

THE ROLE OF INTER-ORGANISATIONAL RELATIONSHIPS IN ENHANCING BUSINESS RESILIENCE AND ACHIEVING ECONOMIES OF SCALE

Sylwia ŁĘGOWIK-ŚWIĄCIK

Faculty of Management, Czestochowa University of Technology; s.legowik-swiacik@pcz.pl,
ORCID: 0000-0002-3963-9499

Purpose: The purpose of the research is to understand and assess inter-organisational relationships in the context of increasing business resilience and achieving economies of scale, as well as to verify the proposed hypothesis.

Design/methodology/approach: Based on a literature review, the strength and direction of the monotonic relationship between two variables were measured using Kendall's rank correlation and the Kruskal-Wallis test. The empirical research was conducted on a sample of 349 enterprises.

Findings: The research findings suggest a strong relationship between increasing business resilience and generating economies of scale, achieved through inter-organisational relationships in business management.

Research limitations/implications: The future direction of research on understanding inter-organisational relationships should focus on explaining which mechanisms for creating these relationships will contribute to increasing the transfer of knowledge and technology, and how these relationships can help businesses respond to changes in the market environment.

Practical implications: A clear implication of the conducted research is that the creation of inter-organisational relationships not only enables an increase in flexibility and economies of scale, but also facilitates the sharing of resources, knowledge, and technologies, which allows for better adaptation to dynamic market conditions.

Social implications: Research on the creation of inter-organisational relationships helps to understand how collaboration between different market partners can improve resilience and achieve economies of scale. Inter-organisational relationships between companies will contribute to the creation of a dynamic and competitive market, which fosters the growth of social well-being.

Originality/value: This paper contributes to research on understanding the mutual connections and inter-organisational relationships which is becoming the cornerstone of effective and resilient functioning of modern enterprises. The main contribution of this paper is its presentation of strong empirical evidence supporting the significance of inter-organisational relationships in the process of increasing business resilience, facilitated by generating economies of scale within companies.

Keywords: enterprise management, inter-organisational relationships, business resilience, economies of scale.

Category of the paper: Research paper.

1. Introduction

Operating a business in changing environmental conditions requires selecting appropriate company management tools. In this context, inter-organisational relationships play a crucial role in achieving and maintaining a competitive advantage by enhancing the effectiveness of business management processes (Jap, 2001). The main advantage of inter-organisational relationships lies in their synergy, which is both incremental and flexible (Woźniak-Sobczak, 2013), allowing for the construction of a resilient architecture for businesses (Brzóska, Jelonek, 2015). Therefore, the flexible mechanisms of cooperation created within inter-organisational relationships enable market partners to focus their efforts on achieving the desired outcomes in order to maintain and enhance their competitive position in the market (Rossignoli et al., 2015). In contrast, the paper highlights the positive impact of establishing inter-organisational relationships in achieving economies of scale (Rose, 2006). It is the element of inter-organisational relationships that enables partners to achieve synergy in the configuration of the value chain (Kramarz, 2013). It is worth noting that the role of inter-organisational relationships is to create conditions for deriving benefits from collaboration opportunities and leveraging the diverse resources and competencies of partners to deliver products tailored to customer needs (Zhong et al., 2017). In this context, the purpose of the paper is to understand and assess inter-organisational relationships in terms of increasing business resilience and achieving economies of scale (Sydow et al., 2017). Thus stated, the research purpose aligns with hypothesis H1 which states that in businesses, inter-organisational relationships enable the increase of business resilience, thereby fostering the generation of economies of scale. The research methods applied to achieve the purpose include critical literature review, questionnaire survey, and analysis using Kendall's rank correlation and the Kruskal-Wallis test.

The importance of inter-organisational relationships in business management

Inter-organisational relationships are a result of adaptation to the turbulent conditions of the environment surrounding enterprises. In this context, inter-organisational relationships enable the creation of a symbiosis through collaboration with market partners (de Wit, Meyer, 2007), aimed at generating benefits for all partners who voluntarily participate in these relationships. Inter-organisational relationships lead to mutual dependence between autonomously functioning enterprises (Czakon, 2010). Furthermore, inter-organisational relationships act as a driver for creating value for companies that build the foundations for the functioning of networked organisations.

Establishing inter-organisational relationships is often a consequence of specific decisions made by the management teams of companies. Therefore, the rationale for creating inter-organisational relationships is often dictated by the strategic situation of individual companies and their needs (Ferguson, 2018). These decisions stem from the belief that inter-organisational relationships enable increased efficiency, making processes more streamlined and effective

(Palmatier et al., 2007). Consequently, inter-organisational relationships allow for the shaping of innovative cooperation models which make it possible to generate economies of scale and create added value through participation in a particular inter-organisational relationship (Rossignoli, Ricciardi, 2014). This means that a peculiar relational paradox arises, manifested in the possibility of achieving individual success through the mutual cooperation of different companies (Niemczyk, 2006). This stems from the fact that partners forming inter-organisational relationships simultaneously adopt both competitive and cooperative behaviours (Yang, 2022), leading to the achievement of above-average profitability by the company (Olesiński, 2010). As a result, the reasons for building inter-organisational relationships determine the type of created value.

Inter-organisational relationships enable the identification of dependencies between the resources and competencies of each partner (Jap, 2001), which serves as the basis for their creation. Therefore, the multidimensional nature of inter-organisational relationships ensures that both partners and customers of companies operating within these relationships can participate in the increased added value (Dyduch, 2016). They benefit from economies of scale and increase the resilience of their operations through the involvement of resources belonging to the partners in inter-organisational relationships (Rossignoli et al., 2015). This line of reasoning leads to the assumption that if inter-organisational relationships enable the increase of business resilience (Schilke, Cook, 2013), then it can be expected that these same relationships will foster the generation of economies of scale. Therefore, considering the current state of research and experience in understanding inter-organisational relationships, the following hypothesis is formulated:

H1: In businesses, inter-organisational relationships enable the increase of business resilience, thereby fostering the generation of economies of scale.

The cognitive gap regarding the understanding of inter-organisational relationships and their role in business management justifies the hypothesis and determines the purpose of this paper, which is to understand and assess inter-organisational relationships in the context of increasing business resilience and achieving economies of scale, as well as to verify the stated hypothesis. The expansion and deepening of the understanding of the conditions that create inter-organisational relationships will serve as the foundation for drawing conclusions related to the stated hypothesis.

2. Materials and methods

The direct research was quantitative in nature. The population of surveyed companies consisted of 400 micro, small, medium, and large enterprises. The sample selection was purposive. 349 companies operating in Poland were selected for the research after verifying the

database. When considering the structure of the sample, it should be noted that micro enterprises accounted for the largest share (68%). The majority of respondents were top management members (71%). Services were the predominant business profile (73%).

The questionnaire survey was conducted using the Computer Assisted Telephone Interview (CATI) technique (Hair et al., 2014). The CATI method allowed for direct recording of responses by the interviewer. The CATI system ensured the standardisation of the interview process, allowing for automatic switching between questions depending on the respondent's answers, thereby eliminating errors associated with manual data recording. Thanks to computer support, the questions were asked in a fixed order, minimising the impact of interviewer subjectivity and ensuring the comparability of the results. Data was recorded directly during the conversation, reducing the time needed for later data entry and speeding up the analysis of results. Compared to face-to-face interviews, conducting a telephone survey using CATI is a less costly solution, making it attractive for large samples. Respondents provided answers using a five-point Likert scale, where 1 meant "strongly disagree" and 5 meant "strongly agree".

A limitation of the CATI method is the short conversation time, as phone calls are time-limited, forcing a shorter questionnaire and possibly limiting the depth of the information gathered. Additionally, it should be noted that the lack of non-verbal communication makes it difficult to observe non-verbal cues which could provide additional insights into the respondent's reactions. Moreover, respondents may be less willing to participate in a telephone survey, which can lead to lower response rates and potential selection bias.

The purpose of the research on the functioning of the surveyed logistics companies was to understand and assess inter-organisational relationships in the context of increasing business resilience and achieving economies of scale. Additionally, the hypothesis H1 was verified which states that *in businesses, inter-organisational relationships enable the increase of business resilience (A1), thereby fostering the generation of economies of scale (A2)*.

The research procedure was divided into two main stages. In the first stage of empirical research, frequency analysis was applied to understand and assess inter-organisational relationships in the context of increasing business resilience and achieving economies of scale. Frequency analysis is a tool for preliminary data analysis. It allows for presenting the distribution of respondents' answers and serves as a basis for further research (Kończak, 2014).

In the second stage of the empirical research, the strength and direction of the monotonic relationship between two variables were measured using Kendall's rank correlation and the Kruskal–Wallis test to verify the research hypothesis. The use of these methods enables rank-based analysis, which helps minimise the influence of extreme observations. The Kendall rank correlation coefficient ranges from [-1 to 1], making it easier to interpret the strength and direction of the relationship. The Kruskal-Wallis test is used to assess differences in the median (or distribution) of the studied variables. Despite their many advantages, both Kendall's correlation and the Kruskal-Wallis test have limitations, particularly regarding the interpretation of results and the impact of connections in the data.

3. Results

In the first stage of empirical research, frequency analysis was carried out to understand and assess inter-organisational relationships in the context of increasing business resilience and achieving economies of scale. This approach allowed for the examination of trends in the creation of inter-organisational relationships aimed at building business resilience and generating economies of scale. Figure 1 presents the frequency of respondents' answers to the question regarding mutual connections and relationships with market partners that contribute to increasing the resilience of business operations.

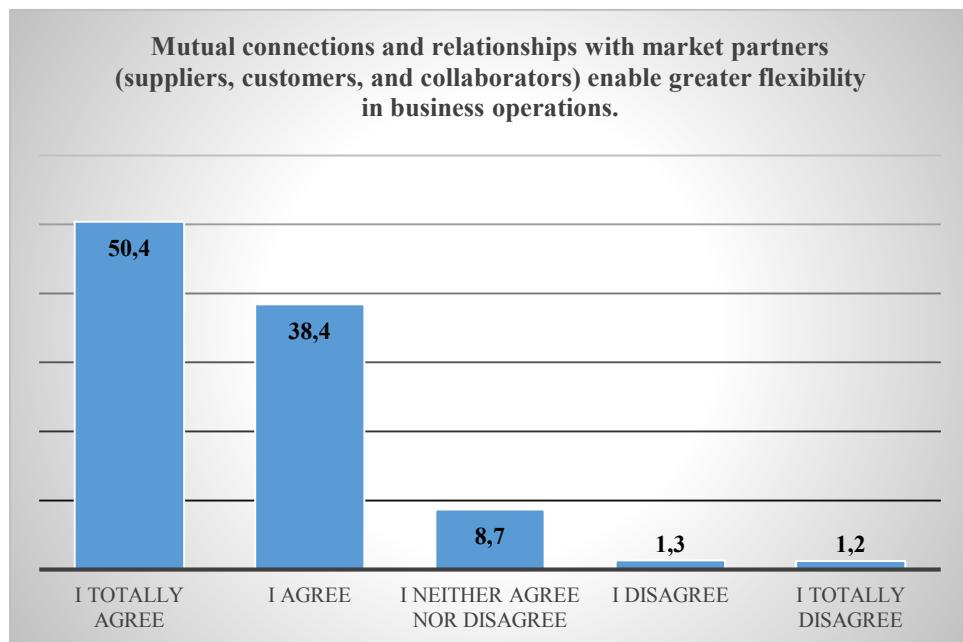


Figure 1. Inter-organisational relationships in building business resilience.

Source: own work.

Based on the research results presented in Figure 1, it can be observed that over 88% of respondents declared that they strongly agree or agree with the statement that cooperation with market partners significantly contributes to increasing the resilience of business operations in their company. This may indicate that the establishment of inter-organisational relationships in the surveyed companies translates into long-term cooperation between the company and its suppliers, customers, and collaborators. The surveyed companies have greater opportunities to create flexible offers through inter-organisational relationships. This approach allows for the conclusion of long-term contracts that enable companies to adapt to changing market conditions without the need to renegotiate existing agreements. Inter-organisational relationships thus become a key element in increasing the resilience of business operations. Furthermore, companies can gain access to the latest technologies, raw materials, information, and products by building strong partnerships. According to 8.7% of respondents, they have no opinion on whether cooperation with market partners significantly contributes to specialisation in their

company. This may indicate that this group of respondents lacks knowledge on the matter. On the other hand, 2.5% of respondents stated that their company does not collaborate with market partners in increasing the resilience of its business operations. This may be due to the stability of inter-organisational relationships and the lack of need for changes in those relationships. Figure 2 presents inter-organisational relationships in generating economies of scale.

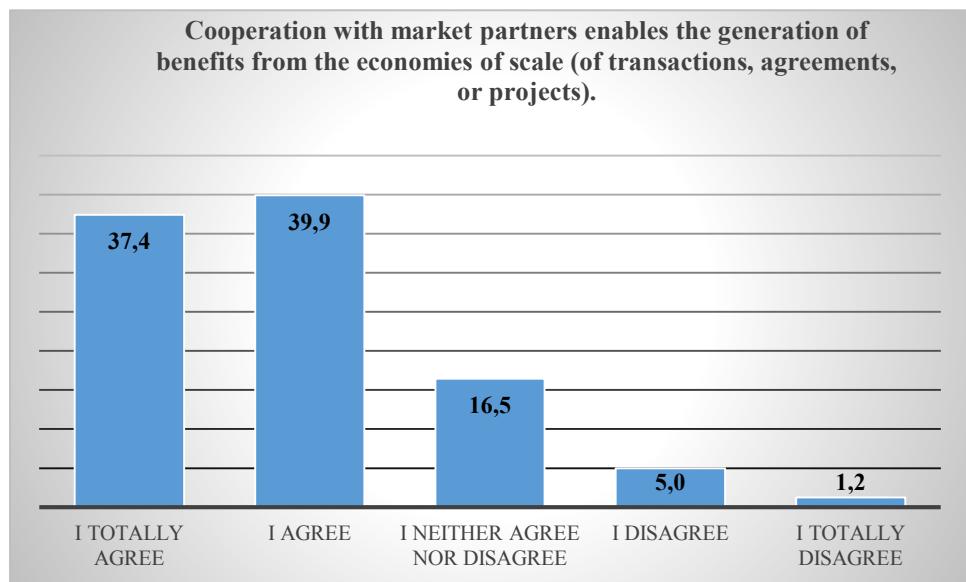


Figure 2. Inter-organisational relationships in generating economies of scale.

Source: own work.

Based on the research results presented in Figure 2, it can be stated that over 77% of respondents declared that they strongly agree or agree with the statement that cooperation with market partners enables the generation of economies of scale in their company. This may indicate that cooperation with market partners in these companies allows for obtaining better prices from suppliers through economies of scale by combining orders. Furthermore, the surveyed companies can share resources such as warehouses, means of transport, or sales platforms, which helps to reduce unit costs. It should be noted that 16.5% of respondents stated "neither agree nor disagree". It is possible that this group of respondents does not focus on cooperation with market partners to generate economies of scale. On the other hand, 6.2% of respondents disagreed or strongly disagreed with the above statement. This may be due to the lack of relationships with market partners in this group of respondents, specifically in terms of generating economies of scale.

In the second stage of the empirical research, Kendall's rank correlation analysis and the Kruskal-Wallis test were conducted to understand and assess the relationships concerning the increase in business resilience and the generation of economies of scale as part of inter-organisational cooperation.

Table 1.

The Kendall's rank correlation coefficient between respondents' answers to questions regarding mutual connections and relationships with market partners that allow for greater business resilience, and answers related to cooperation with market partners enabling the generation of economies of scale

CORRELATION MATRIX	The mutual connections and relationships with market partners (suppliers, customers, and collaborators) allow for greater resilience in business operations
(transactions, contracts, projects)	0.83

Source: Own work based on empirical research.

The Kendall's rank correlation coefficient is 0.83 (in Table 1), indicating a very strong, positive relationship between the evaluation of mutual connections and relationships with market partners that allow for greater resilience in business operations, and the responses regarding cooperation with market partners that enables the generation of economies of scale. This may indicate that respondents who rate the positive impact of relationships with partners on resilience higher tend to also rate the economies of scale higher. No statistically significant differences were observed when comparing the distributions of answers for both questions using the Kruskal-Wallis test, suggesting that the distributions of ratings for both questions are very similar.

Based on the research results presented in Table 1, it can be concluded that inter-organisational relationships are focused on maintaining good relations and cooperation with suppliers in the surveyed companies. This allows companies to better adapt to changing market conditions, enabling them to maintain a continuous supply chain while minimising the risk of supply disruptions, which contributes to increasing resilience. Collaboration with customers should contribute to a quicker response to customer needs and the adjustment of product offerings to meet current market demands. Meanwhile, cooperation with collaborators may result in improved access to both material and immaterial resources, leading to an increase in business resilience.

The creation of inter-organisational relationships in terms of increasing the business resilience can be conducive to generating economies of scale. By creating joint research and development projects, enterprises can, on one hand, share costs, and on the other hand, benefit from resource sharing, accelerating the development of new products and technologies. Moreover, inter-organisational cooperation on marketing or sales strategies with key customers can lead to an expansion of business scope and entry into new markets. This means that inter-organisational relationships and integrated processes can lead to increased operational efficiency and lower business costs.

4. Discussion

This paper is based on the hypothesis that there is a relationship between increasing the business resilience which, in turn, is conducive to generating economies of scale resulting from inter-organisational relationships between companies. The results of the conducted research suggest that the formation of inter-organisational relationships is an important area for enhancing the resilience of modern enterprises that strive to acquire and maintain their market position. Thus, cooperation with suppliers, customers, and collaborators enables enterprises to better adapt to changing market conditions, share resources, risks, and competencies, which translates into increased competitiveness and the ability to generate value. The research findings balance the importance of the relationship between increasing business resilience and achieving economies of scale which can be gained through the establishment of inter-organisational relationships. The fact that there is a significant relationship between increasing business flexibility and generating economies of scale based on inter-organisational relationships confirms their importance in business management.

In summary, it is important to note that in the current rapidly changing economic situation, resilience and the ability to seize development opportunities have become not only an asset but a necessity. Many entrepreneurs highlight strategic relationships with market partners as a tool for enhancing the adaptive capacity of enterprises, enabling them to effectively respond to the growing demands of customers.

5. Conclusions and summary

To conclude the considerations presented in this paper, it is important to emphasise that, in the context of the changing conditions of business operations, inter-organisational relationships have become a key factor in shaping the competitiveness of enterprises. Mutual connections with suppliers, customers, and collaborators can serve as a source of benefits, such as increased operational resilience and the utilisation of economies of scale.

The main contribution of this paper is its presentation of strong empirical evidence supporting the significance of inter-organisational relationships in the process of increasing business resilience, facilitated by generating economies of scale within companies. Mutual connections and inter-organisational relationships are becoming the cornerstone of effective and resilient functioning of modern enterprises. In an era where the pace of change and the level of uncertainty are higher than ever, the ability to respond quickly and adapt has become a key factor for success. Companies that invest in building strong and lasting relationships with market partners gain a strategic advantage, enabling them not only to survive but also to thrive

in a complex and dynamically changing environment. Furthermore, inter-organisational relationships can facilitate enterprises in achieving economies of scale and increasing resilience.

In summary, inter-organisational relationships are a key element in the process of building competitive advantage through shared access to customers, suppliers, and collaborators. The creation of inter-organisational relationships is particularly significant for micro-enterprises, which have weaker bargaining power in the market. Collaboration with market partners enables them not only to increase the resilience of their operations but also to generate economies of scale. However, caution should be exercised when generalising the research findings, as a broader analysis would be necessary to examine differences between other cases.

References

1. Brzóska, J., Jelonek, D. (2015). Koncepcja pomiaru wartości tworzonej przez aplikacje modeli biznesu: podstawy teoretyczne i studium przypadku. *Przegląd Organizacji*, No. 9, pp. 48-55. <https://doi.org/10.5604/01.3001.0011.1727>
2. Czakon, W. (2010). Model biznesu operatora a orkiestracja sieci. In: J. Pyka (Eds.), *Nowoczesność przemysłu i usług. Modele, metody i narzędzia zarządzania organizacjami* (pp. 23-30). Katowice: TNOiK.
3. de Wit, B., Meyer, R. (2007). *Synteza strategii. Tworzenie przewagi konkurencyjnej przez analizowanie paradoksów*. Warszawa: PWE, p. 243.
4. Dyduch, W. (2016). Value Creation and Capture in Entrepreneurial Organizations. *European Management Studies*, 14(3(62)), pp. 11-23. <https://doi.org/10.2478/ems-2016-0010>
5. Ferguson, M.A. (2018). Building theory in public relations: Interorganizational relationships as a public relations paradigm. *Journal of public relations research*, 30(4), pp. 164-178. <https://doi.org/10.1080/1062726X.2018.1554646>
6. Hair, J.F. et al. (2014). *Multivariate Data Analysis*, 7th Ed. Upper Saddle: Pearson Education, pp. 282-288.
7. Jap, S.D. (2001). "Pie sharing" in complex collaboration contexts. *Journal of Marketing Research*, 38(1), pp. 86-99. <https://doi.org/10.1509/jmkr.38.1.86>
8. Jap, S.D. (2001). Perspectives on joint competitive advantages in buyer-supplier relationships. *International Journal of Research in Marketing*, 18(1-2), pp. 19-35. [https://doi.org/10.1016/S0167-8116\(00\)00012-4](https://doi.org/10.1016/S0167-8116(00)00012-4)
9. Kończak, G. (2014). O testowaniu istotności współczynników korelacji cząstkowej i wielorakiej dla wielowymiarowych tablic wielodzielczych. *Studia Ekonomiczne*, No. 189. Uniwersytet Ekonomiczny w Katowicach, pp. 40-48.

10. Kramarz, M. (2013). Skuteczność flagowego przedsiębiorstwa sieci dystrybucji wyrobów hutniczych. *Zeszyty Naukowe Politechniki Śląskiej, Organizacja i Zarządzanie*, Iss. 63, pp. 201-215.
11. Niemczyk, J. (2006). *Wyróżniki, budowa i zachowania strategiczne układów outsourcingowych*. Wrocław: Akademia Ekonomiczna we Wrocławiu, pp. 25-29.
12. Olesiński, Z. (2010). *Zarządzanie relacjami międzyorganizacyjnymi*. Warszawa: C.H. Beck, p. 67.
13. Palmatier, R.W., Dant, R.P., Grewal, D. (2007). A comparative longitudinal analysis of theoretical perspectives of interorganizational relationship performance. *Journal of marketing*, 71(4), pp. 172-194. <https://doi.org/10.1509/jm.2007.71.4.172>
14. Rose, A.K. (2006). Size really doesn't matter: In search of a national scale effect. *Journal of the Japanese and international Economies*, 20(4), pp. 482-507. <https://doi.org/10.1016/j.jjie.2006.08.005>
15. Rossignoli, C., Ricciardi, F. (2014). *Inter-organizational relationships: towards a dynamic model for understanding business network performance*. Springer.
16. Rossignoli, C., Ricciardi, F., Rossignoli, C., Ricciardi, F. (2015). Theories Explaining Inter-Organizational Relationships in Terms of Strategic Challenges. In: C. Rossignoli, F. Ricciardi (Eds.), *Inter-Organizational Relationships: Towards a Dynamic Model for Understanding Business Network Performance* (pp. 59-74). Cham: Springer.
17. Schilke, O., Cook, K.S. (2013). A cross-level process theory of trust development in interorganizational relationships. *Strategic organization*, 11(3), pp. 281-303. <https://doi.org/10.1177/1476127013481298>
18. Sydow, J., Schüßler, E., Müller-Seitz, G. (2017). *Managing inter-organizational relations: Debates and cases*. Bloomsbury Publishing.
19. Woźniak-Sobczak, B. (2013). Wykorzystanie organizacji sieciowej w kreowaniu wartości. In: W. Rudny, B. Woźniak-Sobczak (Eds.), *Procesy kreowania wartości w strukturach sieciowych* (p. 184). Katowice: Uniwersytet Ekonomiczny w Katowicach.
20. Yang, X., Wang, L., Zhu, F., Müller, R. (2022). Prior and governed stakeholder relationships: The key to resilience of inter-organizational projects. *International Journal of Project Management*, 40(1), pp. 64-75. <https://doi.org/10.1016/j.ijproman.2021.10.003>
21. Zhong, W., Su, C., Peng, J., Yang, Z. (2017). Trust in interorganizational relationships: A meta-analytic integration. *Journal of management*, 43(4), pp. 1050-1075. <https://doi.org/10.1177/0149206316688249>