

RELATIONAL CAPITAL FOR MANAGING THE UNCERTAINTY OF THE ENVIRONMENT

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Abstract:

The article is an attempt to show the essence of relational capital in the context of the environmental uncertainty. The problem is all the more important that, on the one hand, the uncertainty is a challenge for representatives of management sciences, on the other hand, it is an immanent feature of any business activity. There is a necessity to search for a remedy for the lack of information needed to make decisions and the inability to predict effects of the decisions taken. The aim of this article is to present the current theoretical achievements in terms of the essence of relational capital in the context of the uncertainty of the environment. The article is divided into three parts. The first of them is devoted to the essence of the environmental uncertainty. The second part concerns the nature of relational capital from the perspective of the resource approach. The third part is an attempt to present the essence of relational capital in the context of the environmental uncertainty. There are indicated capabilities of managing the uncertainty of the environment, which can be achieved through relational capital. The literature shows the deficit of scientific research (theoretical and empirical) referring to relational capital in the context of the uncertainty. Moreover, the existing acquis comprises interesting cognitive gaps which, when filled in, should contribute to a deeper understanding of relational capital versus the uncertainty of the environment - which is going to be the subject of the author's further research.

Keywords:

relational capital, uncertainty, environment



INTRODUCTION

Nowadays, the changes taking place in the goods and services market make the organisation's capacity to react swiftly to changes in its environment become one of the main factors of the effective functioning. In addition, the uncertainty of the environment is an integral feature of the modern economy. This results from the turbulence and dynamic development of the environment, its violence, frequency, intensity, dynamism and instability. All these factors cause that today's organisations do not constitute a specific continuum of the present reality. Continuous changes are made, resulting in the acceleration and intensification of the environmental influence on the organisation. This implies an increase in the stakeholders' demands and expectations towards the organisation, the shortening products and technologies life cycles. Thus, organisations must seek ways and undertake projects which enable them to reduce the uncertainty of their actions.

In the literature it is pointed out that the answer to the growing environmental uncertainty can be to maintain connections between an organisation and partners in its surroundings. As a consequence, the key events occurring in the organisation become more innovative, novel as well as less expensive. For many organisations the cooperation with the environment is the only way to provide the chance for the survival in a turbulent environment. Establishing and maintaining relationships with customers, suppliers, employees and other stakeholders in the closer environment may prove helpful in order to survive, achieve a competitive advantage and success.

The article is written from the perspective of the resource approach. Its aim is to present current theoretical achievements in terms of the essence of relational capital in the context of the uncertainty of the environment. The article is divided into three parts. The first of them is devoted to the essence of the uncertainty of the environment. This part has a character of the literature analyses on the contemporary organisation's environment. The second part concerns the nature of relational capital from the perspective of the resource approach. The third part is an attempt to present the essence of relational capital in the context of the environmental uncertainty. There are indicated capabilities of managing the environmental uncertainty, which can be achieved through relational capital. The literature shows the deficit of scientific research (theoretical and empirical) that concerns relational capital in the context of the uncertainty. Moreover, the existing acquis comprises interesting cognitive gaps which, when filled in, should contribute to a deeper understanding of relational capital versus the environmental uncertainty - which is going to be the subject of the author's further research.

1. THE ESSENCE OF THE UNCERTAINTY OF THE ENVIRONMENT

The uncertainty is defined variously. It is indicated that it is a condition in which the future possible alternatives and opportunities of their occurrence are not known. This is a situation where one cannot determine what elements it consists of and what their value is or what the probability of their occurrence is. This situation usually applies to

issues that did not appear in the past and are characterised by a high degree of complexity¹.

This indicates that uncertainty as a cognitive category manifests itself in gaps, shortages and the lack of information necessary to make decisions, the impossibility to predict the effects of decisions and, finally, the inability to assess the impact of events occurring in the environment. Thus, the uncertainty is the result of insufficient information conditioned by the context of the increasing complexity and dynamics of the environment. However, the uncertainty is not only the lack of information. Funtowicz and Ravetz prove that it may indicate a situation in which knowledge is available, but it is inaccurate, fallback or ignored. Therefore, it can be shown that the environmental uncertainty has to do with the limited, inconsistent knowledge.

The literature indicates that the uncertainty - in the face of the environmental turbulence, the complexity of the organisation, constant changes - becomes an inherent feature of any business activity². It concerns several levels. Firstly, there is the difficulty in predicting the future. Secondly, the uncertainty is reflected in the development of several alternative scenarios for defining the future and determining the degree of likelihood of the occurrence of each of them. Thirdly, the inability to establish the range of possible events in the future. Fourth, the difficulty how to forecast the behaviour of the environment arises.

The uncertainty results from the dynamism and diversity of the organisation's environment. Its source is the external environment - the surrounding of the organisation - that in a continuous and dynamic manner can generate market needs and subordinate its operating conditions. This raises issues of the diversity, increasingly shorter product life cycles, technology, competitiveness, over-liquidity of global financial markets³. It is associated with the lack of access to sufficient information.

This indicates that the uncertainty is an uncomfortable state for organisations' management bodies. They face up to difficulties in predicting and responding to changes. They do not know how to handle a particular situation. The uncertainty in the environment affects the decision-making uncertainty reflected by anticipating the future or the accurate recognition of the present. It should be emphasised that the effectiveness and efficiency of the organisation depend on the rapidity and methods of its responding to varying environment conditions. They are constantly requested speed, the ability to identify opportunities arising in the environment, updating and adapting business models, quick development of new products and penetrating new markets, providing the highest level of products and services, ongoing mobilisation and readiness to apply any changes, configuration and reconfiguration of resources (Table 1).

¹ L. Pasieczny, *Encyklopedia organizacji i zarządzania*, PWE, Warsaw 1981.

² S. L. Brown, K. M. Eisenhardt, *Competing on the Edge: Strategy as Structured Chaos*, Harvard Business School Press, Boston 1998.

³ A. Czaplą, *Wdrażanie procesów zarządzania wiedzą w kontekście efektywnego przywództwa*, [in:] W. Banka (ed.), *Wymiary przywództwa w organizacji w XXI w.*, Wydawnictwo Naukowe Novum, Płock 2004, p. 154.

Table 1. External and internal factors of the uncertainty of the environment

External factors	Internal factors
<ul style="list-style-type: none"> - Market uncertainty - Legal and institutional uncertainty - Social and political uncertainty - Uncertainty of recipients' acceptance 	<ul style="list-style-type: none"> - Technological uncertainty - Uncertainty in management - Decision-making uncertainty - Uncertainty of consequences - Uncertainty of information

The source: the author's own study

Organisations are put under the obligation to optimise the organisational activities, accept the inevitability of changes, which entails their affirmation and the focus on a creative approach to the possibilities inherent in the environment. This implies the need to create flexible and less formalised structures, strategies and coordination mechanisms⁴. In addition, the dynamically changing conditions, increased uncertainty of the environment cause that organisations are forced to observe and analyse their environment and skilfully, flexibly and efficiently respond to all emerging opportunities and threats.

In the face of changes and difficulties with making decisions, organisations seek solutions that would help them develop and succeed. Organisations are faced with challenges, because "any organisation itself does not have the diversity of resources required and cannot quickly enough generate them in the way of the limited development"⁵. It seems to be insufficient when the organisation relies on its own resources: "the thesis, that in a world of rapid change and hyper-competition an enterprise can hope to succeed by acting on its own, which a number of management concepts were based on, appears to be outdated today. It must be verified and concepts of the cooperation with many entities, including competitors, should be taken into account"⁶. The more the knowledge possessed by an organisation is diversified and comes from various sources, the greater possibilities of making changes are.⁷

According to the theory of an organisation's dependency on resources, any organisation is dependent on the resources that are held by third parties.⁸ The literature re-

⁴ *Relacje organizacyjne w naukach o zarządzaniu*, A. K. Koźmiński, D. Latusek-Jurczak (ed.), Wolters Kluwer, Warsaw 2014, p. 16.

⁵ Compare: J. Pfeffer, G. R. Salancik, *The external control of organizations: A resource dependence perspective*, Harper & Row, New York 1978; M. W. Peng, P. S. Heath, *The growth of the firm in planned economies in transition: institutions, organizations, and strategic choice*, [in:] "Academy of Management Journal", 1996, Vol. 21, No. 2, pp. 492-528.

⁶ Z. Dworzecki (ed.), *Przedsiębiorstwo kooperujące*, EuroExpert, Warsaw 2002, p. 5.

⁷ W. Czakon, R. Lenart, *Zdolność absorpcyjna wiedzy jako czynnik skuteczności międzyorganizacyjnego uczenia się*, [in:] "Prace i Materiały Wydziału Zarządzania Uniwersytetu Gdańskiego" 2011, No. 4(1), p. 221.

⁸ E. Stańczyk-Hugiet, *Paradygmat relacji – czy to nowa jakość w zarządzaniu?*, [in:] "Studia i Prace Kolegium Zarządzania i Finansów" 2012, No. 116, p. 165.

marks that permanent learning, especially learning from others, is a necessity given the high level of the uncertainty in the environment, its continuous change and high risk. The ability to design relationships with external stakeholders provides an organisation with access to resources as well as fosters the creation of new values and links, the use of market and technological opportunities and mitigating the impact of randomly emerging threats. The researchers therefore suggest that the greater the uncertainty of the environment is, the greater the likelihood that the organisation will rely on resources held by other organisations. R. Krupski states that "continuity of operational processes is ensured mainly by matching resources and tasks related to the implementation of commitments (of internal and external customers)"⁹.

2. THE ESSENCE OF RELATIONAL CAPITAL

The very concept of capital is an economic category. It is defined through the prism of the advantages of the organisation's links and network of relationships with its internal and external stakeholders. The relationships that exist between the organisation and entities in its environment, interdependence and interaction between related parties are the essence of relational capital. The importance of a stakeholder is highlighted here, since the environment sets the trends, tastes, terms of cooperation, and thus indicates directions of the development. The surrounding sends signals which the organisation should systematically respond to and process for its own purposes.¹⁰

Relationships are built in the process of sequential, progressive development for a long period of time, based on mutual trust and commitment.¹¹ They also enable the combination of the basic knowledge with the knowledge of other organisations - that is the source of the relational rent. They also have a positive impact on forming new businesses, access to tangible and intangible resources, external sources of financing, knowledge, competences as well as the latest news. Above-average incomes in the form of the relational rent are received jointly by companies involved in a mutual exchange. This occurs due to seizing opportunities that result from configuring resources.¹² Organisations would not be able to generate those incomes separately as they are achievable only through the contribution by specific partners. In such an approach, exogenous relational resources are of key importance for building competitive advantage.

⁹ R. Krupski, *Redundancje zasobów i procedur jako panaceum na niepewność otoczenia*, [in:] "Organizacja i Kierowanie", 2012, No. 2 (151), p. 11.

¹⁰ A. Surmacz, *Klasyczne ujęcie czynników produkcji*, [in:] *Współczesne przedsiębiorstwo* J. Engelhardt (ed.), CeDeWu, Warsaw 2009, p. 51.

¹¹ P. S. Adler, S. Kwon, *Social capital: prospects for a new concept*, [in:] "Academy of Management Review", 2002, Vol. 27, No. 1, p. 17-40.

¹² S. Alvarez, J. Barney, *Organizing rent generation and appropriation: Toward a theory of the entrepreneurial firm*, [in:] "Journal of Business Venturing", 2004, No. 19 (5), p. 621-635

Relational capital does not occur in isolation. It is associated with human and structural capitals.¹³ Its smooth functioning is largely dependent on these two capitals. The human capital in the form of knowledge, experience, skills, competencies, motivation, predispositions plays an important role. Relational capital thus constitutes a form of social capital, in which relationships are resources that support the achievement of individual and collective objectives¹⁴.

Relational capital consists of structures used to maintain appropriate relations with the environment including: the recruitment system, sales networks, research and development projects, customer bases, a brand, reputation, strategic partnership, relations with customers and suppliers, activity within network organisations, strategic alliances with business partners during the implementation of innovation processes, access to complementary resources in the innovation process, image, the reputation of an organisation, the position of a company on the market of innovations, the ability to share knowledge, a level of trust in relation to employees in the innovation process, financial links and cooperation with other companies- service providers, the value, a degree of customer loyalty to the organisation and customer satisfaction. Moreover, it comprises knowledge of competitors' strategies and external conditions, including the country's economic situation and government policies in terms of fiscal policy, monetary policy and state interventionism.

Maintaining good relationships with customers and contractual partners is a prerequisite for rational management. This is due to feedback occurring here. Recognising contractors' and customers' needs is essential for the proper meeting these needs as well as establishing and maintaining appropriate relationships. In turn, maintaining good relationships between employees and customers enables better identification of customers' needs and tastes with the aim of their maximum satisfying. This leads to enhanced loyalty to the company from all its contractors as well as customer satisfaction. Providing the highest quality of products and services and customers servicing is of great significance in order to achieve full customer satisfaction¹⁵.

The development of relational capital is influenced by various factors (Table 2). In the process of its building formal and informal contacts as well as the ability to establish relationships gain their significance. These relations are based on a strong sense of belonging and a highly developed ability to cooperate of individuals and organisations which are similar in cultural terms. This also applies to the organisation's ability to interact positively with members of business communities in order to stimulate producing benefits by increasing human and structural capitals. It comprises knowledge of competitors' strategy and external factors, including the country's economic situation

¹³ Intellectual capital is defined as a combination of genetic heritage, education, experience, attitudes towards life that characterise individual employees of an organisation. See W. J. Hudson, *Intellectual Capital. How to build it, enhance it, use it*, John Wiley&Sons Publishing, Toronto 1993, p. 16.

¹⁴ R. S. Burt, *Structural Holes: The Social Structure of Competition*, Harvard University Press, Cambridge 1992, p. 12.

¹⁵ N. Bontis, *Intellectual Capital: An Exploratory Study that Develops Measures and Models*, [in:] "Management Decision" 1998, No. 36 (2), p. 63-76.

and government policies in terms of fiscal policy, monetary policy and state interventionism.

Relational capital results from the formation of appropriate relations with customers, distributors, suppliers and other entities in the organisation's close surroundings. It is a factor in creating the organisational added value¹⁶. Distribution channels, customer satisfaction and loyalty affect its creation¹⁷. It includes all the features that organise and manage relationships appearing between an organisation and its environment. Trust, honesty, respect, openness, clear rules of communication and transparency of applicable rules are important values in shaping relationships. Only long-term cooperation based on mutual understanding and partnership has a chance to turn into relational resources¹⁸.

Table 2. External and internal factors of relational capital

External factors	<ul style="list-style-type: none"> • Stakeholders • Forms of cooperation • The macroeconomic environment • The microeconomic environment
Internal factors	<ul style="list-style-type: none"> • The business model of an organisation • Resources and transaction costs • The absorption capacity

Source: the author's own study

3. RELATIONAL CAPITAL AS A REMEDY FOR THE UNCERTAINTY OF THE ENVIRONMENT

In conditions of the environmental uncertainty, its turbulence, volatility and dynamism, organisations search for ways to build competitive advantage, competitiveness, optimise organisational activities, improve information and communication systems and, above all, stand out from the competition. Furthermore, it proves necessary to satisfy consumers' needs at the highest level and be able to respond to the dynamically changing environment. In the face of increasing volatility of the environment, developing ties between stakeholders takes on a new quality.

Today, in the literature of management it is also emphasised that one of the most important resources of an organisation from the resource point of view is the relationship between the organisation and the environment. Less and less attention is paid to

¹⁶ G. B. Kamath, *The Intellectual Capital Performance of the Indian Banking Sector*, [in:] "Journal of Intellectual Capital", 2008, No. 8(1), p. 96-123.

¹⁷ M. Bannany, *A Study of Determinants of Intellectual Capital Performance in Banks: the UK case*, [in:] "Journal of Intellectual Capital" 2008, No. 9(3), p. 487-498.

¹⁸ J. Thakkar, A. Kanda, S. D. Deshmukh, *Evaluation of buyer-supplier relationships using an integrated mathematical approach of interpretive structural modeling (ISM) and graph theoretic matrix. The case study of Indian automotive SMEs*, [in:] "Journal of Manufacturing Technology Management", 2008, Vol. 19, No. 1, p. 95.

a single transaction, whereas building partnerships gains the importance¹⁹. The concept of relational capital and the fact that relationships are "the most valuable asset in an enterprise, without them it could not function or even exist"²⁰. In the literature relational capital is specified as a variable that is used in order to achieve a better understanding of processes such as knowledge, management, competitive advantage and intangible resources (Table 3).

Table 3. Issues for discussion on relational capital based on management science

Areas for consideration	Variables clarifying relational capital
Relational resources	Relations with clients, relations with competitors, relations with suppliers, relations with the environment [Clulow, Barry, Gerstman, 2007; Dalziel, Gentry, Bowerman, 2011]
Knowledge management	Knowledge absorption, access to knowledge, diffusion of knowledge, transfer of knowledge, coordination of knowledge, creation of knowledge, knowledge exchange, mutual learning, resources and processes redundancy [Ricardo, Santa, Bretherton, 2010]

The source: the author's own study

In conclusion, relational capital is a category that is often considered by scientists in the fields of management. Studies are carried out strictly from the resource perspective. According to the theory of resources, a sustainable competitive advantage is possible to achieve due to the ability to acquire, use and possess the appropriate combination of intangible assets that are difficult to imitate and have hidden nature as well as they can be synergic towards each other and can lead to an increase in value. They ensure generating competitiveness, increasing environmental approval for business operations, strengthening positive company image in the market, creating reputation, obtaining and access to resources, including precious, unique intangible resources necessary for operating as well as for creating innovation.

Cooperation skills can become the source of advantage of one organisations over the others. Recognising the needs of partners and customers is necessary for their proper satisfying. This leads to increased loyalty to the company of all its contractors and customer satisfaction. It is crucial to take care for quality of products and services and quality of customer service in order to reach full customer satisfaction. It can be concluded that effects of the financial activity of an organisation largely depends on the recipients.

The use of links and alliances to build networks not only allows limiting conflicts of interest, but also reducing business risk and increasing flexibility, alignment with expectations of stakeholders of an organisation. What is more, relational capital is important

¹⁹ B. Kaczmarek, *Współdziałanie przedsiębiorstw w gospodarce rynkowej*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2000, p. 20.

²⁰ D. Ford, L. E. Gadde, H. Hakansson, A. Lundgren, I. Snehota, P. Turnbull, D. Wilson (ed.), *Managing Business Relationships*, Wiley, Chichester 1998, p. 13.

for maintaining ongoing processes in various departments within the organisation. Creating relational capital becomes one of the processes that reduce the uncertainty of economic activities. It enables making safe and rational business decisions.²¹ According to many authors, there are lacking studies conducted on the basis of the uncertainty of the environment.

CONCLUSION

Changes occurring in the surroundings of organisations extorted necessity of searching for new management models that enable them to meet today's economic challenges. In conditions of uncertainty it seems therefore essential to have knowledge. Independent creation of knowledge, new solutions poses a risk of incurring costs, extends the duration of developing the knowledge base and limits the flexibility of a company and, thus, coping with the uncertainty of the environment as well. Contacts of an organisation with the environment make it may have access to external sources: "relational capital formation is an inherent feature of any organisation that is an open system, permanently exchanging tangible resources and assets with the environment."

According to the author, creation of relational capital is one of the processes that reduce the uncertainty of economic activities. The ability to form economic relations and establish alliances increases the flexibility of an organisation, which significantly affects the growth of competitiveness through the effective use of resources, more efficient identification and taking advantage of emerging market opportunities. It allows all partners of the relationship to obtain economic benefits. Planning and the awareness of building relational capital can create synergy and become valuable and helpful for the organisation in dealing with the growing uncertainty of the environment.

REFERENCES

1. Adler P. S., Kwon S., *Social capital: prospects for a new concept*, [in:] "Academy of Management Review", 2002, Vol. 27, No. 1 p. 17-40.
2. Bannany M., *A Study of Determinants of Intellectual Capital Performance in Banks: the UK case*, [in:] "Journal of Intellectual Capital", 2008, No. 9(3), p. 487-498.
3. Bontis N., *Intellectual Capital: An Exploratory Study that Develops Measures and Models*, [in:] "Management Decision", 1998, No. 36 (2), p. 63-76.
4. Brown S. L., Eisenhardt K. M., *Competing on the Edge: Strategy as Structured Chaos*, Harvard Business School Press, Boston 1998.
5. Burt, R. S. *Structural Holes: The Social Structure of Competition*, Harvard University Press, Cambridge 1992, p. 12.
6. Czakon W., Lenart R., *Zdolność absorpcyjna wiedzy jako czynnik skuteczności międzyorganizacyjnego uczenia się*, [in:] "Prace i Materiały Wydziału Zarządzania Uniwersytetu Gdańskiego", 2011, No. 4/1/, p. 221.

²¹ K. Perechuda, I. Chomiak-Orsa, Znaczenie kapitału relacyjnego we współczesnych koncepcjach zarządzania, „Zarządzanie i Finanse” 2013, r. 11, No. 4, part 2, p. 293-307.

7. Czapla A., *Wdrażanie procesów zarządzania wiedzą w kontekście efektywnego przywództwa*, [in:] Banka W. (ed.), *Wymiary przywództwa w organizacji w XXI w.*, Wydawnictwo Naukowe Novum, Płock 2004, p. 154.
8. Dworzecki Z. (ed.), *Przedsiębiorstwo kooperujące*, EuroExpert, Warszawa 2002, p. 5.
9. Ford D., Gadde L. E., Hakansson H., Lundgren A., Snehota I., Turnbull P., Wilson D. (ed.), *Managing Business Relationships*, Wiley, Chichester 1998, p. 13.
10. Hudson W. J., *Intellectual Capital. How to build it, enhance it, use it*, John Wiley&Sons Publishing, Toronto 1993, p. 16.
11. Kaczmarek B., *Współdziałanie przedsiębiorstw w gospodarce rynkowej*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2000, p. 20.
12. Kamath G. B., *The Intellectual Capital Performance of the Indian Banking Sector*, [in:] "Journal of Intellectual Capital", 2008, No. 8(1), p. 96-123.
13. Krupski R., *Redundancje zasobów i procedur jako panaceum na niepewność otoczenia*, [in:] "Organizacja i Kierowanie", 2012, No. 2 (151), p. 11.
14. Pasieczny L., *Encyklopedia organizacji i zarządzania*, PWE, Warszawa 1981.
15. Peng M. W., Heath P. S., *The growth of the firm in planned economies in transition: institutions, organizations, and strategic choice*, [in:] "Academy of Management Journal", 1996, Vol. 21, No. 2, p. 492-528.
16. Perechuda K., Chomiak-Orsa I., *Znaczenie kapitału relacyjnego we współczesnych koncepcjach zarządzania*, [in:] "Zarządzanie i Finanse", Vol. 4, No. 2, p. 309.
17. Pfeffer J., Salancik G. R., *The external control of organizations: A resource dependence perspective*, Harper & Row, New York 1978.
18. *Relacje organizacyjne w naukach o zarządzaniu*, A. K. Koźmiński, D. Latusek-Jurczak (ed.), Wolters Kluwer, Warszawa 2014, p. 16.
19. Stańczyk-Hugiet E., *Paradygmat relacji – czy to nowa jakość w zarządzaniu?*, [in:] "Studia i Prace Kolegium Zarządzania i Finansów", 2012, No. 116, p. 165.
20. Surmacz A., *Klasyczne ujęcie czynników produkcji*, [in:] *Współczesne przedsiębiorstwo*, Engelhardt J. (ed.), CeDeWu, Warszawa 2009, p. 51.
21. Thakkar J., Kanda A., Deshmukh S. D., *Evaluation of buyer-supplier relationships using an integrated mathematical approach of interpretive structural modeling (ISM) and graph theoretic matrix. The case study of Indian automotive SMEs*, [in:] "Journal of Manufacturing Technology Management", 2008, Vol. 19, No. 1, p. 95.

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