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THE EFFECTS OF TRANSPORT SYSTEMS ON GLOBAL URBANISATION

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Abstract: *In the history of civilisation, new settlements were established on transport routes with the requirements of security, accommodation and change. Life and economic change after the industrial revolution have affected the social cultural environment and carried the phenomenon of urbanisation to a new stage. The 1929 crisis is seen to give direction to the Keynesian development period.*

Rapid developments in transport, communication and communication also affect cultures. One of the transformations as an extension of consumption culture is the automotive sector. The increasing use of motorised vehicles in urban life causes significant problems as well as benefits. A transport system based on the automobile has significant environmental, economic and social impacts. This mutual interaction between urban development and economic development is observed in transport. Transport structures such as new roads, road widening investments, multi-storey interchanges and tunnels built to meet the increasing demand for vehicle traffic lead to the increasing concretisation of cities and the surrounding rural areas, causing more and more damage to the buildings and urban fabric, which are our cultural heritage. Infrastructures associated with globalisation and spatial changes on cities have increased, especially subways, and in vertical architecture, there has been an increase in transportation vehicles such as monorails.

While making transport infrastructure investments, it has been observed that the effects of these investments on urban spatial development are not taken into account. This deficiency is also valid for urban rail system investments. In many of our cities, the fact that the development effects of the proposed rail system investments along these routes are not sufficiently taken into consideration, and the lack of studies for the healthy re-planning of urban development with the changing transport infrastructure along these routes are important deficiencies.

In this study, the effects of transport infrastructure and superstructure on Istanbul, which is included in the global city index, have been investigated.

1. INTRODUCTION

The most striking of the concepts that came to the agenda with the globalisation process is the concept of glocalism (in Turkish, küyerelelleşme), which is formed by combining the words ‘globalization’ and ‘localization’, the English equivalents of the

concepts of globalisation and localisation. The concept of glaocalism, first used by Roland Robertson to emphasise the heterogeneous aspect of globalisation (Aslanoğlu, 2000: 138), has been adopted to refer to global localisation. According to Wordspy, glocalisation means 'the creation of products or services designed for the global market but customised to suit local cultures' (Khondker, 2004: 14-15).

Globalisation is generally defined as the unrestricted movement of capital, goods and labour of certain qualities, the removal of barriers to their movement around the world, entering every field deemed profitable, and being able to produce and sell anywhere in the world (Kayan, 2015:1). Commercial globalisation, which started with Bretten Woods, started to spread from developed countries to developing countries with the realisation of financial globalisation, which was put into effect step by step since 1980. Thus, the phenomenon of globalisation was realised with the full liberalisation of goods, services and capital movements at the universal level (Kazgan, 2002: 34).

Globalisation is a process with economic, social, political and cultural aspects and has a very wide sphere of influence. According to Keyman (2002:36), it is a period in which heterogeneity comes along with homogenisation, localisation as much as universalisation, traditionalisation with modernisation, difference as well as selfhood, and contradictory coexistence. Globalisation, ignoring the uneven development rule of capitalism and disregarding national-regional imbalances, evaluates its approach through the existing conditions of the local. In the face of globalisation, the concept of localisation has gained new meanings and has begun to be seen as an element that needs to be highlighted within the framework of intensive privatisation policies and the downsizing of the state.

Global cities differ from other metropolitan cities in terms of their economic, social, political, cultural and spatial characteristics. In economic terms, global cities emerge as cities orientated towards consumption rather than production. The most important feature that distinguishes global cities from other big cities is that they have become an integral part of the world economy (Kayan, 2015:271).

The formation of urban identity is linked to three elements. These three elements are 'physical values of the city, satisfaction with the quality of life' and 'discourses on the identity of the city' (Tekeli, 2008:15).

Globalisation accelerates the exchange of cultural symbols among the peoples of the world and causes local national cultures to change (Ökmen, 2003:18-19). With this rapid exchange, while the urban space is experiencing change and transformation, the identity of cities is also changing and transforming

2. TRANSPORTATION

Transport represents one of the most important human activities worldwide, as it allows us to alleviate the constraints of geography. It is an essential component of the economy and plays an important role in supporting spatial relationships between places. It generates value by creating links between regions and economic activities, between people and the rest of the world.

The main purpose of transport is geographical because it facilitates movements between other places. It plays a role in the structure and organisation of spaces and regions, which can vary according to the level of development.

In the 19th century, the aim of emerging modern forms of transport, notably railways and maritime transport, was to expand spatial coverage by creating, expanding and consolidating national markets. In the 20th century, the aim shifted to route selection, prioritising modes of transport, increasing the capacity of existing networks and responding to mobility needs, and this is being done on an increasingly global scale with its own flow area. In the 21st century, transport needs to cope with a globally orientated economic system in a

timely, cost-effective and sustainable manner, taking into account local issues such as congestion and capacity constraints.

Transport is relevant to geography for two main reasons. First, transport infrastructures, terminals, modes and networks occupy an important place in space and form the basis of a complex spatial system. Secondly, as geography seeks to explain spatial relationships, transport networks are of special interest because they are the main physical support of these interactions.

As an extension of the consumer culture, one of the socio-cultural transformations in cities is due to developments in the automotive sector and mass media. The increasing use of the car in cities has had a debilitating effect on urban public life (Paul Harrison, 1997: 191).

Rapid urbanisation in emerging economies has presented the challenges of transport infrastructure investments for both private and collective uses. Suburbanisation, for example, has resulted in a range of challenges related to traffic congestion and car dependency.

Globalisation has supported the development of complex air and maritime transport networks, fostering global supply chains and trade relations across long distances.

Transport geography has played a relatively minor role in the field of transport studies, a field dominated by engineers and economists. This is partly due to the needs of the industry, which are focussed on the provision of infrastructure and technologies at what costs and benefits and at what level of pricing. Contemporary industry is much more complex, with issues as diverse as safety, aesthetics, working conditions, environment and governance being necessary considerations. A much broader skill set is therefore required and transport studies has become a multi-disciplinary area of practice where the geography of transport has opportunities to contribute due to the breadth of approach and training.

In the first half of the 20th century, the formation of regional manufacturing clusters specialised in sectors such as transport equipment, textiles or food became common. By the second half of the 20th century, trade liberalisation and the formation of economic blocs enabled the fragmentation of production at the global level. The combination of trade liberalisation, containerisation and technological innovation changed the operational scale and network structure of transport systems. Even if the car is not an international mode of transport, its global diffusion has expanded the global trade in vehicles, parts, raw materials and fuels (mainly oil) (https://transportgeography.org/contents/chapter8/transportation-urban-form/).

Inequalities in the global economy are reflected in the spatial organisation and structure of international transport systems. Globalisation has stimulated a growth in spatial flows (trade) and increased interdependence. Telecommunications, maritime transport and air transport support most of the global flows due to their scale of services.

Services follow a spatial trend that looks increasingly different from manufacturing. While manufacturing is globally dispersed to lower-cost locations, high-end services have focused on a relatively small number of major metropolitan areas labelled as world cities. These are centres of financial services (banking, insurance), head offices of large multinational corporations, innovation clusters, nexuses of the arts and seats of major governments. Underlining the ongoing dichotomy between central locations (commercial imperatives) and transport locations (distribution imperatives), gateways and world cities do not necessarily correspond in location. This is particularly true for containerised traffic associated with new production clusters and intermediate centres. The world's largest container ports are not necessarily global cities, but many are, such as New York, Shanghai and Tokyo (https://transportgeography.org/co

In the 20th century, cities developed a unique spatial structure based on motorised transport, particularly the private automobile, while encouraging a shift from the grid pattern to the curvilinear and dead-end street patterns commonly found in suburban areas. Dispersal

or urban sprawl is taking place in many different types of cities, ranging from dense, central European metropolises such as Madrid, Paris and London to rapidly industrialising metropolises such as Seoul, Shanghai and Mexico City. Urban growth such as Mumbai, Jakarta and Lagos. Contemporary urban expansion is strongly shaped by road transport, which supports mobility through a hierarchy of local streets, junctions, boulevards and motorways. Therefore, in addition to the various density variations observed within cities, there are also significant differences in the densities of cities across the world. Differences are particularly prevalent between North American and European cities (https://transportgeography.org/contents/chapter8/urban-mobility/)

The evolution of transport has often led to changes in urban form. The more radical the changes in transport technology, the greater the changes in urban form. One of the most fundamental changes in urban form is the emergence of new clusters in peripheral areas that express new urban activities and new relationships between elements of the urban system. Retail and office activities have also created changes in urban form through suburbanisation. However, many important port facilities and railways have emerged in suburban areas, partly following new requirements in modern freight distribution brought about by containerisation. The urban spatial structure has shifted from a nodal to a multi-nodal character, indicating new forms of urban development and new links with regional and global economic processes.

The amount of urban land allocated to transport is often related to the level of mobility. In the pre-automobile era, around 10 per cent of urban land was allocated to transport, consisting of roads for pedestrian traffic and shared use only. As the mobility of people and goods has increased, an increasing share of urban land has been allocated to transport and its supporting infrastructure. There are large differences in the urban transport footprint between different cities and parts of the city, such as the centre and peripheral areas.

The main components of the urban transport footprint are:

- Pedestrian areas. The amount of space allocated for walking. This space is usually shared with roads, as pavements can use between 10 and 20 per cent of the right of way. In central areas, pedestrian areas tend to use a larger proportion of the right of way and in some cases entire areas are dedicated to pedestrians. However, in a motorised context, most pedestrian areas serve people's access to modes of transport such as parked cars.
- Roads and parking areas. The amount of space dedicated to road transport, which has two states of activity. In motorised cities, on average, 30 per cent of the surface is dedicated to roads, while another 20 per cent is required for off-road parking. This means that approximately two off-street and two on-street parking spaces are available for each car. In North American cities, roads and car parks make up between 30 and 60 % of the total surface, while elsewhere this proportion is lower.
- Micromobility spaces. In a scattered form, forms of micromobility such as cycling share access to pedestrian and road spaces. However, many attempts have been made to create spaces specifically for bicycles, with segregated lanes and parking facilities. The Netherlands has been particularly proactive in this regard, with cycle lanes and parking facilities being active components of the urban transport system; 27% of total commuting is done by bicycle. The proliferation of electric bicycles has given an additional impetus to cycling in urban transport.
- Transit systems. Many public transport systems, such as buses and trams, share road space with cars, often to the detriment of their efficiency. Initiatives to alleviate congestion have resulted in the creation of road lanes permanently or temporarily (during peak hours) reserved for buses. Other transport systems, such as metro and rail, also have infrastructure and therefore rights of way.
- Transport terminals. Areas dedicated to terminal facilities such as ports, airports, transit stations, railways and distribution centres. Globalisation has increased the mobility of

people and freight and hence the footprint required to support these activities. Many large terminals are located on the periphery of cities, which is the only place where sufficient land is available.

The spatial importance of each transport mode varies according to various factors. In addition, each transport mode has unique performance and space consumption characteristics. The most relevant example is the car. It needs space (roads) to move, but at the same time it spends 98 per cent of its existence stationary in a parking space. Where it is not moving and is therefore economically and socially useless, a significant amount of urban space needs to be allocated to accommodate the car. In large urban agglomerations, almost all available street parking spaces in areas of average density and above are occupied throughout the day. In the United States, more land is used for the car than for housing. In Western Europe, roads account for 15 to 20 per cent of the urban surface, while in developing economies this figure is about 10 per cent, but is increasing rapidly due to motorised vehicle use.

3. GLOBALISATION and URBAN DEVELOPMENT

McLuhan referred to globalisation with the concept of 'Global Village' by stating that advances in communication technologies have enabled a part of the world to shrink (McLuhan, 1962:21). McLuhan, who states that people all over the world live like a tribe through the definition of 'global village', emphasises that even people living far away are aware of the events taking place thanks to the process of globalisation (McLuhan, 1962:31).

It is stated that Egyptian merchants established contact with Meso-potamia between the Tigris and Euphrates rivers as early as 3200 BC. As a result of this, the world called the Ancient Near East was entered (Freeman,2005:73) and Thomas L. Friedman classifies the phenomenon of globalisation in three stages(Friedman, 2006:19).

According to this; in the first stage, it states that there is a time period started by Christopher Columbus in 1492 and lasted until 1800 and covers the globalised countries, in the second stage, it emphasises that companies and multinational structures are the process that continued from the 1800s to 2000. Finally, he defines it as a process in which the world has flattened as individuals and small groups of all nations have started to globalise themselves, covering a period of time from 2000 onwards. According to Friedman, 'Globalisation II, which lasted from 1800 to 2000, reduced the world from "medium size to small size" (Friedman, 2006:20).

Globalisation deeply affects cities in terms of economic development, demographic change, cultural structure and activities, spatial development and transformation, international politics and relations, and security situation and policies.

In addition, with regard to the point where spatial shaping turns into segregation, in Sassen's words, the existence of a critical mass with the ability to make high profits is present in cities. Their presence contributes to the increase in commercial space, industrial services and other business needs. Sassen argues that in this process, the survival rate for firms with medium profit-making capabilities has become increasingly precarious. States (Tikly, 2001:153:277).

In the process of globalisation, capital, production and information have become more widespread. In this process, basic production units have started to move towards more profitable locations on a world scale. As a result of this, capital and information, which had been focussed on certain cities, have gained a global shape and started to open new areas for themselves. In the opening of these areas, the existence of economic, demographic, cultural and spatial dimensions are taken into consideration.

In today's global cities, companies owned by international capital often prefer high-rise buildings in order to show their power and to keep their profits and sales high. The parallel development of fierce competition between cities on the one hand and the results of a

fundamental process of economic restructuring on the other have led to dramatic changes in the spatial layout of most cities. Cities today have become places where the heights of the so-called skyscrapers compete with each other.

Thanks to the intensive and rapid flow of information, goods, capital, people and services, which is one of the characteristics of global cities, the intensive formation of spaces related to these areas is also noticeable. It would be appropriate to compare the university and library spaces, which are the centre of the intellectual breakthrough in the construction of the global city, in terms of volume, number of users and the quality of the services they offer. Raiser and Volkmann state that new buildings exhibit postmodern architectural designs and that they have become symbols for a dynamic, future-oriented attitude.

He also argues that expanding service industries go to great lengths to create an attractive environment for the professional elite. He notes that shopping malls, cultural centres and sports complexes allow them to maintain a cosmopolitan lifestyle. In addition, cultural and folkloric events convey a sense of uniqueness designed to attract the attention of tourists, professionals and investors277. The export and import figures of the cities where globalisation is experienced most strongly are a strong indicator for measuring the competitiveness of cities and the transformation of urban space areas278.

Every city has a unique architectural structure. We can come across this architectural structure in all buildings from settlements, social spaces, streets and avenues to official institutions. This structure is also reflected in the lifestyles of those living in the city. The process experienced together with globalisation shapes our cities, makes them uniform or de-identifies them (Beyazıt, et al., 2013).

In the process of change and transformation with globalisation, the importance of some cities is gradually increasing. In the 21st century, which is considered as the information age, global cities such as New York, London and Tokyo come to the forefront with their characteristics of being the centre of both social change and development and the global economy (Pustu, 2006: 130). Countries that have cities integrated with the national and international system in areas such as banking, trade and transport have an advantageous position in competition (Topal, 1997: 5).

Global City Index

Today, when classifying global cities, not only economic principles but also various subclassifications are made in which disciplines from different fields can provide support. Of course, the different areas where global cities are concentrated constitute the starting point of indices focused on different fields. From this point of view, indices with their own characteristics have brought different cities to the forefront.

If these indices are also categorised4:

1. ‘Finance, investment and business environment indices’ ,
2. ‘Macroeconomic performance indices’,
3. ‘Quality of life indices’,
4. ‘Knowledge economy, human capital and technology indices’,
5. ‘Infrastructure and property indices’,
6. ‘Environment and sustainability indices’,
7. ‘Image, brand and spatial power indices’,
8. ‘Culture and diversity indices’,
9. ‘Quality of life and affordability indices’.

In terms of the number of cities analysed by global city indices, the Globalization and World Cities Research Network (GaWC) covers 707 cities, the Global Power City Index (GPCI) covers 44 cities, the Global Cities Index (A.T. Kearney Global Cities Index) covers 128 cities, the Global Cities Index (Knight Frank) covers 40 cities and the Global City

Competitiveness Index (Economist Int. Unit and Citibank-Global City Competitiveness) covers 120 cities.

In the Globalisation and World Cities Index (GaWC), Istanbul's position among the world cities is ranked 10th among Alpha-cities in 2008, 7th among Alpha-cities in 2010, 6th among Alpha-cities in 2012, 14th among Alpha-cities in 2016, and 21st among Alpha-cities in 2018.

In the data of the Global Power Cities Index (GPCI) for 2023, this index, published annually by the Institute for Urban Strategies (IUS), detaches cities from their geographical location and evaluates the position of cities in indicators such as cultural diversity, economic dynamics and sustainability. The Global Power Cities Index serves as a guide to identify dynamic changes among global cities and which cities are more prominent in the global arena. Since the publication of the first Global Power City Index in 2008, IUS has been actively promoting its findings worldwide through the media and website. London, New York, Paris, Tokyo and Singapore have been among the top five cities in the index since 2009, although their ranking has varied. In all indices published from 2016 to 2023, it is seen that the top five rankings are London, New York, Tokyo, Paris and Singapore, with no change in order. In 2023, London is again the city that comes the closest to the ceiling score of 2600 and ranks first. While Istanbul usually ranks 30th in the final list in the Global Power Cities Index, it has twice achieved its highest rank of 21st place, scoring 901.2 points in 2014 and 959.4 points in 2016. In 2023, Istanbul ranked 30th with 1017.2 points.

4. CONCLUSION

Since the beginning of the Modern Age in the 5th century, transport has played an important role in the development of the global economy.

The evolution of transport has often led to changes in urban form. The more radical the changes in transport technology, the greater the changes in urban form. One of the most fundamental changes in urban form is the emergence of new clusters in peripheral areas that express new urban activities and new relationships between elements of the urban system. Many cities have taken on a polycentric form, a change associated with new mobility patterns.

Once the primary destination for commuters and served by public transport, the central business district has been transformed by new manufacturing, retail and management practices. Whereas traditional manufacturing was based on centralised workplaces and transport, technological and transport advances have made modern industry more flexible. In many cases, manufacturing has moved from suburban to offshore locations, if not entirely, extending the reach and connectivity of cities.

Retail and office activities are also suburbanising, creating changes in urban form. However, many important transport terminals, i.e. port facilities and railways, have emerged in suburban areas, partly following the new requirements of modern freight distribution brought about by containerisation. The urban spatial structure has shifted from a nodal to a multi-nodal character, which implies new forms of urban development and new links with regional and global economic processes.

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