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## **THE TRANSFORMATION OF SPATIAL LINKAGES IN ŁÓDŹ URBAN AGGLOMERATION IN THE LAST FOUR DECADES**

The transformation of centrally planned economy into market economy brought significant changes within Łódź urban agglomeration both in the structure and strength of spatial linkages. Those changes refer in particular to permanent migrations, as well as workforce and students' commuting flows. They lead to strengthening the role of Łódź as the cultural centre of the region and the development of linkages within technical infrastructural networks. The socio-economic transition changed the conditions of institutional cooperation, too. However, taking contemporary inter-municipal relationships into consideration Łódź urban agglomeration doesn't seem to keep up with other Polish agglomerations, even those of significantly lesser socio-economic potential.

**Key words:** *spatial linkages, Łódź, urban agglomeration*

### **1. Introduction**

Łódź urban agglomeration is an intriguing research object since it has a relatively short yet dynamic history. Łódź used not to be an important administrative centre but a small town specialised in trade and handicraft for quite some time. Although it was formally considered a city as early as 15<sup>th</sup> century, a significant growth of Łódź urban system did not occur until the 19<sup>th</sup> century. The change was more like an outburst rather than a subtle evolution. The city became the second biggest textile manufacturing centre in Poland and held this position till the 20<sup>th</sup> century (Koboжек, Pielesiak 2013). The final crystallisation of Łódź urban agglomeration, which was manifested in the development of strong linkages between the central city and the satellite-towns, occurred in the period of centrally planned economy and depended heavily on the socialist industry. The spatial extent of this structure was differently delimited by various authors, however, since the 70-ties usually 13 urban centres have been attributed to the agglomeration (Jakóbczyk-Gryszkiewicz 2001) (fig. 1).

Spatial relations within Łódź urban region and the socio-economic processes which affected them were often subjected to detailed geographic analyses, both

in the period of centrally planned economy and the following transition period (e.g. Jakóbczyk-Gryszkiewicz 1982, 2001; Suliborski et al. 2009; Jakóbczyk-Gryszkiewicz et al. 2010; Jewtuchowicz, Wójcik 2010; Liszewski 2010; Bartosiewicz et al. 2012). However, there is a gap in the research on the transformation in terms of the extent and scope of different types of spatial linkages regarding the period from the decline period of the previous socio-economic system to the present day.

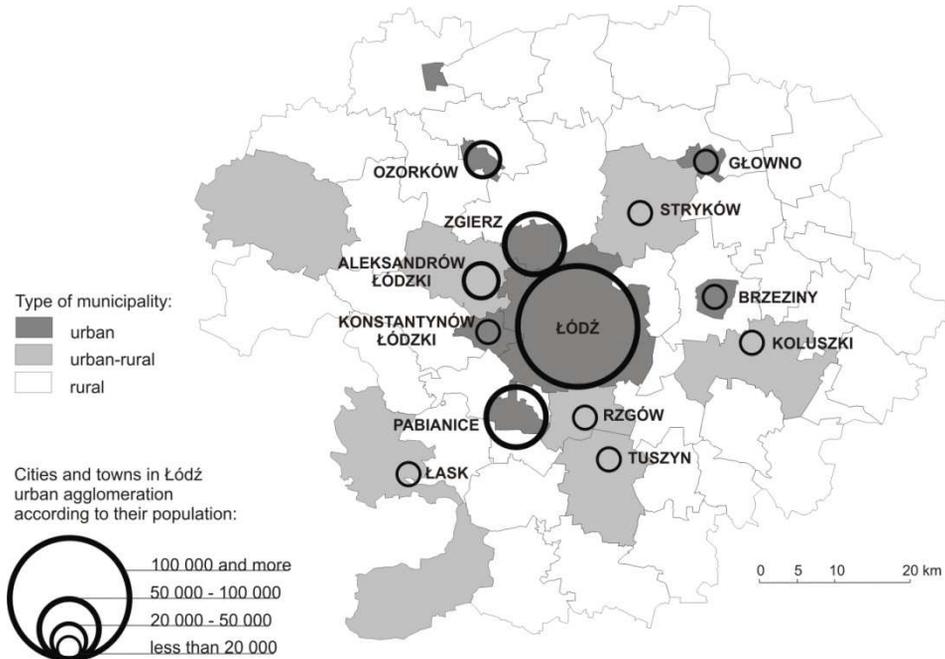


Fig. 1. Łódź urban agglomeration and the surrounding municipalities in 2014

Source: own elaboration

In this paper, the changing spatial distribution of chosen socio-economic linkages was taken into consideration. Although it would be extremely interesting to monitor the change of relations within the whole urban area including the rural municipalities that surround the agglomeration centre, the focus was put on urban municipalities. This limitation was determined by the accessibility of data illustrating the analysed phenomena in the period of centrally planned economy.

## 2. Changes in migration patterns

Among the characteristic features of urban agglomerations there is a high intensity of various socio-economic relations. Analysing their strength and

spatial distribution enables one to assess what stage of urbanization is currently taking place. One of the crucial elements that should be taken into consideration in such an analysis is the pattern of migration.

At the beginning of the analysed period, Łódź was deriving profits from the massive industrialization. Although the authorities considerably limited immigration to the city at that time – administrative limits in registering new inhabitants were introduced in 1956 – much more people from the surrounding areas moved in rather than left to other urban areas within the agglomeration (fig. 2).

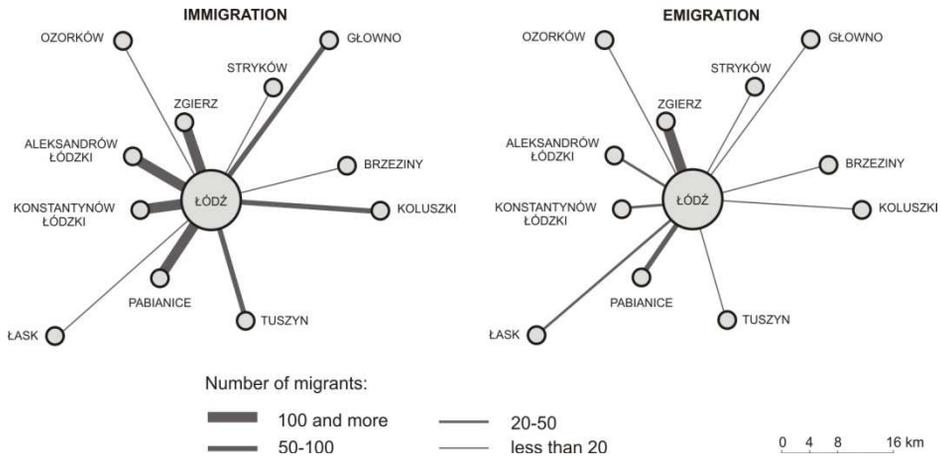


Fig. 2. Migration flows between Łódź and the surrounding towns in 1974

Source: elaboration based on J. Jakóbczyk-Gryszkiewicz (1982)

Except for Łask, which was more influenced by the neighbouring Pabianice, the majority of emigrants coming from urban areas of the agglomeration headed its centre. According to J. Jakóbczyk-Gryszkiewicz (1982) the biggest flows came from Zgierz, Pabianice and Aleksandrów Łódzki (over 150 people each). At the same time Łódź proved to be the main source of immigrants for its satellite towns, mostly for Zgierz, Pabianice and Konstancynów Łódzki (25 people and more). In case of the hinterland towns, cases of influx were weak and rather occasional. The only significant nodes were Zgierz and Pabianice but they attracted the inflow only from their proximity.

This was still the phase of urbanization in the agglomeration of Łódź, but as the socio-economic and political changes of the 80ties and 90ties happened, migration patterns were reversed. One of the reasons was the fall of the socialist industry, mainly the textile industry, which resulted in massive structural unemployment. The economic crisis that followed had a huge impact on the attractiveness of the city, which no longer was 'a promised land' for the unqualified workforce and the jobs that were still available were poorly paid. Moreover, the developing transport accessibility of the surrounding

municipalities with high landscape values made them attractive for Łódź inhabitants. According to data published by the Central Statistical Office of Poland, the core city of the agglomeration has been experiencing constantly increasing significant migration loss since 1999. The outflow was one of the highest in the whole country (Lisowski, Grochowski 2009). For the last six years this process has lost its impetus, and now the migration balance oscillates around the loss of 1 500 people.

In 1989–2002 about 12 thousands new inhabitants appeared in the suburban zone of Łódź (fig. 3). This influx was, however, five times smaller than the migration loss observed in the central city at the same time. Most emigrants moved out of the region (Cudny 2012). Nowadays the observed processes of depopulation suggest that Łódź is already shifting from suburbanization into dezurbanisation (Lisowski, Grochowski 2009).

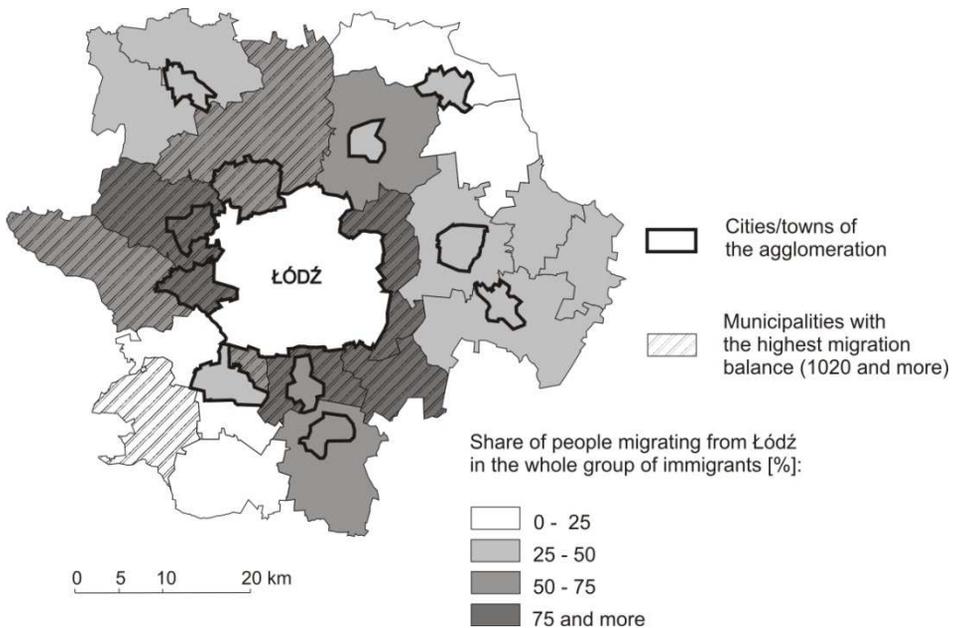


Fig. 3. Internal migrations in Łódź urban area in 1987–2007

Source: elaboration based on T. Śmiłowska (2008)

Apart from the above described phenomena, also temporary migrations have changed their spatial patterns. One of the main reasons for temporary movements is the shift in the location of workplaces and residential areas. In the 70ties such spatial relations were connected with commuting to places located mostly in Łódź. In 1973 more than 43,5 thousand people lived and worked in Łódź, whereas only 5,8 thousand employees left the city to work elsewhere. The network of commuting was basically limited to links between the central city and its satellites, as well as the bilateral linkages of the territorial units that were

located close to each other. The linkages of the first degree (the biggest flows of employees among urban areas) clearly proved the nodal role of Łódź (fig. 4). Other towns of the agglomeration – Zgierz and Pabianice, were the nodes of the second degree that attracted 5,9 and 4,5 thousands inhabitants respectively. The workers came from Łódź, the surrounding rural areas and much smaller towns in their proximity (Jakóbczyk-Gryszkiewicz 1982).

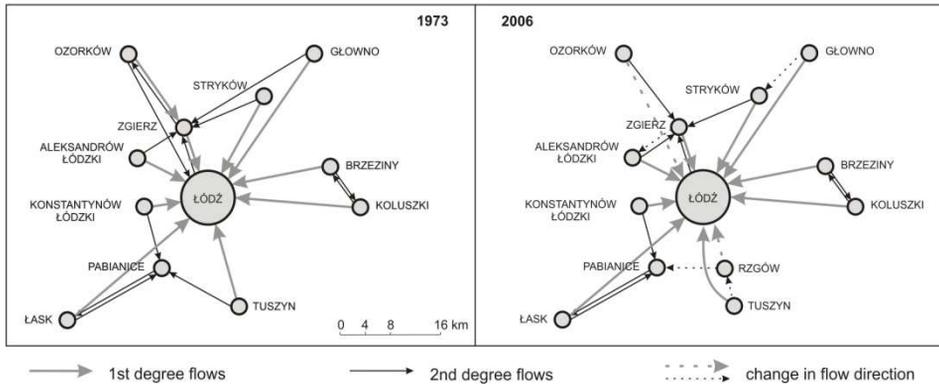


Fig. 4. Workforce flows in Łódź urban agglomeration in 1973 and 2006

Source: elaboration based on J. Jakóbczyk-Gryszkiewicz (1982) and contemporary statistical data

Nowadays the biggest flow of workforce is still directed at Łódź covering almost 50% of all such movements in the urban region. Most commuters come from municipalities that surround the central city. The more populated the territorial unit, the more people temporarily migrate to Łódź. The biggest movement is observed in relation to Zgierz (4 thousand people), Pabianice and the whole municipality of Aleksandrów Łódzki (over 2 thousand) (Bartosiewicz 2012).

The transformation of the centrally planned economy into market economy brought rather slight changes in the spatial pattern of those linkages. The estimation of workforce flows volume between municipalities published by the Central Statistical Office of Poland (2006) indicates the increasing role of Stryków. Together with the rural part of the municipality it has become a crucial centre for logistic activities. There has also been a shift in links between Zgierz and Ozorków. In the period of centrally planned economy those territorial units were strongly connected with each other by commuting phenomena. Nowadays Zgierz is more related to Aleksandrów Łódzki and Ozorków is more attracted by Łódź than it used to be. This change might be attributed to the fall of the big factories which used to employ many people in those towns, as well as to the improvement in the transport accessibility within the agglomeration that took place afterwards.

The comparison of data from 1973 to that from 2006 suggests that although the volume of migration flows as well as their directions have changed, the spatial pattern of the whole network remained almost the same (fig. 5). There was a change because of the inclusion of Rzgów in the analysis since the town was granted civil rights in 2006. Additionally, it was estimated that people commute nowadays from Ozorków to Aleksandrów Łódzki and from Tuszyń to Pabianice. However, in other cases none of the satellite towns has considerably extended its spatial influence on the other urban centres. Despite the passing time, still the most dense relations are observed in the western sector of the agglomeration.

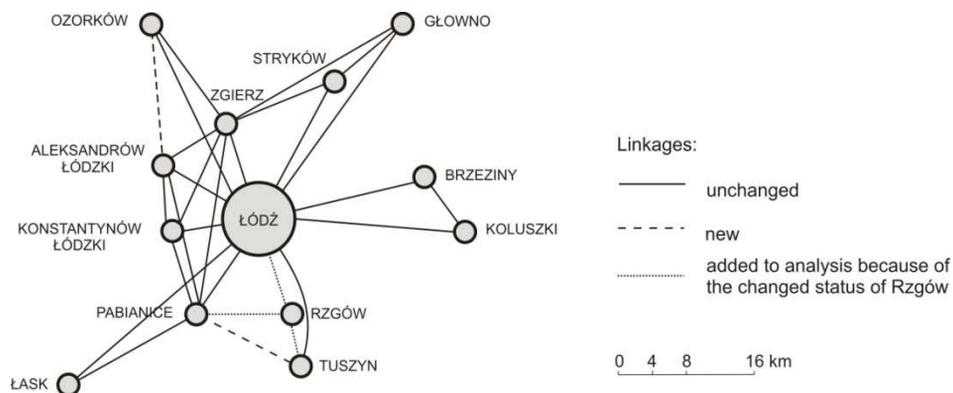


Fig. 5. The network of workforce commuting between cities and towns of Łódź urban agglomeration in 1973 and 2006

Source: elaboration based on J. Jakóbczyk-Gryszkiewicz (1982) and contemporary statistical data

A downfall of the textile industry reduced commuter flows generated by the second sector of economy to the advantage of the service sector. Taking other forms of temporary migrations into consideration, Łódź has also gained on importance in terms of education, which relates especially to the higher level education. Previously only seven main universities were the distinguishing mark of the city (University of Łódź, Technical University of Łódź, Medical University, Military Medical Academy, Music Academy, Art Academy and Film, Television and Theatre Academy). Since the 90ties numerous private schools have been established, some of which, after the initial prosperity period, proved to be uncompetitive and had to be closed due to insufficient demand for their services.

The number of people studying in Łódź increased in the analysed period also due to still observed echo of population boom, the changes in matriculation exams as well as the simplification of the recruitment procedures that were introduced in 2005. According to the recent survey, three of the biggest universities (University of Łódź, Technical University of Łódź and the Academy

of Management) has attracted over 60 thousand students during the academic year 2011/2012. The majority of those students came from the western part of the analysed area, mostly from Zgierz, Pabianice and, despite the considerable distance, also from Łask (Mądry 2012). Unfortunately, recently the process of decreasing demand for higher education in the city has begun, which, apart from other factors, is a result of general population decline (*Socio-economic situation... 2001–2012*).

Complex analysis of contemporary linkages created by other institutions and entrepreneurship from the service sector in the urban region is difficult to be made because of lack of comprehensive data. Although there are some information about commuting in 1979 (Jakóbczyk-Gryszkiewicz 1982), in case of the contemporary much more complex situation, only the relations created by the major cultural institutions in Łódź could be assessed on the basis of the survey conducted in February and March 2012. According to the information about the direct sale of tickets in the 10 major institutions (theatres, museums, galleries) the majority of registered customers (35 thousands people) came from the central city. About 7 thousand people arrived from the municipalities surrounding Łódź. The majority of them came from the most populated municipalities of Zgierz, Pabianice and Aleksandrów Łódzki. The strongest linkages in this case bind Łódź with the territorial units located to the North-West and South from the centre of the agglomeration (Bartosiewicz 2012).

In case of linkages generated by cultural institutions it may be only assumed what kind of change affected them since there are no comparable data relating to the socialist period either. Previously, apart from the educational institutions, also the industrial sector significantly accelerated the inflow to Łódź. Trips were often organised for workers. Fall of the industry considerably weakened those linkages in favour of individual travels of this kind. On the other hand, it is possible that contemporary observed suburbanization processes have increased the inflow from the municipalities that directly surround the central city of the agglomeration, because among the emigrants there are many well-off people who can afford to take advantage of the cultural offer of Łódź (Milewska-Osiecka 2010).

### **3. Changes in infrastructural linkages**

The transformation of the Polish territorial organisation, which was initiated in the 90-ties, together with the integration with the EU in 2004 made significant changes to the structure and the territorial extent of the infrastructural linkages. First of all, a growing superiority of individual transport over public transport has been observed. Due to the increase in the motorisation index, more and more commuters travelled in their own cars instead of using bus and tram connections, and, what is even more distinctive, of rail offer. This phenomena is related to

suburbanization processes – people moving from Łódź often still commute to work to the central city, which increases congestion during rush hours. Surprisingly, despite significant suburbanization, traffic volumes and delays in travelling time to Łódź and back caused by congestion are not as big as users of the roads perceive them. Nevertheless, the situation could be improved much as soon as the missing ring roads around Łódź and towns like Zgierz and Brzeziny are finally constructed (Bartosiewicz, Pielesiak 2012).

The transformation of linkages in the analysed period refers also to bus connections. The fall of the centrally planned economy made the monopolist main carrier (National Car Communication) face serious financial and organizational problems. It also enabled numerous private carriers to start operating, which significantly improved travelling comfort and transport accessibility of almost all parts of agglomeration, especially in its Northern part (fig. 6).

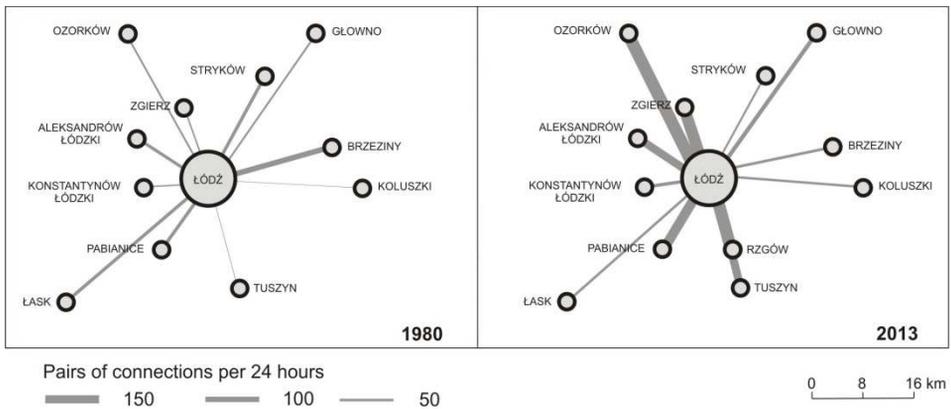


Fig. 6. Bus connections in Łódź urban agglomeration in 1980 and 2013

Source: elaboration based on J. Jakóbczyk-Gryszkiewicz (1982) and contemporary public transport timetables

Moreover, thanks to the administrative reform and strengthening the role of municipalities, in two biggest satellite towns – Zgierz and Pabianice – new partnerships were established to organize local communal transport systems. This considerably increased transportation flows between those territorial units and Łódź.

At the same time a significant decline in the strength of rail linkages has been observed (fig. 7).

Again, new economic conditions exposed the weaknesses of the monopolist carrier (Polish National Railways). As a result, the company was divided into several partnerships that became responsible for different elements of the system, including the separation of technical infrastructure and carriages. Due to insufficient modernisation of the infrastructure, except for the main line to Koluszki, the material base of the system considerably deteriorated. The most

problematic situation regarded the line connecting Łódź with Stryków and Głowno, which was closed for passenger carriers a few years ago. Now the modernised line is again in use, but the number of daily connections decreased significantly.

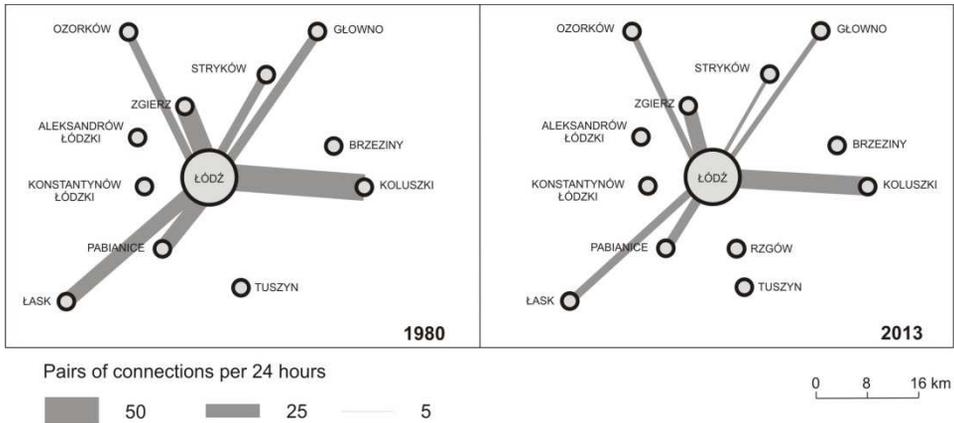


Fig. 7. Rail connections in Łódź urban agglomeration in 1980 and 2013

Source: elaboration based on J. Jakóbczyk-Gryszkiewicz (1982) and contemporary public transport timetables

In general, railway transport within the agglomeration is not competitive in comparison to the private bus carriers' offer, both in terms of travel time and cost. However, it seems that the process of railway linkages depreciation might be stopped or even reversed with the means of Łódź Agglomeration Railway' project. The project is aimed at establishing convenient connections to Kutno, Kozuski, Łowicz and Sieradz by the use of modernised infrastructure (renovated rails, new railway stops, Park & Ride system, etc.), modern comfortable fleet, and integration with local public transport (connecting railway and bus/tram stops, introducing joint agglomeration ticket, etc.). The biggest challenge in this case is the construction of diameter underground line in Łódź, which would reduce travelling distance and time between the main railway stations in the city. Although at first it seemed unlikely that the project would be carried out, an underground station in Łódź is currently under construction. Also, a few other railway stations have already been built or modernised.

In the period of the centrally planned economy, the agglomeration used to have well developed tram connections with the neighbouring towns and villages, but since the transformation three important tram lines (to Aleksandrów Łódzki, Tuszyn and Rzgów) have been liquidated. Tram connections used to be operated by the municipal communication company in Łódź, which in the 90ties was transformed into a limited liability company. This decision was accompanied by establishing inter municipal companies, which took over the suburban lines. In

2012 those companies were liquidated and the suburban tram lines' administration became the responsibility of the municipal communication company in Łódź.

Although there have been some changes in the frequency of tram connections, e.g. due to the liquidation of the whole lines, the services offered by local public transport have improved in general. This happened thanks to the increased number of bus connections, also provided by the municipal communication company in Łódź. Comparing the situation in 1980 with the contemporary linkages, the increasing role of the Eastern direction is observed. The network of connections is now embracing much wider area than previously. Moreover, there has been a significant shift in the pattern of the strongest relations – from those observed between Łódź and Pabianice to those between Łódź and Zgierz (fig. 8).

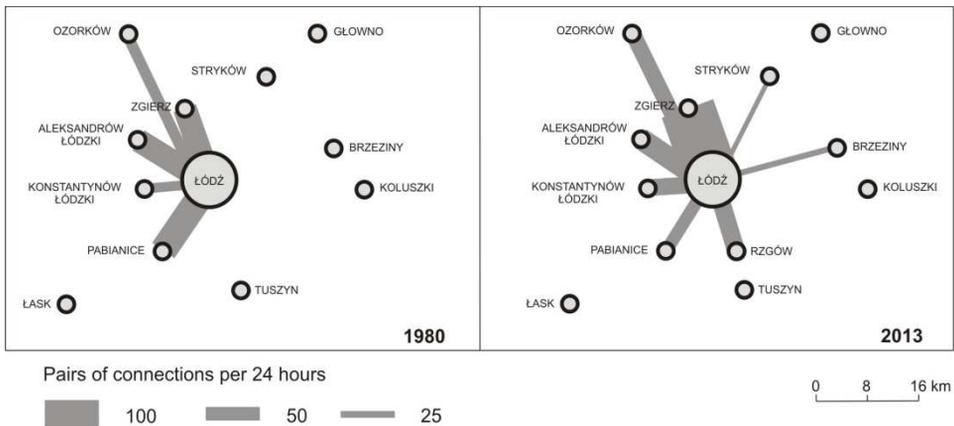


Fig. 8. Connections provided by local public transport in Łódź in 1980 and 2013

Source: elaboration based on J. Jakóbczyk-Gryszkiewicz (1982) and contemporary public transport timetables

For many urban agglomerations having such a developed suburban tram communication would appeared profitable, however, in case of Łódź urban region the future of external tram linkages is threatened. Some municipal authorities claim that they cannot bear such a big financial burden, some even refuse to participate in funding the maintenance of the tram infrastructure. Now it seems that only the connection between Łódź and Zgierz is sure to remain unchanged. The future of other lines depends on the good will of the central city's authorities.

It might be argued that the situation is improving because of an initiative to create Łódź regional tram that appeared several years ago. Carrying out of the project was co-financed from the EU funds. In its most optimistic option, the project assumed modernisation of infrastructure between Pabianice and

Ozorków. In fact, the spatial extent of the project was so reduced that at the moment only Łódź derives profits. Except for neighbouring Zgierz, which is strongly connected to Łódź, no significant improvement has been made so far in the other municipalities.

Changes in the political and economic situation in Poland in the last four decades had a positive impact on other infrastructural linkages administered by the municipal authorities – water distribution and sewage disposal networks – and in one case on commercial enterprise – gas distribution network. In the first case the changes were enabled by the empowerment of local authorities in accordance with the administrative reform of the 1990. As a result, municipal governments initiated the modernisation and the territorial expansion of the infrastructural systems. Sometimes this process required initiating cooperation with the neighbouring communities, which regarded e.g. water distribution. As a result, new inter-municipal infrastructural linkages have been created, usually between rural areas and the neighbouring towns.

Waste management has stimulated creating new infrastructural linkages in the analysed period, too. In the period of centrally planned economy, it was production volume that mattered rather than environmental protection issues. Sewage was often deposited directly into rivers, without any attempt to purify it. Together with regaining economic and political freedom came the improvement in this field. Increasing environmental awareness – enhanced by the Western countries – resulted in constructing several purification plants. Such objects in Łódź urban agglomeration were constructed in Koluszki (1990), Łódź (1994), Zgierz, Cedrowice village by Ozorków, and in Stryków (1996). Soon the neighbouring municipalities were linked to those installations and new infrastructural connections appeared. As a result, the central part of the agglomeration was strongly integrated (Pielesiak 2012b).

The only branch that has not contributed to significant strengthening of spatial linkages in the agglomeration in the analysed period is the electro energetic infrastructure. One of the reasons for this situation is that, unlike e.g. gas distribution network, it was relatively well developed a few decades ago and now it covers the whole area. However, there is a need for its modernisation, and for creating new connections that could increase the efficiency of energy transfer and delivery reliability. This means an urgent need for constructing the electro energetic ring of middle voltages around Łódź that could improve the situation of quickly developing surrounding municipalities. Unfortunately, all the mentioned investments require enormous funds and gaining them is not probable at the moment.

#### 4. Changes in institutional relations

Throughout the history of the Łódź urban region there were many political turns and events that influenced the institutional relations between its territorial units. It was a relatively short period when all the towns and Łódź belonged to the same administrative unit (1919–1975). This fact strongly hampered the development of social linkages. In the period of the centrally planned economy the whole region was divided and four towns – Łask, Tuszyń, Brzeziny and Kozłowski – were separated from the rest of the agglomeration by voivodeship borders. Such unfavourable situation lasted till 1999 when another administrative reform consolidated the agglomeration in one voivodeship, however, still within several separate districts (unlike e.g. Poznań agglomeration with one ring district).

The decentralisation of governance and the restoration of the local government in the 90ties meant for Łódź urban region a new quality of institutional relations. At the beginning, the inter-municipal cooperation was being developed occasionally and cautiously, but as time passed, the dynamics of institutional agreements increased. Nowadays there are numerous efforts aimed at strengthening the institutional relations, which may be helpful in gaining the EU funds. The success of those actions is, however, uncertain due to still insufficient spatial extent and scope of collaboration, especially in terms of metropolitan cooperation.

For the last several years, the prospects of institutionalization of metropolitan areas in Poland have been discussed. A metropolitan area in this case was defined as the area of a big city and its functionally related surrounding, which is characterized by the dynamics of development and strong relations between the central city and its hinterland. So far there has been no introduction of complex legislative arrangements which could solve the problems of identification and delimitation of such territorial units. Neither were there any provisions defining the competences of their administrative organs, although there is a variety of scientific contributions to this topic, e.g. M. Smętkowski et al. (2008, 2009), T. Markowski and T. Marszał (2005, 2006a, 2006b).

A recent project conducted by the Ministry of Administration and Digitalization proved that there are many problems with municipal cooperation in the metropolitan areas. It has been pointed out that the territorial units compete with each other too excessively. On the other hand, due to the fact that many users of communal services do not live in municipalities which provide them, there are financial claims that are difficult to be satisfied. Moreover, up to now valid formal frames of cooperation have been criticised for their ineffectiveness, as well as the social lack of understanding of projects that are beneficiary not only for single municipality but for a wider area (*The white book...* 2013). Such problems could and should be solved by administrative decisions on the highest

level, by the use of a special metropolitan act. This might considerably contribute to the strengthening of functional relations within urban agglomerations.

While all other, even much smaller cities in Poland did not wait for such administrative solutions and established various forms of cooperation (e.g. referring to public transport, water and sewage management, waste management or territorial marketing), no significant general agreement has been made in Łódź agglomeration for a very long time. There were only few formal associations and just bilateral forms of cooperation (Pielesiak 2012a). The majority of agreements was made between the central city and its nearest satellite towns and tackled mainly public transport (Table 1). Such form of metropolitan integration could be attributed to insufficient involvement of the natural leader – the authorities of the central city. As a result, local authorities of the surrounding municipalities were very sceptical towards the institutionalization of Łódź Metropolitan Area. As a survey conducted by B. Bartosiewicz and I. Pielesiak in 2012 showed, authorities feared the dominance of the central city, limiting their autonomy and at the same time reducing the possible profits for the hinterland municipalities.

Table 1

Inter-municipal agreements<sup>1</sup> in Łódź urban agglomeration in 1993–2014

Year	Parties of agreement	Purpose
1	2	3
1993	Łódź–Stryków–Zgierz	land management
	Łódź–Zgierz–Ozorków	public transport
2000	Łódź–Rzgów	sewage disposal
2002	Łódź–Konstantynów Łódzki	water supply
2003	Pabianice–Zgierz	animal welfare
2004	Pabianice–Łask, Łódź–Pabianice	public transport
2005	Łódź–Konstantynów Łódzki	sewage disposal
	Ozorków–Zgierz	waste management*
2006	Główno–Stryków	education
	Łódź–Stryków	water supply
	Łódź–Rzgów	transportation
	Główno–Stryków	health care
2008	Pabianice–Rzgów	transportation
2010	Rzgów–Pabianice	public transport
2011	Łódź–Brzeziny, Łódź–Pabianice, Łódź–Rzgów, Łódź–Konstantynów Łódzki, Łódź–Aleksandrów Łódzki, Rzgów–Pabianice, Łask–Pabianice	public transport
	Łask–Pabianice	education
	Łódź–Konstantynów Łódzki	sewage disposal

<sup>1</sup> Those include annexes to agreements.

Table 1 (continued)

1	2	3
2012	Łódź–Zgierz, Łódź–Ozorków–Zgierz, Łódź–Stryków, Łódź–Rzgów, Pabianice–Rzgów	public transport
	Łódź–Tuszyn	social welfare
	Pabianice–Łask	education
2013	Aleksandrów Łódzki–Stryków–Zgierz, Rzgów–Pabianice, Łódź–Brzeziny, Łódź–Stryków, Łódź–Pabianice, Łódź–Aleksandrów Łódzki, Łódź–Konstantynów Łódzki, Łódź–Zgierz	public transport
	Łódź–Pabianice	sewage disposal
	Łódź–Tuszyn, Łódź–Ozorków, Pabianice–Tuszyn, Pabianice–Rzgów, Głowno–Stryków	social welfare
	Pabianice–Łask	education
2014	Łódź–Konstantynów Łódzki, Tuszyn–Pabianice	public transport
	Tuszyn–Pabianice	social welfare

\* dissolution of agreement

Source: elaboration based on *Official Journal of Łódzkie Voivodeship* (1991–2014).

Eventually, in December 2012, a letter of intent was signed by the representatives of 22 territorial units (Głowno, Rzgów and Łask did not join the initiative). The collaboration is aimed at supporting absorption of the EU funds, which are designed especially for functional areas for 2014–2020. This year the municipal authorities of the central city have announced the bidding for the contract for preparing the strategy for Łódź Metropolitan Area. The diagnosis of the document has already been prepared (*Diagnoza strategiczna...* 2014), the strategy is supposed to be published in 2015.

## 5. Final remarks

The last four decades in Poland are characterised by a significant socio-economic and political transformation, which considerably influenced spatial relations, especially those observed within urban agglomerations. In case of Łódź and its surrounding, there was a complete reverse in the migration patterns. The agglomeration has already experienced urbanization, suburbanization and has just entered the dezurbanization phase.

Apart from population changes there was a considerable shift in the economic linkages. Former vertical dependence of the dispersed socialist industrial departments on their head offices (usually located in Łódź) has been replaced by the horizontal cooperation of smaller private entrepreneurships of the post-Fordist model. Big socialist factories went bankrupt but soon many new employers appeared, especially those representing previously underdeveloped service sector. Those phenomena retained the workforce inflows and sustained

the nodal role of the central city. Moreover, recent investments in the logistics centre in Stryków created new important node for commuters. The influx to the central city has been generated by its developing educational and cultural functions, too.

Since the 70ties, most infrastructural linkages, especially those generated by local authorities and supported with EU funding, have been considerably expanded and strengthened. At the same time a downfall of the rail transportation occurred. This branch of infrastructure could nevertheless regain its former significance because of Łódź Agglomeration Railway project, supported by regional authorities.

Insufficient institutional cooperation and the negligence of public transport in the functional area of Łódź seem to be more problematic than in other Polish urban agglomerations. One could wonder what the reason for such a situation is. It may have been caused by the administrative separation in the past. The reluctance towards corporate actions could be the result of the previous socialist system, which might have disrupted the processes of creating civil society. It should be emphasized that Polish tradition of municipal cooperation is shorter than in e.g. Western countries, mostly due to the fact that the socialist system blocked real chances for its gradual development for some considerable time. All crucial decisions, even referring to the local communities, were made by superior authorities, often without enough problem insights and proper social consultations. Once the power and real competence were again attributed to local communities, those groups remained sceptic about reducing their prerogatives, even under the auspices of common good. It is manifested in the fear that municipal authorities of Łódź will not act as equal partners of other communities, but as the only infallible decisive organ. Moreover, local authorities often experience financial problems – they are obliged to perform more and more tasks, but at the same time there is no adequate increase in municipal budgets. If the money is short, it is spent on own urgent needs first and only extra funds may be assigned to cover the costs of membership in various associations and participation in other non-obligatory projects.

Finally, it ought to be emphasised that despite the change in the strength of the analysed linkages, their spatial distribution is characterised by visible inertia. Apart from Stryków which develops significantly due to the favourable location on the major highway crossing, neither of the analysed settlements have improved their position in the settlement system. There were no significant horizontal linkages created between the hinterland urban centres. This proves that Łódź urban agglomeration still remains a typical monocentric structure. It refers to the central place model rather than the corridor city or the network city models, which are characterised by dense horizontal linkages between several urban centres, are considered more creative, exchange knowledge more efficiently and therefore might achieve significant scope economies (Batten 1995; Gordon, McCann 2000).

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## **PRZEMIANY POWIĄZAŃ PRZESTRZENNYCH W AGLOMERACJI ŁÓDZKIEJ W OSTATNICH CZTERECH DEKADACH**

Transformacja gospodarki centralnie planowanej w gospodarkę rynkową wywołała znaczące przemiany struktury i zasięgu powiązań przestrzennych w aglomeracji łódzkiej. Zmiany te odnoszą się w szczególności do migracji stałych, ale także do przemieszczeń osób dojeżdżających do miejsc pracy oraz nauki. Doprowadziły one do wzmocnienia roli Łodzi jako kulturalnego centrum regionu i do rozwoju powiązań w obrębie sieci infrastruktury technicznej. Transformacja społeczno-ekonomiczna zmieniła również warunki współpracy instytucjonalnej. Analiza współczesnych związków międzygminnych w aglomeracji łódzkiej wskazuje jednakże, że pozostaje ona za innymi aglomeracjami miejskimi kraju, nawet tymi o znacznie mniejszym potencjale społeczno-gospodarczym.

**Słowa kluczowe:** *powiązania przestrzenne, Łódź, aglomeracja miejska*

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