

THE INFLUENCE OF LOGISTICS OVER THE OCCURRENCE OF SPATIAL AGGLOMERATION OF BUSINESSES

MĂDĂLINA S. MATICIUC

ECC.PHD. STUDENT, FACULTY OF ECONOMICS AND BUSINESS
ADMINISTRATION, WEST UNIVERSITY OF TIMIȘOARA
e-mail:1

ALEXANDRU CONSTANTIN PETRACHE

ECC.PHD. STUDENT, FACULTY OF ECONOMICS AND BUSINESS
ADMINISTRATION, WEST UNIVERSITY OF TIMIȘOARA
e-mail:alex.petrache15@gmail.com

Abstract

This paper involves an examination of the literature that refers to the various methods of spatial agglomeration of businesses where the focus is actually minimizing transportation costs. The research has a predominantly theoretical nature, based on exploratory method, being focused on the literature review to highlight the evolution of different forms of spatial organization so we can identify the advantages of acquiring further knowledge needed to the applied research, providing in this manner prospects for progress. The vicinity of the representatives of the economic, political and educational environment presents many advantages with regard to reciprocal relationships that can develop within these, whether formal or informal, highlighting the potential of flexible innovative forms of spatial organization of clusters. Spatial agglomeration theories that were developed in the course of time, is a cornerstone for new innovative forms of business spatial organization such as clusters and networks of clusters that are offering many advantages in terms of cost of transportation. The evolution of business spatial agglomerations shows that the vast majority of companies aim to ensure competitive advantage not only in close locations to increase the generation of innovation and reduced transport costs, but also through access to knowledge in a fast and easy way. The work comes in support of these ideas, proposing in the conclusions part a new model of business agglomeration which does not require physical proximity but one of cloud type.

Keywords: spatial agglomeration, transport, territorial management, cluster

JEL : M19, M20, R40

1.Introduction

Transport infrastructure, manifested in the course of time, an important role in regional development because of the opportunities offered by facilitating rapprochement between business, State institutions and centers of research and education. In this context, the main objective of the paper is to identify the relationship between logistics and business spatial organization. It also aims to identify the components of logistics that have a direct or indirect influence on business spatial agglomeration. The research has a predominantly theoretical nature, based on exploratory method, being focused on the literature review to highlight the evolution of different forms of spatial organization so we can identify the advantages of acquiring further knowledge needed to the applied research, providing in this manner prospects for progress.

The majority of developed states of the world have sought to identify infrastructures to reduce transportation costs, thus facilitating the dissemination of knowledge and supporting the development of metropolitan areas. In this context, companies seek involvement in processes of spatial agglomeration, which have witnessed an unprecedented dynamic over time, due to their potential to create greater added value than if they activated individually, in the absence of adequate logistical infrastructure. In the literature there have been authors (Carlino & Kerr, 2014) who observed relationships that were formed over time between spatial agglomeration of business and innovation. Thus, there are new guidelines with regard to the business space organization, which have established that the majority of companies a proactive and innovative behavior, putting special emphasis on cooperation and synergistic effect of supporting the spatial proximity of companies, political and academically environment.

2. Literature review

The business space organization is a concept created and developed over time, so that we can speak of preliminary and evolved forms thereof. The context of using this is territorial management, when thinking in this spirit pursuing connections between geography and the economy.

Spatial organization is strongly influenced by the ideology of the moment. Progress over time with regard to the organization of agriculture, human settlements or communications networks may not provide a complete picture of implying space organization.

In the paper "Locational Analysis in Human Geography" (Haggett, 1965) is an interesting approach with regard to the spatial organization of a region which presupposed the existence of such factors with the spatial structure: movements, networks, nodes, seats and diffusion stages, subsequently being posted and the notion of governance. Pursuing the same perspective foreseeing Morrill's "The Spatial Organization of Society" (Morrill, 1974) the relevant information concerning the choice of location, and hierarchies that interactions are taken into account when making an assessment of a region. Morrill stresses the importance of the spatial distribution of population, the movements that take place between individuals and the physical frame. Taking account of the historical period in which that were drafted the two authors works, human behavior, as a factor of spatial organization, is completely removed from the theories, the period was marked by a strong industrialization.

Miszczak emphasize that economic theorems which don't take into account the size of the space are incomplete and represent only a simplified version of reality (Miszczak, 2008).

Korenik Miszczak, in his work the "Regional as a Fundamental Unit in Modern Economy Space" (Korenik and Miszczak, 2011) presented the concept of Domański (Domański, 2006) related to the business space organization of which he was watching as a model for achieving economic efficiency of spatial organization. Domanski emphasizes the relationship between geographical concentration and spatial accessibility, precisely due to the human factor taken into account in the form of systems of social values, human bias and conflict relations that may occur and to dictate a positive or negative one.

Interest in the management of territorial and geographical distribution of economic activities is dating back to the early nineteenth century (Santos Cruz and Teixeira, 2007). The first approach of spatial economy can be traced from the studies of (von Thünen, 1826), (Launhardt, 1882) and (Weber, 1909). Classical authors contributions (Perroux, Economic space: theory and applications, 1950), (Myrdal 1957) have laid the groundwork for subsequent theory concerning regional economic development (Santos Cruz and Teixeira, 2007). According to the two authors, over the past two decades, research has offered to significant developments in the field of spatial economy, prompting a wide range of spatial patterns related to the neologisms of economic concentration.

This growing interest for the forms of spatial organization, has brought a series of contributions that led to the emergence of the "new economic geographers" (Krugman, 1991), with a new generation of location models, its main contribution being the addition of external economies of scale in the traditional model of inter-regional trade.

Globalization has challenged the premise of spatial and territorial proximity, pointing out the existence of technological and entrepreneurial proximities between companies without borders, focusing on company-based logic networks and knowledge (Santos Cruz and Teixeira, 2007).

Since the 19th century there were concerns about the spatial organization in various areas. Thus, in his work "The Isolated State" (von Thünen, 1826) von Thünen, references are made to the crop's ideal location, taking into account the distance to be traveled from the place of production to the retail market. Later, Launhardt offered a solution presented in the form of a geometric figures for three important points which should be interconnected (Launhardt, 1882), just that this interconnection should not necessarily be submitted to the points in the form of two by two, recommending the model identification of a fourth point that could connect all the other three initial points. The model is very similar to that of Marshall, who, after more than half a century after the model of von Thunen, and nearly a decade of enunciation, in his work Launhardt "Principles of Economics" (Marshall, 1890) has identified three factors which were interconnected companies in London:

- labor basin;
- localization of specialist suppliers;
- ease of access to knowledge and information.

Marshall's work, each of these factors are very clearly established the importance of: a great human resource availability presupposes the involvement of potential employees in their professional development to win the job they want, and the close proximity of the client provider allows reducing the cost of moving goods and easy access to information and knowledge would facilitate a more rapid learning. He considers the development of the district as a result of the agglomeration of firms and thus as an increase in population (Maticiuc, 2015).

A few years later, in the work of Alfred Weber, which take into account several spatial factors to find out the most suitable location with minimal cost, we identified fundamental forces of localization:

- differences of the cost of transport;
- differences of manpower;

- agglomerated economies;
- diseconomies.

Industrial location theory of Weber's considered the agglomeration economies as one of the causes of spatial agglomeration. Weber did not show why these gatherings occur, but suggests that they are simply varieties of internal economies of scale (Weber, 1909).

Inspired by von Thünen's model was also the concentric zone theory which is based on the idea that a city is built from the outside to the Center, in the form of collaborative areas. Burgess highlight in his work "The growth of the City" (Burgess, 1925) that the cities have radial growth, based on five concentric circles, each with different functions:

- the urban core is the most accessible area of the city;
- transitional zone, which surrounds the nucleus, includes business and industrial centers;
- workers' housing area, they do not allow to move away a lot of work because of the high cost of transport, the location in this area are;
- residential area in living middle-class;
- commuters area where social status is low (Burgess, 1925).

The theory has been criticized on the grounds that disregard boundaries hard to identify between circles because, in reality, areas intersect. Although the model is adapted to the towns in the USA of the 1920s and requires some improvements for the current period, the kick off meeting was the first attempt to explain the development of spatial agglomerations.

Walter Christaller laid the foundations for the theory of central places through a study conducted on the different cities located in southern Germany. According to him, no resident should travel more than five km to the central place. The main idea of this theory refers to a city seen as a central place, from which the population can supply goods and services, any of the consumers attending the nearest midpoint (Christaller, 1933). Christaller has developed through his theory the notion of hexagonal market, perceived by him as being the most appropriate form of Organization for the supply activity.

Hoover, in his work "Location Theory and the Shoe and Leather Industries" (Hoover, 1937) redefines the Weber's forces in:

- economies of large scale;
- localization economies;
- urbanization economies.

Lösch took Christaller's concepts and didn't give us an overlay of areas of influence of the centers, but also creating centers, located on the upper levels, being able to serve at the lower stores (Lösch, 1940).

The city was under review and by Francois Perroux, according to which the increase does not appear everywhere at the same time, he shows up at the poles or dots of growth with variable intensity, spreads along the different channels and different overall effects on the whole economy. Growth pole was defined as "an abstract economic space" (Perroux, 1954) represented by:

- an economic plan;
- a field of forces;
- a homogeneous aggregate (Perroux, 1954).

Growth pole was described by a complex of industries, many of them being active and trying to encourage the other who are passive, the latter tending to pursue the first-stated.

In turn, this model has been criticized for regional inequality that promoted.

The role of public institutions in regional development has been accentuated by North, to distinguish clearly between organizations and institutions, the latter being the "rules of the game" as well as the laws and regulations with respect to these procedures. In his design, "institutional change shapes the evolution way of societies" (North, 1990).

As can be seen from the previous presentation of the theories that refer to spatial organization, it has gone from an economic-managerial analysis applied to agricultural production, to industrial locations and distribution of resources to the social and cultural approach (Hagerstrand, 1953). The concept of spatial agglomeration of businesses presents a particular complexity, going beyond the existing definitions in the literature.

Over the last few decades, research has evolved greatly in the field of industrial location and spatial economy. Based on previous theories presented, detailing the relationship between State, human resources and production processes, based on their desire to come closer and to reduce shipping costs, there are spatial agglomerations of businesses in the form of industrial, scientific and technological parks, clusters and cluster networks.

3. Conclusions

Through the formulation of theories that refer to spatial organization, is aimed to identify a spatial configuration to render the existence of economic operators in the same geographical area so as to lower on a significant shipping cost. Spatial organization of economic activities requires varying degrees of agglomeration and the specific forms that have evolved in parallel with the development of mankind. Organizations struggle to

acquire unique core competencies that can be used to create a competitive advantage (Petrișor & Petrache, 2014).

Relationships that are established between various companies through commercial channels are a key factor for the countries of the world aimed at moving upstream on the value chain. In these regions the companies would be useful in the context of functioning clusters where logistical services are adequate. Due to the importance given to elements of regionalization, agglomerations of business clusters have been reducing the distance between companies and speed up the flow of goods and information between these and the research institutes, universities and representatives of the political environment (Narjoko, 2009).

Because the interaction between companies of a cluster, or moreover, between clusters may be one of the stronger is preferable to reduce transport costs, or improve those services by means of clustering strategies focused on improving logistics infrastructure.

Because the frequency of interactions between the members of a cluster is very large, the costs of the logistical services should not be an impediment.

Spatial organization of business has benefited from the development of innovative arrangements, which, thanks to cutting-edge logistics infrastructures, no longer emphasizes the imperative of geographical proximity, developments in the field of innovation situating the society in which we live in a new approach. The logistics infrastructure of roads is slowly replaced by a cloud infrastructure, in which relations between members of the network have clearly superior relevance their physical proximity, virtual connectivity being facilitated by new technologies that support to achieve competitive advantage.

4. Acknowledgement

This work was partial supported by the European Social Fund through Sectorial Operational Program Human Resources Development 2007 – 2013, project number POSDRU/159/1.5/S/142115, project title “Performance and Excellence in Postdoctoral Research in Romanian Economics Science Domain”.

5. References

- [1] **Burgess, E.** (1925). The growth of the city: an introduction to a research project. In E. W. R. E. Park, *The city* (pp. 47-62). Chicago: University of Chicago Press.
- [2] **Carlino, G., & Kerr, W. R.** (2014). *Agglomeration and Innovation*. Accessed at 9 2, 2014, from Harvard Business School: HYPERLINK "http://www.hbs.edu/faculty/Publication%20Files/15-007_e181fd00-4426-4db8-8f70-89b1b5054a8f.pdf" http://www.hbs.edu/faculty/Publication%20Files/15-007_e181fd00-4426-4db8-8f70-89b1b5054a8f.pdf
- [3] **Christaller, W.** (1933). *Central Places in Southern Germany*. Jena.
- [4] **Domański, R.** (2006). *Geografia ekonomiczna*. Warszawa: Polskie Wydawnictwo Naukowe .
- [5] **Hagerstrand, T.** (1953). *Innovation diffusion as a spatial process*. Lund: Gleerup.
- [6] **Haggett, P.** (1965). *Locational Analysis in Human Geography*. London: Arnold.
- [7] **Hoover, E.** (1937). *Location Theory and the Shoe and Leather Industries*. Cambridge: Harvard University Press.
- [8] **Korenik, S., & Miszczak, K.** (2011). Region as a Fundamental Unit in Modern Spatial Economy. *GeoScape*, 11-17.
- [9] **Krugman, P.** (1991). Increasing returns and economic geography. *Journal of Political Economy*, 99 (3), 483-499.
- [10] **Launhardt, W.** (1882). Die Bestimmung des zweckmässigsten Standorts einer gewerblichen Anlage. *Zeitschrift des Vereins Deutscher Ingenieure*, 26, 105-116.
- [11] **Lösch, A.** (1940). *Die räumliche Ordnung der Wirtschaft(the Economics of Location*. Iéna: Yale University Press.
- [12] **Marshall, A.** (1890). *Principles of Economics*. London: Macmillan.
- [13] **Maticiuc, M.** (2015). *Business Infrastructures – Instruments for the Initiation of Business Cooperation*. Annals of the „Constantin Brâncuși” University of Târgu Jiu , 2, 211-215.
- [14] **Miszczak, K.** (2008). Charakterystyka współczesnego paradygmatu gospodarki przestrzennej. *Gospodarka przestrzenna* .
- [15] **Morrill, R.** (1974). *The Spatial Organization of Society*. Duxbury.
- [16] **Myrdal, G.** (1957). *Economic Theory and Underdeveloped Regions*. London: Duckworth.

- [17] **Narjoko, D.** (2009). Industrial Agglomeration and Technology Upgrading and Innovation: The Experience of Indonesia. In K. Limskul, *Development of Regional Production and Logistic Networks in East Asia* (pp. 33-79). Jakarta: ERIA.
- [18] **North, D.** (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.
- [19] **Perroux, F.** (1950). Economic space: theory and applications. , *Quarterly Journal of Economics* , 89-104.
- [20] **Perroux, F.** (1954). *L'Europe sans rivage*. Paris: PUF.
- [21] **Petrișor, I., & Petrache, A.** (2014). *The Implications of Logistics Dynamics over the Virtual Organization – A Model of Analysis Proposition*. Procedia - Social and Behavioral Sciences , 124, 107-113.
- [22] **Santos Cruz, S., & Teixeira, A.** (2007, 12). *A new look into the evolution of clusters literature. A bibliometric exercise*. Retrieved from http://www.fep.up.pt/investigacao/workingpapers/07.12.17_wp257.pdf .
- [23] **von Thünen, J.** (1826). *The Isolated State*. London: Pergamon.
- [24] **Weber, A.** (1909). *Über den Standort der Industrien (On the Location of Industries)*. Tübingen: Mohr Verlag.