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ORGANIZACJA I KIEROWANIE

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THE COMMITTEE ON ORGANIZATIONAL AND MANAGEMENT SCIENCES

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WARSAW SCHOOL OF ECONOMICS
COLLEGIUM OF MANAGEMENT AND FINANCE

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MACIEJ URBANIAK*

PREFACE

Submitting the English-language edition of our magazine, we hope you will read it in the festive atmosphere of Christmas and the New Year.

The current issue of our Quarterly concerns several contemporary topics such as: organizational behavior of enterprises and relational capital, innovation strategy and organizational performance, cognitive proximity, organizational growth problems, and competitiveness of trade companies.

The study by Patrycja Klimas deals with cognitive proximity which can be perceived through employees using the same language (jargon), scientific standards and technological formal codes. The author clearly indicates that based on the review, synthesis and integration of prior findings, it is justified to perceive cognitive proximity as a multidimensional construct including four components related to inter-organizational similarity of: mental models, technology, knowledge, and environmental conditions.

Wioletta Mierzejewska presents the results of quantitative empirical research on the configuration of holdings and on the relation between their configuration and economic performance. Based on the conducted research, the author argues that complexity of a holding is strongly connected to its management system.

Maciej Czarnecki undertook a research on the determinants of the organizational growth problems. It shows that the dynamics of organizational growth problems is positively correlated with the increase in both sales and employment figures.

Marcin Soniewicki analyzed the sources of knowledge used by commercial companies in order to improve their competitiveness. The results of these studies indicate that these companies most intensively used market related knowledge sources, like: customers, suppliers and competitors. Very important for this type of firms are also publications, external trainings and market research.

A research team composed of Katarzyna Tworek, Katarzyna Walecka-Jankowska, Anna Zgrzywa-Ziemak, Marian Hopej and Robert Kamiński presented in the article the results of empirical study on organizational culture. The results of these studies

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indicate that organizational culture stands as yet another instrument of coordination – so far generally overlooked in the literature. The presented reflections lead to formulation of the concept of a culture of co-operation as a key to simplifying organizational structures.

In the first article Beata Skowron-Grabowska focuses on organizational behavior of enterprises and relational capital. The author assumes that relational capital has become a significant element in the business activities of enterprises that are subject to the challenges of a competitive market. In the paper, relational capital was acknowledged to be an important resource in the strategies of enterprises. Indicating the significance of organizational behavior in terms of various aspects requires the inclusion of organizational culture in the discussed matters.

Wishing you Merry Christmas and a Happy New Year, I hope you will achieve many successes in your professional and personal life!

Maciej Urbaniak

PATRYCJA KLIMAS*

SUMMARISING THE VIEWS ON COGNITIVE PROXIMITY IN COOPERATION AND NETWORKING PROCESSES

Introduction

Nowadays inter-organizational cooperation and networking processes are intensively explored areas of studies in strategic management. Homogeneity and heterogeneity of independent organizations applying strategies based on inter-organizational cooperation [6] are among interesting directions of modern research on inter-organizational processes particularly. Simultaneously, these specific areas of interest have been exploited for around three decades in the field of economic geography but under different label, named proximity. In one of the first articles[1] linking directly the proximity concept with strategic management issues (i.e. innovations, organizational learning, knowledge management, inter-organizational cooperation, and networking performance), proximity has been defined as "*the closeness of actors*" [3, p. 63]. This short definition is based on the assumption that proximity is a multidimensional construct covering five different, but interdependent dimensions: geographical, organizational, social, cognitive, and institutional. However, an extensive systematic literature review run by Knoben and Oerlemans [17] adopting strict management perspective has shown that only three out of these five dimensions are relevant for performance of inter-organizational cooperation and competitive advantage based on that cooperation: geographical, organizational and cognitive dimensions of proximity

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[1] Note that to date this article remains the most cited publication about proximity concept even in the field economic geography. Cited 2848 times according to Google Scholar – 23rd of August 2015.

[17, p. 71]. However, given the existing stock of knowledge and prior research[2] on all of these three dimensions, in this paper we focus on cognitive dimension of proximity as it remains beyond the mainstream of past investigation [3].

As our literature review shows, there is an important knowledge gap related to cognitive proximity considered form strategic management perspective. First, most of former publications linking proximity and cooperation have explored the geographical dimension [2] while there is a strong need to broaden the examination beyond spatial proximity and investigate the role of other proximity dimensions [13]. Second, prior literature points out that most of existing cognitive proximity definitions are partial or unclear and lead to excess generalization [17]. Third, there are direct claims that in case of cognitive proximity, there is a real need for further exploration as it remains the less researched and the most ambiguous component of proximity [11]. Furthermore, it is worth noting that after bridging prior literature on cognitive proximity and heterogeneity of cooperating organizations, it becomes clear that the role played by cognitive homogeneity in case of inter-organizational cooperation and networking seems to be prevailing. One of the newest, comprehensive and deep reviews of prior strategic management literature on inter-organizational cooperation made by Corsaro, Cantù, and Tunisini [6] has revealed six areas of organizations' heterogeneity responsible for longitudinal and successful (dyadic or network) inter-organizational cooperation: actors' knowledge bases, actors' capabilities and competencies, actors' perceptions, actors' goals, actors' power and position, and actors' cultures. However, to our best knowledge three first of them refer to cognitive proximity, while three further to organizational dimension of proximity. Given the fact that geographical proximity has attracted the greatest interest in academic research so far and that organizational proximity has attracted attention of Polish researchers [e.g. 16], we decided to focus on cognitive proximity as it remains more unexplored area of interest, especially in domestic literature. Thus in this paper we aimed at providing literature-based conceptualization and division of cognitive proximity.

1. The essence of cognitive proximity

Cognitive proximity, as defined by Nooteboom [22], is usually explained as a similar way in which organizations (through their employees) perceive, interpret, understand and assess the surrounding world. It is acknowledged that cognitive

[2] All of the considerations presented in this paper have been based on the results of systematic literature review on proximity concept conducted by the author in 2011 and supplemented in 2014 – more details about the literature review (e.g. adopted methodology, reviewed range of publications, and findings) are available in: [15; 16].

proximity is manifested by the homogeneity of competencies, capabilities, skills and knowledge bases [3; 11] possessed by independent organizations. In the light of earlier literature, however, cognitive proximity does not only have to be all-embracing, but can also be relevant to selected or even individual aspects (components) of the aforementioned similarities. This lack of common perspective on the scope of cognitive proximity causes problems with regard to generalizability and comparability of prior findings. Additional ambiguities within cognitive proximity concept stem from the fact that some scholars take into account the above-mentioned aspects by means of cognitive, technological, industrial, or professional proximity. Furthermore, there are papers, which classify similarity of knowledge bases, competences and perceptions under socio-economic [29], or even organizational proximity [3]. This scarcity of terminological cohesion decreases the transparency within prior literature on cognitive proximity.

In general, cognitive proximity used to be considered at two levels of analysis: micro (inter-individual) and macro (inter- organizational). First, micro level of homogeneity refers to cognitive similarity between individuals representing particular cooperation partners. In this perspective, the literature points at communication codes, written language [30] with the emphasis on specific technical language [13], shared professional or scientific backgrounds [30]. Second, macro level of homogeneity refers to cognitive similarity between independent organizations. Cognitive proximity at the inter-organizational level used to be reduced to similarities in knowledge bases [8] or knowledge repertories [10], capabilities [11], competences [3], or experiences [25]. In this paper we follow the most frequently used approach in which homogeneity of mental models, knowledge bases and other professional (i.e. technological, industrial) similarities are considered as cognitive proximity together. Cognitive proximity understood in that manner is a construct in the broadest sense [31] encompassing all aspects pertaining to knowledge, competences, skills, technology, experiences and perceptions about the world around.

Surprisingly, so far cognitive proximity has been usually investigated at one and hardly ever at two levels of analysis simultaneously. We claim that these levels, as well as particular aspects investigated at these levels are interrelated and should not be considered separately. We believe that there are important interdependencies between cognitive similarity among individuals (micro level) and between organizations (macro level). For instance, on one hand technological similarity may require specific language skills or shared professional backgrounds and on the other hand very specific technical language may result from the high level of technological proximity [28]. Therefore, we argue to consider cognitive proximity at both levels simultaneously as we see them rather as complimentary than substitutive. Thus, the discussed here essence of cognitive proximity embraces technological, industrial, and professional proximities described in prior literature. However, we are aware

that cognitive proximity can be perceived in a narrow sense, concerning only a single area of above-mentioned aspects.

2. Narrow and unidimensional approaches to cognitive proximity

Cognitive proximity can be considered as a unidimensional construct which restricts the perception of cognitive similarity to one, purposefully selected area at micro or macro level of analysis. In this vein, the findings of our literature review indicate three different narrow approaches focused on mental similarity of employees engaged in inter-organizational cooperation, technological homogeneity of cooperating organizations and doing business within similar industrial settings.

First, cognitive proximity can be perceived through employees using the same language (jargon), scientific standards and technological formal codes [30] which enable communication during collaboration [17]. Its high level would be determined by mental similarities between employees [20] as well as by shared competences and past experiences [29]. An expression of cognitive proximity in this sense is employees' adherence to the same community of practice [5] or community of interest. Cognitive proximity defined in this manner fully resembles professional proximity[3] and is considered at micro level of analysis only.

Second, cognitive proximity can be understood as similarity of knowledge, competences and technological aspects considered at macro level of analysis. Then it manifests itself by organizations operating within the same technological area [4]. Cognitive proximity defined in that manner is often narrowed to technological proximity [17]. In essence, technological proximity boils down to using similar technological solutions [24]. In a broader sense, technological proximity is also determined by technological experiences of an organization to-date and ensuing technological know-how [5]. Some authors call technological proximity defined in the aforementioned manner plainly cognitive proximity. However, advocates of distinguishing between cognitive and technological proximity would argue that the former is key for engaging in interactions, whilst the latter is critical for the subject of those interactions. From that perspective, absorptive capacity displayed by given organization is crucial. Sorenson, Rivkin and Fleming [28] suggest that technologically similar organizations show twice the absorptive capacity of companies more

[3] *Professional proximity* is assessed by analysing company employees (micro level) sharing the same way of reasoning and competencies. It manifests itself by using the same professional language and standards. Employees of analysed organisation belonging to communities of practice are an example of high professional proximity [26].

technologically distant. In particular, technological similarity of partners is vital for organizations collaborating on research projects, since it improves productivity of both the research efforts and partaking entities [19]. However, another good example of great importance of collective exhibiting high technological proximity are technological communities based on technological similarities to the greatest extent.

The last area of proximity related to cognition and knowledge considered between organizations is *sectoral (industrial) proximity* being investigated at the macro level of analysis. The term sectoral proximity was first used in publication written by Maliepaard and Oosterom [20], but is yet to be defined. Bearing in mind different ways in which various dimensions discussed in their paper are perceived, one can arrive at a conclusion that sectoral proximity stands for similarity of sectors in which cooperation partners run their activities.

The author claims that all of the above-mentioned approaches are not sufficient as they do not cover the whole range of cognitive proximity and boil it down to one aspect while it is acknowledged to be multifaceted [e.g. 3; 13; 22]. Thus, the presented here framework of cognitive proximity applies multidimensional approach.

3. Broad and multidimensional approaches to cognitive proximity

In more recent studies cognitive proximity is argued to be a multidimensional construct which must not be limited to one particular area of cognitive similarity. Indeed, if we take a closer look into seminal studies on cognitive proximity, we find out that it is determined by several cognitive areas of similarity simultaneously: employees perceptions, knowledge bases, competencies and technological capabilities [3; 22]. Nevertheless, even though existing conceptualizations indicate broad scope of cognitive proximity, it is hard to find empirical works applying this broad and multidimensional approach. For instance Huber is one of the very few authors who have tried to identify the components of cognitive proximity. His empirical findings prove the multidimensional nature of cognitive proximity, as he identified four significant components: technical language, (2) the way of thinking about the technology or product, (3) work-related technical details/facts (know-what), and (4) work-related know-how [13].

In our opinion, even though the above-mentioned research proves the multifaceted nature of cognitive proximity, we claim that identified components do not fully cover the whole scope of cognitive proximity. We believe the essence of cognitive proximity refers not only to language, technology and knowledge but is also conditioned by past experiences, individual perceptions, skills, competencies and environmental conditions. We claim to take into account the whole range of different faces of cognitive

proximity as they have been evidenced to be strategically important for organizations interested in cooperation and networking.

4. The strategic importance of cognitive proximity

Cognitive proximity is a theoretical construct explained within proximity concept [e.g. 3; 9] as one of its the most important dimensions [17]. In general, cognitive proximity has been explained using three different theoretical backgrounds: transaction cost economics, social exchange theory and theory of knowledge [22]. However, from the inter-organizational cooperation standpoint, cognitive proximity used to be the most frequently explained from the knowledge management perspective. The popularity of cognitive proximity among researchers stems from the fact that it improves collaboration between organizations. Above all, its significance is reflected by positive impact on inter-organizational communication and thus on different processes related to knowledge creation and utilization through inter-organizational cooperation. Cognitive similarity of separate organizations accelerates communication by making it more precise [9] and more efficient as it reduces the risk of misperception of the message [30]. That said, positive impact is notable at the stage of codifying information sent over by the partner as well as at the stage of decoding it by him. Beneficial influence on communication processes further enhances information, knowledge flows [20; 25] and learning processes [10]. Existing literature pays the greatest attention to knowledge-related benefits of cognitive proximity. In the light of previous research linking cognitive proximity and different aspects of knowledge management we claim that even though cognitive proximity does not guarantee knowledge creation or knowledge transfer [1], it is the "*key mechanism*" in inter-organizational knowledge-related processes [2].

It has been proved that high enough cognitive proximity speeds up and intensifies knowledge access [24], its creation [11], transfer [3; 5], examination and exploitation [30] – Table 1. On the one hand, similarity of mental models to a large extent not only allows entities to communicate more efficiently but also to absorb, understand and implement the exchanged information [1]. On the other hand, the technological component of cognitive proximity accelerates processes of common knowledge creation by partners [28] and is the driving force behind the synergistic effect.

Cognitive proximity seems to be important knowledge management success factor for all types of organizations engaged in inter-organizational cooperation, namely for [27, p. 24]: knowledge absorbents, knowledge transformers, knowledge creators and knowledge accumulators. Ultimately, cognitive proximity facilitates understanding and capturing opportunities coming with potential business partners, and to expand and develop the knowledge base they own. Furthermore, it allows organizations to use

– more effectively – their own absorptive capacity as well as absorptive capacity of their employees. However, one should bear in mind that there is an empirical evidence that the importance of cognitive proximity depends on the type and stage of the process of knowledge creation [11]. First, the role of cognitive proximity is conditioned by the type of knowledge which is created or shared, namely it is important if it is tacit of codified knowledge, as well as if it is technological or rather architectural type of knowledge [10]. Second, the meaning of cognitive proximity is shaped by the stage of the process of knowledge creation, specifically it is important if it is production or rather utilization phase as cognitive proximity should be supported by other different dimensions of proximity [30] in different phases of knowledge creation processes.

Table 1. Knowledge-related benefits from cognitive proximity

Author (-s)	Year	Knowledge management area
Boschma Wink Cantù Hautala	2005 2008 2010 2011	Knowledge creation (generation, production)
Petruzzelli, Albino and Carbonara,	2009	Knowledge access
Molina-Morales, García-Villaverde and Parra-Requena	2014	Knowledge acquisition
Hautala* Molina-Morales, García-Villaverde and Parra-Requena	2011 2014	Knowledge absorption
Molina-Morales, García-Villaverde and Parra-Requena	2014	Knowledge assimilation
Wink	2008	Knowledge examination
Hautala*	2011	Knowledge interpretation
Hautala*	2011	Knowledge categorization
Wink Molina-Morales, García-Villaverde and Parra-Requena	2008 2014	Knowledge exploitation
Boschma Cantù Dang et al., 2014	2005 2010 2014	Knowledge transfer

* based on Noteboom 2000

Source: own study.

It is worth noting that these knowledge-related benefits from cognitive proximity cause that it is identified as more important factor for cooperation and networking than other dimensions of proximity. It has been proven that cognitive similarity is more important than geographical proximity especially for knowledge integration and for organizations operating within science-driven sectors [30]. Additionally, it was shown (together with institutional dimension) as more important for global competitiveness based on technological leapfrogging than organizational, social or geographical proximity dimensions [18].

Furthermore, some authors emphasize that learning processes in the absence of cognitive proximity (at least) would be outright impossible [9] as it is needed for mutual understanding and effective information sharing [13]. Above all, it has been proved that cognitive proximity enables collective learning [10] as it allows organizations to reap benefits of the knowledge spillover effect [19] and protects them from lock-in effect [11]. To conclude, it is worth adding that from the RBV perspective all of the above knowledge- and learning-related benefits of cognitive proximity result in leveraging organizations' resources including: knowledge, creativity and innovativeness, social capital, and inter-organizational relationships.

What is more, there is an empirical evidence which has proved interdependencies between cognitive and other dimensions of proximity. It means that cognitive proximity can: (1) replace some missing resources like appropriate location [24] and thus substitute geographical proximity; (2) build trust and informal contacts between organizations [26] and thus leverage social proximity, and (3) improve communication and coordination during cooperation [7] and thus positively impact organizational proximity. Thus, from the RBV standpoint cognitive proximity can be perceived as a trigger, driver or accelerator for competitive advantage. Nevertheless, besides all of those advantages related to knowledge, learning, innovations, or other dimensions of proximity, there is also the dark side of cognitive proximity. In general, it is acknowledged that cognitive proximity generates significant tangible benefits, however, once it exceeds certain level, it could bring about opposite, than intended, consequences.

Even though cognitive proximity provides important advantages, when it is too high it does not generate assumed synergistic effects and can be harmful for cooperating partners. Among the negative effects of too high level of cognitive proximity, the literature emphasizes the risk of: lessening of creation and transfer of knowledge [4]; diminishing of learning and innovation performance [3], and above average risk of opportunistic behaviors and unintended knowledge flows [9]. In the literature, the phenomenon of continuous struggling with the tensions between cognitive homogeneity and cognitive heterogeneity has been empirically proven and labelled as "proximity paradox" [4] or "proximity dilemma" [13]. The paradox of cognitive proximity is represented by parabolic (inverted "U") character of the relationship between cognitive proximity and its knowledge-related benefits. This bendiness of the relationship induces organizations to constantly monitor cognitive proximity in order to achieve a "cognitive friction" [11[4]] maximizing the positive effects of being similar. This optimizing level of cognitive proximity is achieved by continuous balancing

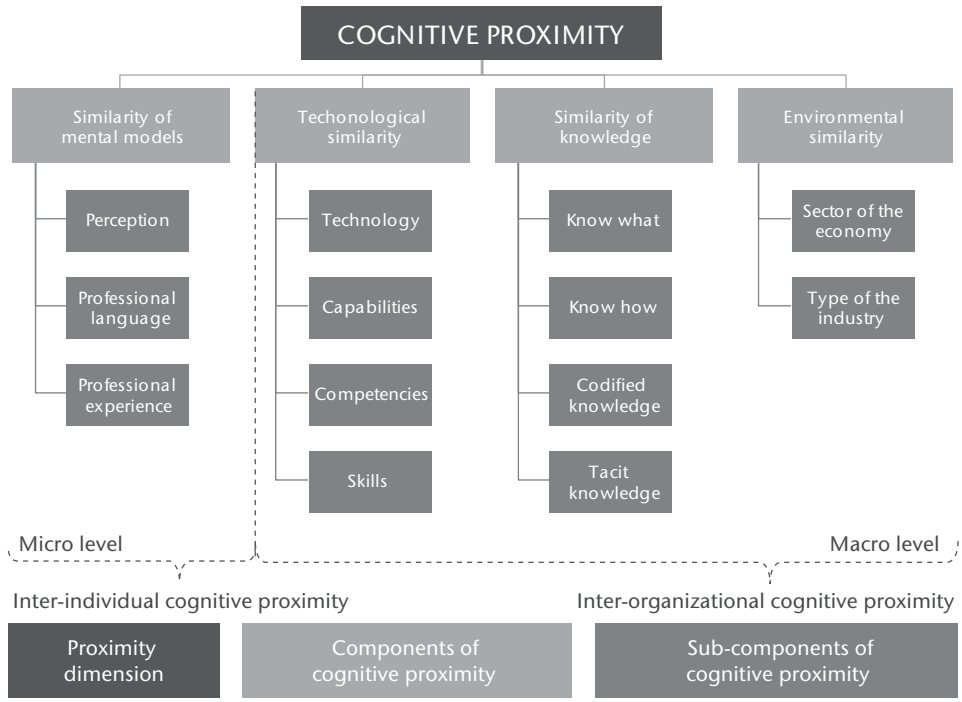
[4] The author adopts a process approach to cognitive proximity and considers it at the individual (micro) level of group work only. She claims that cognitive friction is created when members of a group are becoming cognitively proximate through knowledge base content but remain cognitively distant through a knowledge base structure [13, p. 601].

between no cognitive proximity (misunderstandings, communicational difficulties, no common business areas) and maximum cognitive proximity (homogeneity of knowledge, information and data). Hence maintaining correct level of cognitive proximity is a tall order, since it involves much more than just maximizing it.

5. The integrated structure of cognitive proximity

Given the fact that cognitive proximity has been proved as multidimensional construct and acknowledged as convergence in several cognition-related aspects, we claim it comprises four interdependent areas of similarity between organizations, i.e. mental, technological, related to knowledge, and environmental conditions (Figure 1).

Figure 1. Dimensions of cognitive proximity



Source: own study.

In the proposed approach four, substantially and analytically different but interdependent areas of cognitive proximity remain separate, however, have certain common denominators.

We believe that this broad approach remains in line with existing literature that acknowledged cognitive proximity as similarities of knowledge and technological competencies owned by organizations, taking its source in similar ways in which employees perceive, interpret, understand and assess the surrounding world.

It should be emphasized that the first area, namely similarity of mental models is considered to occur between organization's employees (micro level of consideration), while the remaining three including technological similarity, similarity of knowledge, and environmental similarities are considered for the entire organizations (macro level of consideration). We claim that all of these components should be considered during evaluation of cognitive proximity of cooperating organizations as all of them have been proved to be important in the literature and research on cognitive proximity. Furthermore, we argue that partial decomposition of considered construct can be misleading [11] as it may lead to ambiguous conclusions and substantial difficulties in comparing the results of studies.

Similarity of mental models is understood as a convergence in perception of the surrounding world, similar mind-sets of employees rooted in professional backgrounds and experience (professional proximity included) as indicated by seminal work of Noteboom [22]. This dimension is expressed by using coded messages, jargon and operating procedures [30], common understanding and perception of the professional world [13], as well as by shared professional norms, values and general goals [21[5]].

This sub-component of cognitive proximity shapes the way, in which an organization sees the world, the cognitive perception it adopts for its operations depends on mental models, world-view and ideological beliefs of its employees. In this aspect, cognitive similarity of companies can derive from past, common professional experiences and comparable education. As per above-given definition of mental models, it is clear that mental similarity can be exhibited by organizations distant both technologically and environmentally. Organizations using similar technologies employ experts with communication skills enabling efficient exchange of information, at least as far as technological processes are concerned. In a sense, common specialized language is an effect produced by technological proximity [28]. On the other hand, organizations with different technological approaches but employing similar experts are also capable to communicate in a competent manner. It should be emphasized that even though similarity of mental models has been acknowledged to be one of

[5] The authors include all cultural homogeneity related to norms, values, artefacts, goals in both professional and non-professional expressions of individuals and expressions of cooperating organisations. In our opinion, this cultural homogeneity should be divided into three parts which ought to be taken into account under different dimensions of proximity. In the light of the existing literature, we claim that non-professional cultural homogeneity expressed by individuals should be considered under social (relational) dimension of proximity [e.g. 12], professional cultural homogeneity expressed by individuals should be considered under cognitive proximity, while professional and non-professional cultural homogeneity expressed by organisations should be considered under organisational proximity dimension [e.g. 16; 20].

the core components of cognitive proximity [22] it has attracted a limited attention in the literature and remains the least researched dimension of cognitive proximity [6] while it seems to be one of its crucial components [13][6]. To conclude, it should be noted that it is the only one component of cognitive proximity considered at the micro level of analysis, as it depends on similarities between individuals engaged in inter-organizational cooperation processes.

Technological similarity is considered as an similarity regarding technologies used by organizations related to both technological know-how [5] and professional knowledge flows [25]. One distinguishes four sub-components of cognitive proximity within technological similarity, namely technology, capabilities, competencies, and skills. In particular, we perceive technological similarity as technological relatedness in the area of real cooperative activities aimed at joint transformation of inputs into outputs. In such an approach, the technological similarity reflects the process view on cognitive proximity expressed in the literature [13].

We do claim that technological similarity should not be restricted only to the homogeneity of adapted technology but it should definitely reflect the similarity in overall technological expertise [25]. We believe that similar technologies determined by particular technological solutions, implemented processes and utilized machines and equipment do not reflect the whole scope of technological expertise and thus the full scope of technological relatedness [23]. For example, it is possible that there are some power and technological asymmetries between cooperation partners. In this case, the "stronger" partner may use newer, more expensive, and more advanced technologies than the "weaker" one. From the technology point of view, there is no technological proximity, or at least it is at the minimum level. However, even though the partners use different technological solutions and follow different technological procedures, it does not mean that these partners are technologically distant. First, the "stronger" partner may have technological competencies and skills related to technology adapted by his "weaker" partner which he used in the past. Second, even if these technologies are different, they may be based on the same technical standards or general industrial procedures (e.g. complete different welding methods used during production of aircraft engine blades, or the manufacture of aircraft wings using different technologies based on various composite materials). Therefore, we suggest to expand prior approach (restricted to technology only) and include similarities in competencies, capabilities and skills to the technological similarity considered as a component of cognitive proximity. It should be highlighted that

[6] In the light of prior research technical and professional language considered within compliance of mental models has been identified as the most important and the hardest to be replaced sub-component of cognitive proximity – see: [13].

these "additional" technological aspects have been included in key conceptualizations of cognitive proximity [e.g. 3; 17].

Similarity of knowledge is a third component of cognitive proximity perceived as a resemblance of knowledge owned by organizations which can be valuable or even desired for the achievement of shared goals[7]. We suggest to distinguish this particular component of cognitive proximity as similarities of knowledge bases have been recognized as important [3], but the most ambiguous area of cognitive dimension of proximity so far [13; 17; 29]. The level of knowledge proximity is operationalized as the extent to which knowledge bases overlap. It is noticeable that not only the assets of codified, but also tacit knowledge used by organizations are considered here, because only when those two types of knowledge are combined one can talk about general knowledge base of particular organization. Moreover, based on prior research on cognitive proximity we suggest to include other two sub-components, i.e. *know-what* and *know-how*. In the proposed decomposition similarity of *know-what* [in terms of 13] deals with the technological knowledge [in terms of 10] while similarity of *know-how* [in terms of 13] refers to architectural knowledge [in terms of 10]. We suggest to include these two other sub-components as they grasp dynamic nature of knowledge processes while the former two related to knowledge bases seem to be more static ones [10]. Furthermore, we claim that if we take into account knowledge bases, only there is a risk that some knowledge-related aspects may be missed as they may not be included to the formal knowledge bases of organizations (e.g. organization is not aware that it possesses some valuable knowledge, as it treats this knowledge as worthless or of little value).

Last but not least component of cognitive proximity is ***environmental similarity*** considered in terms of the sector of economy and type of the industry. The first one refers to the type of the sector which can determine similarities in the area of general business environment. Organizations differ depending on whether they operate in primary (extraction of raw materials), secondary (transformation of raw materials) or tertiary (supplying services) sector of the economy. Furthermore, they vary in terms of dynamics, technology advancement and knowledge-intensity. Thus, it is important to consider if cooperating partners operate in similar environmental contexts. However, we claim that this sub-component does not reflect fully the environmental similarities and more detailed consideration is needed. Thus, we propose to take into account the type of industry understood as running the same business activity in terms of NACE Classification [4; 14]. We believe that both of these sub-components ought to be considered together as it is possible to operate in different but similar industries, like in automobile and aerospace, or nanotechnology and software. Concluding, it is worth noting that environmental similarities should not be

[7] Please note that some authors consider homogeneity of knowledge bases as technological proximity [8].

identified with technological proximity, the other, distinguished here, component of cognitive proximity. We claim that both of these sub-components ought to be taken into account under the label of environmental similarity as the logical contents of those sub-components are mutually complementary, consequently making up a more comprehensive picture of organizations' cognitive proximity. Organizations competing in the same industry can, but not necessarily have to use the same technology. On the other hand, it is likely that entities from different sectors are similar technologically in certain parts of their operations (e.g. accounting, IT, CRM).

Conclusion

Cognitive proximity has been acknowledged as important success factor for inter-organizational cooperation and networking. Nevertheless, in the existing stock of knowledge there are some relevant inconsistencies regarding its definition and composition. These ambiguities induced us to review existing literature and provide integrated and less fragmentary approach to conceptualization of cognitive proximity. The conclusions drawn from conducted literature analysis show cognitive proximity as a multidimensional construct including thirteen sub-components divided into the following four components: similarity of mental models, technological similarity, similarity of knowledge, and environmental similarity. Cognitive proximity as per proposed approach remains compliant with the most frequently quoted approaches and eliminates contentious aspects (e.g. taking into account similarity of knowledge bases). We believe that our proposition opens up new directions for future research, which can be focused on theoretical considerations about operationalization of particular components and sub-components of cognitive proximity, as well as on empirical testing of our proposition.

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SUMMARISING THE VIEWS ON COGNITIVE PROXIMITY IN COOPERATION AND NETWORKING PROCESSES

Abstract

Inter-organizational cooperation and networking are at the top of academic interest. Critical success factors of long term and beneficial cooperation have been among the most important issues considered so far. This paper considers one of such factors labeled as cognitive proximity.

As our literature review shows even though cognitive proximity has been acknowledged as a critical aspect of inter-organizational homogeneity, it remains one of the most ambiguous and the less explored dimension of proximity. Thus, in order to address the identified knowledge gaps, this paper aims at providing literature-based conceptualization and division of cognitive proximity.

In general, based on the review, synthesis and integration of prior findings, it is claimed to perceive cognitive proximity as a multidimensional construct including four components related to inter-organizational similarity of: mental models, technology, knowledge, and environmental conditions. Furthermore, it is suggested to adopt – especially during operationalization process – a more detailed view on cognitive proximity as these four components can be further decomposed into thirteen analytically separate but conceptually interdependent sub-components.

The authors believe that the presented propositions not only integrate previous findings but also do open up new directions for future research aimed at investigating the cooperation and networking performance.

Key words: proximity, cognitive proximity, collaboration, cooperation, networking, heterogeneity, homogeneity

BLISKOŚĆ POZNAWCZA W PROCESIE WSPÓŁPRACY MIĘDZYORGANIZACYJNEJ – WNIOSKI Z ANALIZY, INTEGRACJI I SYNTEZY WIEDZY DOTYCHCZASOWEJ

Streszczenie

Współpraca międzyorganizacyjna, w tym współpraca w sieciach wzbudza coraz większe zainteresowanie zarówno praktyków, jak i teoretyków zarządzania. Pośród aktualnych oraz istotnych kierunków dociekań lokują się krytyczne czynniki sukcesu długoterminowej i skutecznej współpracy. Mając to na względzie, niniejszy artykuł koncentruje się na jednym, dotychczas fragmentarycznie rozpoznanym czynniku tj. bliskości poznawczej kooperantów.

Wyniki systematycznego przeglądu literatury wskazują, że bliskość poznawcza, pomimo iż jest postrzegana jako kluczowy aspekt współdziałania to wciąż pozostaje jednym z najbardziej mglistych, niedookreślonych, a jednocześnie słabo rozpoznanych empirycznie wymiarów bliskości międzyorganizacyjnej. Celem zapełnienia wyłonionej luki przedmiotem artykułu jest przedstawienie opartej o literaturę przedmiotu konceptualizacji oraz logicznego podziału bliskości poznawczej.

Integracja, analiza i synteza dotychczasowej literatury wskazuje, że bliskość poznawcza może być postrzegana jako wielowymiarowy konstrukt obejmujący swoim zasięgiem cztery komponenty dotyczące międzyorganizacyjnego podobieństwa: modeli mentalnych, technologii, wiedzy oraz uwarunkowań otoczenia. Dodatkowo, sugeruje się przyjęcie – zwłaszcza na etapie operacjonalizacji – uszczegółowionego podejścia, w którym cztery wymiary bliskości poznawczej dekomponowane są na zbiór trzynastu, analitycznie odrębnych, aczkolwiek konceptualnie współzależnych sub-komponentów. W opinii autorki, przedstawione w artykule propozycje nie tylko integrują dotychczasowe ustalenia naukowe, ale także stanowią krok w kierunku podjęcia prac badawczych zorientowanych na rozpoznanie – dotychczas niezbadanych – uwarunkowań sprawności współpracy w diadach i sieciach rozpoznawanych w przekroju czterowymiarowej bliskości poznawczej.

Słowa kluczowe: bliskość, bliskość poznawcza, współpraca międzyorganizacyjna, sieci międzyorganizacyjne, homogeniczność partnerów, heteregoniczność partnerów

WIOLETTA MIERZEJEWSKA*

BUSINESS GROUPS CONFIGURATION AND ITS CHANGES DURING A CRISIS

Introduction

Business groups play a significant role in the economy, although certain differentiation in the use of capital structures in different world regions can be observed. Economic strength and significance of business groups is reflected by their growing number, but most of all by their revenues, GDP generated by them and their share in the world trade. For example, data from Slovenia show that they account for 7% of the economy, but generate as much as 66% of revenues [22]. In Poland in 2015 enterprise groups generated as much as 50.3% of total revenues of non-financial enterprises [16]. Heugens and Zyglidopoulos [36, pp. 325–341], on the basis of various research, presented the prevalence and profitability of business groups all around the world. It turns out that in some countries business groups make up more than 60% of all enterprises (e.g. Belgium, Denmark, Indonesia, Netherlands, UK, Sweden).

It should be highlighted that business groups develop intensively irrespective of the market situation. Even in the times of a crisis, growth of their number is observed. For example, on the territory of the European Union and EFTA, the growth of the number of international business groups in 2008–2011 was almost 2.5-fold (from 6350 to 15 657) [23]. In Poland, the number of enterprises in 2008–2015 grew from 1462 to 2019 [16]. Also in other countries of Central and Eastern Europe, for example in Romania, Slovenia or Latvia [20] growth of the number of enterprise groups was observed during the crisis. Along with the growth of the number of business groups, changes of their features are also observed. There are more international groups and business groups with a simple structure and a small number of subsidiaries. It can

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be a consequence of the crisis and improvement of effectiveness resulting from sales or liquidation of unprofitable companies.

Business groups can be treated as a natural stage of an enterprise's structural evolution. They are a useful form of organization, especially in the case of very complex undertakings. The attractiveness of a business group as an organizational form is influenced by the fact that this form makes it possible to share risk, minimize transaction costs between companies and that it provides security of contracts implementation guaranteed by ownership supervision, which is especially important in the times of crisis. Being part of a business group helps individual companies enhance their operations and have a positive impact on business performance [60, pp. 109–118; 10, pp. 141–158; 11, pp. 429–448; 12, pp. 265–274]. Aditionally, enterprises belonging to a business group can benefit from the possibility to share the financial, technological and marketing resources available within the group [33, pp. 119–135]. However, the relation between net effect of a business group and its performance is ambiguous [45, pp. 45–74]. Some researchers indicate that business groups help to improve the performance of their affiliated firms [e.g. 10, pp. 141–158; 38, pp. 404–440; 40, pp. 125–135; 57, pp. 1601–1617; 39, pp. 748–761; 43, pp. 268–285], but other indicate negative or no effects [5, pp. 437–460; 31, pp. 48–54; 13, pp. 195–209].

Different research results may be affected by the internal and external factors of business groups functioning. In this paper, I will focus on one factor, which I consider very important, i.e. organizational configuration of business groups. How the organizational configuration of business group could influence the overall performance, especially during economic crisis, is a very interesting issue. Undoubtedly deteriorating economic situation necessitates introducing many changes in economic entities. Dealing with a crisis is often about searching for opportunities of operational improvement, applying financial discipline, verification of strategy, business model changes, as well as reconfiguration of internal organization.

The aim of this article is to identify the rate of complexity and its changes in Polish business groups during a crisis, and also to verify whether there is a relationship between effectiveness and a business group's degree of complexity. Unfortunately, reference literature provides only scarce research on this issue. Because of the research gap, the Author decided to study structural solutions applied by Polish business groups, including the degree of business groups complexity.

1. Literature review

Definition and main research areas of business groups

Business groups have recently emerged as a distinct theme in the literature, both in Poland and globally. The researchers view them as a new organizational form that requires an explanation [17, pp. 419–437]. However, it is not so easy to identify and analyze those complicated organizational forms. The difficulty of analyzing them is caused by both their complexity and ambiguous definition.

The definition of a business group varies extensively across researchers and countries. Even the terms describing "business group" differ in literature. Some researchers use the term "*business groups*", others "*corporate group*", "*conglomerates*", "*holdings*" or "*groups of companies*" [2]. In different countries we can hear or read special expressions identifying business groups, e.g. "*business houses*" in India, "*grupos economicos*" in South America, "*cheabola*" in Korea, "*keiretsu*" in Japan, "*qiye jituan*" in China [9, pp. 407–417; 38, pp. 404–440]. The business group definition is therefore somewhat idiosyncratic to the country [46, pp. 301–340]. But the main difference is the type of relationship between the companies belonging to the group. In some definitions the key characteristic of business group is the ownership relation between the holding company and subsidiaries, while in others this aspect is not as important.

Business groups are often defined not as a legal construct, but as a group of legally independent companies tied both by formal (e.g. equity) and informal (e.g. family) ties [46, pp. 301–340; 47, pp. 331–372]. There are very broad definitions of business groups like the one proposed by Granovetter, including all ties between affiliated firms. According to Granovetter, a business group is "*a collection of firms bound together in some formal and/or informal ways*" [30, pp. 93–130]. Yiu, Bruton, and Lu [68, pp. 183–206] define business groups as "*a collection of legally independent firms that are bound by economic (such as ownership, financial, and commercial) and social (such as family, kinship, and friendship) ties*".

In some definitions it is indicated that affiliated firms are under administrative or financial control, owned and controlled by a certain family [10, pp. 141–158]. Ghemawat and Khanna [28, pp. 35–61] also indicate the family ownership aspect as a characteristic of business groups. Some researchers indicate that it does not necessarily have to be a majority ownership, but very often the controlling shareholders maintain authority by using a pyramid ownership structure [62, pp. 404–420].

Business groups are a type of company network, but to distinguish it from other networks, like suppliers or distribution networks, literature provides more precise definition. For example Cuervo-Cazurra [17, pp. 419–437] describes a business group as a set of legally-separate firms with stable relationships operating in multiple

strategically unrelated activities and under common ownership and control. Other definitions identify business groups as a set of firms linked together through chains of ownership relations arranged in pyramidal or hierarchical fashion [64, pp. 889–909].

In conclusion, two trends in defining business groups should be highlighted. The first one is present in economic literature; it connects the existence of business groups with ownership control relationship. The second, sociological trend, focuses on non-ownership ties [3, pp. 1549–1573].

Also in Polish literature there are differences in defining the business group concept. Trocki proposes the most popular definition [66]. He states that it is a group of legally independent companies, but connected, among others, in terms of ownership control [66]. Recently, business groups have been investigated by the Polish Central Statistical Office (CSO). The CSO uses much broader definition of a business group: "*an enterprise group is composed of enterprises that are independent in legal terms, but rely on each other economically due to the control and/or ownership links between them. Capital relations should not always be the main criterion for the existence of a group – rather a common center of economic decisions determining the action strategy*" [16]. In this paper I will follow the narrow definition of a business group that singles out business groups based on ownership ties.

Despite the difficulties with identification and assessment of business groups functioning, an intensive development of these structures induces researchers to analyze these issues. In English-language literature most interest was given to the issues of business groups in 1970 s and 1990 s. It was related to the fast development of economic entities by diversification and internationalization, which necessitated structural changes and transformation of enterprises into business groups. Due to the current emergence of strong business groups in developing economies and their further international expansion, the scientists are again interested in this form of business activity.

The world literature studies business groups in regard to issues such as: *diversification* [10, pp. 141–158; 28, pp. 35–61; 69, pp. 874–887; 32; 35, pp. 46–54; 42, pp. 867–891]; *internationalization* [27, pp. 327–347; 50, pp. 175–192]; *ownership and control, corporate governance* [4, pp. 373–391; 8 pp. 238–253; 35, pp. 46–54; 62, pp. 404–420]; *internal capital markets* [61, pp. 169–191; 25, pp. 251–273; 29, pp. 63–81; 51, pp. 326–334]; *origin and evolution of business groups* [14, pp. 719–745; 15, pp. 461–489; 44, pp. 283–324; 1, pp. 325–366; 21, pp. 25–51; 41, pp. 271–310; 52, pp. 661–675]; *economic performance* [10, pp. 141–158; 6; 31, pp. 48–54; 42, pp. 867–891; 36, pp. 325–341]; *role of business groups in economy* [26, pp. 609–628; 12, pp. 265–274] and other. A very interesting review of research directions concerning business groups was made by Khanna and Yafeh [47, pp. 331–372].

Polish scientists started to study business groups only after 1989, i.e. after the political transformation, when business groups started to develop intensively. The analyses covered issues such as ways of formation [66; 67; 56]; action strategies

[58; 2]; as well as freedom of decision-making in business groups [24] or synergy [7] and other more detailed problems of business groups' functioning. Polish business groups are an interesting object of research because of the short period of operation and different ways of formation.

Relation between organizational configuration and performance of business groups

Analyses of business group structure and relation between internal configuration and economic entity's effectiveness are a very interesting thread of research on business structures. Unfortunately, the relationship between the structure and business effects is ambiguous. However, solutions conducive to running business in the conditions of dynamic changes in the environment can be indicated [18, pp. 49–64].

Very interesting research was carried out by Kim et al. [49, pp. 25–48] on evolution of Korean business groups between 1996 and 2001. They analyzed the use of different structures (cooperative M-form, competitive M-form) in the implementation of different strategies (related and unrelated diversification) during the fiscal crisis. The main conclusion was that the strategy-structure fit is very important for the economic effectiveness. To achieve that strategy-structure fit changes in internal organization are required. They also found that "*the too-big-to-fail myth has been dispelled*" and big chaebols had to restructure, especially during the crisis.

In the case of business groups, a possibility to increase flexibility of actions and dispers risk by delegating individual functions to subsidiaries and making their business autonomous is a very important factor that can quickly improve their performance during the crisis. Effectiveness of a business group during a crisis is therefore influenced by its internal configuration, including its degree of complexity. Complexity of a business group can be measured by the number of elements it comprises. This simple measurement identifies the total number of companies, number of subsidiaries, second-tier subsidiaries or the number of tiers in a group. Reference literature also provides composite measures, combining those listed above. A high rate of complexity of a business group is often associated with at least three tiers (parent companies, subsidiaries, second-tier subsidiaries) and more than 10 subsidiaries [56].

A high degree of complexity is often perceived as a factor reducing business group's effectiveness. However, research carried out in 2007–2013 on six business groups listed on the Warsaw Stock Exchange indicated that both insufficient and excessive complexity can have a negative impact on economic performance. A low rate of complexity of a business group and a broad scope of operational activities carried out by a parent company can expose the entire group to a greater operational and financial risk. Excessive complexity can in turn lead to problems with management and supervision over subsidiaries [54, pp. 35–47].

Research on the relation between complexity of a business group and its results have often been carried out with reference to a specific strategy implemented by business groups. Particularly large amount of research on business groups was carried out in the context of diversification of business groups' activities and their economic results. Such research was carried out by Mishra and Akbar [55, pp. 22–38] on the example of companies in India; Haque and Hassan [34, p. 719] on the example of a Bangladesh company; Kim, Hoskisson and Wan [48, pp. 613–636] on the example of Japanese companies; Jeong-Pyo Choi and Cowing [37, pp. 271–282] on the example of Korean companies. The last example has proved that the size of a group and number of its members influence profitability, as well as a group type, understood as a group of small, equal enterprises versus a group of companies dominated by one large enterprise. Also Chang and Choi [10, pp. 141–158] proved that the differences in profitability positively correspond to organizational structure.

There has also been research verifying influence of selected features of group organization on its performance. Such research was carried out by Dundas and Richardson [19, pp. 287–301]. They analyzed, whether the way of controlling and grouping companies is related to a business group's effectiveness. It turned out that group members with high profitability are independent. They are only combined in groups for easier management when their number is to large. For it turns out that if the number of subsidiaries rises and they are not grouped, the performance of the entire enterprise decreases significantly. A large number of companies having various sizes, capital needs and effectiveness has a negative impact on management and control possibilities as well as ability to prevent problems.

Creating additional tiers in a business group can be an alternative for consolidation of companies with their number increasing. Vertical development of a business group by adding tiers leads to slimming down its structure, where the number of subsidiaries directly depending on the parent company is small. An advantage of large number of tiers is enhancing the power of a parent company, despite decentralization of decision-making and delegating it to lower tiers, since a large number of small companies subordinate to several levels weakens the significance of lower level business groups, while consolidation enhances subsidiaries. Unfortunately, there is no research confirming this consideration. There is relatively little empirical research on the relationship between effectiveness of the entire business group and its structure. Such research in Poland was carried out by Romanowska [58]. She identified an inverse relationship between a business group complexity measured by the number of tiers and its effectiveness measured by ROA. It turned out that more complex business groups notice worse performance results than those comprising only two tiers, i.e. parent companies and subsidiaries. Complexity of a business group is therefore negatively correlated with its performance.

2. Research method

Research on the complexity of business groups during a crisis was a part of broader research aimed at identification of factors of resilience to crisis [59][1]. It was carried out on a group of enterprises comprising business groups included in the "2000 List" published by "Rzeczpospolita" newspaper in 2012. The "2000 List" by the "Rzeczpospolita" daily covers the largest, in respect of sales revenues, entities operating in Poland. The author has separated 147 enterprises from among these entities for further research, including 97 entities declaring being a part of a business group.

The research was carried out using CATI (Computer Assisted Telephone Interviews) method based on a questionnaire prepared earlier. This research method made it possible to reach numerous respondents, while minimizing financial costs. CATI research was carried out in 2013, by the end of the macroeconomic crisis. The interviews were conducted by a company named "Indicator. Centrum Badań Marketingowych".

The questionnaire prepared for the research included questions about structural factors, such as those concerning structure of a business group, which enabled the evaluation of a business group's complexity. The complexity degree of a business group was examined by asking questions about the number of subsidiaries and the number of tiers. Business group was considered complex if it had at least three tiers (it included at least mother company, subsidiaries and second-tier subsidiaries) and more than 10 subsidiaries [58]. Considering the number of subsidiaries and the number of tiers, each examined group was classified as having a high, medium or low rate of complexity. Additionally, the changes introduced in the business groups during the crisis were analyzed. The respondents were asked about the following changes in their business group structure: purchase of companies, setting up separate companies, merging companies, liquidation of companies and sale of companies.

To evaluate the condition of enterprises comprising business groups, the following measures of effectiveness were applied: sales revenues, ROE, ROA and indicator of resilience to crisis. The crisis-resilience indicator is one of the methods of predicting bankruptcy risk. Romanowska was the first to propose to use it for evaluation of enterprises' effectiveness in crisis [59]. The indicator was adapted to the Polish conditions and based on Altman's model. It was an indicator developed by a team of Polish scientists [53], calculated according to the formula:

[1] Research project "Determinants of Resistance of Polish Enterprises to the Macroeconomic Crisis" under the direction of Full Professor Maria Romanowska. The project has been financed by the National Science Center under Decision No. DEC-2011/03/B/HS4/04922.

$$Z_{7\ \text{INE PAN}} = -1.498 + 9.498^{*}x_1 + 3.566^{*}x_2 + 2.903^{*}x_3 + 0.452x_4$$

X_1 – operational result/total assets
X_2 – own capital/total assets
X_3 – (net financial results + depreciation) / total liabilities
X_4 – current assets/short-term liabilities
Number –1.498

Its interpretation consists in differentiating positive and negative numbers. A negative indicator shows that an enterprise is at risk of bankruptcy. A positive indicator shows that an enterprise is not at risk of bankruptcy. It can be also indicated that enterprises with a positive indicator number, the value of which is however lower than one, are in poor financial condition, and those with the indicator value exceeding one are entities in good financial condition.

The data gathered as a part of CATI research were further processed. The results were presented in a form of collective diagrams and tables. Statistical relationships (strength of relation between variables) were verified on the basis of statistical tests chosen using SPSS Statistics program. Cramer's V index was used in statistical analyses to measure the strength of dependence between the two nominal variables.

3. Results

Three main issues discussed in the article are presented below. The first is about the complexity of business groups in the final years of the crisis. The second one concerns changes of complexity occurring during the crisis, and the third one is about the relationship between complexity of a business group and its effectiveness.

Complexity of business groups in the final years of the crisis

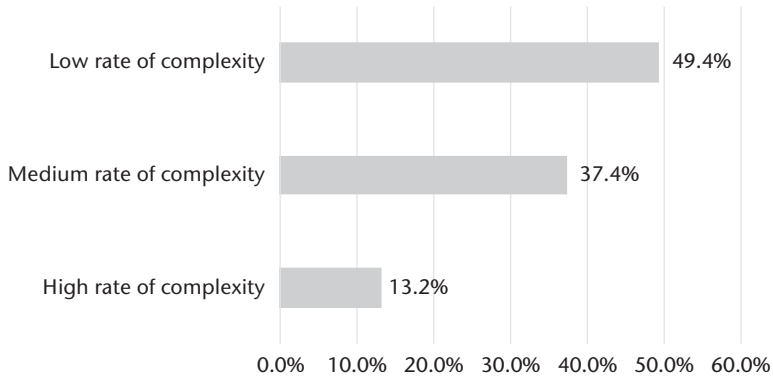
Complexity of business groups is related to both horizontal development (by increasing the number of subsidiaries) and vertical development (by increasing the number of tiers). The average number of companies in the examined sample of business groups was 10, and the median was 5. Most business groups (15 out of 91) had three subsidiaries. A vast majority of the business groups had less than 10 subsidiaries. Such a number was declared by as much as 70.3% of respondents. Only 29.7% of respondents from enterprises being a part of a business group declared that their business group comprises 10 or more subsidiaries. The examined business groups therefore were not very developed in respect of the number of subsidiaries.

They were also not very developed vertically. A prevailing number of respondents (over 55%) declared that their business group comprised two tiers, i.e. a parent

company and subsidiaries. Six respondents said that their business groups had four tiers. Respondents from five enterprises declared that their business group had five tiers. Business groups of the surveyed respondents were also not very developed in respect of the number of tiers.

A summary analysis of companies and the number of tiers in each business group made it possible to provide a comprehensive evaluation of the rate of complexity of the examined entities. Each business group was classified as a business group with a low rate of complexity (not developed vertically or horizontally), or a business group with a high rate of complexity (developed both vertically and horizontally), or a business group with a medium rate of complexity (developed vertically or horizontally). Percentage values reflecting complexity of the business groups examined under quantitative research are shown in Figure 1.

Figure 1. Rate of complexity of business groups



N = 91 (6 refusals of answers)
Source: own study.

Research results show that majority of examined business groups had a low rate of complexity. Almost half of the respondents (49.45%) declared 10 or less than 10 subsidiaries and less than 3 tiers of their business group. It is however worth noticing that over 37% of business groups were classified as business groups with a medium rate of complexity. These business groups had therefore decided to develop either by increasing the number of subsidiaries, or by increasing the number of tiers. Possibly, these business groups could had been undergoing development or reorganization. Only 13% of business groups had a large number of both subsidiaries and tiers.

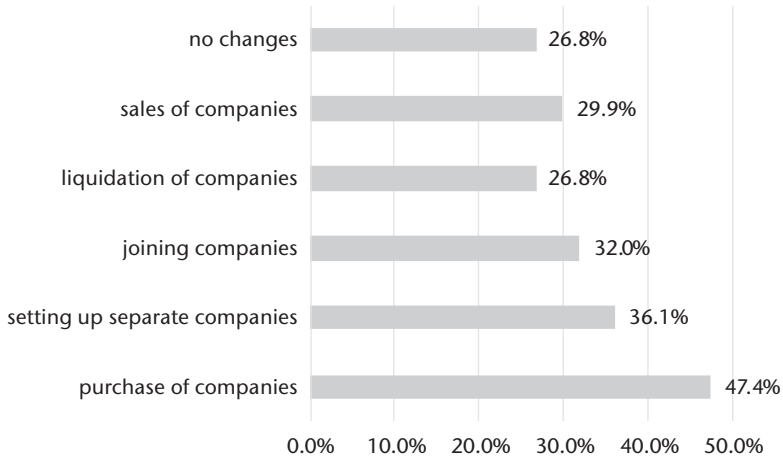
Analysis of individual dimensions of a business group complexity (number of subsidiaries and tiers), as well as comprehensive analysis of a business group structure provides a basis to state that the rate of complexity of Polish business groups is low.

Changes in the business groups complexity during the crisis

Complexity of business groups during the final years of the crisis results from changes introduced in their structures. In the times of crisis it is advisable to introduce measures aimed at reducing the size of an enterprise. Lean management, outsourcing, downsizing and delayering are indicated as appropriate for the enterprises in times of crisis [65]. Engaging in actions aimed at slimming down an organization is much easier in business groups. It can be assumed that during the crisis business groups are more eager to undertake measures to organise their structure and to sell or liquidate unprofitable companies or those that do not fit the business group's strategy.

Changes reported by the respondents are shown on the figure below. The percentage values are not summing up to 100%, since each respondent could give more than one answer.

Figure 2. Changes in business groups – distribution of answers



N = 97

Source: own study.

It is worth noticing that almost three quarters of the entities under research introduced changes in their business group structure during the crisis. Interestingly, as much as 47.4% of respondents indicated that during the last years their business group has been extended by a purchase of companies. The numbers of newly separated companies (36.1%), merged companies (32.0%) and sold companies (29.9%) were similar.

Changes in business group structures can be divided into investment changes, changes relating to the emergence of new companies in the business group structure,

divestment changes understood as sales or liquidation of companies and changes concerning business group structure reorganization, i.e. those related to setting up separate companies and mergers. Divestment and organizational changes prevailed during the crisis, according to anticipations. As much as 56.7% of the analyzed entities have sold and liquidated companies. It was accompanied by changes in business group structure organization (setting up separate and merging companies – 68.1%). These measures were to increase the effectiveness of the business groups.

Interestingly, as much as 26.8% answers were about lack of any changes in a business group during the crisis. Respondents in the number of 9.7% reported introducing every listed change. Both categories of answers are alarming. Lack of changes can be an evidence of a will to wait through the crisis or ignoring it, while excessive activities of a business group can mean a lack of strategy and only *ad hoc* measures.

The research also verified whether the changes were specific for business groups with higher or lower degree of complexity. The results are shown in the table below.

Table 1. Rate of complexity and reported changes introduced in a business group [in %]

Reported type of introduced change / Rate of complexity	Purchase of companies	Setting up separate companies	Merging companies	Liquidation of companies	Sale of companies	No changes
Low	35.7	33.3	42.9	32.0	42.3	68.0
Medium	42.9	42.4	28.6	28.0	34.6	24.0
High	21.4	24.2	28.6	40.0	23.1	8.0
Total	N = 100(42)	N = 100(33)	N = 100(28)	N = 100(25)	N = 100(26)	N = 100(25)

Source: own study.

Respondents from business groups with a medium level of complexity were the ones to report purchases of companies most often (42.9%) as well as setting up separate companies (42.4%). Mergers and sales of companies were mostly reported by respondents from business groups with a low level of complexity (42.9% and 42.3% respectively). The last type of changes, i.e. liquidation, was usually indicated by respondents from business groups with a high rate of complexity. Lack of any changes was mostly declared by respondents from business groups with a low rate of complexity.

It should be highlighted that a statistically significant relationship between a change introduced in the last years and the rate of complexity of a business group was identified for four out of five types of changes: purchase (Cramer's $V = 0.289$, $p < 0.05$), setting up separate companies (Cramer's $V = 0.294$, $p < 0.05$), merging companies

(Cramer's V = 0.305, 0.05) and liquidation of companies (Cramer's V = 0.489, $p < 0.05$). Relationship between company liquidation and the degree of complexity was the strongest. It means that more companies' liquidations accompanied the increasing business group's rate of complexity. It is the simplest way to improve effectiveness during a crisis, eagerly applied by developed business groups.

Influence of business groups' rate of complexity on their effectiveness during the crisis

The issue of complexity of a business group is strongly related to its management system. As it was mentioned in the research review, it can also influence a business group effectiveness. It is assumed that effectiveness of business groups which are very developed vertically and horizontally would be lower. The described research measured effectiveness both by traditional measures such as ROE and ROA or volume of generated revenues, and by more complex indicators, such as crisis-resilience indicator allowing for assessment of bankruptcy risk.

The tables below show the relationship between the rate of complexity of a business group and its effectiveness.

Table 2. Rate of complexity of business groups and volume of sales revenues [in %]

Volume of sales revenues (PLN thousand)	Rate of complexity		
	low	medium	high
Up to 175,000	26.7	20.6	41.7
175,001–240,000	15.6	32.4	33.3
240,001–385,000	31.1	23.5	0.0
Over 385,001	26.7	23.5	25.0
Total	100 (N = 45)	100 (N = 34)	100 (N = 12)

Cramer's V = 0.211, $p > 0.05$

Source: own study.

Table 3. Rate of complexity of business groups and ROE [in %]

ROE	Rate of complexity		
	low	medium	high
ROE below average	46.7	41.2	33.3
ROE over average	53.3	58.8	66.7
Total	100 (N = 45)	100 (N = 34)	100 (N = 12)

Cramer's V = 0.091, $p > 0.05$

Source: own study.

Table 4. Rate of complexity of business groups and ROA [in %]

ROA	Rate of complexity		
	low	medium	high
ROA below average	55.6	44.1	41.7
ROA over average	44.4	55.9	58.3
Total	100 (N = 45)	100 (N = 34)	100 (N = 12)

Cramer's V = 0.122, p > 0.05

Source: own study.

Table 5. Rate of complexity of business groups and resilience to a crisis

Crisis-resilience indicator	Rate of complexity		
	low	medium	high
ZM < 0	8.9	5.9	8.3
0 < ZM < 1	20.0	17.6	16.7
ZM > 1	71.1	76.5	75.0
Total	100 (N = 45)	100 (N = 34)	100 (N = 12)

Cramer's V = 0.047, p > 0.05

Source: own study.

An analysis of percentage values indicates that business groups with the smallest sales revenues prevail among business groups with the highest level of complexity. It is proven that development of a business group is not accompanied by a growth of sales revenues. In the bigger business groups probably occur units that do not generate revenues from sales of goods and services, and their function is to provide services for the entire or part of the business group, such as financial companies offering loans to other business group companies or logistics management companies. Analysis of relationship between the rate of complexity of a business group and values of ROE and ROA of business group's members shows that along with increase in complexity, the number of entities generating ROE and ROA above average grows. Similarly, medium and high level of complexity business groups consisted companies with the highest level of crisis-resilience indicator. Unfortunately, relationships between variables are not statistically significant. The rate of complexity of business groups does not differentiate the examined group.

It should be highlighted that there are also no relationships between the number of subsidiaries and effectiveness measured by crisis-resilience indicator (Cramer's V = 0.171, p > 0.05) and between the number of a business group's tier and its effectiveness measured by crisis-resilience indicator (Cramer's V = 0.200, p > 0.05). The number of subsidiaries and the number of tiers differentiate the examined group. However, slightly more business groups were identified with a small number of

subsidiaries not being at risk of bankruptcy, and greater percentage of business groups with a big number of subsidiaries (more than 10) reported decrease of the crisis-resilience indicator. Excessive development, due to the number of subsidiaries, cannot be favorable for a business group and its effectiveness. Unfortunately, statistical tests do not confirm a relationship between the analyzed parameters.

Conclusion

The presented research attempted to answer the questions about complexity of Polish business groups during the final years of the crisis, directions of changes of this complexity and impact of the rate of complexity on a business group's effectiveness. The results provided a basis to state that Polish business groups in the final years of the economic crisis had a rather low rate of complexity. It was conditioned by changes in the business groups' configuration during the crisis.

The examined business groups introduced numerous changes in their structure in the analyzed period, although they were not revolutionary. According to respondents, the most popular category of changes were divestments (liquidation or sales of companies) and changes organizing the structure of a business group (setting up separate companies or merging them). Changes consisting in internal reconfiguration of a business group's structure, i.e. merging or setting up separate companies, were more specific for business groups with a low and medium rate of complexity. Interestingly, business groups with a low and medium rate of complexity were also more frequently purchasing companies.

Unfortunately, no relationship between effectiveness and complexity of a business group was identified. It could be possibly related to the fact that the structure of a business group should be regarded as a factor moderating relationship between other factors, influencing economic entities' activities results, such as strategy. However incorrect configuration of structure, reflected by excessive complexity, has a negative influence on strategy implementation and it can reduce effectiveness of the entire business group and entities it comprises.

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BUSINESS GROUPS CONFIGURATION AND ITS CHANGES DURING A CRISIS

Abstract

Business groups are a very interesting phenomenon, although their development stage varies in different countries across the world. It depends mainly on the legal and political, as well as economic conditions. In the 'old Europe' countries the phenomenon of business groups is well known and described. Big transnational corporations were created already in the 19th century. Also in emerging markets like Korea, India or China, the functioning of business groups is well decribed. In the Central and Eastern Europe however, this phenomenon is relatively new, as business groups were developed only after the system transformation.

The significance of business groups in modern economy is proven by a constant growth of their number, even during the crises. The emergence and development of business groups consisting of legally independent enterprises is substantiated by numerous circumstances. Undoubtedly, the growth of an enterprise makes it necessary for managers to look for optimum means of management. Replacing hierarchical relations by capital relations translates into greater structural flexibility of an entity and facilitates control and management. The reasons of establishing business groups are often related to reduction of operational and capital risk, especially with reference to diversified business groups, which are more resilient to periodical downturns than entities operating in only one sector [63]. Additionally, operating as a part of capital group during a crisis can give advantages by dispersing risk and more opportunities of restructuring actions at the level of the entire business group, as well as opportunities of support by instruments of internal capital market of individual companies.

What matters in the times of a crisis is not only the form of a business group, but also its configuration understood as the business group construction in respect of the number of tiers and subsidiary companies. Excessive development can lead to a drop of effectiveness because of the necessity of greater coordination of actions, problems with supervision, control and subsidiary companies management. On the other hand, insufficient complexity of a business group and a broad scope of operational activities carried out by the parent company can expose the entire group to a greater operational and financial risk.

The reference literature does not provide research showing dependence between a business group configuration and its perfomance. Most studies identify only the level of complexity (number of subsidiary companies, number of business group tiers) or indicate the need to adapt the business group organization to strategy changes (structure-strategy fit).

The aim of the article is to present the results of quantitative empirical research on the configuration of business groups and on the relation between their configuration and economic performance. Quantitative research was carried out on the sample of 97 business groups operating in Poland. The research evaluated not only the business groups' configuration

during the crisis, but most of all the changes they made in their configuration. It should be highlighted that the empirical research fills the gap in research on the issue of business groups configuration during the crisis.

Key words: business group, structure, economic performance

KONFIGURACJA STRUKTURALNA GRUP KAPITAŁOWYCH I JEJ ZMIANY PODCZAS KRYZYSU

Streszczenie

Grupy kapitałowe są niezmiernie ciekawym zjawiskiem, chociaż rozwój grup kapitałowych jest w różnym stopniu zaawansowany w poszczególnych krajach na świecie. Zależy to głównie od uwarunkowań prawno-politycznych oraz gospodarczych. W krajach starej Europy zjawisko grup kapitałowych jest dobrze znane i opisane. Już w końcu XIX wieku powstawały duże korporacje transnarodowe. Grupy kapitałowe działające na rynkach rozwijających się, takich jak Indie, Korea czy Chiny, również są dość dobrze opisane. Natomiast w Europie Środkowo-Wschodniej to zjawisko jest stosunkowo nowe, ponieważ rozwój grup kapitałowych nastąpił dopiero po przemianach systemowych.

O znaczeniu grup kapitałowych we współczesnej gospodarce świadczy także fakt, że obserwuje się ciągły wzrost ich liczby nawet w czasach kryzysu. Pojawienie się i rozwój grup kapitałowych składających się z samodzielnych pod względem prawnym przedsiębiorstw uzasadnia wiele przesłanek. Niewątpliwie wzrost przedsiębiorstwa wymusza na menedżerach konieczność poszukiwania bardziej optymalnych sposobów zarządzania. Substytucja powiązań hierarchicznych powiązaniami kapitałowymi oznacza zwiększanie elastyczności strukturalnej pomiotu oraz ułatwia kontrolę i zarządzanie. Jako motywy tworzenia grup kapitałowych często wymieniane są te związane z ograniczaniem ryzyka operacyjnego i kapitałowego, szczególnie w odniesieniu do grup zdywersyfikowanych, które są bardziej odporne na czasowe osłabienie koniunktury niż podmioty działające w jednym sektorze [63]. Dodatkowo w czasie kryzysu działanie w formie grupy kapitałowej może przynieść korzyści poprzez rozproszenie ryzyka oraz większe możliwości dokonywania działań restrukturyzacyjnych na poziomie całej grupy kapitałowej, a także pojawiające się możliwości wsparcia za pomocą instrumentów wewnętrznego rynku kapitałowego poszczególnych spółek.

W czasach kryzysowych nie tylko sama forma grupy kapitałowej ma znaczenia, ale także sposób jej konfiguracji rozumianej jako budowa grupy ze względu na liczbę pięter oraz spółek zależnych. Nadmierna rozbudowa może prowadzić do spadku efektywności przez konieczność większej koordynacji działań, pojawienie się problemów w nadzorze i kontroli oraz zarządzaniu

spółkami zależnymi. Natomiast niewielka złożoność grupy kapitałowej i prowadzenie w dużym zakresie działalności operacyjnej przez spółkę matkę może w większym stopniu narażać całą grupę na ryzyko operacyjne i finansowe.

W literaturze przedmiotu brakuje badań pokazujących zależność między konfiguracją grupy kapitałowej a jej efektywnością. Większość badań tylko identyfikuje poziom złożoności (liczbę spółek zależnych, liczbę pięter w grupie) lub też wskazuje na konieczność dopasowania budowy grupy kapitałowej do zmian w strategii.

Celem artykułu będzie przedstawienie wyników badań empirycznych dotyczących konfiguracji grup kapitałowych oraz związku konfiguracji z wynikami ekonomicznymi. Badania ilościowe zrealizowane zostały na próbie 97 grup kapitałowych działających na terenie Polski. W zrealizowanych badaniach nie tylko oceniono jak były skonfigurowane grupy kapitałowe w czasie kryzysu, ale przede wszystkim jakich zmian dokonywały w swojej konfiguracji. Należy podkreślić, że zrealizowane badania empiryczne uzupełniają lukę badawczą dotyczącą problemu konfiguracji grupy kapitałowej w czasie kryzysu.

Słowa kluczowe: grupy kapitałowe, struktura, efektywność ekonomiczna

MACIEJ CZARNECKI*

ORGANISATIONAL GROWTH PROBLEMS: THE CONSTRUCT AND ITS EMPIRICAL EXAMINATION

Introduction

Company growth is typically perceived as one of the most important strategic objectives, as attested by opinions gathered from entrepreneurs, managers and rank-and-file employees [9, p. 127]. It is also considered as highly desirable by public authorities at every level, since it translates into tangible benefits: tax revenues, new jobs, and the economic development in general [10, p. 227]. However, by associating growth with company's success, many decision-makers seem to disregard the notion that company growth is invariably associated with problems and challenges [5, p. 48]. For those companies which are not equipped properly to respond to such challenges, company growth may become a source of crises or even a portent of spectacular failures [16, p. 90]. While modern management sciences have long shown interest in problems related to organizational growth, the quantitative research in this area is by far inadequate. This is evidenced not only by the lack of reliable analyses of correlations between growth problems and other variables, but also by the lack of proper empirical evaluation of the issue at hand. Consequently, organizational growth problems remain in the sphere of conceptual analyses.

This paper represents an attempt at bridging this gap by means of studying the correlations between growth processes and other concurrent problems in company operation, together with suggestions for the interpretation of such interplay. The analyses were conducted on a sample of 172 Polish companies representing the

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segment of medium size enterprises. The correlations were tested using Pearson linear correlation coefficient and Spearman's rank correlation test.

1. Conceptualization and operationalization of organizational growth problems

Research provides us with a large set of potential causes of problems associated with growth, together with a list of areas where such an influence may manifest itself. For instance, growth problems may emerge due to mere replication of those behavioral patterns which had been proved effective in the past [12, p. 24; 13, p. 222]. E. Penrose, on the other hand, accentuates the role of inadequate managerial skills [15, p. 17]. According to Ch.J. Fombrun and S. Wally, growth problems – for the most part – are manifested in such areas as: employment and induction of managers and other staff, control mechanisms, centralization, delegation of empowerments, and formalization of structures and systems [6, p. 108]. P. Abetti [1, p. 15] classifies organizational growth problems into three categories: business problems, personnel problems, and organizational problems. Ch.L. Nicholls-Nixon [13, p. 78ff] places the emphasis on problems associated with processes, structures and systems, while A.D. Chandler et al. [2, pp. 374f] focus on problems of administrative character. Levie and Lichtenstein, in their review of models based on the concept of organizational lifecycle, point to structures, processes and formalization as the three most frequent operational areas susceptible to problems associated with growth – judging by their inclusion in such models [11, pp. 321f]. Based on the above observation, it may be assumed that the majority of problems associated with organizational growth can be categorized as problems of organizational character[1].

Problems associated with company growth are manifested with varied intensity [17, 2004, p. 130]. If the negative consequences of growth escalate in a rapid fashion, they may pose a serious risk to company's existence. In the worst case scenarios, such a crisis[2] may even lead to bankruptcy [16, pp. 90f]. It may be useful to note, however, that 'negative scenarios can also be approached in terms of challenges and opportunities, due to their potential for stimulating innovation' [17, p. 130]. Therefore, it may be assumed that growth-related crises can indeed be perceived as opportunities and potential sources of innovation, as long as the problems at hand are kept from escalating beyond control and have no significant impact on company result (or its very existence).

[1] Organisational problems apply to routines, structures, systems, and their coordination [7].

[2] Risk to company's existence is a widely used determinant of crisis in professional definitions of the term [cf. 8,18].

For the remainder of this paper, the organizational growth problems will be interpreted as disturbances to the day-to-day operation of the organization, generated as a result of maladjustment between the development of processes, operating systems, organizational structures, management systems, and the organizational culture on the one hand, and the requirements of the progressing complexity resulting from growth. To measure the empirical values of organizational growth problems, a proprietary scale was employed, designed on the basis of findings obtained in the course of research in the years 2012–2016[3]. The scale consists of 14 statements evaluated by the respondents on a 7-point Likert scale. The scale passed the Cronbach's alpha reliability test with the score of 0.92.

2. Research methodology

The research was conducted on a sample of 172 Polish companies of medium-sized segment: 138 showing an employment increase of at least 50% over the period of 2011–2014 (*growth*)[4], and 34 showing a change in employment in the range of –10% do +10% (*non-growth*)[5]. The above imbalance in company representation between these two groups was a result of the fact that the *growth* companies had already been subject to detailed evaluation in a previous study, and the *non-growth* group was intended to serve as research control group. Finding the respondents fitting the above requirement had proved to be a fairly difficult task, due to the lack of database support for this type of information. The official employment reports stored by the Central Statistical Office were (and still are) subject to formal statutory protection under the statistical confidence clause. In effect, the bulk of the time assigned to the study was devoted to finding a suitable representation of respondents, in comparison to the joint duration of actual surveys. The basic property valuation for the selection of respondents came in the form of an address book of medium-sized companies, collated and maintained by a commercial research center[6].

Sales increase was measured in a two-fold manner: as a percentage change and, due to the steep right sloping in its distribution, as a categorial property described by ranges calculated from $100k/7$ percentiles, where $k = 1,\ldots,6$. This approach produced

[3] For a detailed overview of both the original definition and the scale design, see this author's chapter in [3].

[4] The group of 138 *growth* entities is a representative sample of medium sized growth enterprises in Poland [3]. The *non-growth* group is not representative for the population.

[5] All the companies in the *growth* group reported an increase in employment and (with one exception) sales volumes. In the *non-growth* group, four companies reported employment reduction, and four – a decrease in sales volume.

[6] Sample collation and respondent reviews were subcontracted to an external research centre: Centrum Badań Marketingowych INDICATOR.

7 categories of sales progression (with 1 representing the lowest score, and 7 – the most pronounced change in the examined value), which corresponded to the 7 grades of responses to survey questions, designed to measure the growth-related problems in an organizational setting. Employment increase was examined in a similar manner: as a percentage change, and as a property described by means of procedures similar to the ones used for changes to sales volumes. This time, however, the 7 categories were assigned to companies included in the *growth* group, while the *non-growth* entities were assigned zero value (as representing radically different employment trends). Employment reports were disclosed by all the companies under study, while sales figures were withheld by 13 companies of the *growth* group, and 6 of the *non-growth* group. For this reason, the measurement of correlations was supplemented with by-pair elimination, to ensure the use of the broadest possible set of observation data in the calculation of coefficients.

The measurement of correlation was conducted based on the use of Pearson linear correlation coefficient and Spearman's rank coefficient. Those two methods were employed in order to test the correlations between descriptive properties between the companies under evaluation, for the purpose of comparing the coefficient values for each of the properties examined across the sample population. It must be noted at this point that conclusions drawn from the Spearman's rank correlation test are interpreted differently from those obtained using a rank correlation test, as a measure of ordering the entities by both properties. Rank coefficient tests, on the other hand, may be calculated by the range of a property under examination, which is fairly weaker than the one used for linear correlation analyses. At the same time, the results offered by rank correlation tests are more resilient to incidental deflections in property values resulting from the limited size of the sample population. The characteristics of the rank test pose an obstacle to the use of more advanced methods of statistical analysis, such as regression analysis or path analysis. All the calculations were conducted using Statistica 2010 software.

3. Analyses of correlations between growth and the organizational growth problems, based on the use of Pearson linear correlation coefficient

The entire sample under study – i.e. *all* the entities, both those in the *growth* and *non-growth* group – shows a positive and statistically significant correlation of 0.16 (Table 1) between employment increase (categorially) and the dynamics of organizational growth problems. No correlations were identified between the sales increase and the dynamics of growth-related problems. Based on the above, it may be assumed that the increase of organizational complexity (and problems associated with this

process) shows a notably stronger correlation to the increase in employment, rather than the increase in total sales volumes [4, p. 194].

Table 1. Matrix of linear correlations identified in the *entire* sample under study

Variable	1	2	3	4	5	6
1	1	**0.479**	**0.514**	**0.383**	–0.026	–0.002
2	**0.479**	1	**0.303**	**0.741**	–0.095	**0.160**
3	**0.514**	**0.303**	1	**0.381**	0.093	0.075
4	**0.383**	**0.741**	**0.381**	1	–0.072	–0.003
5	–0.026	–0.095	0.093	–0.072	1	**0.280**
6	–0.002	**0.160**	0.075	–0.003	**0.280**	1

LEGEND: statistically significant values (at the level of 0.05) are bolded. The following variables were examined: 1 – categorial change in sales; 2 – categorial change in employment; 3 – sales volume change in %; 4 – change in employment in %, 5 – organizational growth problems, current value; 6 – organizational problems, dynamics.

Source: own study.

Interesting correlations can be observed in the *growth* group (Table 2).

Table 2. Matrix of linear correlations identified in the *growth* group of entities under study

Variable	1	2	3	4	5	6
1	1	**0.326**	**0.503**	**0.281**	0.015	**–0.228**
2	**0.326**	1	**0.248**	**0.682**	–0.044	–0.141
3	**0.503**	**0.248**	1	**0.343**	0.112	0.002
4	**0.281**	**0.682**	**0.343**	1	–0.036	**–0.197**
5	0.015	–0.044	0.112	–0.036	1	**0.346**
6	**–0.228**	–0.141	0.002	**–0.197**	**0.346**	1

LEGEND: statistically significant values (at the level of 0.05) are bolded. The following variables were examined: 1 – categorial change in sales; 2 – categorial change in employment; 3 – sales volume change in %; 4 – change in employment in %, 5 – organizational growth problems, current value; 6 – organizational problems, dynamics.

Source: own study.

Firstly, and contrasting with the positive correlation found for the *entire* sample of companies, the *growth* group shows a negative (0.197) correlation between the percent increase in employment and the dynamics of organizational growth problems. Accounting for the presence of discernibly positive correlations between increases in employment and sales (both categorially and in %), the above may be interpreted as follows: companies showing positive correlation between employment levels and sales volumes, through the increase in human resources needed for the servicing of

increased demand, have managed to avert the mounting pressure of organizational growth problems. Furthermore, as suggested by this author's studies, those companies were also able to reach a higher level of organizational growth [3]. The increase in employment, associated with organizational development, may help explain the notable decrease of symptoms and problems related to growth, as observed in this particular group of entities.

Secondly, the results show an ostensibly negative correlation of –0.228 between the increase in sales volumes (categorially) and the dynamics of organizational growth problems, which seems to provide more arguments for the validity of the above statement.

Further proof confirming the validity of the above conclusion can be found in the results obtained for the *non-growth* group of companies under study (Table 3). Namely, there was a notable (0.405) and statistically significant (p=.033) correlation between per-cent increase in sales volume and the dynamics of organizational growth problems. It seems viable to assume that, for those companies that showed no increase in employment in response to their increase in sales volumes, there was a mounting pressure of problems related to the rise of customer servicing needs, such as the increased customer base, mounting orders, production pressure, claims servicing, and so on. It must be noted at this point that the number of responses obtained from *non-growth* companies with respect to their sales records was fairly small (N=28), meaning that the conclusions drawn from statistical data should be taken with more caution compared to more numerous sets – this also applies to any attempts at generalizing the findings. The optimal settings for drawing viable conclusions would require an equal (or approaching equal) composition of the contrasting sets, or – alternatively – a layer distribution of entities into groups representing similar sale volume spectrums.

Table. 3 Matrix of linear correlations identified in the *non-growth* group of entities

Variable	1	2	3	4	5	6
1	1	0.000	**0.955**	0.168	–0.080	**0.444**
2	0.000	1	0.000	0.000	0.000	0.000
3	**0.955**	0.000	1	0.141	–0.089	**0.405**
4	0.168	0.000	0.141	1	–0.254	–0.052
5	–0.080	0.000	–0.089	–0.254	1	0.130
6	**0.444**	0.000	**0.405**	–0.052	0.130	1

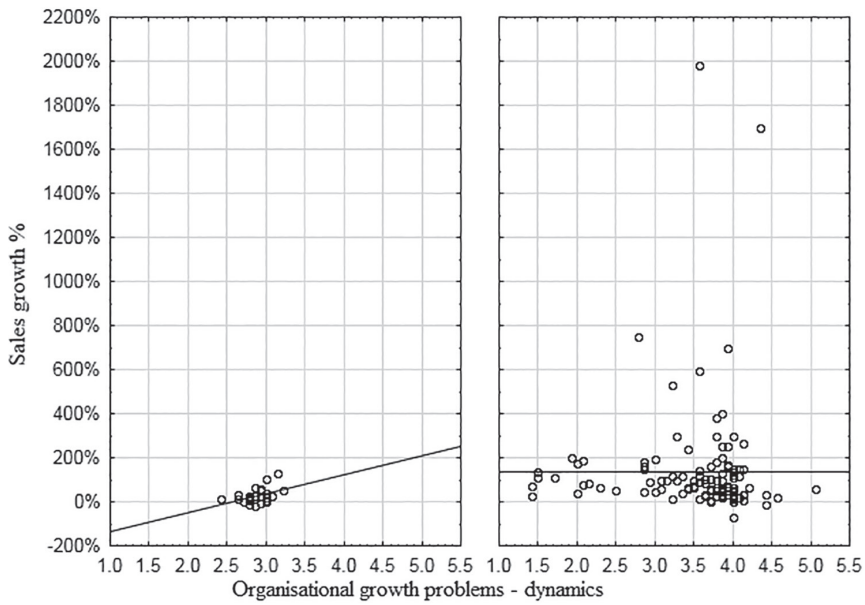
LEGEND: statistically significant values (at the level of 0.05) are bolded. The following variables were examined: 1 – categorial change in sales; 2 – categorial change in employment; 3 – sales volume change in %; 4 – change in employment in %, 5 – organizational growth problems, current value; 6 – organizational problems, dynamics.

Source: own study.

4. Analyses of correlations between growth and organizational growth problems, using Spearman's rank correlation test

Some of the correlations under study seem to follow a non-linear trend. This can be observed on the distribution chart (Figure 1).

Figure 1. Correlations between changes in sales volume (the axis is scaled in %) and the dynamics of organizational growth problems in *non-growth* (left) and *growth* groups (right)



Source: own study.

For this reason, the analyses were recapitulated using Spearman's rank correlation test. This approach offers increased resilience to disturbances resulting from outlier data. The purpose was to test whether the findings obtained from additional analyses would confirm, modify, or falsify the previous observations and conclusions.

The values and signs of rank correlations presented in Tables 4–6 seem to confirm the validity of previous examinations. Thus obtained, the values of correlations between variables exceeded those determined from Pearson coefficient, but retain their sign (positive/negative). This should not come as surprising, since a change in methodology of calculation does have its effect on the results. Furthermore, some

value disparities may be a result of a non-linear form of certain correlations. It should be noted that, for both the *growth* and the *non-growth* group, the findings obtained from Pearson's linear test and Spearman's rank test are fairly convergent. More pronounced differences between the two sets of results were only found for the *entire* population of entities under study.

Another interesting observation with respect to the *entire* respondent group (Table 4) is the positive and statistically significant correlation (0.242) between employment increase (in %) and the dynamics of organizational growth problems. This seems to further validate the conclusions drawn for the *entire* studied population.

Table 4. Matrix of rank correlations identified in the *entire* population of respondents

Variable	1	2	3	4	5	6
1	1	**0.484**	**0.990**	**0.493**	–0.095	0.028
2	**0.484**	1	**0.503**	**0.992**	**–0.235**	**0.245**
3	**0.990**	**0.503**	1	**0.512**	–0.100	0.028
4	**0.493**	**0.992**	**0.512**	1	**–0.239**	**0.242**
5	–0.095	**–0.235**	–0.100	**–0.239**	1	0.051
6	0.028	**0.245**	0.028	**0.242**	0.051	1

LEGEND: statistically significant values (at the level of 0.05) are bolded. The following variables were examined: 1 – categorial change in sales; 2 – categorial change in employment; 3 – sales volume change in %; 4 – change in employment in %, 5 – organizational growth problems, current value; 6 – organizational problems, dynamics.

Source: own study.

Table 5. Matrix of rank correlations identified in the *growth* group of entities

Variable	1	2	3	4	5	6
1	1	**0.337**	**0.988**	**0.345**	0.040	**–0.250**
2	**0.337**	1	**0.352**	**0.991**	–0.063	–0.145
3	**0.988**	**0.352**	1	**0.363**	0.042	**–0.258**
4	**0.345**	**0.991**	**0.363**	1	–0.068	–0.144
5	0.040	–0.063	0.042	–0.068	1	**0.203**
6	**–0.250**	–0.145	**–0.258**	–0.144	**0.203**	1

LEGEND: statistically significant values (at the level of 0.05) are bolded. The following variables were examined: 1 – categorial change in sales; 2 – categorial change in employment; 3 – sales volume change in %; 4 – change in employment in %, 5 – organizational growth problems, current value; 6 – organizational problems, dynamics.

Source: own study.

Table 6. Matrix of rank correlations identified in the *non-growth* group of entities

Variable	1	2	3	4	5	6
1	1	0.000	**0.952**	0.187	–0.094	**0.433**
2	0.000	1	0.000	0.000	0.000	0.000
3	**0.952**	0.000	1	0.122	–0.106	*0.358
4	0.187	0.000	0.122	1	–0.109	–0.008
5	–0.094	0.000	–0.106	–0.109	1	0.239
6	**0.433**	0.000	*0.358	–0.008	0.239	1

LEGEND: *p=0.062 – approaching the significance threshold. Statistically significant values (at the level of 0.05) are bolded. The following variables were examined: 1 – categorial change in sales; 2 – categorial change in employment; 3 – sales volume change in %; 4 – change in employment in %, 5 – organizational growth problems, current value; 6 – organizational problems, dynamics.

Source: own study.

5. Research conclusions. Limitations of the study and suggestions for future analyses

Analyses of correlations between the increases in sales and employment and the magnitude of organizational growth problems provide some interesting observations. Most importantly, they seem to validate the very existence of organizational growth problems, at least in part.

Across the *entire* population under study, the calculated coefficients seem to imply the existence of a positive correlation between company growth and the dynamics of organizational growth problems. It seems that the values of such correlations would be more pronounced if the share of *non-growth* group in the entire respondent population were more adequate for the purpose at hand.

The above conclusion is further validated by the context of correlations identified in the *non-growth* group, as the most pronounced of all the sets included in the calculation process. In *non-growth* entities, the increase in sales volumes was not balanced by a suitable increase in employment figures. In effect, the existing personnel base was burdened with additional servicing load brought about by new customers, orders, production, claims, etc. This may explain the notable increase in dynamics of organizational growth problems observed in this group.

Astonishingly, the *growth* group showed negative correlations between company growth (as measured by the increase of both employment and sales figures) and the dynamics of organizational growth problems. It may be assumed that companies in this segment have managed to increase both their sales volumes and employment figures, thus providing suitable manpower to service the increased load. In effect, they managed to avert the pressure of increased dynamics of organizational growth

problems, or even effectively reduce it through the development of organizational solutions.

The analyses conducted as part of this study come with certain limitations. It must be noted that the proprietary scale used for testing organizational growth problems is a recent development, and – so far – has not been verified in external studies. In addition, the groups used for cross-examination purposes were unequal, and the findings (the most pronounced, at that) obtained for the *non-growth* group were based on a disproportionately limited sample.

For future studies, it seems advisable to provide a more proportionate count of respondent entities across each sample group. Alternatively, the sample can be reduced to contain only such entities that show sales increase without the corresponding increase in employment. The above analyses suggest that such companies are the most favorable setting for the evaluation of the phenomenon of organizational growth problems. Such sample composition would also allow for the use of more advanced methods of statistical analysis (regression analysis, path analysis). However, one must bear in mind the obvious difficulties in finding suitable representation for such a respondent sample.

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ORGANISATIONAL GROWTH PROBLEMS: THE CONSTRUCT AND ITS EMPIRICAL EXAMINATION

Abstract

Company growth is typically accompanied by the emergence or intensification of pressures and organizational problems. The mounting pressure may, in some cases, result in crises, or even present a danger to company existence. This area has long been explored by management sciences, but empirical evidence on the subject at hand is relatively scarce; in fact, the very incidence of organizational growth problems has not yet been verified through quantitative methods. The analyses presented in this paper represent an attempt at bridging this apparent gap. The research was conducted on a sample of 172 Polish companies representing the segment of medium size enterprises. Correlations were tested using Pearson linear correlation coefficient and Spearman's rank correlation test, while the calculation of dynamics of organizational

growth problems was measured on a proprietary scale consisting of 14 statements evaluated by the respondents along a 7-point Likert scale (Cronbach's alpha = 0.92). The dynamics of organizational growth problems was found to be positively correlated with the increase in both sales and employment figures. Somewhat astonishing was the observation of negative correlations in the group of entities with reported increase in employment. This can be explained as a conscious response of such companies to the anticipated pressure of growth problems associated with sales increases – in this context, the correlation between sales and employment figures seems obvious, and is often accompanied by organizational growth. The most important observation, however, is that the problems associated with organizational growth are a valid construct, and one measurable by quantitative methods.

Key words: growth, problems, challenges, pressures, crisis

ORGANIZACYJNE PROBLEMY WZROSTU – KONSTRUKT I JEGO EMPIRYCZNA WERYFIKACJA

Streszczenie

Wzrost organizacji wiąże się z występowaniem napięć i problemów organizacyjnych. Nasilając się, mogą one doprowadzić do kryzysów, będących zagrożeniem dla egzystencji przedsiębiorstwa. Problematyka ta od dawna jest przedmiotem zainteresowania nauk o zarządzaniu, jednak stosunkowo niewiele o niej wiadomo; nie zweryfikowano nawet dotąd za pomocą metod ilościowych istnienia problemów wzrostu. Przedstawione analizy stanowią próbę wypełnienia tej luki. Badania przeprowadzono na próbie 172 polskich przedsiębiorstw średniej wielkości. Do pomiaru zależności użyto współczynników korelacji liniowej Pearsona i rangowej Spearmana, do pomiaru organizacyjnych problemów wzrostu skali opracowanej przez autora, zawierającej 14 stwierdzeń, do których respondenci ustosunkowywali się za pomocą siedmiostopniowej skali Likerta (alfa Cronbacha = 0,92). Z dynamiką organizacyjnych problemów wzrostu korelują zarówno wzrosty sprzedaży, jak i zatrudnienia. Nieco zaskakujące są niektóre ujemne zależności, uzyskane w grupie przedsiębiorstw zwiększających zatrudnienie. Przyjęto, iż powodem tego zjawiska jest pożądane, w kontekście zapobiegania nasilaniu się problemów wzrostu, współwystępowanie w tej grupie wzrostu sprzedaży ze wzrostem zatrudnienia, któremu dodatkowo towarzyszy organizacyjny rozwój. Najważniejszym spostrzeżeniem wydaje się jednak fakt, iż za pomocą metod ilościowych wykazano występowanie organizacyjnych problemów wzrostu.

Słowa kluczowe: wzrost, problemy, wyzwania,napięcia, kryzys

MARCIN SONIEWICKI*

COMPETITIVENESS OF TRADING COMPANIES – THE ROLE OF SELECTED KNOWLEDGE SOURCES[1]

Introduction

The article concentrates on companies that mainly deal with retail and wholesale trade. It examines the impact of different knowledge sources, most often described in the literature, on their competitiveness level.

In the recent years the role of knowledge became crucial and dominant. Currently, it is the key element of successful operation of every type of companies [11], also those that operate in the so called "traditional branches" [14, pp. 1–2]. However, this resource is not homogeneous. Each type of enterprise requires different kind of knowledge and different source of its acquisition. Moreover, it quickly becomes outdated, so companies need to acquire new elements of knowledge regularly. The issue of knowledge management has not been comprehensively explored in the case of wholesale and retail trading companies. This article is going to partially fill this research gap and check the actual knowledge sources used by trading companies.

1. Literature review

There are many concepts in the literature concerning intangible assets of enterprises. The most popular are organizational learning (OL), learning organization (LO) as well as knowledge management (KM) [6, p. 3; 3, p. 11]. At the moment, knowledge

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management is the most popular among authors, mostly because of its clarity and practical character [24, p. 124]. Nevertheless, there are different attitudes to knowledge management. This article adopts process approach as it has a significant advantage of a clear distinction between particular processes [20, p. 76]. There are also numerous knowledge management definitions in the literature [1; 5, p. 3]. I have adopted the one developed by Cranfield Business School. According to this definition knowledge management is a "collection of processes that enables the creation, dissemination and use of knowledge to achieve organizational objectives" [15, p. 74]. Literature also describes different ways of distinguishing particular knowledge management processes. They are more or less detailed. This article uses concept proposed by Probst, Raub and Romhardt [16, p. 42]. It consists of locating, acquiring, developing, sharing, disseminating, exploiting as well as protecting knowledge.

Significance of external knowledge or information acquisition is underlined by many authors, for example Jack Welch [9, p. 93] or Hsieh, Lai and Shi [7]. Darroch [2, p. 41] and Paliszkiewicz [13, p. 74] stress out that this resource might be obtained from number of sources and their selection may influence enterprise's level of competitiveness. The analysis of knowledge sources used by trading firms is purposeful as reliable and up to date information and knowledge are crucial for these companies [23, p. 14]. Moreover, their goal is to provide trade services such as selecting suppliers, purchase of goods and market analyses. During these processes trading companies need to make a number of decisions, which need to be based on the accurate information [18, pp. 26–27], therefore its efficient collection and processing is crucial for their operation [23, p. 14]. Information and knowledge are also important for trading companies due to increasing importance of innovation [8, pp. 24–27], especially among enterprises operating in the retail trade [10, pp. 34–41; 19, pp. 48–55].

2. Methodology

There are two main cognitive perspectives in the literature – emic and etic [25]. This article adopts the etic or modernistic cognitive perspective as it brings more objective results and enables one to get practical conclusions that may be useful for companies. The data for the analyses have been acquired in the quantitative survey performed as a part of research project financed by Polish National Science Center (1). Sampling frame of the research survey has been derived from database delivered by Kompass Poland. The research consisted of two parts. The first one was electronic survey conducted with the use of software specially adapted for the mentioned project and a help of computer scientist. The second part was a classic paper based on survey sent by post due to the fact that some companies from Kompass Poland database do not allow to send them the content by e-mail. In the entire research almost

1300 research surveys have been received, but some of them had to be rejected due to the fact that they were not complete. We obtained 1283 properly filled surveys. The research has been carried out in the year 2012 and beginning of the year 2013 among companies operating in Poland.

The analyses in this article concentrate on the companies that specified in the surveys wholesale or retail trade as their main area of operation. Out of 1283 examined companies, 240 were trade companies. The structure of research sample regarding the number of people employed is presented in Table 1.

Table 1. Structure of employment

Employment	Number of companies in the sample
Below 10	88
10–49	113
50–249	36
250 or more	3
All	240

Source: own study.

I have analyzed two types of data received from the companies – selected knowledge sources intensity of use and firms' competitiveness level. Knowledge sources examined in the article are listed in Table 2. They are the most often mentioned items in knowledge management literature [21, p. 17; 2, p. 45; 16, pp. 126–133; 9, p. 94; 13, pp. 71–73; 12, p. 151; 22; 20, p. 78]. Moreover, some knowledge sources often mentioned in literature were not examined in the article because almost all analyzed companies used them frequently, for example: the Internet. I tried to create optimal list of knowledge sources that can be used by enterprises – not too long, not too short. The selected sources were then divided into four categories – knowledge purchase, market related knowledge sources, governmental and non-governmental institutions, research and development.

Competitiveness level of companies has been measured against their closest competitors with the use of four variables: profit, return on investment (ROI), value of sales and market share. The adopted way of measuring companies' competitiveness is not perfect, but has been successfully used in many research projects such as the one by Fonfara [4], fulfilling its role well.

In order to measure popularity of different knowledge sources and competitiveness level of companies, 5-grade Likert scale has been used. It is a commonly used scale in the surveys conducted in Poland. In case of knowledge sources particular answers meant: 1 – lack of use, 2 – low use, 3 – average use, 4 – high use, 5 – very high use.

In case of competitiveness level: 1 meant much worse results in comparison to the closest competitors, 2 – worse, 3 – more or less the same, 4 – better, 5 – much better.

The statistical significance of differences in competitiveness index values between particular groups of companies has been checked using U Mann-Whitney test. In order to do that, SPSS software has been used.

Table 2. Examined knowledge sources and their categories

No.	Category of the knowledge source	Knowledge source
1.	Knowledge purchase	External trainings
2.		Consulting companies
3.		Publications (scientific, industry)
4.		External expertise / external expert advice
5.	Market related knowledge sources	Market research
6.		Customers
7.		Suppliers
8.		Competitors
9.	Governmental and non-governmental institutions	Networking groups or associations
10.		Scientific institutions (including universities)
11.		Governmental or local government institutions
12.	Research and development	Own research and development

Source: [21, p. 17; 2, p. 45; 16, pp. 126–133; 9, p. 94; 13, pp. 71–73; 12, p. 151; 22; 20, p. 78].

3. Research results

The research results section begins with presenting the general intensity of use of examined knowledge sources by trading companies. Subsequently, series of analyses have been presented that check whether companies with higher intensity of use of particular knowledge sources also demonstrate higher levels of competitiveness against their closest competitors.

The first analysis (Table 3) presents overall intensity of use of examined knowledge sources.

Table 3 clearly shows that the intensity of use of various, examined knowledge sources considerably differs. Analyzed companies most commonly use market related knowledge sources. It is understandable as market knowledge is the most important aspect of competitiveness of trading companies. When using it, they create added value [18, pp. 26–27; 23, p. 14]. Unfortunately, their market research is relatively weak and they could increase their competitiveness level by conducting it more often. Knowledge gained from customers and suppliers qualifies as qualitative research as it

does not give complete perspective of the market. On the other hand market research can be either qualitative or quantitative. Both types of knowledge are important but in my opinion the best results are obtained when one systematically implements both kinds of research as they deliver different sort of data.

Table 3. Intensity of knowledge sources used by trading companies

Category of the knowledge source	Knowledge source	Intensity of knowledge source use
Knowledge purchase	External trainings	2.63
	Consulting companies	1.76
	Publications (scientific, industry)	2.93
	External expertise / external expert advice	1.52
Market related knowledge sources	Market research	2.28
	Customers	3.49
	Suppliers	3.46
	Competitors	3.07
Governmental and non--governmental institutions	Networking groups or associations	1.73
	Scientific institutions (including universities)	1.66
	Governmental or local government institutions	1.57
Research and development	Own research and development	2.53

Source: own study.

Purchasing knowledge on the market, sometimes from other entities specialized in particular areas, is a quite popular way of obtaining knowledge. The cheapest solutions are the most popular ones – industry and scientific publications as well as external trainings. Considerable disadvantage of this sort of knowledge is the fact that it is not unique and cannot constitute competitive advantage of a company as probably it is also held by competitors. Using more advanced ways of purchasing knowledge – consulting companies and external expert advice is not common among trading companies.

Research and development activities are not intensively used in examined companies. It is understandable due to the fact that these entities are some sort of a link between producer and end user.

The last of the analyzed groups of knowledge sources – governmental and non-governmental institutions – are the least utilized knowledge sources. Therefore, they pose a chance for many companies to increase their competitiveness level. For example, trading companies could gain new partners, become more recognizable and develop their business through active participation in network groups. On the other hand, cooperation with scientific institutions could familiarize company with new theories

and scientific research results as well as general market trends. Cooperation with governmental institutions might also bring a lot of positive results as these entities often possess a lot of valuable analyzes not available anywhere else and in many cases they know market in their area well.

Following analyses compare sets of companies categorized according to intensity of use of particular groups of knowledge sources – below average (<3) and average and above (>=3).

Table 4 presents the competitiveness index value of trading companies divided into two groups depending on the average intensity of use of knowledge sources from the "knowledge purchase" category. The asterisk(s) denotes the statistical significance of difference between competitiveness index of two groups.

Table 4. The competitiveness index of companies using knowledge sources from knowledge purchase category with low or high intensity (2)

Number of companies	Knowledge purchase intensity	Competitiveness index
209	Below average (<3)	3.23
31	Average and above (>=3)	3.48
Difference (average and above – below average)		0.24

Source: own study.

Most trading companies do not use knowledge sources from this category intensively. Only slightly more than 10% of them appreciate this kind of knowledge sources more and it results in their higher competitiveness. However, the difference in competitiveness between both groups is not statistically significant.

Table 5 shows the competitiveness index of examined companies divided into two groups depending on intensity of use of market related knowledge sources.

Table 5. The competitiveness index of companies using market related knowledge sources with low or high intensity

Number of companies	Market related knowledge sources use	Competitiveness index
92	Below average (<3)	3.03
148	Average and above (>=3)	3.41
Difference (average and above – below average)		0.38***

Source: own study.

The level of use of this knowledge sources is much higher than in case of the previous group. Most of examined trading companies use this kind of knowledge sources with average or more than average intensity. What is more, it should be noted that the

difference in level of competitiveness of both groups is very large. Another important fact is that the result is statistically significant for $\alpha = 0.01$. It shows great importance of this kind of knowledge sources for competitiveness of trading companies.

Next table presents competitiveness index of firms that use knowledge sources from the group "governmental and non-governmental knowledge sources" with low or high intensity.

Table 6. The competitiveness index of companies using governmental and non-governmental knowledge sources with low or high intensity

Number of companies	Governmental and non--governmental organizations	Competitiveness index
221	Below average (<3)	3.26
19	Average and above (>=3)	3.28
Difference (average and above – below average)		0.01

Source: own study.

Table 6 reveals that knowledge coming from governmental and non-governmental organizations is not very important for trading companies. Most examined enterprises use it with below average intensity, and only less than 10 percent of analyzed entities exploit this kind of knowledge sources to a greater extent. Nevertheless, the latter companies are slightly more competitive than their closest competitors, although the difference is not statistically significant.

The following table presents the competitiveness index of enterprises with various levels of involvement in research and development activities.

Table 7. The competitiveness index of companies involved in research and development activities with various levels of intensity

Number of companies	Research and development	Competitiveness index
119	Below average (<3)	3.17
121	Average and above (>=3)	3.36
Difference (average and above – below average)		0.20**

Source: own study.

Research and development might seem, to some extent, unusual sort of knowledge source for trading companies, however the results, presented in Table 7, prove that about half of the examined enterprises use it with average or above average intensity. Enterprises that apply this knowledge source are considerably more competitive.

The difference in average competitiveness level between both groups of companies distinguished in Table 7 is statistically significant for α=0.05.

Up to now various knowledge sources have been analyzed in the specific groups. For the subsequent analysis, most popular single knowledge sources from all groups have been chosen. Competitiveness of companies using these knowledge sources with particular intensity has been examined in Table 8.

Table 8. The competitiveness index of companies using selected knowledge sources with particular intensity

	Number of companies	Intensity of knowledge source use	Competitiveness index	Competitiveness index difference x – (below average (<3))
Customers	34	<3	3.28	–
	206	>=3	3.26	–0.02
	128	>=4	3.38	0.11
	30	=5	3.54	0.26
Market research	138	<3	3.13	–
	102	>=3	3.45	0.32***
	44	>=4	3.37	0.24*
	10	=5	3.50	0.37
Suppliers	40	<3	3.13	–
	200	>=3	3.29	0.16*
	132	>=4	3.34	0.21*
	28	=5	3.54	0.41**
Competitors	66	<3	3.13	–
	174	>=3	3.31	0.18*
	85	>=4	3.44	0.30***
	18	=5	3.44	0.31
Own research and development	119	<3	3.17	–
	121	>=3	3.36	0.20**
	66	>=4	3.46	0.30**
	13	=5	3.60	0.43
External trainings	104	<3	3.09	–
	136	>=3	3.40	0.31***
	48	>=4	3.52	0.43***
	8	=5	3.41	0.31
Publications (scientific, industry)	72	<3	3.19	–
	168	>=3	3.30	0.11
	71	>=4	3.29	0.10
	11	=5	3.16	–0.03

Source: own study.

As we can see in Table 8 companies more intensively using selected knowledge sources are more competitive in almost all cases. The exception are the last knowledge sources – external trainings and publications in terms of their very intensive use (5) and market research in case of intensive use (4) but this outcome may be related to the low number of companies that intensively use these particular sources. Another important conclusion is that the most competitive trading companies (competitiveness index of 3.60) are very intensively involved in research and development activities. Moreover, it is worth mentioning that enterprises that use market research to an average or greater extent are much more competitive than their competitors that do not use this tool of knowledge acquisition so often. To conclude, the most important, single knowledge sources include: market research, research and development, suppliers, customers. The competitors and external trainings are also very important. The publications are useful, but not as much as previously mentioned knowledge sources.

The last conducted analysis, presented in Table 9, compares two elements – the number of knowledge sources used by trading companies with at least average intensity and the level of companies' competitiveness measured with competitiveness index.

Table 9. The number of knowledge sources that companies use compared with level of companies' competitiveness

Number of companies in the group	The number of knowledge sources that companies use with at least average intensity (>=3)	Competitiveness index of the group
60	1–3	3.00
117	4–6	3.31
49	7–9	3.39
14	10–12	3.52

Source: own study.

Results, displayed in Table 9, reveal that the more knowledge sources trading companies use, at least with average intensity, the more competitive they are. Especially interesting is the fact that trading companies which limit themselves to three or less knowledge sources are much less competitive than other enterprises. The other interesting aspect is fairly high competitiveness of companies using the highest number of examined knowledge sources (10–12). This suggests that using wide range of knowledge sources might be crucial for competitiveness of trading companies.

Conclusion

The results of analyses presented in this article show that market related knowledge sources are the most important for trading companies and they are indeed the most intensively used by them. Trading companies that do not, at least with average intensity, use this sort of knowledge sources are much less competitive. Knowledge sources from the group knowledge purchase and research and development activities are also very important.

The most important single knowledge sources include: customers, suppliers and competitors, scientific and industry publications, external trainings as well as research and development activities. For every type of business, but especially for trading companies, it is important to keep close relations and acquire knowledge from their closest partners, which are customers and suppliers. This result complies with the opinion of Ratajczak-Mrozek [17] who also underlines the importance of keeping close relations with customers and suppliers in the context of network approach. He also emphasizes that it is important to keep competitors under close observation which is rarer among analyzed companies but it brings positive results in terms of competitiveness (Table 8).

The most important analysis conducted in this article is the comparison of number of knowledge sources used by trading companies and their competitiveness index. It uncovers that the more knowledge sources the firms use, at least with average intensity, the more competitive they are. It proves that using many different knowledge sources might be the crucial factor for trading enterprises' competitiveness.

It must be noted that the conducted research has particular limitations. Despite the fact that research sample is quite large, some distinguished groups consisted of not enough companies to statistically prove certain differences. Sampling frame is another limitation. Examined sample of enterprises has been selected from the Kompass Poland database. Unfortunately, it is not perfect as it does not contain all trading companies operating in Poland.

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(2) *p < 0.1, **p < 0.05, ***p < 0.01.

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COMPETITIVENESS OF TRADING COMPANIES – THE ROLE OF SELECTED KNOWLEDGE SOURCES

Abstract

Knowledge is currently crucial resource for every company that wants to become, and remain competitive. Unfortunately, its elements quickly become out of date. Enterprises need to constantly acquire or develop new knowledge in order to not be overtaken by competitors. Moreover, knowledge elements that are priceless for one kind of company might be useless for the other. That is why this article concentrates on the specific type of firms – wholesale and retail trading companies. During the quantitative research I have analyzed 240 such entities (1) regarding the intensity of use of twelve most popular, in the knowledge management literature, knowledge sources. The results show that the most intensively used are market

related knowledge sources, like: customers, suppliers and competitors. Very important for this type of firms are also publications, external trainings and market research. Nevertheless, the key conclusion is the result of comparison of number of knowledge sources used by trading companies and their competitiveness index. It shows that the more knowledge sources such firms use, at least with average intensity, the more competitive they are.

Key words: trade, knowledge, knowledge management, competitiveness, competitive advantage

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KONKURENCYJNOŚĆ PRZEDSIĘBIORSTW HANDLOWYCH – ROLA WYBRANYCH ŹRÓDEŁ WIEDZY

Streszczenie

Wiedza jest obecnie kluczowym zasobem dla każdego rodzaju przedsiębiorstwa, które chce pozostać konkurencyjne. Niestety, jej elementy szybko stają się nieaktualne. Przedsiębiorstwa muszą stale pozyskiwać lub rozwijać nową wiedzę, aby nie zostać wyprzedzone przez konkurentów. Ponadto elementy wiedzy, które są bezcenne dla jednego rodzaju przedsiębiorstw, mogą być bezużyteczne dla innego. W związku z tym niniejszy artykuł koncentruje się na określonym rodzaju przedsiębiorstw – podmiotach zajmujących się sprzedażą – zarówno hurtową, jak i detaliczną. 240 tego rodzaju firm zostało przebadanych w ramach badania ilościowego (1). W ramach niniejszego artykułu sprawdzono poziom wykorzystania dwunastu źródeł wiedzy, najczęściej wymienianych przez autorów w literaturze dotyczącej zarządzania wiedzą. Wyniki pokazały, że analizowane przedsiębiorstwa najintensywniej wykorzystują takie źródła jak: klienci, dostawcy i konkurenci. Bardzo ważne są dla nich także publikacje, zewnętrzne szkolenia oraz badania rynku. Jednak kluczowym wnioskiem jest rezultat ostatniej analizy. Wynika z niej, że im więcej przedsiębiorstwa handlowe wykorzystują źródeł wiedzy, z przeciętną lub wyższą intensywnością, tym są one bardziej konkurencyjne.

Słowa kluczowe: handel, wiedza, zarządzanie wiedzą, konkurencyjność, przewaga konkurencyjna

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COMMUNITY-ORIENTED CULTURE AND SIMPLE ORGANIZATIONAL STRUCTURE

Introduction

Interest in the simplicity of the organization is regarded as a part of a broader social movement referred to as 'voluntary simplicity' [18; 26]. The simple life is seen as a mean to personal fulfillment and more broadly, as a mean to social justice and ecological sustainability [18]. Simplicity appears here as the value of the business, as 'the holy grail in an over-complicated, stressed and hassled world' [25]. However, the quest for simplicity is, first and foremost, an act of opposition to the complexity of the world of organization and management. Researchers increasingly cite hard data on the effects of excessive complexity. In a study on the problem of organizational complexity, conducted by The Economist (Economist Intelligence Unit – EIU) in 2015, almost half of the 331 executives stated that their organizations are very or extremely complex – too complex to manage [21].

Furthermore, they emphasized that the excessive complexity has a significant impact on the organizational performance, is time-consuming (according to the EIU, consumes more than 45 minutes per day per manager), results in lower profits and productivity of the organization [21]. Collinson and Jay [5] examined the Fortune

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Global 200 companies and showed that excessive 'bad' complexity led these organizations to reduced profits by an average of 10.2%. Excessive complexity also affects negatively general management, the relation between the employees, the level of customer service, corporate governance and product development [5; 21].

Specific management tools were developed over the years. They are a manifestation of the pursuit of simplicity of organization, especially with regard to simplification of their strategy (e.g. Eisenhardt and Sull [9]; Collinson and Jay [5]), products and services (e.g. Maeda [22]; Collinson and Jay [5]), structures (e.g. Drucker [8]; Welch and Welch [30]; Ashkenas [1]; Collinson and Jay [5]), processes (e.g. Maeda [22]; Ashkenas [1]; Collinson and Jay [5]) or even corporate culture (Osbert-Pociecha [26]). However, formulation of the comprehensive concept of simplifying the organization and management began only in the last decade. The most important papers on this subject are Ashkenas [1], Segall [27], Collinson and Jay [5]. However, these concepts require considerable clarification. Mainly because of the fact that in the case of strategic issues and operational or individual elements of the organization (e.g. strategy, organizational structure), formulated principles and recommendations are very general in nature. The subject of this article is a narrower problem – the problem of simplifying organizational structures, and in particular the role of organizational culture in the development of simple structural solutions.

Organizational structure emerges as one of the main sources of excessive complexity of the organization [5; 21] – as Král et al. [19] noticed: some models treat organizational structure as a central or an ultimate component of organizational design. On the one hand, it is increasingly emphasized that simple structural solutions support flexibility and adaptation of organizations operating in complex, dynamic and unpredictable conditions [1; 6; 8; 21; 30]. On the other, the existing structural solutions do not meet the criterion of simplicity. For example, in already cited EIU research, more than half of the managers perceived the structure of their organizations as very or extremely complex, and only 1% of them found the structure to be sufficiently simple [21]. The very concept of a simple structure is still ambiguously understood [16]. Therefore, the term will be introduced in the context of different, often conflicting views.

The main goal of the article is to draw attention to the potential need for including organizational culture influence during structural solutions simplification. The relation between organizational structure and culture was the subject of many conceptual and empirical studies [17], but they relate to the problem of simplifying the organization in a very limited extent [16; 21]. In this article, we present the results of empirical research defining the role of organizational culture in shaping simple structural solutions in the context of other structure-forming factors. These results have become a stimulus for discussion about organizational culture as an instrument of coordination because this problem is basically overlooked in the existing literature.

The article proposes the concept of a community-oriented culture as a key instrument of coordination in the process of simplification of the organizational structure and wider, the organization. It must be admitted that the concept of community-oriented culture is based on theories that go beyond the area of management science. It refers to the research in the area of evolution, psychology, sociology, political science and experimental economics (in reference to Benkler [3]) and morality (in reference to Haidt [11]).

1. Shaping structural solutions according to simplicity rule

The problem of shaping the organizational structure, understood as a set of rules bringing order to the behavior of organization members, is one of the fundamental issues of management sciences [16]. Therefore, it is not surprising that the classics have formulated the relevant rules, which can be divided into two groups:

- specifying how the individual structural characteristics should be shaped;
- specifying the desired characteristics of the structure as a whole.

The simplicity of the organizational structure is listed among the rules of the second group [1; 8; 30]. Typically, it advocates the creation of a flat, single-line solutions, in principle apart from the shape of other features, e.g. the degree of specialization and centralization. There are also not nearly enough efforts to simplify structure in the context of what is happening throughout the organization. This means that there is the need to clarify the principles of structure simplicity, even more, because of doubts about the characteristics of simple structural solutions.

1.1. Simple organizational structure

According to Mintzberg [24] and his, probably the most referenced in the literature, model of a simple structure, its main part is the strategic peak and the basic mechanism of coordination – direct management oversight. It is characterized by a flat, two-tier hierarchy, low degree of specialization, formalization and standardization activities, as well as a high degree of centralization.

Such a structural solution can be seen as restrictive, because within it, one person sets the rules of action, and the rest must submit to them. Therefore, the room for maneuver is small. It would be undoubtedly higher in the case of providing direct executors, who are called the operating core, with the decision-making powers and able to take coordinating actions, not by direct supervision, but through the mechanism of mutual accommodation. It is based on direct arrangements between members of the organization during operation.

The following question arises: whether such a structure, providing members with the decision-making and behavioral freedom, is not easier? Its validity results from the determination of the organizational structure. The simpler it is, the fewer rules there are in the organization. The number of rules, in turn, depends on the scope of freedom of behavior and decision-making of the organization members (the bigger the scope, the less rules). Moreover, it is augmented by e Cunha and Rego [6], who emphasize that the simplification of the structural solution requires limiting rules imposed from above so that organization members can be creative in the face of a complex and dynamic environment.

The answer to this question was formulated based on the idea of the classic fractal tree, resembling a single line, hierarchical structural solution. The calculations show that with the increase in the intensity of the direct management supervision, there is an increase of the structure complexity, although it is not a linear complexity [16; 13]. Thus, a simple structure is not a centralized but a decentralized solution, in which the superior enables the subordinates to self-manage their actions.

The simple structure works under certain conditions, i.e. in a dynamic, or even hostile environment and for small organizations. In other conditions, to paraphrase Einstein's words ('everything should be made as simple as possible, but not simpler'), the structure should be as simple as possible, but not simpler. It means that:

- The organizational structure should be adequate to its context (characteristics of other elements of the organization and its environment). Full appropriateness is not possible since the characteristics of the context may create conflicting demands for the formation of the characteristics of the structure. Therefore, a particular context is accompanied by not one structural solution, but their limited set, i.e. the set limited by the context of structural solutions.
- The simplest solution should be chosen from the set of allowable structural solutions, i.e. the least mechanistic. Therefore, characterized by a least-developed hierarchy, the lowest degree of centralization, specialization, formalization and standardization of activities.

Compliance with this kind of simplicity principles in the organization of work fosters rational structural solution – tailored to a variety of internal and external circumstances through well-established cognitive activities. It contributes not only to the creation of structures devoid of unnecessary rules but also reduces the cost of managing the organization and its flexibility [16].

However, it creates another question: what determines the simplicity of the organizational structure? The purpose of this article is an attempt to answer it, in particular, to examine the role of organizational culture in simplifying the structural solution.

1.2. Factors shaping the simplicity of organizational structure

The empirical research (conducted on a sample of 100 companies operating in Poland) was based on following assumptions:

- Characteristics of the structure include the hierarchy, the degree of centralization, specialization, formalization and standardization. Their measurement is based on the findings of the Aston group.
- The structure is the simpler, the more it resembles a simple structural solution.
- The simplicity of the structure depends on 11 factors that have been identified by the model of the organization by Leavitt and the experience of the authors regarding the design of organizational structures. Detailed justification of the particular factors selection and their exhaustive characteristics are the subject of previous papers by Hopej-Kamińska et al. [15; 16]. The variables were measured using questions, which determined the level of their formation in the investigated objects. For example, the desire to simplify the management of the organization was analyzed by asking respondents to assess actual behavior in this regard, the use of IT – by asking respondents about the use of systems such as ERP, CRM or SAP in their organization.
- The organizational structure is simpler in the case of:
  - greater environment uncertainty (and vice versa, the more stable environment, the more complex the structural solution);
  - greater dependence of the organization on the environment (reduction of the dependence results in increased complexity of the structure);
  - smaller organization (the larger the organization, the more complex the structure);
  - less diversification of its business (increase in the degree of diversification leads to an increase in the complexity of the structure);
  - more open organizational culture ('closing' the culture is conducive to complicating structural solution);
  - more professional employees (the less professional, the more complex structure);
  - more distributed leadership (the more classic is the leadership, the more complicated is a structural solution);
  - higher determination of the leadership to simplify the organization (the smaller the determination, the more complex the structure);
  - less routine manufacturing technology (the more routine the technology, the more complex the structure);
  - a wider range of information technology use (the lower the range, the more complex the structural solutions);
  - a shorter period of organization's functioning – the longer the period is, the more complex the structure [2; 14; 28; 29].

The research tool, used for the verification of above-mentioned hypothesis, involved a questionnaire addressed to companies separated according to the factors mentioned above. We tried to obtain answers from the top management – the study was anonymous [16].

In the first step of the research procedure, the correlation coefficients between the characteristics of the organizational structure and the structure-forming factors have been calculated. The results show that most of the theoretically determined factors correlate with dimensions of the organizational structure (instead of two: diversification level and organization's functioning period, which do not correlate with any structural dimension). The results show that none of the factors considered are significantly correlated with all the characteristics of a structural solution. In the next step of the research procedure, the regression analysis for specific structural characteristics (using the method of stepwise regression) has been carried out. It revealed that none structure-forming factors predict all dimensions of the structure, however, the statistically significant models are proposed for each characteristic.

Hierarchy

Hierarchy (more precisely its shape) is explained in 49% (adjusted $R^2 = 0.488$) by 4 variables (factors): the size of employment (the strongest predictor, beta = 0.485; $p < 0.001$), income level (beta = 0.179; $p < 0.05$), the degree of diversification activities (beta = 0.166; $p < 0.05$) and the desire of the management to simplify the organization (beta = –0.28; $p < 0.01$). The proposed model was a good fit to the data: $F(4, 87) = 22.705$; $p < 0.001$. This means that the hierarchy is less extensive (simpler) when the organization is smaller (due to the number of its members and revenues), conducted activities are less diversified, and the desire to simplify the organization is stronger.

Correlation analysis between the structure-forming factors and hierarchy in structural solution revealed that there is indeed a correlation between hierarchy and culture in a cognitive dimension ($r = 0.298$; $p < 0.01$) and organic leadership ($r = 0.222$; $p < 0.05$). These factors are not proved to be significant in the regression model, which may result from their correlation with the *desire to simplify organizations* variable, which is an important predictor in the model. These correlations are moderately positive, and amount to, respectively, $r = 0.447$ and $r = 0.366$ ($p < 0.01$).

Degree of centralization

In the case of this characteristics, the proposed model was statistically significant: $F(4, 82) = 6.077$; $p < 0.001$, and the predictors were: the level of employment (beta = –0.300; $p < 0.01$), manufacturing technology (beta = –0.270; $p < 0.05$),

organizational culture in the cognitive dimension (beta = –0.263; $p < 0.05$) and the period of functioning of the organization (beta = 0.214; $p < 0.05$). Therefore, the more non-routine manufacturing technology, the larger the organization, the more open the organizational culture, and the younger the organization is, the lower the degree of centralization is (and hence, simpler structure). However, the degree of centralization is explained only by 19% of these factors (adjusted $R^2 = 0.191$). The model does not include two variables weakly, negatively correlated with the degree of centralization: organizational revenues and organic leadership.

Degree of specialization

Degree of specialization is explained in 65% (adjusted $R^2 = 0.649$) by the manufacturing technology (beta = –0.763; $p < 0.001$). Moreover, the proposed model proved to be well suited for the data: $F(1, 84) = 158.04$; $p < 0.001$. Thus, the more non-routine nature the used technology has, the simpler the structure in the dimension of specialization of activities is.

The degree of specialization is correlated with other factors, but they were not included in the regression model. It is due to the fact that the variable manufacturing technology is the most important factor correlated with the degree of specialization ($r = 0.784$; $p < 0.01$) and also significantly correlated with almost all (except income) factors correlated with the degree of specialization: moderately with the uncertainty of the environment ($r = 0.463$; $p < 0.01$), the degree of openness of organizational culture in the anthropological dimension ($r = 0.352$; $p < 0.01$), the organic leadership ($r = 0.347$; $p < 0.01$), the scope of IT use ($r = 0.4$; $p < 0.01$) and poorly with professionalism of employees ($r = 0.27$; $p < 0.01$).

Degree of formalization

Also for the formalization of activities, the model has proved to be statistically significant: $F(3, 88) = 20.488$; $p < 0.001$. The degree of formalization is explained in 39% (adjusted $R^2 = 0.391$) by three variables: employment size (beta = 0.479; $p < 0.001$), dependence of the organization on the environment (beta = 0.196; $p < 0.01$), and the desire to simplify the organization (beta = –0.187; $p < 0.01$). This means that the structure is simpler in the dimension of formalization of activities when there is a lower number of organizational members, smaller dependence on the environment and greater commitment of the management to simplify of the organization.

It should be noted that the variable organizational culture in the cognitive dimension was not included in this model. This is due to the fact that it correlates with the desire to simplify the organization ($r = 0.447$, $p < 0.01$), employment size ($r = –0.269$, $p < 0.01$), and also organic leadership ($r = 0.352$, $p < 0.01$). The models in which this

variable was one of the predictors of formalization were constructed, but they were worse regarding adjusted R^2 than the one presented in this article. Similarly, the correlation between the organic leadership, the desire to simplify the organization ($r = 0.366$, $p < 0.01$), and employment size ($r = –0.244$, $p < 0.01$) was not without significance for the construction of the model. Finally, the dependence on the environment correlated significantly with the uncertainty of the environment ($r = 0.221$, $p < 0.05$) and the desire to simplify the organization ($r = –0.228$, $p < 0.05$).

Degree of standardization

The last considered structural characteristics, i.e. standardization of activities, is explained in 20% (adjusted $R^2 = 0.203$). The proposed model is well suited to the data: $F(2, 90) = 12.694$; $p < 0.001$. It consists of two variables: manufacturing technology (beta = –0.408; $p < 0.001$) and employment size (beta = 0.198; $p < 0.05$). Therefore, the more non-routine the manufacturing technology is, and the lower the number of organization members is, the simpler the organizational structure due to the standardization activities is. It also correlates, to a small extent, with the functioning period of the organization. However, this variable did not enter the model. This is probably due to the fact that it correlates with the manufacturing technology ($r = –0.311$, $p < 0.01$).

The relations revealed by the studies are neither inevitable nor sure (they only substantiate the cause-effect relations). However, the studies indicate several factors that should be taken into account in the process of simplification of structural solutions. They are the size of the organization, the diversification of the business, manufacturing technology, the link between the organization and the environment, desire to simplify the organization, and, what should be underlined, the organizational culture.

In the case of the last factor – the organizational culture – the significant achievements of organizational and management science in describing the relation between organizational culture and organizational structure should be underlined. These studies are a basis for proposing a type of organizational culture conducive for the simplification of the organizational structure.

2. Organizational culture as a structure-forming factor

The relation between cultural norms/values and the organizational structure under study is not surprising. Some authors link culture and structure already while defining the organizational culture. Thus, culture is a network of internal structures and processes that shape and reinforce the perception of the organization by its participants. This network consists of seven overlapping areas: history and myths,

symbols, power structure, organizational structure, control systems, rituals and routines, organizational guiding principle (quoted author calls it a paradigm).

The detailed mechanism of mutual (bidirectional) interaction between culture and organizational structure is presented by Janićijević [17]. He underlines that organizational culture influences the structure during both its design and implementation. In the design phase, interpretative schemes of senior management are formed, who selects a particular type of organizational structure. In the design phase, culture creates a frame of reference on the structural solution and its ability to achieve the organizational goals (for example, if the organizational culture accepts the unequal distribution of power and concentration of decision-making powers at the top of the hierarchy, the managers will choose centralized organizational structure). However, in the implementation phase, the impact can be positive or negative, depending on the compatibility of the two components. Culture will legitimize the structure in case of high compliance – participants will receive the organization structure as a normal and desirable as it will facilitate the implementation of the objectives and tasks of the organization and support the activities of employees. In the case of compliance of culture and structure, cultural values will be strengthened through the process of institutionalization – the elements of organizational culture will be reflected in the structural solution. On the other hand, if the selected organizational structure is not compatible with the existing organizational culture, the employees will experience a cognitive dissonance. The structure will dictate behaviors contrary to the current procedure, which will force a change either of the structure or organizational culture, depending on the level of advancement and dissemination of culture. The high degree of dissemination will be associated with lack of acceptance of new structure (incomplete or modified implementation of the structure). Its low degree will cause the culture to adjust to the new structural solution (there will be a deinstitutionalization of culture). Therefore, the organizational structure institutionalizes (or deinstitutionalizes) organizational culture and organizational culture legitimizes (or delegitimizes) structure. McGuire et al. said it also has power to cultivate change initiatives [23].

The mechanisms described above will lead to the co-occurrence of certain types of culture and organizational structure [17]. Handy, was the first one, who has published a typology of cultures associated with the type of organizational structure [12]. He defined the culture of power corresponding to the structure characterized by a high degree of centralization and a low degree of formalization. On the other hand, bureaucratic organizational structure (high degree of hierarchy, specialization and formalization) will favor the formation of the culture of role. The third type of organizational culture is the culture of task which is typical for flexible structural solutions corresponding with adhocracy structure, defined by Mintzberg [24]. The fourth type of culture is the culture of person. In this organizational culture, the individual unit has a dominant position, relations between people are based on partnership and

independence, and the position of the employee depends on individual proficiency in the implementation of a specific task. The culture of person is common in a professional bureaucracy and refers to such professional groups as lawyers, architects, doctors and academic teachers.

Similar results were revealed by the team from the University of Szczecin. It was deduced that companies operating in Poland, with the participation of foreign capital, are characterized by decentralization and poorly outlined hierarchy, manifested by co-decision, cooperation, and reciprocity. National companies, in turn, organize their activities according to the concept which is based on the clearly marked hierarchy, clearly distinguished units, as well as a clearly defined range of tasks, powers, and responsibilities. The authors believe that the differences between structural solutions explain, to some extent, the differences between the cultural norms and values in studied objects [10].

Thus, while the impact of organizational culture on the organizational structure does not raise major concerns, it remains unclear in which way culture affects structural solutions. The attempt to answer this question is based on the fact that literature pays little attention to culture as an instrument of coordination. Hofstede [13] was one of those who saw it. He said that organizations operating in different countries, depending on cultural preferences, comply with different types of structural solutions, distinguished by Mintzberg [24], characterized by certain instruments of coordination. This is, inter alia, because the organizational culture:

- offers a common language, which organization's members can use to inform about the implementation of mutually intertwined activities;
- accumulates what is common, forming a mutual trust, undoubtedly facilitates the coordination of activities;
- gives a sense of stability, increasing the predictability of certain actions, and therefore the use of, e.g. coordination by standardizing the results – at least to some extent.

Not every organizational culture identically governs the behavior of organizational members, including the coordination activities. The study on the factors shaping the simplicity of the structure revealed that it is not dependent on the anthropological and social culture dimension. However, it seems to depend on the cognitive dimension (Table 1).

It means that:

- the simplicity of structural solution does not depend on the values of an open organizational culture, such as selfishness, rivalry, and self-realization.
- the simplicity of organizational structure seems to favor the coordination which is based on mutual exchange of information, mutual enrichment, pluralism or the use of techniques of trial and error. Coordination based on authoritarianism, distrust of workers and fear of failure is not preferred.

Table 1. Open and closed organizational culture

Organizational culture	Open	Closed
Anthropological	Voluntarism: organization as an object shaping reality according to their own will (planning object)	Determinism: organization as an object sensitive to influences from outside (object of planning)
Social	Individualism: unit is under protection	Collectivism: collective is under protection
Cognitive	Temporality: learning and knowledge discovery as a continuous process	Finality: realization of knowledge and indiscriminate implementation of the final ideas

Source: own study based on [4].

It seems that simplicity of the organizational structure can also be served by other values. Haidt [11], referring to 'our bee nature', stresses the importance of increasing social capital, especially:

- freedom, understood as the concern about whatever the organization members are feeling oppressed and trying to unite against the tyranny of their manager-in-chief;
- loyalty, i.e. the answer to the challenge of creating a cohesive coalition [11].

Because of that, people begin to see themselves as members of the team and not separate units, which is conducive to building mutual trust that allows the employees to do their job efficiently. For this to happen, according to Haidt, there is a need for:

- The increase of similarity rather than diversity in the organization: 'to make a human hive, you want to make everyone feel like a family. So, don't call attention to racial and ethnic differences; make them less relevant by ramping up similarity and celebrating the group's shared values and common identity' [11].
- Use of synchronization that shapes trust. Such activities have been carried out for many years in Toyota, where every day begins with a common, synchronized gymnastics for all employees.
- Organization of competition. However, not an individual but a team competition. It increases the kindness to own group rather than the reluctance to foreign groups [11].

Therefore, a new approach to organizational culture is proposed. There are three dimensions of organizational culture (due to the role it plays in coordinating activities):

- temporality / finality;
- freedom / authoritarianism;
- loyalty / contestation.

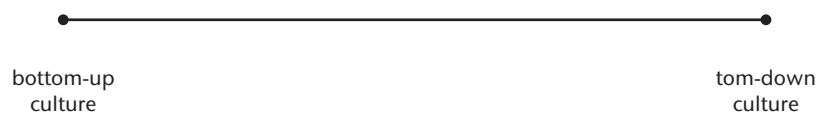
Thus, the basic types of culture may be a bottom-up and a top-down culture. The first is based on the dimensions of temporality, freedom and loyalty, and the second – finality, authoritarianism, and contestation.

In general, coordination by a top-down culture is used in the top-down management, which has its roots in the achievements of the classics of management science. Coordination by the bottom-up culture is in turn a part of the bottom-up

management used in the turbulent environment, which often happens as if the present one did not know in what direction to go. It should be emphasized that it is based on simple structural solutions, that give organizational members plenty of space. The bottom-up culture is a type of culture which favors the development of cooperation systems. It could be even defined as the culture of 'bottom-up cooperation' or 'self-organization'. It is based on the assumption that people have a natural predisposition to cooperate. There is a direct reference to the latest experiments and discussion of the 'gene of cooperation' or 'natural collaboration' as the third pillar of evolution, next to mutation and natural selection [3]. According to Benkler [3], such an assumption would lead, among others, to the rejection of surveillance measures in motivating employees to incite them to engage and strengthen the sense of common purpose. In turn, the top-down culture is, in fact, a culture of 'top-down coordination'. It is based on the assumption of selfish human nature (a reference to the work about Selfish Gene published by Dawkins in 1976 [7]) and hierarchical nature of human being (discussed by Leavitt [20]).

They are both the ends of the continuum of organizational cultures (Figure 1), and between which there is an infinite number of intermediate, more or less top-down or bottom-up types of culture.

Figure 1. Two extremes of community-oriented culture



Source: own study.

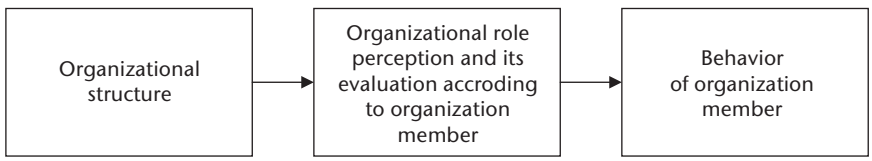
Appointed types of structures are considered as two extremes relating to the extent to which the organizational culture supports the community building. Therefore, it is assumed that one should speak of a new concept of organizational culture – the community-oriented culture.

3. The role of community-oriented culture in simplifying the structural solution

The typology of organizational culture presented above is the starting point for further empirical research. It is assumed that shaping the organizational structure (in line with its simplicity rule) may be based on several principles. These are:

- First principle: continuous analysis of existing structural solution designed to assess its complexity. As established earlier, it is the greater, the more extensive the hierarchy and the greater the degree of centralization, specialization, formalization and standardization of activities are. Therefore, it can be assumed that a complex structure has a high level of defects of its attributes, e.g. the formation of barriers between hierarchical levels, making decisions in isolation from places where the problems are, physical and mental fatigue and forced labor inefficiency.
- Second principle: the analysis of the suitability (aligning) of the organizational structure and its context (a set of structure-forming results), which may be based on the diagram shown in Figure 2. As it shows, the rating of perceived role in the existing structural solution has an impact on the behavior of organizational members. It should be noted that it is based on the provided function. Therefore, there are different components, and each of them constitutes an assessment of the acceptance, provided by the members of the organization (compared to others), of organizational behaviors arrangement (to limit their randomness and unpredictability, more precisely) due to the given structural characteristic. Therefore, the higher the acceptance, the easier the life within the structure. Thus, it is more suited to its context, i.e. more rational.

Figure 2. Organizational structure and behavior of organization member

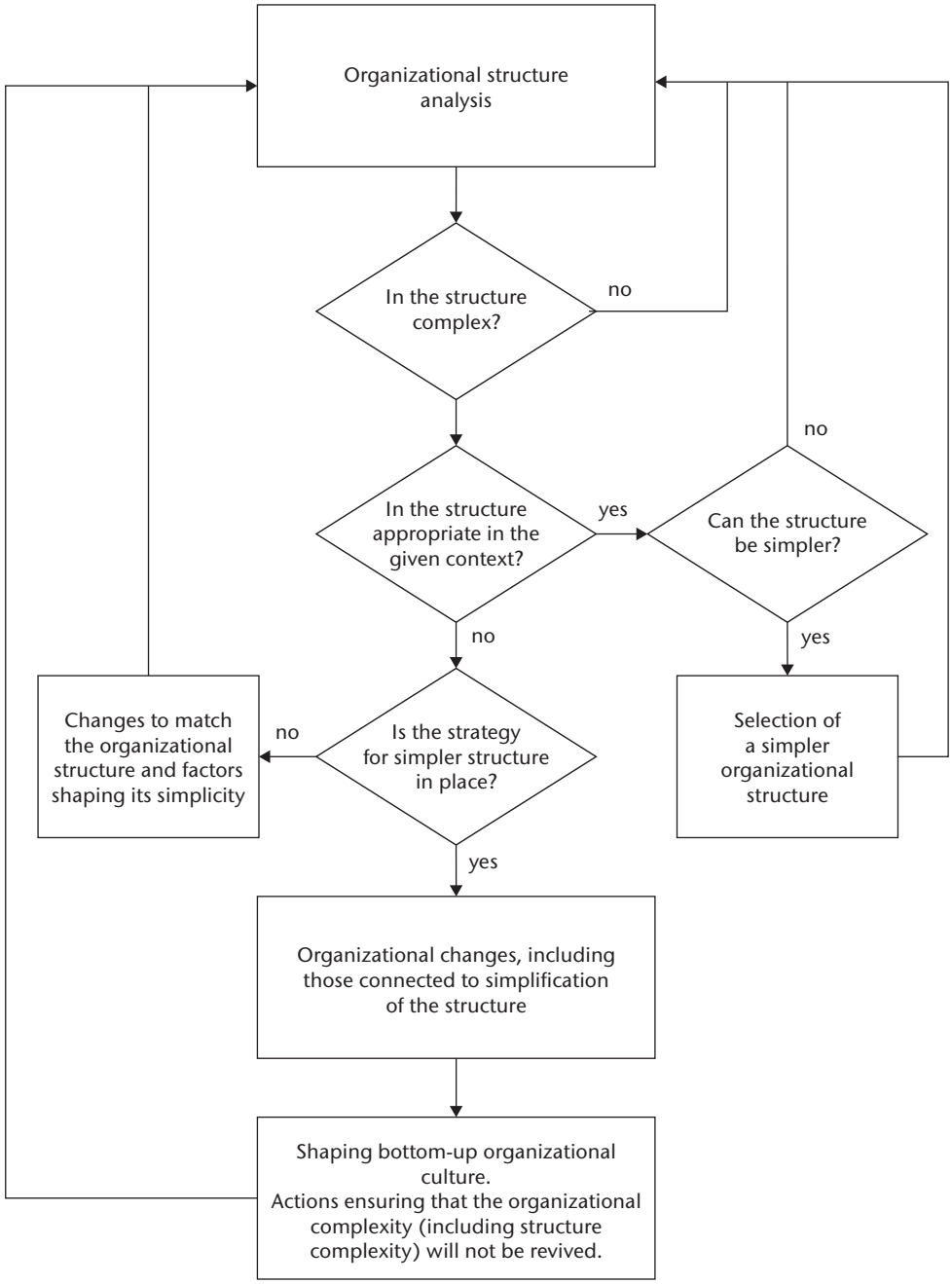


Source: own study.

Development of bottom-up culture. It is not a simple nor a short process. On the contrary, it is extremely complex, and it never ends. Cultural norms and values do not arise at the order. The organization members must be convinced that change is necessary and must be motivated to try something new, even more than during other organizational transformations.

Making two kinds of changes in the organizational structure. One of them is carried out when the structure is overly complex and at the same time appropriate to its context, which allows for the use of a limited set of solutions, which differ in complexity (simplicity). The second kind of change lies in the fact that the simplification of the structure is a part of the simplification of the entire organization, which includes, for example, the reduction of the degree of business diversification, or the reduction of the organization's size.

Figure 3. Workflow for simplifying the organizational structure



Source: own study based on [16].

Potential confirmation of the community oriented culture impact on the simplification of the organizational structure will entail the need to include organizational culture in the workflow for simplifying the organizational structure. A workflow diagram of the procedure of simplifying the organizational structure is illustrated in Figure 3. It concerns mainly organizations with complex structural solutions, and among other things, of a large size and highly diversified activities. However, it may also be used by the leadership of the organization, e.g. a medium-sized, of course taking into account the specifics of their own actions and prudent decisions regarding changes to simplify the structure.

Conclusion

The principle of simplicity (organizational structure should be as little mechanistic as possible in the limits of its context solutions), formulated in this article, seems to be important and perhaps even crucial in organizing activities. That is because simplicity is a kind of common denominator of other desirable characteristics of the structure, as the element of the organization, e.g. the flexibility or transparency. The conducted research shows that simplicity depends on several factors, including the organizational culture, which in the light of the considerations can be seen as another instrument of coordination – generally overlooked in the literature so far.

Based on new dimensions of organizational culture and proposed innovative culture typology, it can be assumed that the more community-oriented nature of the organizational culture is, the simpler the structural solution is. However, with the obvious assumption that the other factors are at the same level. Nonetheless, shaping a bottom-up culture is a very complex process, whose success depends on, among others, the determination of the organization's management to simplify it. It seems that the importance of this factor in organizing activities will grow with increasing dynamics and complexity of the environment.

It should be noted that the research results, presented above, are not a closed set of analyses. Further directions of research can be identified. One of them are the analyses of credibility of a hypothesis concerning the relations between shaping of community-oriented culture and the simplicity of organizational structure. This should involve the development and empirical verification of situational factors model of organizational structure simplicity, where community oriented culture would be only one of the considered factors. This would be a significant closure for this research problem and would develop and implement practically oriented methods and techniques for simplifying structures.

However, considering the results of the research and deliberations, an in-depth understanding and structuring the concept of community-oriented culture as a vital

element in the development of systems based on cooperation rather than hierarchy or competition appears to be a particularly interesting and important research challenge. The correlation between organizational structure and culture, discussed in this article, at the same time allows one to assume that the change in the structure will be important in the development of community-oriented culture.

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COMMUNITY-ORIENTED CULTURE AND SIMPLE ORGANIZATIONAL STRUCTURE

Abstract

Simplicity has been (and still is) in opposition to the increasingly complex world of organizations. The paper focuses on the problem of simple structure soultions and it aims to define the role of organizational culture in simplifying organizational structures. Simple structures are recognized as those facilitating flexibility and adaptability in the complex, dynamic and unpredictable environment. Since the Ashby's law, holding that complexity may be balanced by a different kind of complexity, is being questioned, the simplification of structures requires the development of specific mechanisms within the organization. The role of culture in shaping simple structural solutions is presented in the broader context of other factors (the results of empirical research are presented). Organizational culture stands as yet another instrument of coordination – s o far generally overlooked in the literature. The concept of community-oriented culture as crucial for simplifying structures is developed.

Key words: organizational structure, simplicity, organizational culture, community-oriented culture

KULTURA WSPÓŁDZIAŁANIA I PROSTOTA STRUKTUR ORGANIZACYJNYCH

Streszczenie

Postulat prostoty stoi w opozycji do coraz bardziej złożonego świata współczesnych organizacji. Celem artykułu jest przedstawienie prostego rozwiązania strukturalnego oraz określenie roli kultury organizacyjnej w upraszczaniu struktur organizacyjnych. Proste struktury uznaje się za sprzyjające elastyczności i adaptacji w złożonym, dynamicznym i trudno przewidywalnym otoczeniu. Jako że kwestionowane jest tym samym sformułowane przez W.R. Ashby'ego i noszące jego imię prawo, które głosi, że każda różnorodność może być równoważona przez inną, upraszczanie struktur wymaga rozwijania specyficznych mechanizmów wewnątrz organizacji. W artykule przedstawiono rolę kultury w kształtowaniu prostych rozwiązań strukturalnych w kontekście szeregu innych czynników (przytoczono wyniki badań empirycznych). W ich świetle kultura organizacyjna jawi się jako istotny instrument

koordynacji działań dotąd słabo dostrzegany w literaturze przedmiotu. Sformułowano koncepcję kultury współdzialania jako kluczowej dla upraszczania struktur organizacyjnych.

Słowa kluczowe: struktura organizacyjna, prostota, kultura organizacyjna, kultura współdziałania

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ORGANIZATIONAL BEHAVIOR OF ENTERPRISES AND RELATIONAL CAPITAL

Introduction

Organizational culture is of fundamental significance in terms of the organizational identity of employees and the perception of the enterprise's image. Organizational culture supports enterprises as a community of goals and interests of employees, integrating their activities aimed at creating value and mission, while simultaneously leading to the survival and success of the economic organization. The condition for such an activities' existence, is the adherence to norms and patterns that are identified with the organizational culture of an enterprise. Likewise, the role of employee teams in the creation of organizational culture is crucial. Within the framework of the required organizational culture and organizational behavior, with simultaneous support of relational capital, a superior and common goal of enterprises has been stipulated, namely to improve the efficiency of enterprises. Hence, organizational behavior should aid activities of enterprises that support this aim.

1. Fundamental problems of organizational behavior in enterprises

The problematic issues of organizational behavior in an enterprise are significant subjects in economic theory and practice. Organizational behavior constitutes the subject of deliberations over a long-term perspective, albeit the scope of interest differs in the particular periods of development of management science. The concepts

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of management in the first stages of the management science development focused on the issues of organizational behavior in a small range.

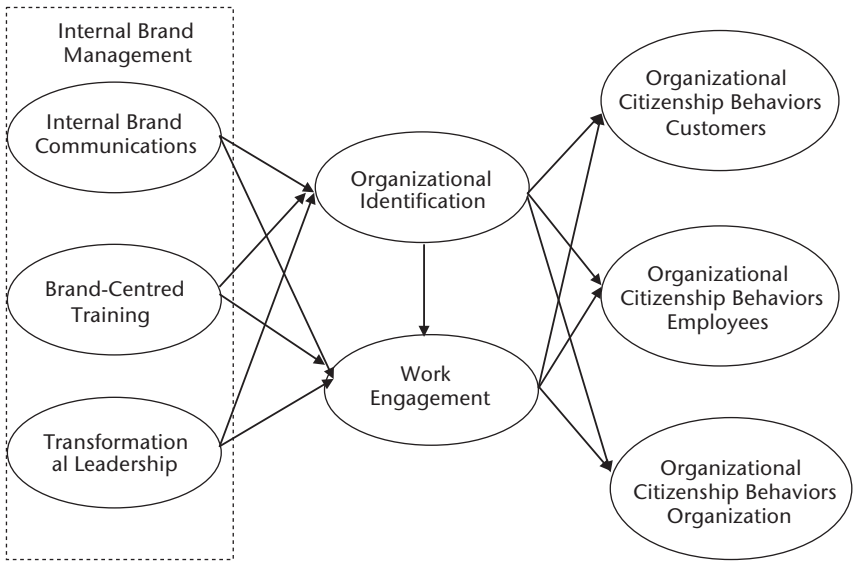
Organizational behavior currently plays a significant role in the identity of an organization as it involves elements which strengthen the cohesive image of enterprises. The identification of employees with the enterprise determines interpersonal ties and the positive image of enterprises in the market environment. The principles of the functioning of enterprises on the market are shaped by organizational culture which is derived from the internal system of values. Thus, organizational behavior translates into a multitude of areas of activities of enterprises. The system of organizational behavior also includes following sections: personal contacts, appearance, while also the manner of conducting negotiations.

One can also separate elements of organizational behavior that support the effective motivational system at the employee and the enterprise levels. Consequently, these processes focus on shaping the image of the enterprise, as well as the identity of style, culture and communication activities. In this process, the integration of standardized methods of organizational behavior takes place in the enterprise and its environment [22]. In terms of the development of the organization, it is necessary to refer to the process of change which is a part of the transorganizational system (TS). The basis of the aforementioned concept is the problem of transorganizational development (TD), in which changes are planned and the TS is created with the aim of improving the efficiency of the organization.

Interest in the changes is determined by the necessity to adopt knowledge, skills and resources in organizations. The process of transorganizational development must ensure a positive response to the created activities, particularly in the sphere of costs and benefits. In organizational activities, it is essential to refer to leadership and indicate the streamlining of the organizational structure, while also the tasks in the sphere of communication. Hence, it is becoming crucial to prepare the policies of transformation and the necessary procedures. The basic aims of the evaluation activities include the improvement of the quality of ties and the satisfaction of the employees and the enterprise itself. A comprehensive analysis of organizational behavior was conducted by J. Buil, E. Martinez, J. Matute in which they indicated the relations between the Internal Brand Management, Organizational Identification and Work Engagement [5]. A total of 323 employees of the principal hotel chains operating in Spain were analyzed. Various dimensions of the internal management of the brand were displayed in this model, as well as the differentiated basis of organizational behavior. Based on the research, it is possible to formulate the conclusion that the Transformation Leadership avails of organizational identification and work engagement. Simultaneously, the research illustrates that the activities which have a significant impact on the opinions of clients with relation to the brands (Brand Training/Communication) do not directly evoke positive reactions and emotions

in the workplace. Level of involvement in tasks arising from the scope of duties is decidedly more effective stimulator of organizational behavior than the feeling of association with an organization (Figure 1).

Figure 1. Tasks in organization



Source: [5].

Figure 1 illustrates that it is possible to distinguish the institutional contex of organizational behavior. Processes of effective actions of institutions facilitate the realization of social expectations. Alongside the simultaneous achievement of a high level of conformance with the social principles, organizational behavior of an informal nature is also created. As a result of these actions, there exists a possibility of ensuring the predictability and efficiency of organizational behavior in enterprises, as well as in society [8]. The institutional context translates into the functional structure, which as a base for the integration of the processes of management determines the organizational behavior of enterprises. In their sphere, the costs of creating a friendly organizational vibe are to be found that constitute an element of the activation of the enterprise [11]. This activation subsequently translates into organizational creativity. Novelty and usefulness are fundamental dimensions of organizational creativity. Novelty relates to the extent to which an idea is new for the particular enterprise. However, in terms of usefulness, we identify the scope in which the new idea may be conducive to ensuring a higher degree of enterprise's effectiveness [4]. In regard to organizational creativity which novelty relates to, it is necessary to point out that its

characteristic feature is bringing value to the stakeholder. Organizational creativity can also refer to the aggregate accumulation of personnel's creativity that can be combined in a way that creates value for the enterprise [27]. The process of generating novelties must be bonded with the usefulness of the resources. The most justified here is a reference to the research by R. Krupski on the usefulness of resources.

Table 1. Position due to importance of actual usefulness of resource for neutralization of threats

Position	Large firms	Medium-sized firms	Small firms	Micro-sized firms
1	Knowledge	Employee attitudes and behaviors	Non-formalized relations	Knowledge
2	Non-formalized relations	Knowledge	Knowledge	Source of financing
3	Employee attitudes and behaviors	Routine, inter-organizational solutions	Employee attitudes and behaviors	Employee attitudes and behaviors
4	Routine, inter-organizational solutions	Sector-based technologies	Formalized relations	Location
5	Source of financing	Non-formalized relations	Routine, inter-organizational solutions	Non-formalized relations

Source: [17].

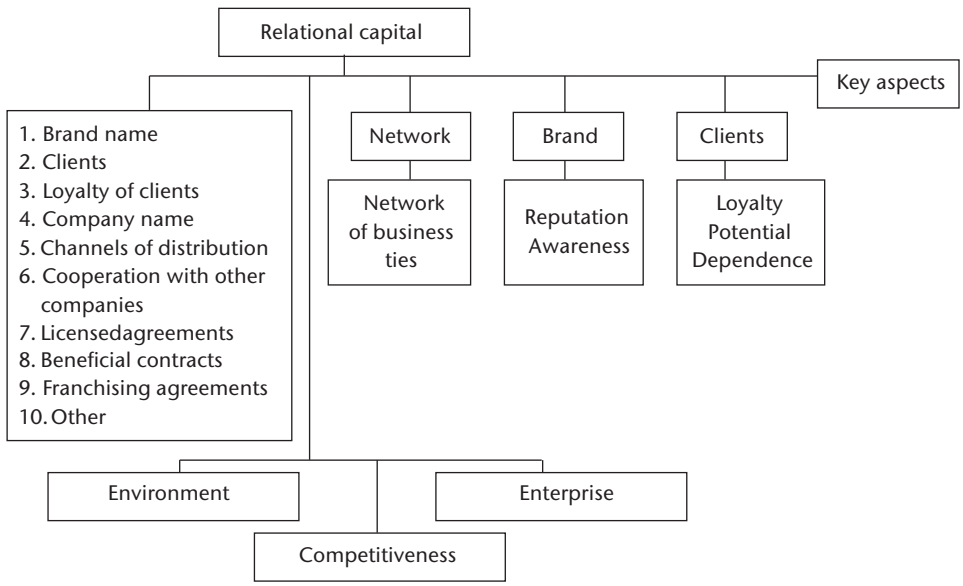
It is necessary to underline that non-formalized relations are of particular interest. Their positions differ due to the size of the enterprises. In large enterprises, they hold second place, whereas in medium enterprises they are in fifth/last place. The importance of non-formalized relations is the highest in small enterprises. However, in micro enterprises they hold fifth place. The subsequent research assessed the usefulness of intangible resources in terms of available opportunities. Results show that non-formalized relations are the most useful resource that enable seizing the opportunities. R. Krupski also studies the problem of the usefulness of intangible resources in the context enterprise's actions. Non-formalized relations appear in all enterprise's activities. They can be found between the first and fourth positions. So, it is necessary to indicate the usefulness of non-formalized relations. The third position is prevalent in this case. Moreover, the great value of employee attitudes and behaviors is pointed out. Knowledge was found to be the most important intangible resource [17]. People that acknowledge the usefulness of knowledge are more likely to accept the defined organizational behavior, which consequently influences the efficiency of the enterprise's functioning. A similar nature of dependencies is indicated by T.A. Hart, J.B. Gilstrap, M.C. Bolino. They state that organizational behavior is connected with the indicators of the employees' efficiency. Their model exemplifies

how the organizational behavior impacts the ability of an enterprise to adapt to new concepts. They argue that organizational behavior facilitates the relations between the routine procedures and the experimental processes [10].

2. Relational capital of enterprises

Relational capital is becoming the prevalent problem in the functioning of enterprises in the 21st century. The development of enterprises in conditions of the rapid growth of the globalization and competitiveness is based on the systematically changing list of premises influencing functioning of the economic entities. In any case, the premises that were important for enterprises in the 20th century are becoming increasingly less valid. If we refer to the importance of capital, in the 20th century tangible capital was inherent. However, at the end of the previous century, particularly in the highly developed countries, changes occurred in terms of the importance of capital in the economic processes. The role of tangible capital decreased in favor of intangible capital. This position of capital encompasses a multitude of elements whose level of importance has also undergone intensive changes over the past few years. The structure of relational capital is presented in Figure 2.

Figure 2. Elements of relational capital



Source: based on the [26].

In the presented structure of relational capital a multitude of different elements has been distinguished. The ones that unequivocally identify the enterprises, clients and cooperation with other economic entities are worth mentioning. The aforementioned cooperation is realized in the form of various agreements or networks of business ties. The key aspects of relational capital ensure competitiveness of the enterprises. A similar line of thinking is adopted by M. Rzemieniak with regard to the relational capital of clients. During the expansion of the resource area, organizational capital is also distinguished, in which fundamental role is played by the infrastructure assets encompassing the following [22]:

- processes of management, together with their philosophy,
- activities in the sphere of organizational culture,
- IT system with specified relations,
- finances of the enterprise.

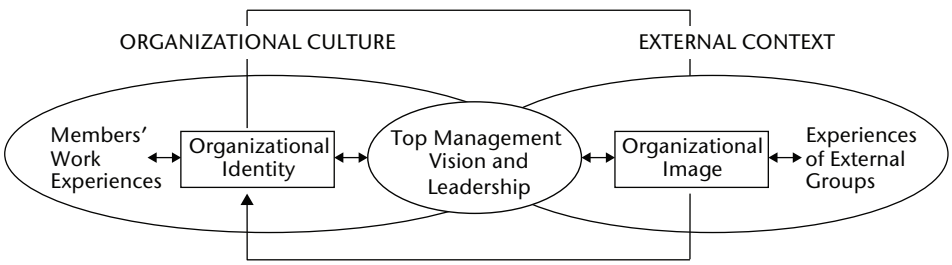
When indicating the presented elements of relational capital, it is fully justifiable to refer to the environment of the enterprises. Business entities treat their relations concerning the ongoing interaction processes with special attention. Within the framework of the relational capital, the specific perception of the environment in which business units' function is created, is evident.

It is purposeful to cite M. Romanowska and J. Cygler, according to whom contemporary researchers may "…follow the process of blurring and erasing the boundaries and intricate relations between the elements of the organization and its environment that are formed during this process" [9]. The boundaries of the organization determine the scope of the impact of enterprises. This process defines the mechanism of the integration of enterprises with the environment. Within this framework actions are taken which facilitate the survival and development of business entities [7]. Relational capital leads to the optimization of organizational behavior of groups of consumers, suppliers and clients [14]. Economic practice reveals that there is a significant level of interest among enterprises in the creation of relations with the market environment. Creating long-lasting relations facilitates the development of enterprises in the processes of the codependences with the environment, both formal and informal [26]. In the enterprise that uses relational capital it leads to the achievement of the specific skills enabling the utilization of resources according to the expected results [16]. The herein context is also indicated by the results of research on Hungarian enterprises. Relational capital was acknowledged there as a significant element in the increase of the efficiency of an enterprise [13]. Hence, relational capital is also becoming an important element of the activities of enterprises that are forced to meet the challenges of a competitive market. Likewise, relational capital constitutes an important resource in the strategies of enterprises.

3. Organizational culture in organizational behavior

Organizational culture of an enterprise plays a significant role in organizational behavior. Literature indicates the increasing scope of organizational culture in an enterprise. Its nature is determined by a multitude of varied factors, of which it is possible to distinguish the following: the type of production and service operations of enterprises, the level of education of employees and their involvement in the execution of their work tasks, as well as the standards designated for the personnel with the aim of realizing the strategies of operations of the particular economic entities. Thus, in each enterprise a specific and unique culture prevails that is of fundamental importance in terms of the organizational identity of the employees, as well as for the perception of the organizational image. In this context, the fact of existence of the culture of the hierarchy and the occurrence of a moderate level of the organizational identity of the employees are underlined (Figure 3).

Figure 3. Hatch and Schultz's model of relationships between organizational culture, identity and image



Source: [3].

Therefore, it is possible to assume that "… organizational culture is a profound, subconscious and abstract phenomenon that has an impact on the behaviors and relations of employees, whereas the organizational vibe is more conscious, specific and is visible in the customs prevailing in the organization, in behavior and in the feelings of the employees" [18].

The aforementioned definitions reveal that organizational culture should aid the efficient functioning of each enterprise as a community of its parts. With regard to the fact that all employees integrate their activity for the purpose of building common values, mission and aims, the survival and success of the economic organization is possible. However, this activity should be realized in conditions of cultural norms and patterns that favor the realization of these values [21].

In the area of the norms regulated by culture, prevail issues such as: trust and openness, undertaking challenges set by the enterprises and a simultaneous involvement at the workplace. Similarly, support and space [20] are important for the realization of new ideas, the appropriate involvement in conflict situations with the aim of their proper resolution. In the literature, a mediatory role of organizational culture is mentioned. The approach to work and behavior in relation to the pro-social services between employees can be distinguished. The approach to risk taking and level of autonomy of the employees are essential aspects of the organizational culture. In this manner, organizational culture may stimulate "… the behavior of employees and constitute a context for the formation of new ideas and their execution" [15]. Employee teams resolve the problems of the enterprises' organizational culture. Their actions have social, technical, organizational and economic nature and relate to the field of management. Employee teams, within the framework of organizational culture, concentrate on the compliance of the aims of the employees and the enterprise. In this process, the level of satisfaction among employees is important [24]. Therefore, it is justifiable to refer to the research results on the identification of the employee with the enterprise, while also the level of job satisfaction. In empirical research on the functioning of the employee teams, A.J. Baruk provided a verification of two research hypotheses:
H_1 – assuming the existence of a positive dependency between the level of employee satisfaction with relation to the identification with the organization;
H_2 – assuming the existence of a positive dependency between the level of satisfaction in the context of the degree of the identification of the employee with the organization [2]. On the basis of the research results, it was claimed that "…the majority of respondents were at least satisfied, while 17.48% of the total analyzed felt a very high level of satisfaction, almost 1% of the people surveyed was very dissatisfied and a total of 18.45% of people indicated dissatisfaction, namely slightly more than the percentage of those very satisfied" [12].

With regard to the indicated research results, managers should create the conditions for the identification of the employee with the organization, otherwise their attitudes and behaviors might be in opposition to the goals of the enterprise [23]. In terms of professional development, apart from increasing the qualifications, it is essential to ensure satisfaction from the assigned tasks [19]. Managers should concentrate on consumer culture and relations. Enterprise is forced to first and foremost become familiar with the principles of the cultural behavior of clients and society [12]. It is necessary to ask questions regarding the level of education, social relations and the system of values prevalent in society [11]. Efficiency in meeting requirements of the competition, within the framework of the required organizational culture, as well as the appropriate organizational behavior, is a necessity. It is important to indicate factors determining the organizational environment that is displaying increasingly

greater intricacy in the context of the strategies of enterprises. These factors are perceived through the prism of their strategic values, encompassing the relations between organizational culture and the efficiency of the enterprise [6]. Organizational culture therefore, comes down to ensuring the appropriate effectiveness of the enterprise. Effectiveness is the economic category that changes over time. If we conduct an evaluation of, for instance, effectiveness before and after the global crisis, then we acquire a list of necessary actions in the sphere of organizational culture that are essential for the enterprise. The literature on the subject describes new concepts of business activities in this area. They were presented by P. Wachowiak and S. Winch, who conducted a very interesting research analysis on the organizational culture of chosen capital groups.

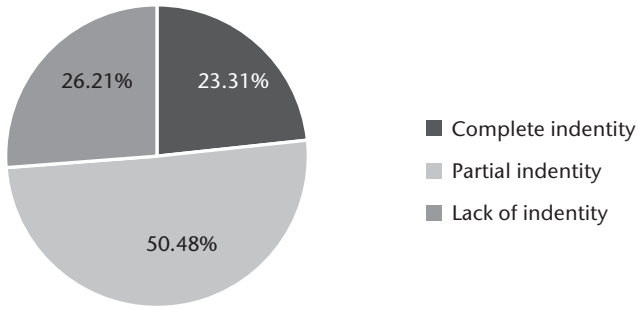
They compared different dimensions of the organizational culture before and during the global crisis [28]. These dimensions included: individualism, universalism, maintaining a distance from the authorities, collectivism and particularism.

In the Budimex capital group, the only cultural change that occurred related to maintaining distance from the authorities. Prior to the crisis, the distance was small, while during the crisis it was described as large. No changes concerning organizational culture occurred in Impexmetal and Ciech in the analyzed period. However, significant changes occurred in Marvipol. Collectivism was replaced by individualism during the crisis; while the small distance towards authorities changed to a large one [25].

In my research, I have presented managers of enterprises with a hierarchy of aims determining organizational behavior. Economic efficiency was decided the most important (83% of indices). Second place was taken by the nature of organizational culture, specified as individualism (11%). However, third place was given to organizational collectivism (4%). Hence, the research results illustrate the high degree of convergence in the sphere of the economic efficiency as a consequence of organizational behavior, primarily the organizational culture.

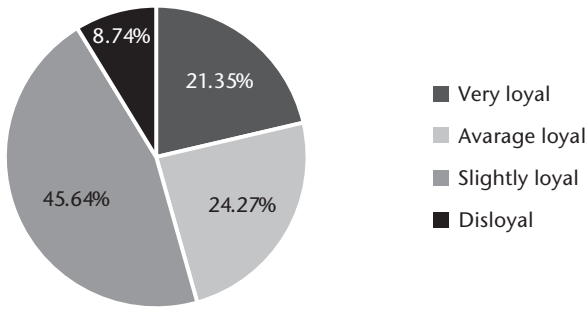
In the next study, I have analyzed employees from 145 enterprises in order to evaluate organizational identity, as well as the level of loyalty towards the enterprise. Complete identity was declared by over 50% of the respondents, while 26% indicated a lack of identity (Figure 4). Answers regarding loyalty of employees were as follows: 21% of employees are characterized by a very high level of loyalty, average loyal – 24%, slightly loyal – almost 46%, while disloyal answer was indicated by almost 9% of employees (Figure 5).

Figure 4. Structure of employees' answers with regard to organizational identity



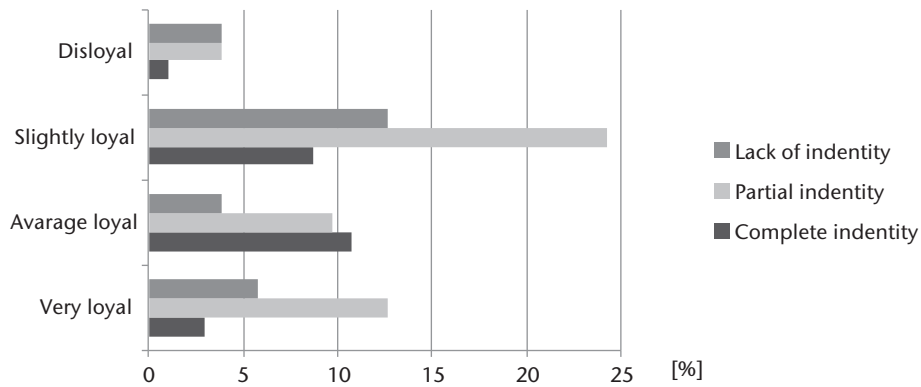
Source: own study based on the research results.

Figure 5. Structure of employees' answers with regard to level of loyalty



Source: own study based on research results.

Figure 6. Structure of employees' answers with regard to level of loyalty and organizational identity



Source: own study based on research results.

With relation to the aforementioned research of the areas under analysis, it is necessary to ask the following question:

Does a relation exist between the evaluation of organizational identity and the level of loyalty of employees? In order to answer that, the following research hypotheses have been formulated:

H0: The level of loyalty of employees does not depend on the level of their organizational identity.

H1: The level of loyalty of employees depends on the level of their organizational identity.

The chi-square statistic has been utilized for the measurement of the dependency between the qualitative variables presented in the correlation table as follows:

$$\chi^2 = \sum_{i=1}^{r}\sum_{j=1}^{k}\frac{n_{ij}^2}{\hat{n}_{ij}} - n \tag{1}$$

whereby:

$$\hat{n}_{ij} = \frac{n_{i.} \cdot n_{.j}}{n} \tag{2}$$

n – number of attempts,
$n_{i.}$ – sum of numbers in i-this line ($i = 1,\ldots,r$),
$n_{.j}$ – sum of numbers in j-column ($j = 1,\ldots,k$),
n_{ij} – empirical numbers,
$\hat{n}_{ij}$ – theoretical numbers.

Table 2. Results of survey research relating to the evaluation of organizational identity, employees, enterprises and their level of loyalty towards the enterprise

Evaluation of organizational identity	Evaluation of level of loyalty				Total
	Very loyal	Average loyal	Slightly loyal	Disloyal	
Complete identity	2.91 (4.98)	10.68 (5.66)	8.74 (10.64)	0.98 (2.04)	23.31
Partial identity	12.62 (10.78)	9.71 (12.25)	24.27 (23.04)	3.88 (4.41)	50.48
Lack of identity	5.82 (5.60)	3.88 (6,36)	12.63 (11.96)	3.88 (2.29)	26.21
Sum	21.35	24.27	45.64	8.74	100

* The theoretical numbers have been provided in brackets for the chi-square statistics

Source: own study.

On the basis of the empirical and theoretical values presented in Table 2, the chi-square statistic has been set in accordance with the equation (1):

$$\chi^2 = 9.2937.$$

The critical value is derived from the distribution table of chi-square for the level of significance of 0.05 and 6, while the degree of freedom amounts to 12.5916.

At the level of significance of 0.05, there are no grounds for rejecting the zero hypothesis, namely the level of loyalty of an employee does not depend on the organizational identity.

The results of calculations confirm the H0 hypothesis, namely that the level of loyalty of employees does not depend on the level of their organizational identity.

Organizational culture is subject to specific changes, while at the same time it seems possible to state that the threats changed the behavior of enterprises. Employee teams were mobilized to take action that ensured the survival of the enterprises. The search for new solutions in this area of organizational culture should be a part of operational and strategic actions, and they should be connected with organizational behavior which is characterized by a high level of efficiency of action.

Conclusion

Theory and the empirical research conducted by multiple researchers confirm the growing significance of organizational behavior in the process of the functioning of an enterprise. It is possible to assume that knowledge and informal relations as a part of organizational behavior have a strong impact on competitiveness. In the paper, I have analyzed the existing studies on the subject and conducted a research on the organizational culture. It was possible then to verify the research hypotheses. I assumed that the level of loyalty of employees does not depend on the level of their organizational identity. Empirical research confirms the significance of organizational culture in the behavior of the employees in the enterprise. Moreover, relational capital is created in enterprise-clients contacts which facilitate the growth of competitiveness. Hence, the increase in the level of competitiveness is one of the primary aims of the enterprise, and organizational behavior and relational capital play a crucial role in it.

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ORGANIZATIONAL BEHAVIOR OF ENTERPRISES AND RELATIONAL CAPITAL

Abstract

The organizational behavior of enterprises constitutes a significant aspect in terms of economic theory and practice. This behavior translates to a multitude of varied areas of activities of enterprises. These areas are featured by activities aimed at the identification of the employees with the enterprise with the aim of strengthening a cohesive and positive image of the enterprise at hand. The process of change identified with Transorganizational Development has been taken into account in terms of organizational behavior for the enhancement of the efficiency of the enterprise. The basic aims of these processes are as follows: increasing the level of the quality of relations and the satisfaction of employees and the enterprise. The author introduced the hypothesis and verified them. In the paper it was assumed that relational capital has become a significant element in the business activities of enterprises that are subject to the challenges of a competitive market. In the paper relational capital was acknowledged to be an important resource in the strategies of enterprises. Indicating the significance of organizational behavior in terms of various aspects requires the expansion of the problematic issues to include organizational culture. The increasingly greater scope of organizational culture in an enterprise, as well as its specifics have been underlined in the last part of the paper.

Key words: organizational behavior, relational capital, enterprise

ZACHOWANIA ORGANIZACYJNE PRZEDSIĘBIORSTW A KAPITAŁ RELACYJNY

Streszczenie

Zachowania organizacyjne przedsiębiorstw stanowią istotne zagadnienie w teorii i w praktyce gospodarczej. Przekładają się one na wiele różnorodnych obszarów działalności przedsiębiorstw. Obszary te charakteryzują się działaniami zmierzającymi do identyfikacji pracowników z przedsiębiorstwem w celu umacniania spójnego i pozytywnego wizerunku przedsiębiorstwa. Opisując zachowania organizacyjne, uwzględniono procesy utożsamiane z rozwojem transorganizacyjnym, umożliwiającym poprawę efektywności przedsiębiorstwa. Procesy te mają na celu przede wszystkim zwiększanie poziomu jakości relacji między

pracownikami i interesariuszami oraz uzyskanie satysfakcji z tych relacji. W artykule przedstawiono hipotezy i zweryfikowano je. Przyjęto, że kapitał relacyjny jest istotnym elementem działalności gospodarczej przedsiębiorstw podlegających wyzwaniom konkurencyjnego rynku. Uznano, że kapitał relacyjny jest ważnym zasobem wpływającym na strategie przedsiębiorstw. Dążąc do wskazania znaczenia zachowań organizacyjnych, w artykule poruszono zagadnienia problemowe wpływające na kulturę organizacyjną, która obecnie nabiera ważnych cech dla przedsiębiorstwa.

Słowa kluczowe: zachowania organizacyjne, kapitał relacyjny, przedsiębiorstwo

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