

# Social aspects of clustering as an innovative form of entrepreneurship in agribusiness

Roman Chorób

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**Abstract:** **Background:** Trust is the primary outcome of social cooperation rules rooted in national and group culture, which make up social capital, and is particularly important in fostering integration. Actors in an integrated system invest their trust in one another, but especially in the cluster head. Trust provides an opportunity to reduce transaction costs, which are critical where particularisms and excessive regulation may disrupt both the cluster's operation and the dominance of corporate and bureaucratic culture.

**Research objectives:** The main aim of the study is to emphasise the importance of trust in initiating and developing innovative integration ties as part of cluster structures.

**Research design and methods:** The data was obtained from a survey conducted among entrepreneurs – participants in cluster initiatives in the agrifood industry in Podkarpackie Voivodship. The study covered all 99 members of the above-mentioned clusters. Descriptive statistics, Cramer's V coefficient, and Pearson's chi-squared test were used to analyse the data.

**Results:** The findings demonstrate that trust, as a critical component of social capital, serves as the foundation for any cooperative network structure.

**Conclusions:** One of the most important prerequisites for an economy's dynamic expansion is the development and operation of effective integration structures.

**Keywords:** trust, integration processes, cluster structures, cooperation, agribusiness

**JEL Codes:** D41, F15, L20, O31, R11

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## 1. Introduction

There are strong correlations between the structure and volume of food consumption and the level of agribusiness development. On the one hand, consumer food demands chart the course for agribusiness growth, while on the other, the degree of the latter determines the level at which consumer food needs are met. Active socioeconomic policy programmes in rural regions should be pursued in order to revive local economies, taking into account the vertical and horizontal connections (or integration) between all the links in the agribusiness chain. The increasingly common, particularly in rural areas, creative integration links, or agro-industrial clusters, are an example of this integration. They contribute to the reduction of production costs, stimulate economic activity, and, as a result, boost the local competitive advantage. Innovative integration processes in agribusiness affect not only production and distribution,

but also the entire rural institutions system and the awareness of the local community. The process contributes to the emergence of communities made up of people who value entrepreneurship, innovation, and are ready to learn.

The main aim of the theoretical part of this study is to identify entrepreneurial behaviour as one of the critical factors influencing the development and operation of innovative forms of integration links in agribusiness. The notion of clustering is briefly introduced, followed by an exploration of the role of trust in an innovative organisation. Finally, the significance of cooperation in such structures is demonstrated. The empirical part of the study focuses on the operation of four clusters that bring together enterprises in the food industry to characterise the scope of collaborative operations carried out by their member organisations. The selection of cluster structures as the subject of the analysis, namely the AGRO-KARPATY Podkarpackie Agricultural and Food Cluster, the Podkarpackie Smaki Cluster, the Podkarpackie Ecological Food Cluster, and the Serwatkowa Kraina Cluster, was deliberate, as they were the only clusters with their headquarters and operating in the said region at the time the research was conducted.

The basic cognitive aim of the study underlies the research hypothesis that cluster structures have a positive effect on the local and supra-local communities, primarily in terms of building trust and benefits from cooperation, thereby favouring the growth of their competitiveness and economic innovation. The literature on the idea of clustering and its advantages, the importance of trust in corporate connections, and the role of cooperation is discussed in the opening part of the paper. The research methodology is covered in the second section, which is followed by a presentation of the author's original research's findings and their interpretation. These findings are then compared with those obtained by other authors in the discussion section, which proved to be a challenge, given the fact that this study fills a certain gap, particularly in terms of the selected industry and the area of focus. The study concludes with a summary of findings and a handful of suggestions for further research.

## 2. Literature review

Contemporary economic development is affected by two main factors. One of them is knowledge, both at the level of direct production and management; and the other innovation defined by the OECD as all technological, scientific, organisational, financial and commercial activities aimed at developing and implementing new products or processes or significantly improving them (OECD, 2018). On a global, national, and regional scale, investing in innovation and the knowledge-based economy is currently a prominent and effective development strategy. As a result, the concept has emerged as a crucial component of the Europe 2020 Strategy, which recommends that the most pressing contemporary challenges – including climate change, dwindling energy supplies, population ageing, and declining health of societies worldwide – should be approached in terms of innovation (Babiak, 2011, pp. 155–156; Dworak et al., 2014, pp. 75–94; Jagódka, 2021; Pająk, 2016, pp. 211–223).

The concept of clustering fits neatly into this trend, which is today regarded as one of the tried-and-true methods of implementing innovation strategies. In general terms, a cluster is a type of vertical and horizontal link among enterprises, the world of science, and numerous organisations (the terms group and industrial bundle are frequently used in the literature). The major purpose of such collaboration is to achieve a state of synergy or the integration of the operations of numerous organisations in order to reduce product development and promotion costs, which has a favourable effect on profits. Without a doubt, it promotes innovation

in enterprises, for example, by facilitating the transfer of information and scientific concepts into production. Such an approach reflects a fairly new way of thinking about enterprise competitiveness; yet, in many industrialised countries, it is a feature that contributes to the prosperity of regions where business sectors are already organised in this manner (Babiak, 2011, p. 157).

The goal of the cluster-based regional development policy (CBP) is to coordinate operations in many spheres of the political, economic, and scientific life. This results in the development of a coherent system and a distinctive system of communicating vessels, where research supports production technology, education meets the actual needs of the labour market, and fostering the competitiveness of local businesses encourages foreign investment, among other things. The primary distinction between the concept under discussion and the conventional regional development model is the decision by local governments to forgo the customary direct or, to put it more bluntly, manual control of the local economy in favour of indirect and stimulatory policies. Under such circumstances, clusters become a support and activation mechanism, unlocking natural entrepreneurship. This is one of the most significant advantages of implementing a CBP: the benefits accrue throughout the entire region, not only to the entities involved in the project (Wierzyński, 2013).

An important issue in this area is trust, which is the main product of the norms of social cooperation, anchored in national and group culture, which make up social capital (Fukuyama, 2000). Contemporary research reveals direct relationships between trust and other processes in the economic environment. Transparency of economic and public relations requires a minimum level of trust secured in interpersonal relations (Krannich, 2013, p. 55). It is important to note that trust is built on expectations of other people, therefore recognising these expectations is critical to developing this type of relationship that presupposes a comparable or related range of values and shared meanings. Many scientists, including F. Fukuyama (1997) have underscored the role of shared meanings and values as the foundation of trust. Shared values provide a framework for social standards that promote predictability and credibility, permitting complex cooperative efforts (Uslaner, 2002).

An important aspect of empirical experience for creating networks or cluster structures is the belief that trust can be built even between people from different organisational cultures or individuals who do not share any values other than their limited commercial goals (Huotari & Iivonen, 2005). Trust offers opportunities to reduce transaction costs, which are critical in the functioning of mechanisms where, on the one hand, all manner of particularisms and, on the other hand, an excess of regulations and procedures may disrupt both the cluster's very operation and the dominance of corporate and bureaucratic culture. Moreover, social capital, including its component known as organisational culture, with trust prominent among other cultural values, can regulate specific aspects of human behaviour in personal and inter-organisational relations to reduce the inevitable transaction costs within enterprises and among business partners (Krannich, 2013, p. 58; Putnam, 2000; Bourdieu, 1986; Coleman, 1988; Knack, 2002).

Organisation members (mainly managers) can strengthen and consolidate trust by building social capital and adapting new elements of organisational culture (Fukuyama, 2000). These relations can be formed both within and between cooperating organisations. Each trust-building element and the links among them should be intimately known and understood by managers. It is worth noting that in the business environment, many countries support the creation of industrial clusters, where companies can develop their skills to compete with global industry leaders (Kuei-Hsien, 2010, pp. 141–155; Knop & Stachowicz, 2013), among others by sharing resources, innovation opportunities, and knowledge transfer. Researchers are increas-

ingly demonstrating the importance of clusters in boosting a company’s competitive advantage as well as regional competitiveness. Since industrial clusters provide a unique setting for access to knowledge resources in a streamlined process of information absorption, organisational knowledge based on the use of trust is vital (Saxenian, 1994; Knop & Stachowicz, 2013; Chorób, 2019).

The reality of the market economy demonstrates that the price mechanism, which manifests itself largely as competition among firms, is accompanied by the emergence of cooperative relations between competitors. Coopetition, also known as co-opetition, as a new approach for controlling the behaviour of economic entities results from the symbiotic relationship of competition and cooperation that develops in specific industries or relationships between organisations (Jankowska, 2012, p. 54). The term combines the principles of cooperation and competition and is closely tied to cluster development. Although the notion in question first appeared in economic sciences in the 1980s, it is only now that it is gaining traction, along with the growing relevance of clusters for the development of a contemporary, innovative economy. The increasing importance of creative industries caused by the globalisation of markets reflects intensifying competition among the participants in globalising industries, more complex customer expectations, and a strong appreciation for intangible resources such as brands and know-how (Chorób, 2013).

The essence of coopetition is that enterprises strive to gain a competitive advantage thanks to their unique resources, competencies, and market position, while trying to integrate their strengths with those of their rivals, suppliers, customers, and other business partners. On the one hand, coopetition involves the joint use of competitive potential by coopetitor firms, and on the other, a constant fierce competition through cost leadership or differentiation of market shares, and stimulating technological changes in the industry. The ability to take advantage of this kind of relationship poses a considerable challenge (Jankowska, 2012, p. 58). Figure 1 shows the approach to coopetition proposed by Bengtsson et al. (2003).

		Relative position in the sector	
		<i>strong</i>	<i>weak</i>
Resource requirements outside	<i>strong</i>	Coopetition	Cooperation
	<i>weak</i>	Competition	Coexistence

**Figure 1. Coopetition as one of the types of relations between competitors**

Source: Bengtsson et al. 2003, pp. 3–4, as cited in Jankowska, 2012, p. 58.

Enterprises wishing to benefit from coopetition must recognise the importance of both competition and cooperation. In coopetitive relations, it is particularly important to create conditions conducive to fair cooperation and competition, and managing trust in business partners is an extremely valuable skill. The key challenge is to develop such management skills that

will allow one to combine these opposing strategies and protect the business secrets of each company.

### 3. Research method and material

The empirical study conducted in 2015 focused on innovative integration ties emerging in the agrifood industry in Podkarpackie Voivodship among the entrepreneurs-participants of four cluster initiatives (clusters) in the studied area. It covered all 99 members operating in these clusters, who were asked to complete a questionnaire and participate in an in-depth interview. The contacts and data for the survey were provided by representatives of institutions managing individual clusters. Those entrepreneurs-participants who declared their membership in more than one cluster were requested to complete one questionnaire. Nineteen entrepreneurs – cluster members refused or did not respond to the survey questions; in view of the above, the research findings are based on 80 correctly filled questionnaires, which constitute a representative research sample.

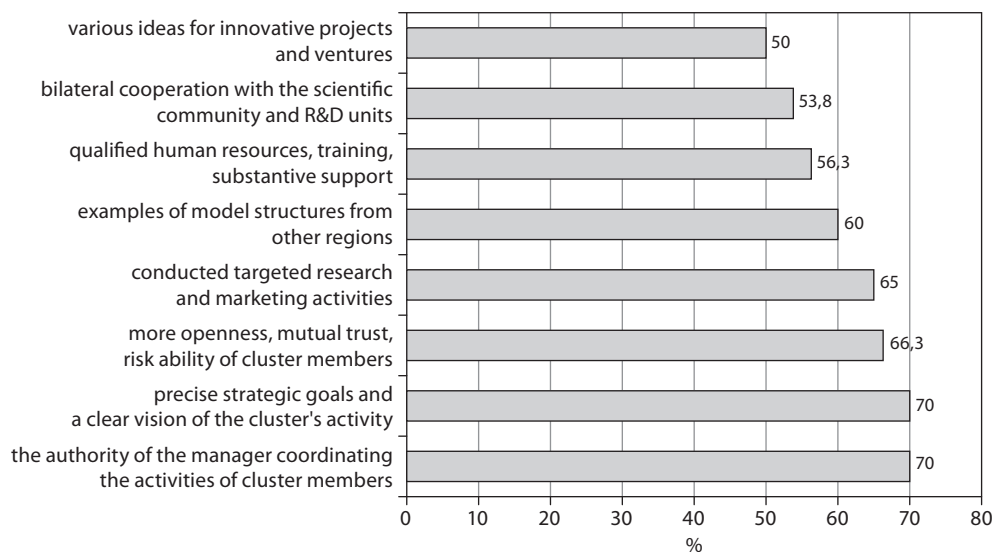
The choice of the survey as a research method was dictated by the fact that some data cannot be obtained in any other way. Admittedly, its major drawback is that it provides intersubjectively unverifiable information (Stachak, 1987, p. 157); as a result, in-depth interviews were conducted by individuals with appropriate experience, including personally by the author of this study.

In the following part, the author attempts to determine the relationship between the emergence of innovative integration links and selected variables that characterise the participating entities, such as organisational form, number of employees, duration of business operations, and net income. As is the case with other entities, a variety of external and internal stimulating and disintegrating factors that affect the development of innovative integration links have been considered. Furthermore, management in an integrated system is characterised by a higher degree of complexity, a higher level of risk, and more difficult tasks to complete than that in non-integrated entities.

### 4. Results and discussion

The idea of a cluster expands the concept of social capital by considering the mechanisms through which network relations in a given geographic location benefits individual businesses. These advantages derive from mutual trust and organisational interdependence, which are enhanced by ongoing encounters and awareness of shared interests in a given region. They strongly encourage the development of interactions that promote efficiency, stimulate innovation, and lead to the establishment of new enterprises. Efficient communication facilitates these processes, which, if managed properly (e.g. by using marketing communication tools), may stimulate the creation of even stronger ties among the cluster participants (Porter, 2001, pp. 246–248).

The research findings support the above-mentioned considerations in the context of the relevance of trust and cooperation for the establishment of innovative integration ties. Figure 2 shows the factors that entrepreneurs believe affect the formation and expansion of cluster structures.



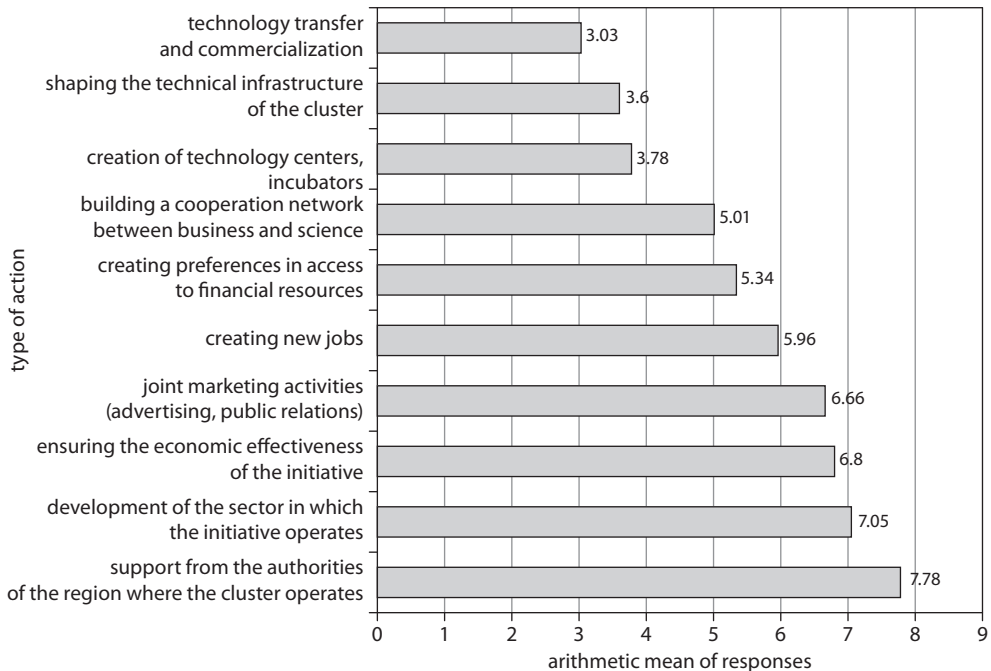
**Figure 2. Determinants of the development of cluster structures in the opinion of entrepreneurs**

Source: own study.

The data presented in Figure 2 clearly shows that according to the vast majority of the surveyed entrepreneurs, the key factors that contribute to initiating and developing clusters are: the authority of the coordinating manager, specific strategic goals and a clear vision for the cluster (70.0% of responses each). Given the topic at hand, the third item merits special attention: increased transparency, mutual trust, and the ability to take risks in business (indicated by 66.3% of the respondents). The survey participants also mentioned targeted research and marketing activities (65.0%) and examples of similar proven structures in other regions (60.0%) as factors that may contribute to the cluster's success. These were followed by qualified human resources, training, substantive support; cooperation with the scientific community, R&D units and ideas for the implementation of innovative projects and ventures.

Figure 3 lists the activities that respondents believe contribute the most and least to the formation of clusters, in order of frequency of responses (arithmetic mean).

This questionnaire item required respondents to score each of the variables on a scale of 1 (least important) to 10 (most important). According to the data in Figure 3, the most important factor is local government assistance in the region where the cluster operates (arithmetic mean 7.78). The development of the sector in which the cluster operates is the second most important factor (7.05), and the third one, ensuring the cluster's economic efficiency (6.80), closely followed by coordinated marketing operations such as advertising and public relations (arithmetic mean 6.66). The creation of new jobs is also noteworthy, since it reveals the entrepreneurs' investment in future stability. Entrepreneurs ranked the following as the least important for cluster development: creation of technology centres and incubators to cater for cluster needs; shaping the cluster's technical infrastructure; and technology transfer and commercialisation (arithmetic means 3.78, 3.60, and 3.03, respectively).



**Figure 3. Key cluster development activities according to entrepreneurs**

Source: own study.

Entrepreneurs were also asked if, apart from competition, there were any signs of cooperation between businesses within the cluster structure. In this case, cooperation – which encompasses both rivalry and collaboration and serves as the reason for the cluster's existence – becomes critical. The breakdown of responses was as follows: 62.5% said yes, 12.5% said no, and 25.0% did not know. This demonstrates that being a part of the cluster structure considerably promotes cooperation among the entities that make up the organisation.

Selected variables (i.e. organisational form, number of employees, duration of business operations, and net revenue), which in combination with other features may contribute to the creation or strengthening of existing innovative integration links, are presented in Table 1 in order to assess the relationship between the development of innovative integration links and certain characteristics of entities involved in cluster initiatives. Associations between individual factors (identified in 2015) were sought using Pearson's  $\chi^2$  test (significant at  $\alpha = 0.05$ ). The numerical values of these coefficients, which represent the strength of the association between the two features on nominal scales, are also included for comparison. The coefficients take values between 0 and 1. The closer this value is to unity, the stronger the association between the factors under consideration.

**Table 1. Relationships between selected characteristics of the surveyed participants in cluster initiatives (2015)**

Listed features degree of dependence between:	$\chi^2$	$\chi^2_{(\alpha;v)}$	$\chi^2 \geq \chi^2_{(\alpha;v)}$	Cramér's V	Pearson's CC
Organisational form of the company and signs of cooperation observed in the sector (apart from rivalry/competition) between companies – cluster members	13.593	7.815	Yes	0.4122	0.3811
Number of employees in the company and increase in competitiveness of the company – member of the cluster	20.021	7.815	Yes	0.5003	0.4474
Number of employees in the company and signs of cooperation between companies – cluster members observed in the sector (apart from rivalry/competition)	16.564	7.815	Yes	0.4550	0.4142
Duration of business operations and signs of cooperation observed in the sector (apart from rivalry/competition) between companies – cluster members	19.589	7.815	Yes	0.4948	0.4435
Company's net income from the sale of goods, products, services and financial operations and increase in the competitiveness of the company – member of the cluster	23.111	5.991	Yes	0.5375	0.4734
Company's net income from the sale of goods, products, services and financial operations and manifestations of cooperation between companies – cluster members observed in the sector (apart from rivalry/competition)	8.889	5.991	Yes	0.3333	0.3162

$\chi^2$  = Pearson's  $\chi^2$  test significant at  $\alpha = 0.05$

Source: own study based on research.

The strongest relationships, as determined by the analysis of Cramer's V and Pearson's coefficients shown in Table 1, were found between:

- the company's net income from the sale of goods, products, services and financial operations and the increase in competitiveness of the company participating in the cluster (0.54);
- the number of employees in the company and the increase in competitiveness of the company participating in the cluster (0.50);
- the duration of business operations and the manifestations of cooperation between companies – cluster members (0.49);
- the number of employees in the company and signs of cooperation between companies participating in the cluster (0.45);
- organisational form of the company and signs of cooperation between companies participating in the cluster (0.41);
- the company's net income from the sale of goods, products, services and financial operations and the signs of cooperation between companies participating in the cluster (0.33).

The study found that, apart from rivalry/competition, manifestations of cooperation among companies participating in clusters correlate with all four above-mentioned characteristics, the only difference being the strength of the relationship between features expressed in nominal



terms. This supports the conclusion that one-person enterprises, those employing up to nine people, those in business for up to 20 years, and those with a net income of up to PLN 27 million are the most inclined to engage in this type of cooperation. Another association was discovered with regard to two features of these businesses, namely the number of employees and net income. The strength of this association varies only in terms of the increased competitiveness of the enterprise participating in the cluster. In this case, it demonstrates that firms with a net income of up to PLN 27 million and employing up to nine people are the most affected by the increase in their own competitiveness as a result of entering the cluster.

The positive effect of clusters on the economy's innovation level is an extremely important observation that has already been emphasised several times. The tendency may be strengthened, among other things, by encouraging cooperation and fostering mutual trust among the individual members of the triple helix. According to 72.5% of entrepreneurs who participate in cluster initiatives, these arrangements considerably boost the level of innovation in the economy at large. Only 13.7% expressed the opposite view, while 13.8% were unsure. The study's findings support the claim that properly operating clusters have a major positive impact on both the competitiveness of their member entities and the level of innovation in the economy.

As other authors have repeatedly stated, the role of trust grows in uncertain and volatile times such as the current economic reality; thus, it appears that it is one of the fundamental qualities that should characterise the culture of contemporary organisations, both in their internal relations and in their institutional dimension (Krot & Lewicka, 2016, p. 68). The standards and values associated with a trust-based organisation should be universally applicable. In this context, one might even speak of a culture of trust, which Sztompka (2007) defines as "normative rules widely adopted by a community that demand trust and credibility, enforced by social sanctions". Embracing shared values, treating people with respect and as partners, openness to change, as well as a willingness to learn and share knowledge are all characteristics of a culture of trust.

Trust is an incredibly valuable asset in today's corporate environment. As a result, many scholars emphasise the importance of consciously developing a trust-based organisational culture in order to maintain the position of an enterprise focused on competing through innovation, in order to fully exploit its human potential, achieve higher efficiency and competitive advantage. A climate conducive to innovation requires deeply rooted and unambiguously communicated values and norms, as well as the tools to support them, such as incentive systems and organisational support for innovators, codes of ethics, training in maintaining good relations and encouraging cooperation, as well as procedures for resolving conflicts or disputes (Chorób, 2019, p. 158).

Trust is the main product of the norms of social interaction anchored in national and group culture, that make up social capital (Fukuyama, 2000). Contemporary research reveals direct relationships between trust and other processes in the economic environment. Transparency of economic and public relations requires a minimum level of trust anchored in interpersonal relations (Krannich, 2013; Chorób & Chorób, 2015), whereas shared values provide a reference framework for social norms that promote predictability and credibility, and thus provide an opportunity for complex cooperative action.

The cluster, as A. Rundo rightly points out, enables a continuous improvement of workforce qualifications and skills, which rank among the key competitiveness factors and inevitably lead to better opportunities for achieving a higher degree of innovation. Close cooperation, a high degree of trust, and numerous interactions constitute a perfect environment for new ideas,

a microclimate conducive to innovation that can be tested and implemented at a lower cost. Companies enter into relationships with partners and suppliers within the cluster, which is another factor promoting process efficiency as well as cooperation (Rundo, 2013, pp. 57–58).

The empirical research findings discussed above demonstrate that mutual trust is required to develop friendly and lasting relations amongst cluster members, without which the cluster would be nothing more than an empty shell. Overcoming the mental barrier of distrust towards business partners is critical to the overall success of the endeavour. It is worth emphasising, as the author of this study affirms, that cluster structures may offer a remedy for Poland's persistent trust deficit and the best illustration of how cooperation based on mutual respect simply pays off (Wierzyński, 2014).

## 5. Conclusions

The literature review and research findings demonstrate that trust plays a key role in many organisational processes and phenomena, having a substantial impact on the outcomes and accomplishment of the set goals. One of these goals is to build a strong competitive advantage by consistently deploying innovations. Thus innovation is the primary focus of business activity, which is substantially affected by its membership in a cluster, a system that enables companies to take advantage of a wide variety of growth opportunities.

The cluster organisation permits continuous improvement of workforce qualifications and skills, which is an essential component of its competitive advantage and leads to increased levels of innovation. Close cooperation, a high degree of trust, and numerous interactions offer an ideal environment for new ideas, offering a microclimate conducive to innovations that can be evaluated and implemented at a lower cost. Companies seek partners and suppliers within the cluster, which is another factor that improves process efficiency and promotes cooperation.

Managing a cluster structure also increases the demand for building trust among its members as the value of participation in a cluster – apart from the direct and indirect acquisition of knowledge resulting from engagement with other entities – is mostly based on trust. As a result, overcoming mental barriers caused by a lack of trust in market actors' reputations, corporate cultures, or even integrity is critical to the emergence and growth of cluster structures. Trust, as a major component of social capital, serves as the cornerstone of every network structure built on cooperation.

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### About Author/s

**Roman Chorób\***, PhD, Associate Professor  
 Institute of Economics and Finance  
 University of Rzeszow  
 ul. T. Rejtana 16 C, 35-959 Rzeszów, Poland  
 e-mail: rchorob@ur.edu.pl  
 ORCID: 0000-0003-2045-6251  
 \*Corresponding author.

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### Conflict of Interest

The author declares that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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