

# LOGISTICS AS A TOOL FOR DEVELOPMENT OF THE WAŁBRZYCH AGGLOMERATION IN THE OPINION OF TERRITORIAL SELF-GOVERNMENT

## LOGISTYKA JAKO NARZĘDZIE ROZWOJU AGLOMERACJI WAŁBRZYSKIEJ W OPINII SAMORZĄDU TERYTORIALNEGO

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**Abstract.** Presentation of development directions of the Wałbrzych Agglomeration in the context of changes taking place in the area of logistics, including road infrastructure and its accompanying systems is the purpose of this publication. This article presents the results of a survey conducted among 22 territorial self-government units belonging to the Agglomeration. The questionnaire forms were addressed to employees of municipalities holding positions of: mayors, commune heads, their deputies, treasurers and secretaries. The agreement idea of local government units within the framework of the Wałbrzych Agglomeration is to solve problems together and search for integrated methods and development tools. In the course of the research, the authors sought an answer to the question: did the logistics infrastructure change over the last 10 years, and if so, how do they assess the investments undertaken in this area (in the opinion of the employees of territorial self-governments of the Wałbrzych Agglomeration)? This research question allowed the authors to focus on contemporary and future directions of the Wałbrzych Agglomeration development on which the currently implemented logistics processes have a significant impact.

**Keywords:** logistics, road infrastructure, territorial self-government

**Streszczenie.** Celem publikacji jest prezentacja kierunków rozwoju Aglomeracji Wałbrzyskiej (AW) w kontekście zmian zachodzących w obszarze logistyki, w tym infrastruktury drogowej i jej towarzyszącej. W artykule przedstawione zostały wyniki badań ankietowych przeprowadzonych wśród 22 jednostek samorządu terytorialnego (JST) należących do Aglomeracji. Formularze ankietowe skierowane były do pracowników gmin zajmujących stanowiska: burmistrzów, wójtów, ich zastępców, skarbników i sekretarzy. Ideą porozumienia JST w ramach AW jest wspólne rozwiązywanie problemów oraz poszukiwanie zintegrowanych metod i narzędzi rozwoju. W toku prowadzonych badań poszukiwano odpowiedzi na pytanie: czy w ocenie pracowników samorządów terytorialnych AW infrastruktura logistyczna uległa zmianie na przestrzeni ostatnich 10 lat, a jeżeli tak, to jak oceniają oni podejmowane w tym zakresie inwestycje? Tak postawione pytanie badawcze pozwoliło autorkom na skoncentrowanie się na współczesnych i przyszłych kierunkach rozwoju Aglomeracji Wałbrzyskiej, na które niewątpliwie wpływ mają obecnie realizowane procesy logistyczne.

**Słowa kluczowe:** logistyka, infrastruktura drogowa, samorząd terytorialny

### Introduction

The economic growth of entire cities and regions as well as the life quality of their inhabitants are certainly determined by the logistic infrastructure available in a particulate area (Witkowski, Starościc, 2008; Kaźmierski, 2010; Kauf, Tłuczak, 2014, p. 29-38;

Szołtysek, 2016, p. 61-92). The logistic infrastructure is system of land roads, waterways, airports, harbours and telecommunication grids located in a particular area. There are three compounds of the logistic infrastructure: linear infrastructure, nodal infrastructure and communication infrastructure (also IT infrastructure)

(<https://www.logistyka.net.pl>). Among the key elements proving the attractiveness of a particular city and a region there are: transport availability in a city, advantageous conditions for people, who run economic operations, diverse economic bases and conditions of life in an area (Transport Development Strategy by 2020, 2013). The availability of a city and a region includes, among others: road and railway networks, traffic and transport nodes, direct transport connections at relevant level including international ones.

Authorities of regions, including self-government units (JST) must presently face challenges arising from relatively quickly changing micro and macro environment conditions (Kogut-Jaworska, 2010; Szewczuk, 2016). Changes concern economic, technical, social & culture, political & legal conditions, but also international and environmental ones. A challenge also concern planning and performance of the sustainable development strategy and a concept of social responsibility of organizations (JSM) at the context of the changing needs of inhabitants arising from, among others, changes of demographic rates describing aging of the society, migration etc. (Kwaśny, 2009; Krodkiewska-Skoczylas, Żarlicka, 2015; Detyna, Mroczek-Czetwertyńska, 2017; Detyna, 2017). A crucial problem of many contemporary cities and entire agglomerations (including Wrocław Agglomeration) is de-population. Hence, it is necessary to look for reasons of disadvantageous de-population processes – monitoring of existing demographic trends and rate of satisfaction of inhabitants from life in a particular area. In categories of contemporary challenges the JST need to face the fact that there is also use of resources (funds) from the European Union - realized investment must meet the expectations of the society (varied groups of stakeholders: inhabitants, entrepreneurs, students, tourists, elderly and disable people, youths etc.) (Jabłoński, Jabłoński, 2013; Zalewska, 2016).

The goal of the publication is presentation of the growth directions of the Wrocław Agglomeration (AW) in the context of changes taking place in the field of logistics including associated road infrastructure. It should be emphasized that the idea of the agreement by and between 22 communes in the framework of the AW is mutual solving of problems and looking for integrated methods and development tools (Siwek, 2016). In the frameworks of conducted research an answer to the following questions was looked for: Has, in the opinion of employees of territorial self-governments cooperating in the

framework of AW, the logistic infrastructure changed in 10 years? And if yes, how do they rate the made and planned investments in this field. Such a research question enabled the authors to focus on contemporary and future development directions of the Wrocław Agglomeration, which are definitely affected by realized logistic processes being realized.

## Material and methods

Surveys, results of which are demonstrated in the paper, were conducted in the framework of the scientific project realized by the authors (internal grants) of the Angelus Silesius University of Applied Sciences in Wałbrzych (Contract no. 53/IPT/2016) titled „Impact of development of the logistics on the competitiveness of the Wałbrzych Agglomeration – analysis & assessment of contemporary trends”. The paper presents exclusively certain elements from a prepared survey questionnaire which comprised 12 questions directed to 22 units of the self-government (JST) in the area of the Wałbrzych Agglomeration. Survey questionnaires were directed (on-line) to employees of communes, more accurately to people in such positions as: mayors, village mayors, their deputies, treasurers and secretaries. Surveys took place in a period from 26.02.2018 to 31.03.2018. With reference to the number of people, who were delivered the survey questionnaire (110 people), the return rate of filled in forms equalled 21,8% (24 persons). However, most of JST participated in the survey actively (19 communes which is 86,4%).

Questions included in the survey enabled us to discover the opinions of people responsible for management of the self-governments regarding:

- cooperation of communes in the framework of the Wałbrzych Agglomeration - assessment, dominating aspects, benefits and negative aspects of cooperation (questions 1-4);
- initiatives (projects and investments) in the area of the AW, which affect its development positively (question no. 5);
- condition and development of road grids, implemented investment operations for the last 10 years, adjustment of parking space, investments in nodal infrastructure (parking, hubs), IT infrastructure and related systems (traffic lights systems, information boards, seconds displaying units) - in Wałbrzych city, AW and particular communes (group of questions no. 6);
- economic potential of the AW (assessment and way of use) as well as conditions organized by communes designed to promote business (questions group no. 7);
- Impact of the Wałbrzych Special Economic zone „INVEST PARK” into the situation and development of particular communes (question no. 8);
- economy areas with the highest development potential (question no. 9);
- road and railway transport between AW communes - assessment and all potential remarks (question no. 10);
- operations in the framework of cooperation intended to enhance the logistic infrastructure of communes (questions no. 11-12).

Accepted research methodology enabled to learn directions of development of the Wrocław Agglomeration in the context of changes in the field of logistics, including road infrastructure and related undertakings, as well as opinions and recommendations of regional civil servants regarding cooperation in the framework of AW.

## Results and discussion

Assessing the cooperation of communes in the framework of the Wałbrzych Agglomeration (scale 1-5) the interviewees did not award the lowest rates

(1-2). 50% of interviewees think the cooperation is good (rate 4), 33,3% very good (rate 5) and for 16,7% it was rather fair (rate 3). In the opinion of interviewees, the list of mutual cooperation areas is relatively extensive which proves real realization of the agreement by the communes of the agglomeration. The list of benefits arising from the agreement regarding the AW is even longer. Most interviewees did not present any negative effects of the cooperation. In Table 1 there are presented the most frequent answers of the interviewees regarding dominating aspects (areas) of cooperation in the framework of the AW, as well as benefits and negative aspects of the agreement.

**Table 1.** Dominating areas of the cooperation; benefits and negative aspects of the agreement in the framework of the Wałbrzych Agglomeration – the most frequent answers

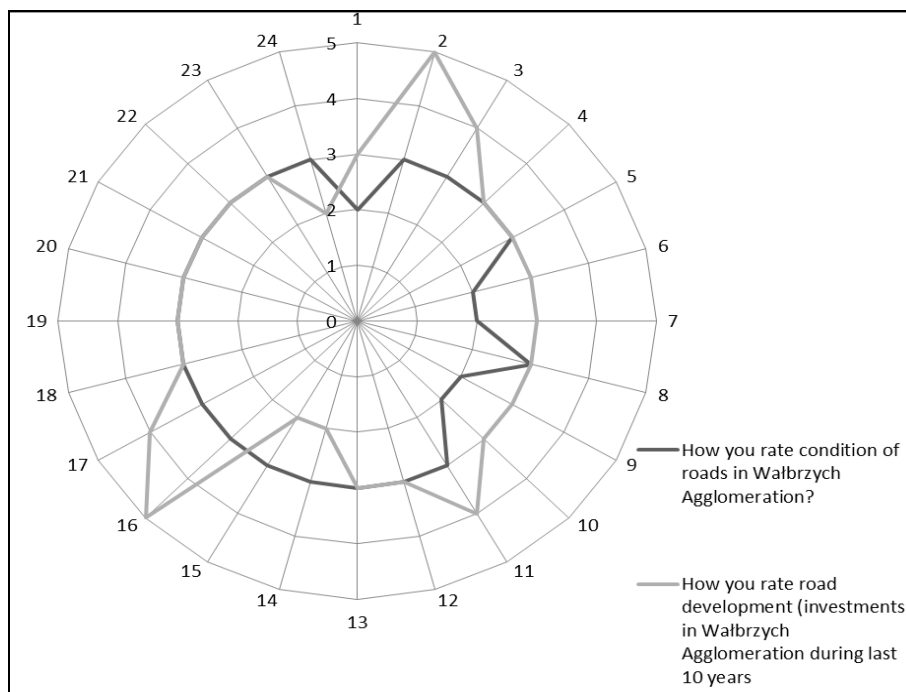
Dominating fields of the cooperation	Benefits arising from the cooperation	Negative aspects of the cooperation
<ul style="list-style-type: none"> <li>- realization of the AW Sustainable Development Strategy,</li> <li>- partnership in projects, including the attraction of resources from the European Union, coordination of investments realized by communes,</li> <li>- establishing and realization of common strategic documents,</li> <li>- development of technical infrastructure, including transport (road grid etc.),</li> <li>- traffic (development of traffic connection, including common public transport in the framework of the AW),</li> <li>- operations in the framework of Integrated Territorial Investments (ZIT AW),</li> <li>- environment protection, including low emission area,</li> <li>- revitalization area,</li> <li>- cooperation in order to promote tourism,</li> <li>- common operations promoting communes and the entire AW area,</li> <li>- education and culture,</li> <li>- looking for common business,</li> <li>- increase of availability of e-administration services,</li> <li>- multi-subject operations intended to achieve mutually non-contrary goals,</li> <li>- mutual determination of frameworks and guidelines for uniform operations,</li> <li>- actions intended to promote a coherence policy,</li> <li>- taking actions to promote development of the labour market, including enhancement of conditions for investors,</li> <li>- mutual operations promoting development of varied areas in particular communes cooperating in the framework of the AW,</li> </ul>	<ul style="list-style-type: none"> <li>- exchange of experiences,</li> <li>- development of the technical infrastructure,</li> <li>- modernization of municipal objects,</li> <li>- modernization of roads</li> <li>- boost of the "voice" of smaller communes within the AW,</li> <li>- possibility to create mutual strategic documents and documents and programmes for particular communes e.g. Low-Emission Economy Programme,</li> <li>- better access to EU's resources - possibility to use Union's funds in the framework of ZIT AW,</li> <li>- recognition of the initiative in an All-Poland scale,</li> <li>- economic and social benefits - active changes, spatial and functional support for the social &amp; economic growth (common strategy of actions, investments into the infrastructure, Sudety (Sudeten mountains) Strategy 2030 etc.</li> <li>- establishing of Instytucja Pośrednicząca Aglomeracji Wałbrzyskiej (IPAW) - and hence, better possibility to attract EU's resources for the AW area,</li> <li>- realization of projects which have a great effect on development of the communes,</li> <li>- increase in the share of communes into the region development planning,</li> <li>- higher impact of the voivodship on development of the region,</li> <li>- better understanding of the needs of particular communes,</li> <li>- learning new guidelines (good practices realized in communes),</li> <li>- establishing of trans-commune partnerships,</li> <li>- common promotion of the AW area,</li> <li>- coordination and complementarity of commenced operations,</li> <li>- tight cooperation at the level of mayors / village mayors / presidents.</li> </ul>	<ul style="list-style-type: none"> <li>- too low budget awarded to AW,</li> <li>- growth of the bureaucracy,</li> <li>- organizational issues,</li> <li>- legislation processes between Instytucja Pośrednicząca Aglomeracji Wałbrzyskiej [Intermediate Institution of the Wałbrzych Agglomeration] (IPAW), and Instytucja Zarządzająca Regionalnym Programem Operacyjnym Województwa Dolnośląskiego [Institution Managing the Regional Operating Programme for the Dolnośląskie Voivodship] (IZ RPO WD),</li> <li>- allocation of resources,</li> <li>- operations managed by the Intermediate Institution..</li> </ul>

Source: own materials based on results of the survey.

Acc. to 91,7% of surveyed civil servants, initiatives (projects and investments) in the area of the Wałbrzych Agglomeration positively affect its development. Nobody presented a different opinion and 8,3% had no opinion. In the framework of the Agglomeration some mutual projects are being realized. Acc. to 70,8% of interviewees the projects successively affect the logistic infrastructure of the communes.

The area of the Wałbrzych Agglomeration equals 1,740,6 km<sup>2</sup>. Coordination of operations in such a large region and in so many communes is a challenge for people responsible for management of the AW. Cooperation of the self-governments is a long-term project which aims, among others, to increase the traffic efficiency in communes and between them. Unsatisfactory infrastructure condition and the fact these are mostly single-lane roads do not promote good rates. At the same time, domestic roads, generating heavy transit traffic, are located in centres of the largest cities in the agglomeration, hence, the congestion phenomenon focused at the places in question (Detyna, Mroczek, 2018).

Results of conducted surveys prove that nearly 80% of interviewees rate the road infrastructure of the Wałbrzych Agglomeration 3 (scale 1-5). At a similar average level there are rated investments made by the AW (67% of interviewees). Nevertheless, employees of self-governments, who rated condition of the infrastructure poor, more frequently positively assess investments made in the area of the Agglomeration. Worth mentioning is that the investment operations are appreciated, most of all, by rural and rural-urban communes - approx. 21% of interviewees stated that commenced operations exceed the average. Questions related with the road infrastructure proved that the employees of the AW self-governments are aware of the fact that condition of the road infrastructure is not satisfactory and at the same time they notice that taken investment operations are not sufficient to improve the situation. They pay special attention to: the weak condition of regional roads, bad maintenance of roads in the winter, no comfortable connections with main roads in the country and in the voivodship (e.g. access to A4 highway) and a need to increase the capacity of roads e.g. by erection of city bypasses.



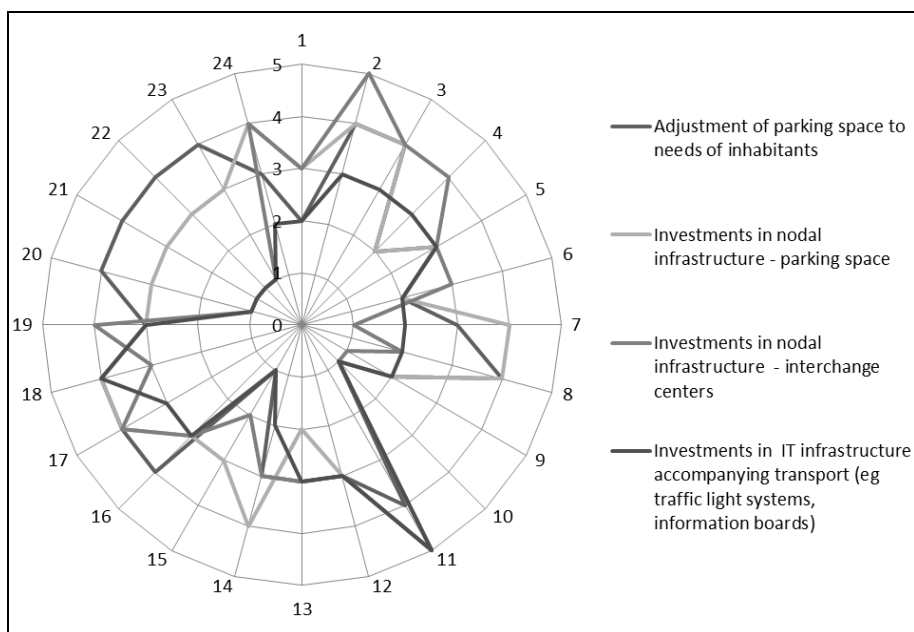
**Figure 1.** Assessment of roads of the Wałbrzych Agglomeration in the opinion of employees of the AW self-governments  
Source: own materials based on results of the survey.

The next question addressed to representatives of self-governments of the Wałbrzych Agglomeration regarded the related infrastructure. Here, answers were much more diversified. It results mostly from the fact that interviewees focused mainly on their own communes. Consequently, representatives of the rural

communes definitely, more positively, assess an area in question. In the opinion of many interviewees, parking infrastructure mainly deserves a good rate, 46% of them rate it good, and 29% fair. The weakest rates were assigned to the IT infrastructure, along with the transport. More than half of the interviewees rated it

weak and very weak. Persons, who rated the related infrastructure good and very good, usually were representatives of the urban communes, while the weakest results were among those representing the rural communes. Worth of attention is the fact that the infrastructure in the field of hubs was rated relatively well. It is a result of, most of all, recent investments into the hubs in the area of the Wałbrzych Agglomeration. These investments are rated good and very good by self-government representatives of areas, where such operations are carried out that is in urban and urban-rural communes.

Conducted surveys aimed to learn the opinion of employees of the territorial self-governments on the condition and changes, which have been taking place in the road infrastructure and related duties in the area of the Wałbrzych Agglomeration. As it results from the acquired answers, changes take place slowly, however, they are the result of entries in the strategy of the Wałbrzych Agglomeration, which stipulates directions of operations. Approx. 71% of the interviewees emphasize that in order to improve the infrastructure mutual operations by communes are taken in terms of the agglomeration agreement (agreement for agglomeration).



**Figure 2.** Opinions of representatives of self-governments regarding related transport infrastructure  
Source: own materials based on results of the survey.

In the course of the conducted surveys there have been analyzed opinions of employees of territorial self-governments on the results of cooperation in the framework of the AW, with special consideration of investment processes taken by communes in the field of logistic infrastructure. The authors of the paper, focusing on contemporary and future directions of the AW development, analyzed entries stipulated in the Wałbrzych Agglomeration Development Strategy 2013 - 2020. Summing up it could be concluded that development directions identified in the AW strategy focus on three fields:

- improvement of technical parameters of roads,
- assurance of the traffic capabilities for the Agglomeration,
- coherent public traffic (Wałbrzych Agglomeration Development Strategy 2013 - 2020).

Tasks identified in this strategy concern mostly re-construction and modernization of roads network. Simultaneously, operations intended to integrate public traffic connections are supposed to be coordinated mutually. There are planned erections of bypasses for the largest cities in the region (that is Wałbrzych, Nowa Ruda and Świebodzice) which are intended to transfer road traffic beyond the city centres. An important investment, which will affect traffic availability in the AW is a Sudety Road connecting Nowa Ruda and Kamienna Góra. The planned road will connect most of the AW communes (Integrated Programme of the Public Transport 2014-2025). Moreover, at the nearest time, due to development of the domestic road S3, the AW will get quick access to the A4 highway. The road in question is an element of the trans-European corridor; finally it is supposed to assure connection between the Scandinavia (via ferry lines)

with the Northern Czech Republic and Prague. The investment is supposed to be completed in 2018 (<http://www.drogas3.pl/>; Detyna, Mroczek, 2018).

As a result of conducted researches one can conclude that the opinions of employees of the territorial self-governments are in line with entries of the development strategy of the Wałbrzych Agglomeration. The most substantial challenges of the AW acc. to interviewees are:

- common integrated bus transport between communes,
- assurance of the collective traffic from all communes into the Wałbrzych Special Economic Zone "Invest Park",
- erection of cycle tracks,
- increase of road capacity,
- erection of bypasses,
- increase in availability of main transit roads in the voivodship and in the country,
- a need to recover railway connections closed in the past.

In the authors' opinion achievement of the goal which is enhancement of the road infrastructure and related tasks, in particular in such a large area as the Wałbrzych Agglomeration, will enable the increase in capacity of main roads in the region, to reduce the congestion phenomenon and to decrease travel times. Tasks, which are to be completed by the communes belonging to the agreement for agglomeration, will be used mostly to increase the quality of life of the regions inhabitants and consequently, will result in economic growth and promote the touristic attractiveness of the region. Moreover, in a distant perspective, access to the labour market will grow, similarly to a group of suppliers and selling markets. Also, the environment protection issue is very important. According to contemporary trends, all investment operations taken in the framework of city logistics must be based on the sustainable development rule, that is all proposed information & traffic solutions must be consequently intended to change the traffic behaviours of the inhabitants (increase their mobility). It means that a result of planned investments, apart from the aforementioned positive economic changes, must be the persuasion of those, who travel by their own means of transport, to use alternative transport forms. These are also elements of the Smart City concept which needs to become a necessary element of future strategic documents created to the Wałbrzych Agglomeration.

## Conclusions

Tasks related with the road infrastructure requiring large financial investments concern many communes and they demand effective coordination. Hence, it should be emphasized that 92% of representatives of the Wałbrzych Agglomeration think that the coo-

peration in the framework of the agreement for agglomeration is an initiative promoting development of the region, and most of all - development of communes they represent (approx. 8% of interviewees did not express their opinions). Generally, apart from excessive bureaucracy and emphasis on the serious impact of the European Union on commenced initiative (allocation of financial means) interviewees do not see any negative aspects of joining the agreement. However, as arises from surveys, operations related with improvement of the road infrastructure and related issues in the region is a long-term process and their effects still in many places (communes) of the area are barely noticed.

In the authors' opinion, regular, coordinated and long-term operations of the AW communes in extent of the logistic infrastructure will contribute mostly, to:

- increase in the traffic availability in the area of the Agglomeration,
- increase in mobility of particular communes,
- reduction of the congestion phenomenon in the region,
- establishing better condition for trade exchange,
- intensification of labour resources flow,
- reduction of regional disproportions (equalization of development level),
- enhancement of area competitiveness,
- enhancement of the Wałbrzych image and the entire region.

Positive effects of investment operations result also in growth of the economic operation and its productivity, as well as in growth of the investment attractiveness of the region and growth of the GDP per capita.

Solving logistic problems in the agglomeration areas is unquestionably a crucial challenge for self-government civil servants. The flow of goods and people in the area of the Wałbrzych Agglomeration and beyond its boundaries must be organized in such a way as to minimize environment pollution and make sure they are the most effective (Kauf, 2016). Such challenges have been faced by self-government representatives, who joined the agreement for agglomeration. Due to the realization of the Development Strategy for the Wałbrzych Agglomeration and the Strategy of Integrated Transport Investments in the Wrocław Agglomeration, including use of European Union's funds, the development direction in question can be recognized in the author's opinion to be a sustainable traffic & transport system.

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