



The Concept of Logistic Attractiveness - Theoretical Basis

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Abstract: This article's aim was to formulate a definition of the concept of logistic attractiveness together with a set of basic determinants that shape it. This study was based on the analysis of literature studies. The article's main conclusion is the confirmation of the possibility of constructing an assessment model of logistic attractiveness based on an extensive set of determinants that entrepreneurs can use to support the decision-making process to change the region of conducting their business. The attractiveness of logistics activities is understood as the competitive ability of logistics, while from a marketing point of view, attractive logistic activities can be talked about when they can be used to achieve competitive advantage by a company, but both of them can be used only for building the base of logistic attractiveness definition.

Keywords: *Logistic attractiveness, city logistics, decision making, urban economy, sustainable development*

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INTRODUCTION

Statement of the Problem

In times of globalisation, it becomes possible to locate interests in every corner of the world. However, making decisions about choosing the perfect place to run your own business generates the need to calculate the investment value of a given region. Due to the numerous variables that can determine this value and the profitability of investments, businessmen from around the world make a series of analyses that will allow them to make the right decision for their strategic goals. Conducting research supporting business decision making is extremely burdensome and expensive for managers. During informal environmental interviews, which inspired the work on the issues described in this article, many of the board members, managers, logisticians and other important employees of large enterprises signaled their willingness to participate in the process of creating a universal indicator that would allow a quantitative assessment of the region in terms of investment. According to their opinion, in addition to the standard set of determinants such as demographic or environmental ones, it becomes necessary to create a set of factors referring to the logistic ability of a potential investment area.

During literature research, the notion that best suits the needs of the market is the notion of logistic attractiveness. Until now, none of the authors of publications dealing with the topics of city and region logistics have been tempted to define this concept; however, it has been clearly stated that logistic attractiveness has a colossal impact on the growth of the industry in the areas they study. Literature in the mentioned area is at the development stage and is not very extensive, however, linking items that fall within the scientific area of city logistics, and regional investments should allow determining the relationship between the attributes determining logistic attractiveness, which in turn will lead to the creation of its complete definition and will allow closing the gap in the theory of management and quality sciences. In addition, these determinants will significantly affect the creation of a set of assumptions necessary to build a model

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for assessing the logistic attractiveness of cities. In the intention of the author, ultimately the core of this model will be a mathematically developed indicator whose creation and the final result will be significantly influenced by that previously identified, using a group assessment of experts, determinants and relationships between them, developed through the use of regression and correlation analysis.

LITERATURE REVIEW

Attractiveness of Regions

In order to properly achieve the purpose of this article, it is necessary to start building the definition of logistic attractiveness with a proper understanding of the concept of attractiveness itself, that is the attractive force, the properties of what is attractive, that is particularly interesting and providing someone with pleasure or profit. This dictionary definition of the word clearly indicates the essence of the concept, which is the perception of attractiveness as a kind of force that can impact decision making.

Attractiveness, in quantitative terms, is treated as a kind of level of attraction force and potentially satisfying previously generated needs of a tycoon, that is a person or organization exposed to the impact of this force (Connell, 2010; Kaothan, 2018). A good example of the functioning of attractiveness as an attractive force can be seen in the situation of migration of people, in which the relationship between motivators to leave one country (push force) and the attraction factor, that is the force that attracts immigrants to a specific country, can be noticed. This observation can be easily translated into the aspect of economic geography, which focuses on researching what affects where investors decide to locate their business and what discourages them from choosing another place or just maintaining the *status quo*.



Figure 1 *Impact of Repulsion and Attractiveness on the Decision-Making Process*

Based on the above, we can distinguish three types of attractiveness (IVA, 2016):

- the attractiveness of life - a place where people want to move or where they want to stay,
- business attractiveness - a place where organizations want to start up their business,
- tourist attraction - the destination that people want to visit.

Due to the need to list all determinants, it becomes necessary to introduce a geographical limitation for the areas studied. Due to the fact that a further step of considerations will be the correlation of attractiveness with investments, the best possibilities of geographical limitation are:

- a city, understood primarily as a space, a separate territory of socioeconomic activity, in which economic and administrative units are located and inhabited by society (Tluczak & Kauf, 2014),
- a region, an area characterized by the homogeneity of natural environment features, socioeconomic phenomena, unique history and cultural traditions.

Cities are the central area of regions that have a number of physical and human resources and a natural environment that interacts with the surrounding. The development of cities and regions, however, is treated as social development and an increase in the economic potential occurring in the designated region; it is characterized by constant improvement of its competitiveness and improvement of the quality of life of its inhabitants. Cities, in turn, significantly contribute to business and economic changes in these areas (Nasser, 2018; Tundys, 2012).

One of the existing concepts, meticulously described in the literature, constituting the next stage in the definition of logistic attractiveness and covering the correlation of attractiveness with a separate economic area, is investment attractiveness. In a synthetic way, it can be understood in terms of “the ability to encourage investors to choose the region as the location of investment” (Gawlikowska-Hueckel & Umiński, 2000; Sirikudta, Archarungroj, & V., 2019). The definition adopted in this way allows the resulting assessment of investment attractiveness through the prism of the amount of expenditure incurred. This criterion, despite its simplicity and apparent obviousness, has a disadvantage - it does not take into account the type of investment. This criterion rewards capital-intensive activities, while greater added value and non-financial benefits for the development of the area in which the investment is located

can be brought by knowledge-intensive activities (Hildebrandt, Kalinowski, Nowicki, Susmarski, & Tarkowski, 2006). However, this approach does not provide the opportunity to analyse specific factors determining the success or failure of a given area. On the one hand, the results of such research should help potential investors search for a location that meets their requirements, and on the other, provide local authorities with information on the strengths and weaknesses of the investment attractiveness of the examined regions and subregions (Sinh, Nga, Linh, & Tuan, 2016; Żak & Węgliński, 2014). The ability to encourage investment, which is the essence of investment attractiveness, is understood as a combination of location benefits that can be achieved during business operations and resulting from the specific features of the area in which the activity takes place. These benefits are referred to as location factors. Therefore, the combination of location factors determines the investment attractiveness of a given area.

Areas offering the optimal combination of location factors are attractive for investment as they allow to reduce capital expenditures and current operating costs of the enterprise, facilitating maximisation of profits and reducing the risk of investment failure (Dziemianowicz & Swianiewicz, 1998).

Based on the definition of investment attractiveness, we are able to state that logistic attractiveness is one of the factors determining the investment attractiveness of cities and regions, in other words, each element of the set of determinants of logistic attractiveness (A) belongs to the set of determinants of investment attractiveness (B).
Mathematical record: $A \subset B$

This assumption is based on the belief that there is no factor determining logistical attractiveness, which at the same time has no effect on investment attractiveness.

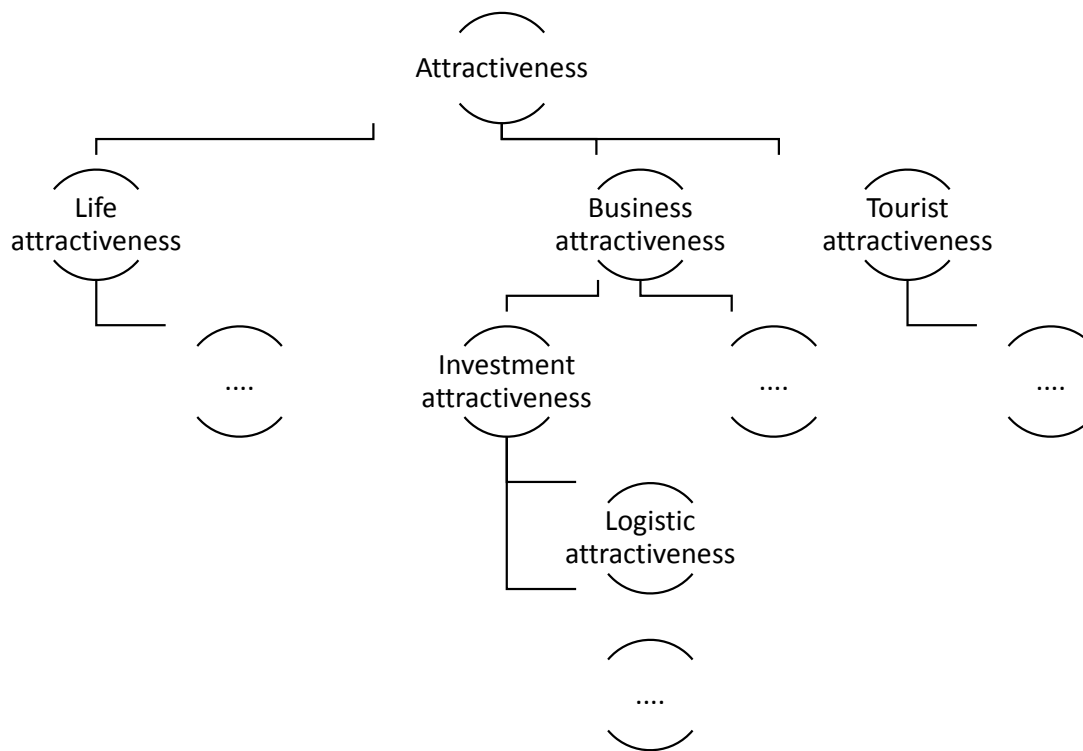


Figure 2 *The Location of Logistic Attractiveness in the Scheme of Attractiveness*

The localization of attractiveness relative to other attractiveness is shown in the diagram below (Figure 2). The diagram clearly indicates the localization of logistic attractiveness in the group of investment attractiveness, which in turn, is the main factor determining the business attractiveness of a given region.

Competitive Ability of the Region's Logistics

In order to determine the significance of logistics in market-oriented enterprise management, it is necessary to examine and identify its capabilities and attractiveness. These two elements constitute the fundamental logistic potential of the enterprise thanks to which a significant competitive advantage can be achieved (Fey, 1989). So it can be concluded that the attractiveness of logistics activities means the competitive ability of logistics. Logistics activities, from the marketing point of view, can be considered attractive if thanks to them the company can improve its competitive position in relation to counterparts (Febriyanto, Sucherly, Sumawiharja, & Padmadisastra, 2016). Based on the marketing approach to the problem of attractiveness, one can propose basic factors determining its level (Figure 3).

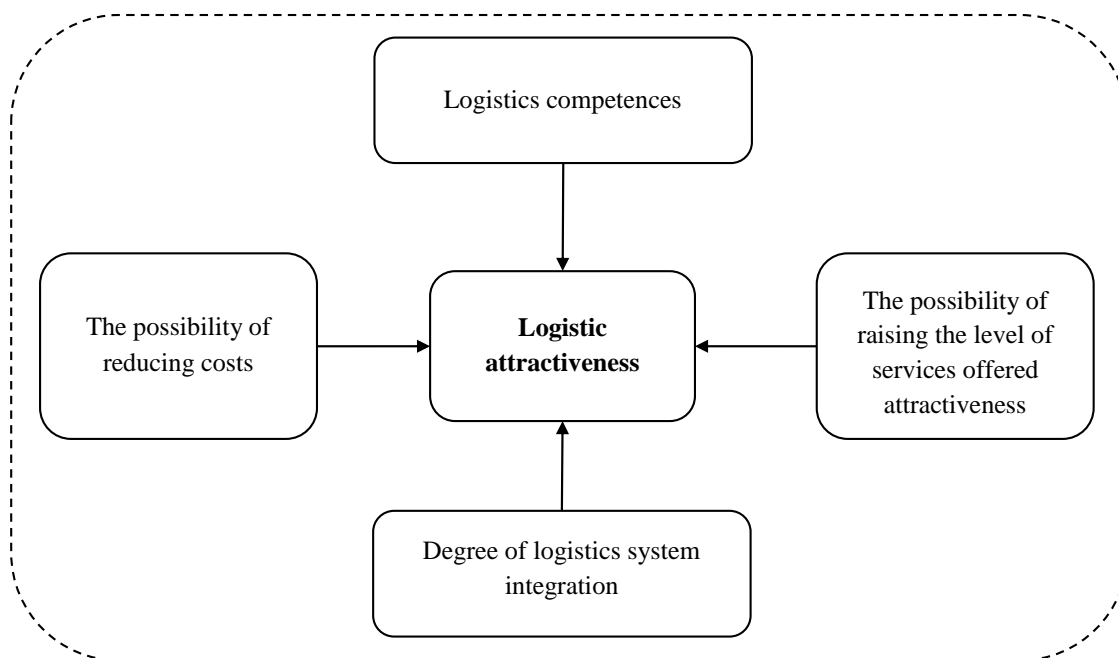


Figure 3 *Factors Affecting Logistics Attractiveness from a Marketing Point of View*

The logistic attractiveness is determined by the possibility of minimizing costs, the possibility of raising the level of services offered, logistic competence and the degree of integration of the logistics system. In some industries (e.g., capital goods), cost reduction can be an essential element of strategic success (Tluczak & Kauf, 2014).

Sources of cost reduction can be found in the optimization of flow-oriented logistics services, as well as in increasing efficiency, understood as an integrated and flow-oriented logistics system. Among the possibilities of increasing the level of services, the greater accuracy, reliability, speed, and flexibility of supplies, should be pointed out, it is also important to allocate resources together with the synchronization of production with supply. The term logistic competence is understood as optimal planning and implementation of the enterprise's logistics concept, during which the current state analyses should examine all marketing logistics problems that may appear as opportunities or threats to the organization. The last element shaping logistics attractiveness from the marketing point of view is the degree of integration of the logistics system with other functions of the enterprise, which is mutually correlated with the degree of logistics impact on the overall management process. The logistics system determines the course of the management process, and at the same time influences the shaping of the enterprise's goals and strategy .

The difference between the attractiveness of logistics activities and logistic attractiveness is the need to refer the second to a dedicated area. Hence, it becomes crucial to relate the competitive ability of logistics to cities or regions. This necessity results not only from mathematical reasons, but also due to significant differences, particularly economic ones, between areas characterized by different cultures, traditions, mineral deposits, and landforms. The region's logistics can be seen in five dimensions. The first of these - the operational approach allows us to state that logistics

requires such a direction of flows in the region that they cause the least possible time loss and a surplus of the transport route and minimize the number of bottlenecks in the process (Tluczak & Kauf, 2014).

The efficiency approach orientates logistics to offering partners optimal solutions within a given region, for a predefined logistics system, while maintaining the *status quo* of costs. The process approach focuses on the logistics of the region on operational and dispositional measures, which significantly affect the guarantee of satisfying the needs of consumers and the collection of subsequent waste, in accordance with the 7W principle. Care for the natural environment is important in this approach.

From the point of view of functionality, we can define the logistics of the region as a concept related to organizing the flow of people and goods (cargo) in the designated region, whose main goal is to maintain a constant quality of transport services while relieving transport traffic at the same time. The perception of the logistics of regions as a basic tool for efficient management of life and business activities is definitely characteristic of the instrumental approach. It includes infrastructure activities used in the organization and coordination of flows of people and goods in the region.

The consolidation of earlier approaches allows for defining regional logistics, taking into account its competitive abilities, as a set of management activities related to the development of a regional logistics network, its implementation, and improvement providing strategic supplies with the necessary resources while maintaining the ability to compete with all stakeholders using their competitive abilities, seen as the attractiveness of logistics activities.

THEORY PROPOSAL

Initial Set of Determinants Specifying the Level of Logistic Attractiveness of the Region

Following the dictionary definition of determinants as factors influencing something in a fundamental way, it seems necessary to create a set consisting of various types of factors to determine the structure of the collective that can clearly indicate which demographic, geographical, economic and legal aspects may shape the level of logistic attractiveness of the region. It is difficult to single out the most important set of determinants, because each of them in a completely different way and with different strength affects the logistic attractiveness. Therefore, it becomes necessary to create a base part of the assessment model based on various determining factors.

Based on the earlier mentioned restrictions on the localization of logistic attractiveness relative to other attractiveness and the need to select a limited geographical area, one can indicate the original set of factors affecting the logistics attractiveness and development possibilities of a given highly urbanized area, distinguishing two basic groups of determinants: macro-regional and micro-regional (Kuciński, 1999).

The first group includes elements that are independent of the characteristics of the city, on which its shape has no impact, and their formation takes place in a significantly limited way, while micro-regional factors are those that can be directly stimulated through local government authorities of a given urban area. For this reason, when making a decision about choosing the right location for their investment, planners, designers and investors are also guided by various economic, demographic and geographical indicators, which include, among others: unemployment rate, purchasing power of the population, price of land per m^2 , average price of transport services, cost of access to infrastructure, tax breaks, long term demographic forecast. There is also a set of factors that are not of indicative or criterion nature, but are an important factor for investors deciding to invest their own capital. Among the most important determinants of this type, the literature indicates: regional and government programmes that support the development of logistics and transport infrastructure and funds for their implementation, the condition of road infrastructure and plans for its development, the attitude of public sector institutions towards the investment initiative, cooperation of public administration bodies and local government territorial units with the private sector, the possibility of using financing sources through a public-private partnership, legal, environmental and ecological conditions (Grondys & Dragolea, 2016).

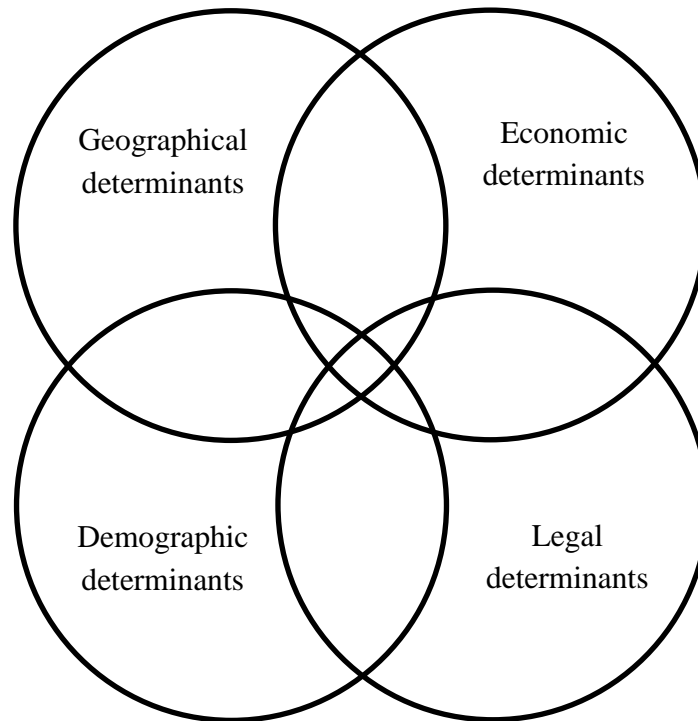


Figure 4 *Overlapping of Four Sets of Factors Determining Logistic Attractiveness*

Sets of determinants influencing the shaping of the level of logistic attractiveness in a given area include factors that are often found in more than just one set. As an example, one can point to this factor: tax breaks - which is found in all four sets at once. It is important to note that each of the sets of determinants can be analysed from a micro and macro-regional perspective.

Definition Proposal

Analysing various location conditions, it should be noted that one of the main principles adopted around the world, when deciding on the location of industrial or logistic investment, is their direct connection with at least two modes of transport, preferably in an already existing transport corridor (Każmierski, 2009). A significant link in supply chains that meets the earlier mentioned criterion is the logistics centre, which, by servicing a larger number of modes of transport, usually increases the attractiveness of the region in which it is located. For this reason, regions served by logistics centres located in seaports with high cargo turnover, which are connected with a highly developed nodal infrastructure for access to land, rail and road transport, with the widest possible development of an inland waterway network and in the vicinity of international airports, the best examples of this type of region in Europe are e.g., the metropolises Rotterdam in the Netherlands or Hamburg in Germany.

Based on the above observations, it can be concluded that there is no single plane or criterion that allows unequivocal confirmation of the profitability of investments in a given region. Only the synergy of the earlier mentioned factors will allow significant support for the decision making process (Szoltysek, 2012).

In order to achieve the assumed goal of the article, based on the assumptions made in them, which are the foundations for the definition, one can propose their concept, where logistic attractiveness is perceived as a force attracting stakeholders to make decisions about allocation or maintenance of resources in the area under consideration, based on its competitive logistics abilities and conditioned by specific determinants. Such definition allows to state that logistic attractiveness can be measurable and determined by means of a previously built indicator based on a set of determinants. It seems crucial to place determinants specifying logistic attractiveness in the set of determinants of investment attractiveness, and thus to treat it as a constituent element affecting the business decision process and not as a comprehensive decision determining factor.

DISCUSSION AND CONCLUSION

Discussion in Terms of Factors

The topic of the selection of individual determinants for assessing the logistic attractiveness of regions is extremely important to start the discussion. It should be remembered that logistic attractiveness is part of investment attractiveness, which is why the key part of brainstorming should be to distinguish between borders. Which factors determine both attractiveness and which only indicate investment attractiveness. The next step, during expert consultations, is to assign appropriate weights to individual determinants when building a model for assessing the logistic attractiveness of regions and cities. This is due to the fact that specialists define which determinants in individual collections are for them more important elements affecting their business decisions and which have a much smaller impact.

Discussion in Terms of Geographic

The next important element subject to expert consultations is the selection of the area to which logistic attractiveness should relate. The article presents a number of arguments indicating the best reference of the indicator to a specific region or city. Initial informal interviews indicate that stakeholders are more interested in referencing the factor to a particular city. This is due to not only formal and legal issues but also for business reasons. The case is, however, open and constantly discussed with business representatives.

Conclusion

To sum up, it must be stated that logistic attractiveness is a very complex, multifaceted concept and, therefore, difficult to define clearly; constituting a dynamic indicator resulting from developmental changes in the regional economy. The speed of economic and industrial development of selected regions indicates a growing demand for investment activities in them. Hence the emergence of a need to create a tool that will significantly simplify the analysis of destination choice by stakeholders of their business operations.

Multi-faceted issues of logistic attractiveness causes complications in creating a universal set of determinants, thanks to which it would be possible to calculate the alleged indicator for each region of the world.

The main conclusion of the article is the confirmation of the possibility of constructing an assessment model of logistic attractiveness based on an extensive set of determinants that can be used by entrepreneurs to support the decision-making process to change the region of conducting their business.

RECOMMENDATIONS FOR FURTHER RESEARCH

There are some recommendations for further research related to this, described as follows:

1. Carrying out further analysis of literature studies in order to develop the concept of logistic attractiveness and to clarify any comments on the proposed definition.
2. Preparation of a survey and preparation of a formal interview for experts in the fields of logistics and investment in order to create a broad set of determinants from all proposed sets and assign appropriate weights to them.
3. Attempt to consolidate all possible determinants into one set.
4. Preparation of a preliminary model for assessing the logistic attractiveness of cities or regions, the core of which will be a universal mathematical indicator supporting investment decisions.

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