

ANALYSIS OF CONDITIONS OF DEVELOPMENT IN THE METAL INDUSTRY IN THE CROSS-BORDER LUBUSKIE-BRANDENBURG AREA

CHEBA Katarzyna¹, SANIUK Sebastian²

¹*West Pomeranian University of Technology in Szczecin, Szczecin, Poland, EU*

²*University of Zielona Gora, Zielona Gora, Poland, EU*

Abstract

The dynamic changes noted on the world markets which have led to the globalization of economy have not eliminated the importance of local (regional) markets. Companies operating on these markets can improve their competitive advantage by building relationships that support collaboration. Forming relationships is even more important for companies operating in cross-border areas. In such cases, a natural consequence of the localization of the cross-border area is a desire to create cross-border relations. An interesting example of this type of activity is the cooperation of companies operating in the metal industry located in the province of Lubuskie in Poland and Brandenburg in Germany. Undertaking cross-border cooperation can, however, also cause negative effects such as the concentration of investments in Brandenburg and the outflow of workforce and customers from the Lubuskie market. The aim of the study is to develop the map of the cooperative relations created on the basis of grid goals and to identify the major ties and areas of cooperation between the companies of metal industry in the cross-border regions of the Lubuskie Province and Brandenburg. The map of cooperative relations was developed on the basis of the results of surveys carried out in 2014. The study included 20 small and medium-sized enterprises representing the metal industry of the Lubuskie Province and Brandenburg.

Keywords: Map of cooperation, cross-border area, metal industry

1. INTRODUCTION

The area of western Poland borders with 3 eastern regions of the Federal Republic of Germany - Brandenburg (whose territory surrounds the Berlin region), Mecklenburg and Saxony. Most cities in western Poland (including major metropolitan areas - Wroclaw, Szczecin, Zielona Gora, Gorzow Wielkopolski.) are closer to European cities than to Warsaw (Wroclaw is located near Prague and Berlin, Szczecin - Berlin and Copenhagen, and Zielona Gora and Gorzow Wielkopolski - Berlin). It should also be noted that despite the greater potential of surface and population, the area of western Poland is characterized by lower levels of socio-economic development than western lands of Germany. This is particularly evident in the case of Lubuskie Province, whose social and economic potential is much lower than the other two regions of this part of Poland. The proximity of the regions to the Federal Republic of Germany creates conditions for the development of mutual relations between these regions and improved living conditions on both sides of the Polish-German border. In the case of Lubuskie Province, the proximity of the Berlin area as an opportunity for development may be taken into consideration in the case of the growth of innovative enterprises, the level of trade as a result of cooperation of Polish and German companies. It should be noted that there could be also side effects, including among others the concentration of investments in the agglomeration of Berlin and an outflow of labour resources and customers. Factors that may prevent this unfavourable phenomena is primarily the construction of permanent and effective (reciprocal) cooperative relations in areas relevant to the economic development of both regions. One of the areas of creating cross-border relations can be, e.g. metal industry, which occupies an increasingly important position among growing industries on both sides of the border. The aim of the study is to develop the map of the cooperative relations created on the basis of grid goals and to identify the major ties and areas of cooperation between the companies of metal industry in the cross-border regions of the Lubuskie Province and Brandenburg.

2. CONDITIONS OF DEVELOPMENT OF THE METAL INDUSTRY IN THE LUBUSKIE - BRANDENBURG BORDER AREA

The metal industry is a very large sector concentrated in many European cities and regions. It is dominated by small and medium-sized businesses operating as subcontractors for various industries, such as: automotive, aerospace, machinery, transport, construction and energy. The metal industry includes companies from Section C of Chapter 24 - metal production, 25 - manufacture of fabricated metal products (except machinery and equipment) and 28 - manufacture of machinery and equipment not elsewhere classified. In the Lubuskie region this sector is represented by more than 1,700 businesses (mainly SMEs), whose number is steadily increasing. However, in the state of Brandenburg (as generally in Germany), the metal industry is a significant industry that is characterized by high employment and revenue. The sector employs about 18% of all professionals in industry and generates nearly 14% of total industrial revenue of Brandenburg. Apart from some large corporations and several medium-sized companies, there are mostly small businesses with fewer than 10 employees. The range of production includes both the production of iron and crude steel through all the processes of metalworking through to the final and semi-finished products. Changes in world markets during the economic crisis 2007-2008 affected the metalworking industry and the production of metal products in different ways. Notably, they led to a reduction in production and a lowering costs and prices, which was caused by the pressure of end-users on the sales prices. Despite declines in production, many companies managed to retain skilled workers, which would likely be difficult at a moment of growth in demand, taking into account the escalating lack of adequately trained human capital. These changes also affected the border regions, in which - despite trends recorded on the global markets - relationships between companies are also important. An example is the work undertaken in two border regions: Lubuskie Province, on the Polish side and Brandenburg on the German side - regions perceived as an important development areas of metal industry. **Figures 1-2** and **Table 1** show selected information that allows comparisons to be made between the economies of Lubuskie Province and Brandenburg.

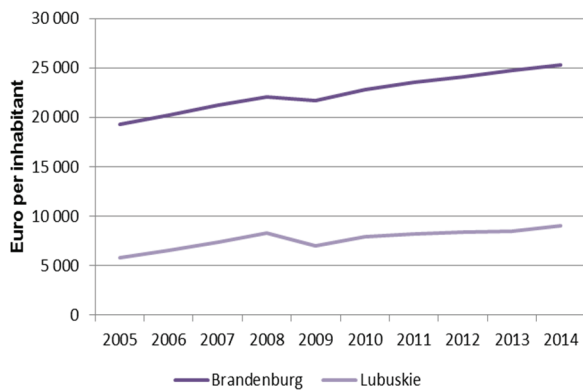


Figure 1 Domestic Product (GDP) at current price in the Lubuskie and Brandenburg area

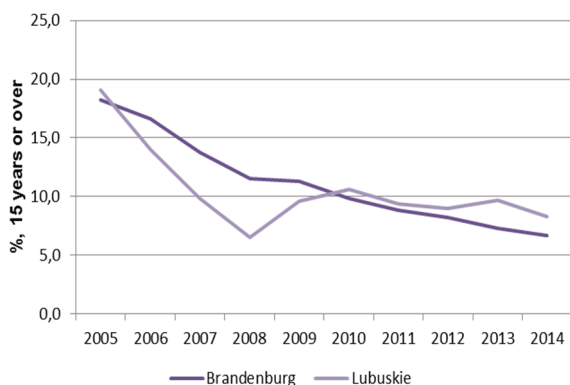


Figure 2 Unemployment rates (%), 15 years and over in the Lubuskie and Brandenburg area

Both regions are faced with problems of getting qualified candidates for a job, which in the case of the metal industry is a particularly important condition for the efficient running of the company. Difficulties in obtaining suitably skilled workers are particularly pronounced in Lubuskie, which is also under the influence of agglomerations of national scope, such as Szczecin, Wroclaw, Poznan and internationally popular Berlin. The proximity of these agglomerations is a serious threat and can contribute to an outflow of the young and well-educated. Another serious problem of both Lubuskie Province and Brandenburg region is a lower level of socio-economic development than in other regions of these two countries.

Table 1 Selected information describing the socio-economic development of Lubuskie Province and Brandenburg (data from 2013 r.)

Selected indicators	Lubuskie	Brandenburg
Area (m ²)	13 988.0	29 654.0
Population	1 010 582	2 491 514
Population density	72.2	84.5
Persons with tertiary education (ISCED) and/or employed in science and technology	173 000	685 000
Gross value added at basic prices (in million euro)	7 735.32	54 246.51
Employment (thousand persons)	398	1 081.90
Gross domestic product (GDP) at current market price (2011, Euro per inhabitant)	8 000	22 800
Economically active population (from 15 to 64 years)	433.2	1 252.2

Source: own study based on Eurostat data.

The information confirms the similarity in the socio-economic development of the analysed regions (similar trends of basic indicators of the economy in both regions), the region of Brandenburg, due to its location of Berlin in the area, economically is developing much better than Lubuskie. Similar trends can also be seen in the field of demography. Changes in the demographic structure, including in particular the ageing of the population, are the basic issues that materially affect the functioning of the metal industry of both analysed border regions. These changes are already visible in Brandenburg and according to forecasts, in the coming years they will also significantly shape the socio-economic development of Lubuskie Province. Even now an outflow of well-educated young people in this area can be observed (in particular with education: higher and secondary vocational education in technical professions) to the neighbouring provinces - province: Wielkopolska and Lower Silesia and other countries, including Germany. Mutual cooperation of Polish and German companies may be considered as an opportunity for the growth of economic activity. It may also be a solution to counteract the outflow of technically educated young people to work abroad or to other regions as a result of obtaining a greater number of better paid jobs and the implementation of common projects, in the case of Polish companies not only on the principle of subcontracting.

3. RESEARCH METHODOLOGY

The basis for the development of the map of cooperative relations between the companies in the metal industry from the region of Brandenburg and Lubuskie Province were the results of research carried out by the authors of this paper in 2014. under the project implemented in cooperation with the Lubuskie Metal Cluster. The study included 20 small and medium-sized companies (the study included 10 Polish companies from the area of Lubuskie Province and 10 German companies located in Brandenburg), leading business as within the metal industry, with experience of mutual cross-border projects or declaring their interest in this type of cooperation. The study included the following 3 steps: 1) analysis of the socio-economic situation and the conditions for the mutual activity of entrepreneurs from the metal industry in border regions; 2) indicating the directions of changes of educational, informative needs and directions for cooperation activities within the metal industry;

3) the development of guidelines and recommendations concerning building effective cooperative relations in the region.

Research carried out on the basis of a questionnaire survey (research tool in the form of a questionnaire) was divided into the following 3 parts: 1) assessment of the situation on the local labor market including the assessment of the current and future situation in this market, the investment plans of the examined companies, the reasons for hiring new employees or indicated declining professions or specializations; 2) the assessment of the potential of the surveyed companies, particularly in the area: the implemented innovative solutions and projects; 3) the identification of potential areas of cooperation of the surveyed companies representing the metal industry. In the study the results of 3rd phase of completed survey were shown, on the basis of which the map of cooperative relations between the companies operating in the border area Lubuskie-Brandenburg was developed .

4. POTENTIAL AREAS OF CROSS-BORDER COOPERATION OF COMPANIES IN THE METAL INDUSTRY

Cooperation, according to the Dictionary of Business and Management [1], can be interpreted as: cooperation between people or enterprises in the production of goods and services, and is seen as an alternative in comparison to competition. In the case of cooperative enterprises (as opposed to co-operation in the customer-supplier relationship), we can talk about pooling resources and activities to a common implementation of analogous function of internal and external cooperating companies. In literature, much space has been devoted to formulating a description and analysis of building cooperative relations of business [2], [3], [4], [5], [6]. We can talk about the growing importance of this form of cooperation, which is a key factor in the success of businesses in new economic conditions, both for large global corporations and small and medium-sized enterprises [7]. One of the objectives of cooperative action is to provide businesses with the opportunity to improve their competitiveness in conditions set by the environment in which they operate [8], [9]. It can involve both activities involving a mutual exploitation of resources and conducting a common policy, e.g. in terms of sales or exports [10]. In the case of international cooperation links are often, however, complementary activities (implemented on the basis of contract) taken during the implementation of investment projects (in the case of cross-border Polish-German cooperation - mainly initiated by German partners) [11]. The existing (positive) experience of working is one of the most important factors for the further cooperation of companies conducting businesses in the border areas, which is difficult due to the greater ease of acquisition of both customers and employees by stronger partners (in the present case mainly German). In the case of companies participating in the survey, we can talk about similar opinions, the most positive relating to projects implemented together in the past. The main conclusions in the framework of the study are as follows:

- 1) Enterprises from the Lubuskie region have already undertaken cooperation with German partners; the cooperation mainly concerned partners from regions other than Brandenburg, such as Mecklenburg, Bavaria, Saxony, Ruhr, Westphalia and Berlin. It has been planned to undertake this type of cooperation in the future, possibly extending the existing area of cooperation to other regions including Brandenburg.
- 2) German partners involved in the study also declared their interest in cooperation with Polish partners, mainly from the provinces of Wielkopolska, Lower Silesia and the Lubuskie Province.
- 3) Like the Polish partners, German enterprises were interested in developing such cooperation in the future.

Among the most frequently cited benefits of cross-border cooperation of companies participating in the survey enterprises indicated mainly: easier flow of information and knowledge, advantages of scale and increased market coverage, the ability to reduce operating costs, greater bargaining power with suppliers and customers, the ability to acquire complementary resources and synergistic effects of the availability of resources to a competitor. The benefits indicated by enterprises confirm the importance of mutual relations and cooperation in cross-border cooperation of enterprises. It should be noted, however, that enterprises, both Polish and German, recognize the existence of certain difficulties limiting or even discouraging partners from more

intensive cooperation. These obstacles relate primarily to the need to establish clear and transparent rules of cooperation. So far, Polish enterprises have collaborated with German partners mainly in terms of subcontracting. Quite often, the products supplied by them or services provided were merely a part of larger projects implemented by the German partners. This form of cooperation significantly limits the opportunity to build their own brand on the German market. Also important are language barriers, indicated by both Polish and German companies and the lack of mutual trust. Despite the difficulties mentioned by both sides, the interest in undertaking mutual activities of cooperation is significant. The results generated during the study and responses of enterprises can therefore be used to map areas of potential co-operation (**Table 2**). On this map, following the initial identification of areas of interest of Polish and German companies regarding potential cooperation, those areas were marked which were characterized by the greatest interest of both sides.

Table 2 Map of potential areas of cooperation

Companies from Brandenburg	The area of cooperation	Companies from Lubuskie Province
great interest	Purchase of raw materials for further processing	little interest
	Purchase of parts, elements, components mount components	great interest
	Purchase of large parts or components of manufactured products	little interest
very little interest	Purchase of parts for repairs and renovations	great interest
little interest	Purchase of other consumables	
great interest	Services of installation	little interest
	Production services	great interest
very little interest	Hire production capacity (including machinery and equipment)	
	Rental employees	
	Research and development in new technologies	
	Research and development for new products	little interest
	Technical advice	great interest

Source: own study based on a survey conducted with companies.

The analysis of the submitted information shows that partners on the Polish side are interested in many areas of cross-border cooperation. In 8 of the 12 analysed areas the interest is very high. In the case of German partners the main interest is focused on the purchase of raw materials, components and services, assembly and manufacturing. This confirms earlier observations and experience in mutual cooperation and perception of Polish partners mainly as subcontractors or entities to facilitate the purchase of raw materials. The resulting map shows some trends and directions conditioning the mutual cooperation between the Polish and German partners. It draws attention to the little interest of German companies in possibilities of cooperation within e.g. technical advice or research and development. It should also be noted very little interest of German partners to hire Polish workers, which means, contrary to a popular belief, there is little risk of Polish workers being taken over by German enterprises, a risk which leading Polish companies in the analysed industry feared. The main obstacle in this case is primarily a language barrier.

5. CONCLUSION

The basis for the ongoing development of the metal industry in both analysed regions are long-standing traditions. These industries are regarded as historically traditional areas of conducting an economic activity. In the case of Lubuskie Province, existing potential also strengthens the placement on the site of metal companies with foreign capital associated with the modern metal industry in Europe. In addition, in both regions as R & D facilities science and technology parks are being created, research laboratories and clusters

associating the company are on the increase. In line with available forecasts of industry development it can be expected in the coming years that the development of traditional sectors oriented on both the internal and external market for goods and services will stabilize. In these sectors, innovative activities and absorption of new technologies will be a field for development as a result of the need to achieve a so-called technological frontier, which has been already popular in other European countries and is necessary for the survival of the competitiveness of these sectors on the internal market. That means, particularly for Polish companies, a need to cooperate with often more developed German companies. In the study, taking into consideration the responses of representatives of the Polish and German companies doing business in this industry, a list of possible areas of cooperation has been presented. The information indicated quite clearly that in the case of Polish companies, we can talk generally about the interest in cooperation in many different areas. In the case of German companies this interest is limited primarily to the purchase of raw materials or parts. However, another field to take action of cooperation between companies can also be collaboration with companies of other industries. Companies engaged in the processing of metals are also very often part of the supply chain in other industries. This means, therefore, there is an opportunity to undertake cooperation with companies from outside the industry. In the Lubuskie Province, examples of this type of cooperation can be seen in mutual projects in the metal and paper industry, as well as in the metal and automotive.

REFERENCES

- [1] LAW, J. (ed.), *Dictionary of Business and Management*, Oxford University Press, 2009.
- [2] ALVAREZ, S.J. How entrepreneurial firms can benefit from alliances with large partners, *Academy of Management Executive*, 2001, vol. 15, no 1, pp. 46-65.
- [3] POMYKALSKI, P., BAKALARCZYK, S., & SAMOLEJOVA, A. Benchmarking polish basic metal manufacturing companies. *Metalurgia*, 53(1), 2014, pp. 139-141.
- [4] POMYKALSKI, P. Consequences of Economic Downturn on Financial standing of Basic Metals Manufacturing Companies in Poland. In *Metal 2012: 21st International Conference on Metallurgy and Materials: 23* (Vol. 25, No. 5), 2012, pp. 1816-1820.
- [5] PORTER, M. *Competitive Advantage. Creating and Sustaining Superior Performance*. New York: The Free Press, 1985.
- [6] RAPOSO, M.L., FERREIRA, J.J.M., FERNANDES, C.I. Local and cross-border SME cooperation: Effects on innovation and performance, *Revista Europea de Direccion y Economia de la Empresa*, 2014, vol. 23, no. 4, pp. 157-165.
- [7] GRANT, D.B., LAMBERT, D.M., STOCK, J.R., ELLRAM L.M., *Fundamentals of Logistics Management*, New York: McGraw-Hill, 2006.
- [8] SANCHEZ-GONZALES, G., HERRERA, L. Effects of customer cooperation on knowledge generation activities and innovation results of firms, *BRQ Business Research Quarterly*, 2014, vol. 17, no. 4, pp. 292-302.
- [9] VODAK, J., SOVIAR, J., LENDEL, V., Cooperation Management in Slovak Enterprises, *Procedia - Social and Behavioral Sciences*, 2014, col. 109, pp. 1147-1151.
- [10] TURNER, G.B., LEMAY, S.A., HARTLEY, M., WOOD, C.M. Interdependence and Cooperational in Industrial Buyer-Supplier Relationship. *Journal of Marketing. Theory and Practise*, 2000, vol 8, no. 1, pp123-145.
- [11] WITKOWSKI, J. *Strategia logistyczna przedsiębiorstw przemysłowych*, Wrocław: Wydawnictwo AE we Wrocławiu, 1995.