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The Role of Local Governments in the Development of City Logistics

Jarosław Witkowski^a, Maja Kiba-Janiak^{a*}^a*Wroclaw University of Economics, Nowowiejska Street 3, Jelenia Góra 58-500, Poland*

Abstract

In the paper the authors made an attempt to present the role of local governments in the development of city logistics taking the example of Poland. The paper is divided into four main parts. The first two present theoretical aspects of city logistics and the different roles of stakeholders. The authors have developed the model of collaborative process of local government as a policy maker in the city logistics field. The empirical part of the paper presents survey results conducted in Polish cities with county rights. Research shows a lack of a comprehensive approach to urban logistics in studied cities and poor cooperation of local authorities with other stakeholders.

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1. Introduction

City logistics is a modern concept aimed at the integration of existing resources in order to solve problems arising from the motorisation index increase in the city. According to the European Commission, several European countries are threatened by a significant increase in the level of congestion in the next few decades. Forecasts show that freight transport activity will have increased by 40% by 2030 and just over 80% by 2050 on 2005 figures. At a slightly lower rate than the freight transport, passenger traffic will increase (34% in 2030 and 51% in 2050). It is

* Corresponding author. Tel.: +48664383332.

E-mail address: maja.kiba-janiak@ue.wroc.pl

expected that in 2050 in the EU countries, road transport will continue to play a dominant role in both freight and passenger transport. (European Commission, 2011).

City logistics requires a huge commitment from stakeholders, such as: freight carriers, residents (consumers), manufacturing, services and trade companies (shippers), local authorities and passenger transport companies. Each of these stakeholders has different expectations towards city logistics (Taniguchi & Tamagawa, 2005; Tseng, Yue & Taylor, 2005; Witkowski, 2011; Kiba-Janiak, 2011). However, a key role in the area of city logistics is played by the local government (Kiba-Janiak 2011, Lindholm, 2012). Local government, according to the legal regulations, may introduce: restricted entry of trucks into the city centre, tolls for car entrance to the city centre, separate bus-lanes for public transport, and the changes in the road marking, traffic lights and information flow etc.

One of the main purposes of local government is to improve the citizens' quality of life by satisfying their needs, including the economic and social sphere. According to the research (Kiba-Janiak & Cheba, 2010) city logistics impacts upon these areas that are less important from the point of view of all the criteria that affects the quality of life (such as salary, access to work, health care institutions, security or housing conditions etc.). The extent to which ease of movement within a city becomes a significant cause of "complaint", is dependent on whether other causes of "discomfort" are solved.

The purpose of the research was to analyse the activities of city logistics undertaken by local governments in Polish cities with county rights. The authors made an attempt to verify the hypothesis: **Polish local governments are insufficiently involved in improving the movement of goods and people within the city, despite the fact they note the growing congestion problem.** During the research, the authors have made the diagnosis of organisational structures of local governments in terms of departments, which carry out tasks in the field of city logistics. A questionnaire was sent to the Polish cities with county rights. A survey helped elicit answers to the following questions:

- What is the significance of city logistics in the implementation of the tasks related to the city management?
- Are there departments or employees in the city councils involved in issues relating to urban logistics? If so, what kind of tasks related to urban logistics are carried out by these departments and employees?
- What kind of activities related to the organization of an efficient movement of people and goods have been taken so far by the surveyed cities, and what kind of projects will be implemented in the near future?
- Do the local governments cooperate with other stakeholders in the field of city logistics to improve the residents' quality of life?
- Do the local governments develop an information system to collect and analyse data from city logistics stakeholders?

In the empirical part of the paper the authors have focused their attention primarily on sufficient involvement of local government, which is understood as involvement of local authorities in efforts to improve, in an effective and efficient way, flows of people, goods and information related to them in an urban area. Sufficient involvement of local government has been considered in three areas: institutional arrangement, efforts (implemented projects) and results (outcome). Due to the limited size of the work, issues related to the future planned projects and ways of collecting and analysing data in the studied cities were presented in an overall summary in the conclusion.

This paper presents the results of the research project "Reference Model of City Logistics versus Quality of Life of Citizens", funded from funds for science in years 2010-2013 as a research project. The final result of the research is to develop the model that includes standards, processes, metrics and best practices to support city logistics partners in a manner similar to the SCOR model, created by SCC, to support communication among supply chain participants. (see: www.supply-chain.org).

2. City Logistics and City Logistics System

City logistics in many cities in the world plays an increasingly important role. Despite the increasing difficulties associated with the movement of goods and people within the various Polish cities, efforts towards urban logistics remain insufficient.

In the literature there are many definitions of city logistics, each placing a different emphasis on different factors. There are a number of areas highlighted which directly or indirectly relate to city logistics. These include: freight, passenger transport, quality of life and sustainable development. Definitions of city logistics can be divided into two main groups, those that primarily relate to the issue of freight transport in urban logistics (Benjelloun & Crainic, 2009; Taniguchi & van der Heijden, 2000; Würdemann, 1992), and those, as well as freight transport, that also raise issues related to the movement of people in the city (Klatte, 1992; Hesse, 1992; Szoltysek, 2005; Witkowski, 2011).

The attitude of Taniguchi towards city logistics is worth noting. In his opinion this is, ‘the process for totally optimizing the logistics and transport activities by private companies with the support of advanced information systems in urban areas considering the traffic environment, the traffic congestion, the traffic safety and the energy savings within the framework of market economy’ (Taniguchi, Thompson & Yamada, 2003). According to Taniguchi, city logistics creates an opportunity to implement innovative solutions to improve the quality of life (Taniguchi, Thompson, Yamada & van Duin, 2001). Quality of life is also emphasised in the literature by other authors (Witkowski & Kiba-Janiak, 2012; Szoltysek, 2005; Gonzalez-Feliu & Morana, 2010, Witkowski, 2011) and understood as both the standard of living measured by indicators related to the income of the population, access to housing, and the society's subjective feelings on living conditions in the city. According to the authors this is the overarching goal of city logistics. Another important goal is the sustainable development, as discussed among other fields in the works: Taniguchi, Thompson & Yamada, 2003; Gonzalez-Feliu & Morana, 2010, Russo & Comi, 2012. Both freight and passenger transport cause noise, pollution and vibration. Therefore, many authors emphasise that the city logistics planning should take place in a harmonised and friendly environment (Taniguchi, Thompson, Yamada & van Duin, 2001; Szoltysek, 2005; Witkowski & Kiba-Janiak, 2012; Benjelloun & Crainic, 2009; Würdemann, 1992; Klatte, 1992; Hesse, 1992; Kiba-Janiak, 2011).

The implementation of activities related to the improvement of city logistics requires the involvement of many stakeholders. Local government plays one of the most important roles. In the literature, there are few scientific publications showing the problems of city logistics from a government perspective. Existing articles tend to refer to the role of local authorities in relation to the transport of goods (Lindholm, 2012; Dablanc, 2007; Hubbard & Onumah, 2000; Munuzuri, Larraneta, Onieva & Cortes, 2005). From Polish literature it is difficult to find any publications on the subject. There is also an absence of research showing the role of local governments in improving city logistics. This survey carried out by the authors is the first such study conducted in Polish cities with county rights. This is a unique study, in which an attempt was made to look at the logistics of Polish cities, in a comprehensive manner.

By analysing the definitions of city logistics based on the foreign and domestic literature, the authors have made an attempt to develop their own definition, according to which city logistics can be defined as ‘planning, implementation and monitoring of economic efficiency and effectiveness of people, cargo and relevant information flows in urban areas in order to improve the citizens’ quality of life’ (Witkowski & Kiba-Janiak, 2012). Analogously with reference to general systems theory, according to which each system is a deliberately structured set of elements and relationships between them, there can be defined the concept of a logistics system. With this in mind, ‘city logistics system should be understood as a deliberately organised set of elements such as stakeholders, infrastructure, regulatory standards, tariff system and the relationship between them, which are involved in the integration process of product flows, people and relevant information in urban areas’ (Witkowski & Kiba-Janiak, 2012). Finally, based on the above definitions, we can define city logistics strategy as a composition of long-term, internally- and externally-coordinated decisions and actions for the efficient and effective flow of people, goods and accompanying information in urban areas in order to improve the quality of life of the residents.

3. Local Government as a Main Actor in the City Logistics

Poland has had a three-tier structure of local government from 1 January 1999. The whole country is divided into 16 provinces, 2,479 municipalities, 314 counties (concentrating from a few to several neighbouring municipalities), 65 cities with county rights performing both the tasks of municipalities and cities with county rights (Rocznik Statystyczny Rzeczypospolitej Polskiej, 2012). The basic unit of local government in Poland is the

municipality. All local authorities have a legal personality. They are entitled to the right of ownership and other property rights. Public duties aimed at satisfying the needs of local communities are carried out as their direct responsibility. The government may instruct units of local government to perform other public duties, the so-called delegated tasks. The income of local government units is their own revenues, including property taxes, general subsidies and grants from the state budget. They have the right to determine the amount of local taxes and fees to the extent specified in the law act (Drożyński & Urbaniak, 2011).

The municipalities are not only responsible for meeting the collective needs of residents and quality of life, but also other tasks, such as spatial order planning, environmental protection and nature conservation, construction and maintenance of municipal roads, streets, bridges, squares, traffic organisation, maintaining cleanliness, waste disposal, local public transport monitoring, etc. (Ustawa o Samorządzie Gminnym, 2001).

Cities become an important place for many business activities. The more companies are located in and around the city, the more dynamic economic development of the city is. Residents have access to attractive places of work, shopping centres, cultural and educational institutions, new housing developments and the whole social and technical infrastructure.

City logistics is a modern concept aiming, among other things, at the integration of existing resources in order to solve problems arising from the increase of congestion and the population growth in urban areas. To achieve this, however, it is necessary to involve many stakeholders such as: freight carriers, residents, shippers, administrators and public transport operators. Freight carriers mainly provide services for the movement and storage of goods in the city. Manufacturing, services and trade companies send or order products. These players also have to contend with waste management. Residents primarily play roles as consumers who purchase various good but also are involved in the traffic and expect a high quality of life in the city. Companies providing services in the area of public transport should provide efficient, fast and safe transportation of people in the city.

The most important role in the city logistics system is played by the local authority, whose main objective is to solve conflicts between urban logistics stakeholders, whilst ensuring the sustainable development of the city. Local authorities should strive to ensure high living standards in the city in the social, economic and environmental issues. They should be the initiators, motivators and coordinators of logistics solutions in order to improve the movement of people and goods within the city. The city council should work with other stakeholders by involving them in the implementation of activities to improve city logistics. Taking into account the urban logistics system, which may include subsystems such as: the movement of people, goods and information flow, local targets for city logistics can be distinguished in these distinct areas: social, economic and environmental (Table 1).

Among the tasks of local governments in the field of city logistics and related to the social area are included: ensuring the safety of residents, inhabitants' education in the protection of the environment (both with regard to the ability of sorting waste and an ecological way of movement within the city). In the case of the economics, the main task of the local government is to reduce the costs associated with the movement of people and cargo. The final area, on the environment, includes all actions to reduce emissions of CO₂ and NO_x (both in the field of freight and car transportation) and noise reduction in the city.

Table 1. Local authorities decision categorisations in the field of city logistics

City logistics subsystems	Objectives of local governments in the field of city logistics		
	Social (quality of life)	Economics	Environment
Goods flow subsystem (including waste)	Citizens' safety, Citizens' education about waste segregation	Cost reduction	Reduction of CO ₂ , NO _x emission, noise reduction, Waste segregation
People flow subsystem	Citizens' education in order to improve their movement within the city by collective transport	Cost reduction of collective transport	Changing citizens' transportation behaviour into the use of collective transport instead of a car
Information flow subsystem	Current information about congestion, closed roads in the city	Long term cost reduction of data gathering and analysis	Current information about CO ₂ emission,

The implementation of the tasks of city logistics by local governments requires cooperation with other stakeholders. The model of a collaborative process of local government as a policy maker is presented in scheme number 1 (Fig. 1). There are some influences, like environmental, economic, social and law regulations, which restrict activities of local government. A collaborative process should include all stakeholders of city logistics and starts from the stakeholders' needs' analysis. The next step is a dialogue, which should build trust among all stakeholders. Stakeholder involvement and mutual understanding of the needs and expectations constitutes the next stage of the collaborative process. Finally, all stakeholders are involved in developing strategic plans, using available tools and methods. Once strategic plans have been established the collaborative process does not end. It is a continuous process that should be repeated at regular intervals in order to improve logistics processes in the city. As a result of the collaborative process, there should be some specific solutions implemented in the field of city logistics. Cooperation depends on the duration of stakeholders' relation (Kramarz & Kramarz, 2011).

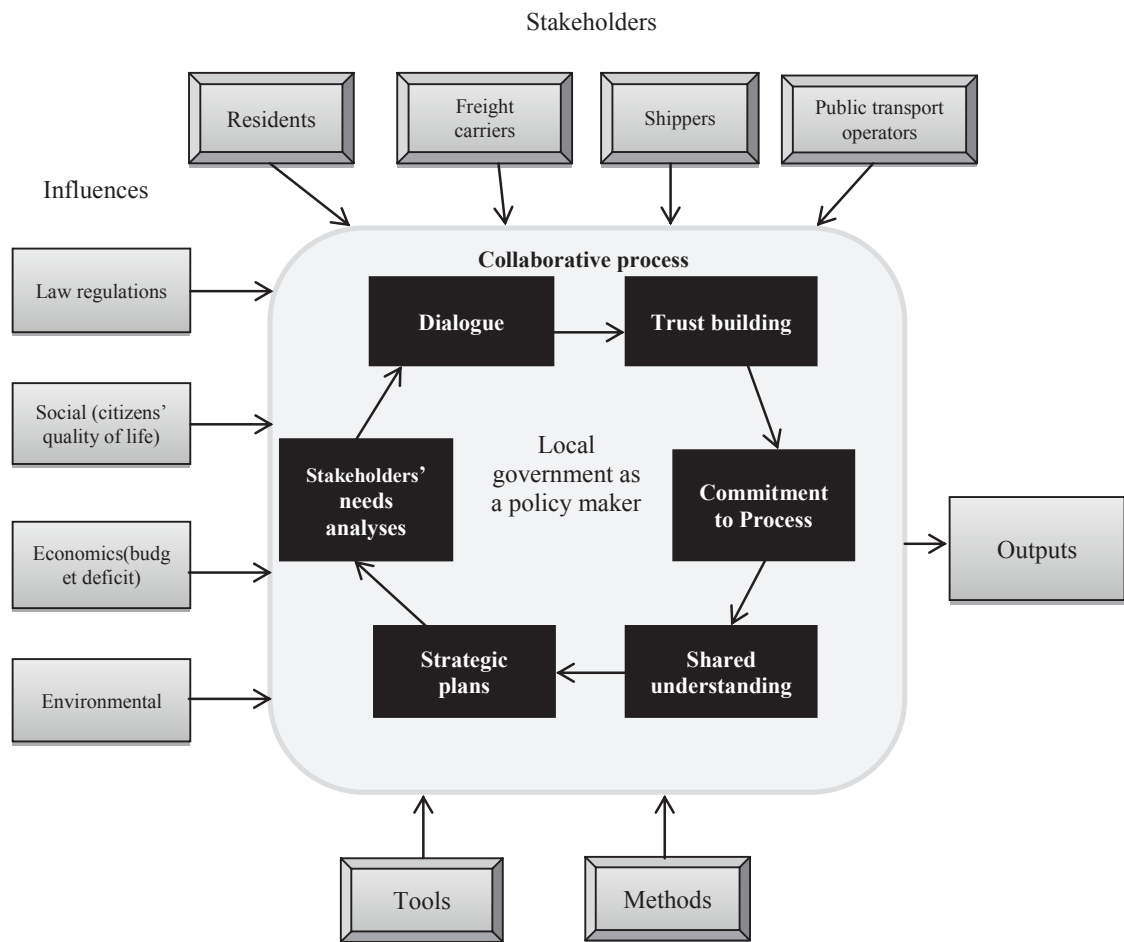


Fig.1. Scheme 1 – Model of collaborative process of local government as a policy maker in city logistics field. (Source: Own work (modified) based on Ansell Ch. & Gash A. (2007).

4. The Research Methodology and Survey Results

The authors, in order to achieve the aim and verify the hypothesis, have developed six steps to implement the study. The first stage of the research process was a literature review. The authors have analysed the domestic and foreign literature in the field of city logistics and the role of local government in the development of city logistics. On the basis of an analysis of the literature, the research tool was developed in the form of a questionnaire. The questionnaire was sent to four experts in order to test it. After testing the survey, including input from experts, the final versions of the questionnaire was developed. In order to verify the hypothesis of the research the authors chose to implement a survey in all cities with county rights.

The study was carried out between December 2012 and January 2013. For the study a sample of 65 cities with county rights was selected (35 completed questionnaires were returned). The sample was a target screening (Table 2).

Table 2. The sample selection

Population size of the research cities	Below 100 thous.	100-199 thous.	200 – 299 thous.	Above 300 thous.	Total
Specification					
The amount of questionnaires sent	23	22	10	10	65
The amount of questionnaires received	8	14	5	8	35
The amount of questionnaires received in %	35%	64%	50%	89%	54%

The questionnaire was developed in Polish on the basis of the work of Lindholm, M., 2012 and based on the knowledge and experience of the authors. The survey consisted of eight questions, the majority of them semi-open and open. Questions were focused on the role of local government in developing city logistics solutions. The whole questionnaire was divided into the following areas: institutional arrangement of city logistics in organisational structures of Polish cities' councils; local government efforts in order to improve city logistics; results achieved from projects undertaken by local government; projects, which will be implemented in the future; cooperation with other stakeholders in implementing past and future projects in the field of city logistics, information systems and methods of collecting data and information.

In order to conduct the survey the author used an electronic questionnaire, which was sent via e-mail to all city councils. Interviews were also conducted with representatives of seven city councils in order to explain some questions in the survey. The Surveys were conducted in Polish by the authors. The next stage of the research was to analyse the data. Because of many semi-open and open questions the authors used two tools: SPSS and Excel. The results obtained allowed the drawing of conclusions and further recommendations.

5. Institutional Arrangement of City Logistics in Organisational Structures of Polish City Councils

City logistics is an issue which has been considered in Poland, both from a scientific and practical side for only a relatively short time. Many local governments have only recently begun to show an interest in the aspects of city logistics, but focusing mainly on public transport in the city. During the study the authors were able to obtain information about the departments and persons involved in issues of urban logistics broken down into the functional areas including: logistics infrastructure, city traffic organisation, freight transport, environmental protection and information and teleinformation systems. The purpose of this part of the study was to obtain

information on how many persons are employed in the various departments, and what the average time devoted to issues related to city logistics is (in relation to all tasks under a contract of employment).

The research shows that in not a single considered city is there a separate department, which is engaged in comprehensive city logistics. This applies to both medium-sized cities, as well as the largest, such as the Polish capital - Warsaw. Respondents pointed out, however, that the departments that deal with issues related to urban logistics are usually the ones that carry out tasks in the field of roads, bridges, transport, public transport and the environment. Some of these departments are separate business units, offices or even commercial companies. According to the studies, the largest group of people working in the field of city logistics perform tasks in the departments of public transport (32 responses). Two of the surveyed cities outsource these tasks. On average, one city employs 33 full-time employees, with a median of 2.5. Most employees (720) are employed in Warsaw (Table 3). The average percentage of working time that employees spend on tasks related to city logistics is as high as 96%.

Table 3. The Number of employees in surveyed councils who execute task in the field of city logistics

Responses	Numbers of responses	The average number of employees	Median	The average percentage of working time per task in the field of city logistics (w %)	There are no employees
Fields of the tasks					
City logistics infrastructure (roads, parking spaces)	27	26	7	91%	7
Traffic management	30	9	3	75%	4
Collective transport	32	33	2,5	96%	2
Freight transport	14	2	1	31%	23
Environmental protection	22	2	1	26%	12
IT and ICT system	26	4	2	56%	8

The smallest number of employees in the analysed councils are those who are executing the tasks in the field of freight transport. Only 14 surveyed city councils employ staff for these tasks, and the average per office is two posts. Also, the average percentage of working time that employees spend on the tasks relating to city logistics is only 31%. The situation is similar with the tasks relating to the protection of the environment. Although 22 cities employ persons who perform tasks in this field, the average percentage of working time that they spend on tasks related to city logistics is only 26%. These data demonstrate the lack of a balanced approach of local governments to city logistics, especially in the implementation of tasks aimed at improving freight transport in the city and reducing environmental degradation.

6. Local Government Efforts to Improve City Logistics

Problems of congestion, air pollution, excessive noise and vibration are some of the many issues faced by the urban population. Local governments responsible for the quality of life in the city are facing challenging tasks in order to solve these issues. Problems with city logistics occur with varying intensity in different cities, and

therefore accurate diagnosis and analysis of existing needs and expectations of urban logistics stakeholders can support local governments in making the right decision. During the study, the authors obtained the views of local authorities on the evaluation of selected aspects of urban logistics (Table 4). According to the respondents the biggest problem is insufficient number of parking spaces in the city in relation to the number of cars (28 responses). The obtained results confirm the opinion of residents of three medium-sized cities in Poland, among which similar research was carried out in 2011. According to them a shortage of parking spaces was certainly the greatest hindrance to movement around the city by car. From interviews conducted with two representatives of the studied cities it follows that, it is sometimes a deliberate action of the city authorities to hinder residents' access to parking in the city centre (with their limited parking spaces and high ticket prices) in order to induce them to make greater use of public transport.

Table 4. Local authorities' opinions on selected aspects of urban logistics

Description	Responses	Definitely or probably yes	I have no opinion	Definitely or probably no
1. In the city there are traffic jams during peak hours	25	1	8	
2. In the city there is congestion for most of the day	3	1	30	
3. Through the city an excessive number of heavy goods vehicles passes	23	3	8	
4. In the city there is too much noise due to the excessive traffic	21	6	6	
5. In the city there is a problem of CO2 emissions caused by large vehicle traffic	12	10	8	
6. Increased traffic of cars and freight transport in the city reduces road safety	26	1	7	
7. In the city there is a problem with car parking (insufficient parking spaces)	28	2	4	
8. In the city there is a problem with unloading / loading heavy goods vehicles (no separate zones for such activities therefore obstructing other vehicles)	13	10	11	

Further significant problems according to respondents include: reduction of road safety as a result of increased traffic in the city (26 responses), congestion at peak traffic hours (25 responses), and an excess of heavy goods vehicles travelling through the city (23 replies). There is also an interesting fact that, according to 90% of the respondents in the surveyed cities there is no congestion outside traffic peak hours (30 responses).

During the study, the authors have set themselves the task of answering the persistent question: Do local governments engage sufficiently to improve city logistics and do they cooperate in this area with other stakeholders? In order to get responses to this question local governments' representatives were asked to provide information from councils on projects implemented in the field of city logistics and to indicate which stakeholders were involved in all these activities (Table 5). Among the analysed cities many projects have been implemented in the field of coordination of tariffs and schedules. These projects were not only related to the administrative area of the city but also to surrounding areas. The Katowice agglomeration is one such example, which includes 25 cities. These cities have transferred tasks relating to the organisation of public transport to the Communal Association of Communication for Upper Silesian Industrial Region (Komunikacyjny Związek Komunalny Górnośląskiego Okręgu Przemysłowego - KZK GOP) in Katowice. By using the public transport organised by KZK GOP, the passenger can reach the villages located in almost all of Katowice and some areas of the neighbourhood - an area of 1.4 thousand km² and a population of over 2 million people. The municipal transport organised by the Association's daily use of 1.2 million passengers - constitutes 57 percent of all traffic (<http://www.kzkgop.com.pl/strony/p-1-geneza.html>, 2012). The next largest number of projects implemented by

the 27 surveyed cities involved facilities in the sale of tickets for public transport. Local governments have provided various solutions of bringing vending machines to purchase tickets at bus stops, in the transportation means and ending with the possibility of buying a ticket by phone. The research shows that in the 23 studied cities the centre was closed for trucks. Among others, the most frequently mentioned projects, can be distinguished as: the introduction of traffic light control system (21 responses), setting window times for trucks (19 responses) and the introduction of priorities within the movement of traffic lights (17 replies). Only one city (Krakow) carried out a project for organising goods delivery at night to companies located in the city. Ideas such as a network of “bike lending” in the city remains unpopular in Poland. Only five surveyed local governments have implemented such projects. However, in Warsaw, where the project started on 08.01.2012, there were 1,068 bicycles available at the 58 stations, which were lent 290,206 times. At the same time, there were registered 47,500 users¹.

Table 5. The number of implemented projects in the field of city logistics by local government and indication of stakeholders involved in all these activities

Description	Number of responses	Stakeholders					
		Local authorities	Freight carriers	Residents	Public transport operators	shippers	others
Preference for public transport and security services such as bus-lanes	15	14	0	8	8	1	1
Giving priority to certain vehicles (fire-brigade units, emergency units, public transport) in the movement within the traffic lights	17	16	0	6	6	0	1
The introduction of entry fee to the city centre	7	6	0	1	0	1	2
Restrictions on the movement of vehicles in the city centre (during peak hours)	12	12	0	3	3	0	1
Prohibition on the movement of trucks through the city centre	23	23	1	3	3	0	1
Prohibition on the movement of all vehicles through the city centre	6	6	0	0	0	0	0
Restrictions for heavy goods vehicles (e.g., restricted hours to enter the city centre)	19	18	2	4	5	0	0
Night delivery organisation	1	1	0	0	0	0	0
The introduction of bicycles for hire in the city	5	5	0	2	0	1	2
The introduction of small buses for public transport, which could move with greater frequency than buses	5	3	1	3	3	3	0

¹ Information received by the interview with a representative of Warsaw Local Government

Introduction of a real-time passenger information system	12	9	0	4	6	2	5
Implementation of traffic-light control system	21	21	1	7	7	0	3
The introduction of a central coordinator of public transport	11	9	0	4	4	0	1
Coordination of tariffs and timetables	28	18	1	14	15	2	8
Facilities for public transport ticket sales	27	17	1	11	12	4	7
Implementation of Park & Ride system	8	7	0	1	1	0	2
Total	217	185	7	71	73	14	34

Urban authorities, and then public transport companies and residents were mainly involved in the implementation of these projects. Unfortunately, freight forwarding companies as well as service and production companies were the least involved stakeholders. Such a low level of freight carrier and shipper involvement confirms the previously referred-to finding that the local authorities in Poland focus mainly on tasks relating to public transport.

7. Results Achieved from Projects Undertaken by Local Government

Research conducted by the authors indicates the involvement of local authorities in the projects which have been carried out so far in the field of city logistics. However, the effectiveness of implemented projects can be proved by achieving measurable results in the form of indicators and metrics. The authors asked respondents to provide the names of the projects and measurable benefits from their implementation. Most of the projects that according to the respondents have brought tangible benefits to the city (Fig. 2) were related to transport infrastructure (33 responses), another group were projects in the field of environmental protection (21 responses) and collective transport (18 responses). The smallest number of projects (only 3) were related to educational activities for environmental protection and freight transport (6 responses). According to the respondents implemented projects have brought benefits (Fig. 3) above all, in reducing degradation of the environment (50 responses).

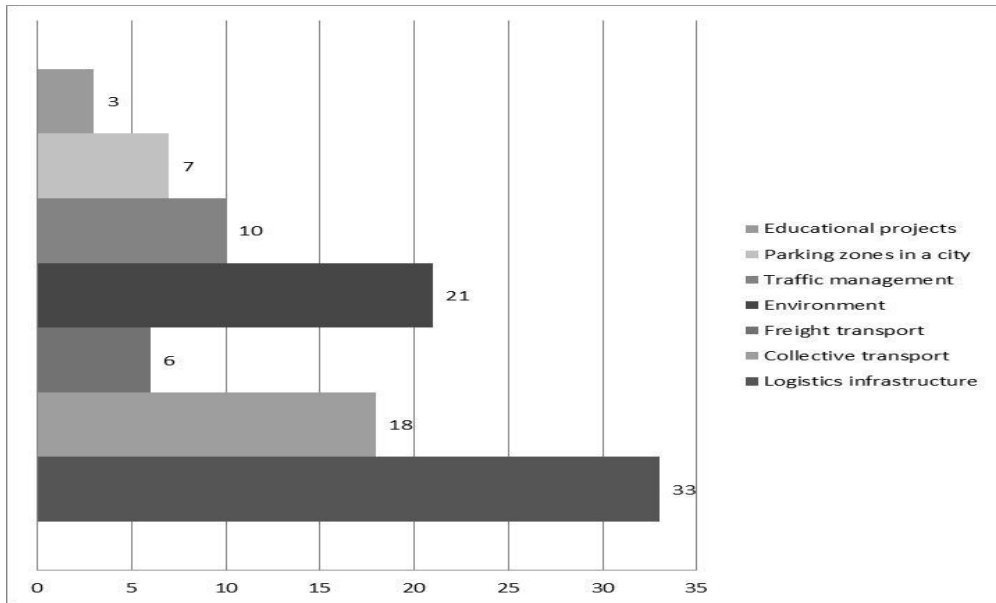


Fig. 2. Number of implemented projects in the field of city logistics in the analysed cities

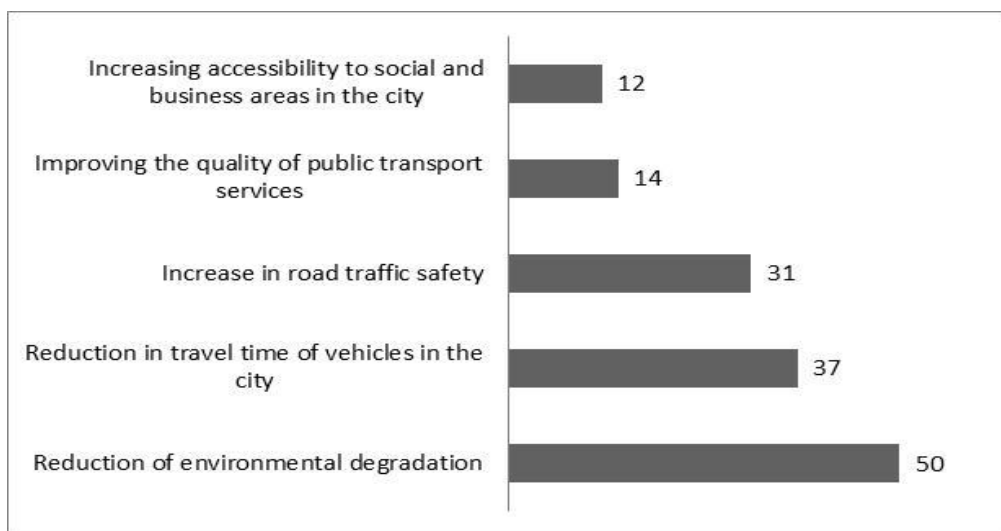


Fig. 3. The benefits resulting from the implementation of projects in the field of city logistics

Unfortunately, research shows that some of the cities failed to examine the effectiveness of implemented projects and their opinion on the benefits achieved were provided in an intuitive way. Only a small number of cities reported measurable indicators, such as: reducing exhaust emissions by about 30% or a reduction of harmful emissions (MG CO_{2e} from 1% to even 80% and particle emission PM₁₀ ok. 0,300 Mg/ per year). Another important benefit resulting from the implementation of projects in the field of city logistics, was the reduction in travel time of vehicles through the city (37 responses). Studies have shown a large spread of the results in the reduction of travel time, which varied in the range of 6% to 50%. The increase in the level of safety is the third

most frequently indicated benefit by respondents in studied cities (31). Although the benefit was achieved in many surveyed cities there was not even a single respondent who supported his or her opinion by statistics regarding the number of incidents, accidents, fatalities, etc. The research shows that two successive benefits from the implementation of city logistics projects aims to improve the quality of service companies offering public transport (14 responses), and better access to socio-economic areas of the city (12 responses).

8. Conclusion

The issue of managing flows of people and goods in urban areas in order to prevent congestion and its effects is of central interest to both traffic engineers and transportation economists. Since the early 1990s there has been a new stage in the development of research on the management of transport systems in urban areas, which is associated with attempts to transpose the military and business experience to logistics planning and improving city development.

The approach to urban logistics in Polish cities is still, unfortunately, restricted mainly to the movement of people, especially to public transport. Indirectly, this situation is due to legal considerations, which impose an obligation on Polish cities to survey public transport. On the other hand, representatives of local authorities noticed a significant problem of congestion during rush hour traffic as well as an excessive number of heavy goods vehicles travelling through the city. However, the number of implemented projects related to the improvement of freight transport in the city is still negligible. Another important issue is that other stakeholders, particularly: freight carriers and shippers are too rarely involved by local governments to improve city logistics. The outlook for the next five years is also not the very bright, because research shows that only 8 shipping and transport companies and 18 manufacturing and service companies will take part in 154 planned projects. Indirectly, this is also due to the fact that among the 154 planned projects only 5 will cover freight transport.

In Polish cities standards for data collection and analysis in the field of city logistics have yet to be developed. In most of the cities information on traffic, number of people travelling by public transport as well as by private car and CO₂ or NO_x emissions are gathered in a very random way, often dependent on the availability of funds for this purpose. The method of collecting information is also differentiated and the dispersion of tasks in the field of urban logistics between the different departments is not conducive to the coordination of activities in the field of city logistics.

Taking into account the obtained information during the study, the authors can confirm the hypothesis previously stated that the Polish Local Governments are insufficiently involved in improving the movement of goods and people within the city, despite the fact they note the growing congestion problem. The main problem is the lack of a comprehensive approach to urban logistics and poor cooperation of local authorities with other stakeholders. Polish local governments should place the plans for the improvement of urban logistics in the development strategies of the cities and incorporate with other stakeholders while planning and implementing these projects. There is also a necessity for developing measures and tools that will evaluate the effectiveness of implemented projects.

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