chain were analysed with regard to the creation of exchange value through co-creation. The following co-creation conditions and values were identified: accessibility; involvement, interest, honesty, openness; meeting expectations and goals; dialogue and communication skills; and interaction between farmers and customers.

After conducting the empirical research, the factors limiting co-creation and hindering the development of co-creation value were identified. Most of the farm produce is sold by hired workers who, although they interact with customers, often lack the sufficient knowledge of the food production process and therefore struggle to answer all the customer questions. Issues were also identified in the dissemination of information about farmers' products and in the limited availability of local products. The low innovativeness of some farmers' solutions does not fully meet the needs of customers; however, the farmers of the examined cases generally consider the opinions expressed by customers and strive to meet their needs.

When organising a short food supply chain, it is necessary to be guided by the fact that the customer, being a creator of value, always perceives it uniquely and determines its worth based on individual experience. This process is also affected by the opinions of the community and the external environment. Therefore, the farmer, in co-operation with the community and other stakeholders of the short food supply chain, should create certain preconditions for dialogue and ensure availability. Interaction and dialogue in the co-creation process is more difficult if the farmer and the customer do not have similar attitudes or values. The ecosystem capacities of the short food supply chain are created by the farmers and the customer, while other interested parties – local government and non-governmental sector institutions – also contribute.

The relationship between farmers and customers can evolve into positions and rules between participating stakeholders and go beyond the needs of the direct participants in the co-creation process, thus contributing to the satisfaction of societal needs. Therefore, other interested stakeholders also become "co-creators" who can contribute valuable information to the creation of a public service.

The application of circular economy principles and the sustainability of the short food supply chain partly depend on the quality of the co-creation process. Because value is first created through interactions with customers and subsequently with other stakeholders, decisions regarding value are collegial and reflects a diversity of perspectives. Stakeholder participation is determined by the balance between benefits and incurred costs. The application of circular economy principles in the short food supply chain and the sustainability characteristics depend on their spatial location, the type of short food supply chain and the attitudes, knowledge and requirements of individual customers and farmers. As the investigated cases and research participant statements show, it is important for customers that the products originate from Lithuanian farms, that they have a clear product path, and that they are either unpackaged or presented in sustainable packaging.

In this study, the co-creation process was analysed in the context of farmer-customer relationships (B2C model). In the future, the research could be expanded to include relationships between farmers and HoReCa entrepreneurs (B2B model), as well as between farmers and public sector institutions (B2G model). The empirical study was conducted in an urban setting, which the authors acknowledge as a limitation. Future studies of co-creation processes in the short food supply chain could be conducted in both rural and urban farmers' markets.

Academic references

- [1] Atkočiūnienė, V., Vazonienė, G., Kiaušienė, I. & Pakeltienė, R. (2021). *Europos šalių trumpųjų maisto tiekimo grandinių organizavimo gerosios praktikos pavyzdžių analizė ir pavyzdiniai modeliai*. Kaunas: Vytauto Didžiojo universitetas.
- [2] Atkočiūnienė, V., Vazonienė, G., Kiaušienė, I. & Pakeltienė, R. (2019). Assumptions for short food supply chains organisation. *Management Theory and Studies for Rural Business and Infrastructure Development* 41(4), 547–560. DOI: 10.15544/mts.2019.45.
- [3] Bakanovė, A., Bagdonienė, L. & Rai, S. (2012). Bendrakūros kompleksiskumas išteklių, tiekimo grandinės valdymo ir atvirųjų inovacijų teorijų sandūroje. *Ekonomika ir vadyba: aktualijos ir perspektyvos* 4, 188–196.

- [4] Boyle, E. A. (2007). Process model of brand co-creation: brand management and research implications. *Journal of Product & Brand Management* 16(2), 122–131. DOI: 10.1108/10610420710739991.
- [5] Durugbo, C. M. & Pawar, K. A. (2014). Unified model of the co-creation process. *Expert Systems with Applications* 41(9), 4373–4387. DOI: 10.1016/j.eswa.2014.01.007.
- [6] Fan, X. & Luo, Y. (2020). Value Co-creation: A Literature Review. *Open Journal of Social Sciences* 08(2), 89–98. DOI: 10.4236/jss.2020.82008.
- [7] Frow, P., Nenonen, S., Payne, A. & Storbacka, K. (2015). Managing co-creation design: A strategic approach to innovation. *British Journal of Management* 26(3), 463–483. DOI: 10.1111/1467-8551.12087.
- [8] Garnett, T. (2011). Where are the best opportunities for reducing greenhouse gas emissions in the food system (including the food chain)? *Food policy* 36, 23–32. DOI: 10.1016/j.foodpol.2010.10.010.
- [9] Gebauer, J., Füller, J. & Pezzeri, R. (2013). The dark and the bright side of co-creation: Triggers of member behavior in online innovation communities. *Journal of Business Research* 66 (9), 1516–1527. DOI: 10.1016/j.jbusres.2012.09.013.
- [10] Grönroos, C. (2023). Towards a marketing renaissance: Challenging underlying assumptions. *Australasian Marketing Journal* 31(4), 270–278. DOI: 10.1177/14413582231172269.
- [11] Grönroos, C. & Voima, P. (2013). Critical service logic: making sense of value creation and co-creation. *Journal of the Academy of Marketing Science* 41, 133–150. DOI: 10.1007/s11747-012-0308-3.
- [12] Handayati, Y., Simatupang, T. & Perdena, T. (2015). Value Co-creation in Agri-chains Network: An Agent-based Simulation. *Procedia Manufacturing* 4, 419–428. DOI: 10.1016/j.promfg.2015.11.058.
- [13] Jia, F., Shahzadi, G., Bourlakis, M. & John, A. (2024). Promoting resilient and sustainable food systems: A systematic literature review on short food supply chains. *Journal of Cleaner Production*, 435, 140364. DOI: 10.1016/j.jclepro.2023.140364.
- [14] Kiss, K., Ruszkai, C. & Takács-György, K. (2019). Examination of short supply chains based on circular economy and sustainability aspects. *Resources* 8(4), 161. DOI: 10.3390/resources8040161.
- [15] Kneafsey, M., Venn, L., Schmutz, U., Balázs, B., Trenchard, L., Eyden-Wood, T., Bos, E., Sutton, G. & Blackett, M. (2013). Short food supply chains and local food systems in the EU: A state of play of their socio-economic characteristics [JRC Scientific and Policy Reports, EUR25911]. Luxembourg: Publications Office of the European Union.
- [16] Konečný, O., Hajná, K. & Zdráhal, I. (2016). A few notes on the study of short food supply chains on the example of farm boxes in the Czech Republic. In Horská, E., Kapsdorferová, Z. & Hallová, M., eds., *The Agri-Food Value Chain: Challenges for Natural Resources Management and Society* (pp. 493–501). Nitra: Slovak University of Agriculture. DOI: 10.15414/isd2016.s7.08.
- [17] Krstić, M., Elia, V., Agnusdei, G. P., De Leo, F., Tadić, S. & Miglietta, P. P. (2024). Evaluation of the agri-food supply chain risks: the circular economy context. *British Food Journal* 126(1), 113–133. DOI: 10.1108/BFJ-12-2022-1116.
- [18] Lankauskienė, R., Vidickienė, D. & Gedminaitė-Raudonė, Ž. (2022). Evolution of Short Food Supply Chain Theory and Practice: Two-Sided Networks and Platforms. *Energies* 15(3), 1137. DOI: 10.3390/en15031137.
- [19] Nazzaro, C., Marotta, G. & Stanco, M. (2017). Short Food Supply Chains and Shared Value on the Multifunctional Farm: An Analysis of Determinants. In Pascucci, S. & Dries, L., eds., *It's a Jungle out There—The Strange Animals of Economic Organization in Agri-Food Value Chains* (pp. 337–355). Leiden: Brill.

- [20] Milici, A., Ferreira, F. A. F., Pereira, L. F., Carayannis, E. & Ferreira, J. J. M. (2021). Dynamics of open innovation in small – and medium-sized enterprises: A metacognitive approach. *IEEE Transactions on Engineering Management* 70, 495–508. DOI: 10.1109/TEM.2020.3042458.
- [21] Paciarotti, C. & Torregiani, F. (2020). The logistics of the short food supply chain: A literature review. *Sustainable Production and Consumption* 26, 428–442. DOI: 10.1016/j.spc.2020.10.002.
- [22] Payne, A. F., Storbacka, K. & Frow, P. (2008). Managing the co-creation of value. *Journal of the Academy of Marketing Science* 36, 83–96. DOI: 10.1007/s11747-007-0070-0.
- [23] Peterson, R. A., Crittenden, V. L. & Albaum, G. (2019). On the economic and social benefits of direct selling. *Business Horizons* 62(3), 373–382. DOI: 10.1016/j.bushor.2018.12.002.
- [24] Pokojski, Z. (2020). Innovation ecosystem: Cooperation of the agricultural market entities in the light of empirical research conducted on the basis of Group Azoty Pulawy innovation consortium. *Economic Annals* 21(185), 108–118. DOI: 10.21003/ea.V185-11.
- [25] Portuguese-Castro, M. (2023). Exploring the Potential of Open Innovation for Co-Creation in Entrepreneurship: A Systematic Literature Review. *Administrative Sciences* 13(9), 1–18. DOI: 10.3390/admsci13090198.
- [26] Prahalad, C. K. & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing* 18(3), 5–14. DOI: 10.1002/dir.20015.
- [27] Quinn, C., Allen, K., Quinn, J. Q., Razo, A., Andersen, S. & Brown, H. (2025). Cultivating connections: a comparison of food producer and consumer values and implications for the viability of local food networks. *Agriculture and Human Values* 42, 2233–2246. DOI: 10.1007/s10460-025-10749-6.
- [28] Ramaswamy, V. (2011). It's about human experiences ... and beyond, to co-creation. *Industrial Marketing Management* 40, 195–196. DOI: 10.1016/j.indmarman.2010.06.030.
- [29] Ramaswamy, V. & Ozcan, K. (2018). What is co-creation? An interactional creation framework and its implications for value creation. *Journal of Business Research* 84(1), 196–205. DOI: 10.1016/j.jbusres.2017.11.027.
- [30] Ramírez-Montoya, M. S. & García-Peñalvo, F. J. (2018). Co-creation and open innovation: Systematic literature review. *Comunicar* 54(1), 9–18. DOI: 10.3916/C54-2018-01.
- [31] Riccaboni, A., Neri, E., Trovarelli, F. & Pulselli, R. M. (2021). Sustainability-oriented research and innovation in “farm to fork” value chains. *Current Opinion in Food Science* 42, 102–112. DOI: 10.1016/j.cofs.2021.04.006.
- [32] Secundo, G., Del Vecchio, P., Simeone, L. & Schiuma, G. (2019). Creativity and stakeholders' engagement in open innovation: Design for knowledge translation in technology-intensive enterprises. *Journal of Business Research* 119, 272–282. DOI: 10.1016/j.jbusres.2019.02.072.
- [33] Schmutz, U., Kneafsey, M., Kay, C. S., Doernberg, A. & Zasada, I. (2018). Sustainability impact assessments of different urban short food supply chains: Examples from London, UK. *Renewable Agriculture and Food Systems* 33, 518–529. DOI: 10.1017/S1742170517000564.
- [34] Stoker, G. (2006). Public value management: A new narrative for networked governance? *The American Review of Public Administration* 36, 41–57. DOI: 10.1177/0275074005282583.
- [35] Sroka, W., Sulewski, P., Mikołajczyk, J. & Król, K. (2023). Farming under Urban Pressure: Business Models and Success Factors of Peri-Urban Farms. *Agriculture* 13(6), 1216. DOI: 10.3390/agriculture13061216.
- [36] Szabó, Z. T., Chuluunbaatar, E. & Alpek, B. L. (2023). The shortening of sustainable supply chains in Hungary and Europe. *Journal of Central European Green Innovation* 11(2), 93–110. DOI: 10.33038/jcegi.4858.
- [37] Touch, V., Tan, D. K. Y., Cook, B. R., Liu, L., Cross, R., Tran, T. A., Utomo, A., Yous, S., Grunbuhel, C. & Cowie, A. (2024). Smallholder farmers' challenges and opportunities: Implications for agricultural

production, environment and food security. *Journal of Environmental Management* 370, 122536. DOI: 10.1016/j.jenvman.2024.122536.

- [38] Umaran, T., Perdana, T., Kurniadie, D. & Parikesit, P. (2022). Co-Creation Approach in Designing a Sustainable Coffee Supply Chain (a Case in Bandung Regency, West Java, Indonesia). *Sustainability* 14(1), 476. DOI: 10.3390/su14010476.

Other sources

- [39] Lithuanian agriculture: facts & figures (2024). Semiannual statistical report. 1(33). Available at: https://zudc.lt/wp-content/uploads/2024/05/Faktai-ir-skaiciai_internetui_2024-m.-Nr.-1-33.pdf. Last accessed: 29/09/2025.