RESEARCH ARTICLE

Processes of globalisation and small and medium-sized cities

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Abstract

Progressive urbanization, economic integration, and development of modern technologies lead to the emergence of a new generation of globally networked cities attracting capital, ideas and people. Size is not the most significant factor influencing the importance of a city. At least equally important are innovation, activity in city networks, the activity of the inhabitants and the quality of life. 15 years ago, Taylor *et al.* suggested that "it is no longer possible to talk of 'non-global' cities". The research problem of this paper corresponds with the statement, addressing the question whether and how small and medium-sized cities show their manifestations of globalization. The hypothesis is that cities, regardless of size, show some signs of it. Such manifestations may be classified as political, economic, socio-cultural, and other. The conclusions confirm that the hypothesis has been positively verified. As a result of the application of probability sampling methods, the cities chosen for examination include the European cities of Aarhus (Denmark), Basel (Switzerland), and Tallinn (Estonia) as they are representative for numerous small and medium-sized cities.

Keywords

small and medium-sized cities; globalisation; city networks

Introduction

Literature on small and medium-sized cities is clearly less extensive compared to the one on global cities (on systemic review of the literature on small and medium-sized cities see Wagner & Growe;[1] on modern development of small and medium-sized cities see Rastvortseva & Manaeva).[2] By 2050, cities will account for 68 per cent of the world population and these will not only be very large cities. As a matter of fact, in the time frame of 2010–2030, cities with a population of less than 1 million will host 47 per cent of the global urban population increase in sub-Saharan Africa, 38 per cent in Asia, and 32 per cent in Latin America.[3] To this should be added that today's cities constitute "globally interconnected entities", particularly when global and world cities are considered.[4]

The notion of 'world city' was first invented by Patrick Geddes (in 1915) to define those localities where a disproportionate volume of global trade was conducted. The definition of world city evolved in the research of such authors as John Friedmann[5] and Saskia Sassen.[6] They developed and expanded the definition and stressed the global political and economic power of some cities (New York, London, and Tokyo) regarded as command centres of the worldwide economy.[7] Another essential term, that of "global city", also emphasises that something more than city size or structure is necessary to be global. Here relations between a city and the world are crucial, meaning that a global city is no longer deep-rooted or embedded in a state urban structure and state governance but participates more extensively and directly in multi-level global governance. Sassen's works are particularly important regarding the above-mentioned evolution. She explains that global cities are "command and control centers in the organization of the world economy, key locations and marketplaces for the leading industries of the current period, that is, finance and specialized services for firms, sites of production

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[1] M. Wagner and A. Growe, "Research on Small and Medium-Sized Towns: Framing a New Field of Inquiry," *World* 2, no. 1 (2021): 105–126.

[2] S.N. Rastvortseva and I.V. Manaeva, "Modern Development of Small and Medium-Sized Cities: Trends and Drivers," *Economic and Social Changes: Facts, Trends, Forecast* 15, no. 1 (2022): 110–127.

[3] UN Habitat, "Why local? Why now? Strengthening intermediary cities to achieve the SDGs," 2021, https://unhabitat.org/why-local-why-now-strengthening-intermediary-cities-to-achieve-the-sdgs; UN, "68% of the world population projected to live in urban areas by 2050, says UN," 2018.

[4] Wagner and Growe, "Research on Small and Medium-Sized," 105–126.

[5] J. Friedmann, "World City Hypothesis," *Dev Change* 17, no. 1 (1986): 69–83.

[6] S. Sassen, *The Global City* (New Jersey: Princeton University Press, 1991).

[7] P. Taylor *et al.*, *Cities in Globalization. Practices, policies and theories* (London & New York: Routledge, 2007), 185, https://www.routledge.com/Cities-in-Globalization-Practices-Policies-and-Theories/Taylor-Derudder-Saey-Witlox/p/book/9780415512602.

including the production of financial innovations and as markets for the products and innovations produced".[8]

While the term "global city" is used to describe the highest level of the global hierarchy of cities which is conditioned first of all by cities' position as places of controlling global finances, "globalizing city" is the notion used to indicate two different issues: first, that all or almost all cities are affected by the globalization processes and second, that participation or engagement in this process does not depend on one the position of the city, up or down the hierarchy structure but rather on the character and extent of the impact of the process. The nature of such engagement is by no way the same, moreover, surely not all cities agree upon a specific model of a "globalized" city.[9]

Kaufmann, Léautier, and Mastruzzi[10] indicate that there are two major lines of argumentation in the literature in the field of globalization of cities and which point to two understandings of the term "globalized city" which is similar to "globalizing city":

• Globalized city meaning a place: a city is a point on the world map which is delimited by its administrative borders but is still part of global movements, including foreign direct investment closely linked with private firms' decisions to locate in specific cities; the movement of people working for these firms or simply people visiting in business matters, and finally the movement of goods and services generated by these firms.[11]

• Globalized city meaning a "sustained achievement of performance": here a city provides services to its inhabitants and its performance may be assessed by the quality and reliability of such services over time (for example access to water, telephone services, electricity or sewerage) as well as by the extent to which a city includes its citizens in decision making processes and responds to their demands. Overall, an important factor is how well the city is governed. Such a globalized city maintains relations with other municipalities and influential actors of the global economy, among the latter firms, people and various institutions scattered across the world-city network.[12]

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[8] Sassen, *The Global City*; See also M. Amen *et al.*, *Cities and Global Governance New Sites for International Relations* (Farnham: Ashgate, 2011), https://www.researchgate.net/publication/259890859_Cities_and_Global_Governance_New_Sites_for_International_Relations; B. Derudder, A. De Vos and F. Witlox, "Global city/world city," in *International Handbook of Globalization and World Cities,* eds. B. Derudder *et al.* (Cheltenham: Edward Elgar Publishing, 2015), 73–82, https://biblio.ugent.be/publication/1997054.

[9] P. Marcuse and R. van Kempen, *Globalizing cities: a new spatial order?* (Oxford: Blackwell Publishing, 2000).

[10] D. Kaufmann, F. Léautier and M. Mastruzzi, "Globalization and Urban Performance," in *Cities in a Globalizing World Governance, Performance, and Sustainability,* ed. F. Léautier (Washington: World Bank, 2006), 27–67.

[11] Kaufmann, Léautier and Mastruzzi, "Globalization and Urban," 27–67.

[12] Kaufmann, Léautier and Mastruzzi, 27–67.

As to small and medium-sized cities, there is no universal definition of such cities. For example, according to the general classification of the Bundesinstitut für Bau-, Stadtund Raumforschung, small German towns are described as "municipalities with between 5000 and under 20,000 inhabitants or with at least a basic central function; medium-sized cities are defined as municipalities with between 20,000 and under 50,000 inhabitants".[13] Authors of different case studies and articles adopt a variety of definitions of small and medium-sized cities, mostly based on the size of the city population and taking into account spatial factors. The literature offers estimates between 5000 and 500,000 inhabitants as small and medium-sized cities.[14] According to World Cities Report[15] the small and medium (or "intermediate" or "secondary") cities are cities with less than 1 million inhabitants. The division presented above coincides with the research findings conducted by the Furman Center for Real Estate and Urban Policy at New York University. Considering data from the 2000 Decennial Census and the American Community Survey (from 2015 to 2019) allowed for the designation of four groups of cities, classified by population size. Small cities were defined as those with populations between 50,000–99,999, small-mid-sized cities with populations 100,000–149,99, mid-sized cities: 150,000–499,999, and large cities: 500,000 residents or more.[16] One should also point to the relativity of the concept of cities' size, especially considering case studies from China and India, the two most populous countries in the world, where cities identified as "large" are those inhabited by 5,000,000 people.[17]

Small and medium-sized cities accommodate 59 per cent of the global urban population and a majority of the city inhabitants in every region. Such cities are also more conducive to economic growth.[18] According to the European Commission[19] there are six categories of cities – S (small): 50,000 to 100,000 inhabitants,

[13] Wagner and Growe, "Research on Small and Medium-Sized," 105–126.

[14] Wagner and Growe, 105–126; A.P. Russo *et al.*, "Identifying and classifying small and medium sized towns in Europe," *Tijdschrift voor Economische en Sociale Geografie* 108, no. 4 (2017): 380–402; L. Servillo, B. Atkinson and A. Hamdouch, "Small and medium-sized towns in Europe: conceptual, methodological and policy issues," *Tijdschr Econ Soc Geogr* 108, no. 4 (2017): 365–379.

[15] "World Cities Report 2020: The Value of Sustainable Urbanization," 2020, https://unhabitat.org/sites/default/files/2020/10/wcr_2020_report.pdf, 14.

[16] H. Raetz, "Housing Characteristics of Small and Mid-Sized Cities," 2021, https://furmancenter.org/thestoop/entry/housing-characteristics-of-small-and-mid-sized-cities.

[17] See e.g. D. Biau, "Chinese Cities, Indian Cities: A Telling Contrast," *Econ Polit Wkly* 42, no. 33 (2007): 3369–3372, https://www.jstor.org/stable/4419914.

[18] S.A. Frick and A. Rodríguez-Pose, "Big or Small Cities? On City Size and Economic Growth," 49, no. 1 (2017): 4–32.

[19] European Commission, "Cities in Europe the new OECD-EC definition," 2012, https://ec.europa.eu/regional_policy/sources/docgener/focus/2012_01_city.pdf, 5.

M (medium): 100,000 to 250,000 inhabitants, L (large): 250,000 to 500,000 inhabitants, XL (extra-large): 500,000 to 1,000,000, XXL (extra extra-large): 1 000 000 to 5 000 000, and global city (more than 5 000 000). This definition could be criticized, for example, global cities are, after all, only referred to in the European Commission's definition as cities with more than 5 million inhabitants.

Another project of relevance to this article is the ESPON Town Project, whose main objective is "to create a methodology to identify small and medium-sized towns". In the final report of 2013[20] the typology is even more complicated as illustrated in the Table 1 below.

Table 1. Town Project's typology. Source: 21.

Classes	Delimitation criteria	Count	Av.Pop	Av. Sq.km	Av.Density	Total pop. in this class	as % of ESPON space*
High-density Urban Clusters (HDUC)	Pop. > 50,000 Pop. Density > 1,500 inh/km2	850	275,476.10	92.3	2,927.10	234,154,670	46.3%
Large SMST	Pop. > 50,000 Pop Density > 1,500 inh/km2	100	132,331.4	101.8	1,299.6	13,233,142	2,6%
Medium SMST	25,000 < Pop < 50,000, Pop. Density > 300 inh/km2	966	35,162.90	19.7	2,060.59	33,967,357	6.7%
Small SMST	5,000 < Pop < 25,000, Pop. Density > 300 inh/km2	7348	10,241.50	7.6	1,470.09	75,254,510	14.9%
Very Small Towns (VST)	Pop. < 50,00 Pop. Density > 300 inh/km2	69,043	1,193.10	1.7	699.3	82,376,586	16.3%

* including EU 27+ Iceland, Norway, Lichtenstein, Switzerland

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[20] Espon, "Territorial Dynamics in Europe: Gateway Functions in Cities," 2013, https://www.espon.eu/sites/default/files/attachments/TOWN_Final_Report_061114.pdf.

[21] Espon, "Territorial Dynamics in Europe."

Some studies have examined and typified small and medium-sized towns in the country-specific context under certain aspects like Gareis and Milbert[22] and Mager and Wagner,[23] both exploring small and medium-sized towns in Germany and Meili and Mayer[24] focusing on small and medium-sized towns in Switzerland. Christophe Demazière[25] pointed out that the presented typology based on the size of cities can be interpreted differently by city authorities, depending on the objectives they pursue (including, among others, for the purpose of strengthening regional identity or mobilising resources). As examples, the researcher mentioned the activities of the 8,000-inhabitants Chinon in establishing the Association of Small Towns of France, and of Dos Hermanas, inhabited by 120,000 residents, practically integrated with the 700,000-strong Seville, aiming to construct an identity that strengthens the city's subjectivity in its relations with decision-makers in Seville.[26]

The research problem of this paper corresponds with the statement formulated by Taylor *et al*., according to which "it is no longer possible to talk of 'non-global' cities".[27] The research aims to answer the question whether and how small and medium-sized cities show their manifestations of globalisation. The hypothesis is that cities, regardless of size, show some signs of it. The statement equally applies to small and medium-sized cities, which in this paper are defined on the basis of the population criterium in the global context and not only European, as cities with a population not exceeding 500,000 inhabitants. Such manifestations may be classified as political, economic, socio-cultural and other. In the same vein, Taylor *et al.*[28] "challenge anybody to find a contemporary city or town that shows no evidence of globalization processes in the activities that occur within it. Given that [they] expect nobody to be able to meet this challenge, [they] conclude that all cities today can be characterized to some degree as both "world" and "global" in nature. Hence, they are all 'cities in globalization'". The article discusses the extent to which globalisation tendencies are discernible in small and

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[22] P. Gareis and A. Milbert, "Functional Classification of Small Towns in Germany. A Methodological Comparison," *Raumforschung und Raumordnung. Spatial Research and Planning* 78, no. 6 (2020): 537–557.

[23] C. Mager and M. Wagner, "Cultural Infrastructures in Small and Medium-Sized Cities in Germany. A Location Typology of Cultural Services of General Interest," *Raumforschung und Raumordnung. Spatial Research and Planning,* 2022.

[24] R. Meili and H. Mayer, "Small and Medium-Sized Towns in Switzerland: Econmic Hetereogenity, Socio-economic Performance and Linkages," *Erdkunde* 71, no. 4 (2017): 313–332.

[25] C. Demazière, "Dealing with small and medium-sized towns (SMSTs) in urban studies," *Espaces et sociétés* 168–169, no. 1 (2017): 17–32, 20, https://www.cairn-int.info/article-E_ESP_168_0017--dealing-with-small-and-medium-sized.htm.

[26] Demazière, "Dealing with small," 17–32, 20.

[27] Taylor *et al.*, *Cities in Globalization*, 185.

[28] Taylor *et al.*, *Cities in Globalization*, 12.

medium-sized towns. As such, it focuses on a scientifically relevant topic and aims to provide some essential empirical evidence proving that not only large cities are predestined to be perceived as global cities. Moreover, this is the first case study and comparative analysis focusing on Aarhus, Basel and Tallinn at the same time. This is the research gap that the authors want to fill.

The manifestations of globalization may take various forms such as participation in international conferences or city networks, hosting headquarters of international bodies or summits, having a prestigious and internationally influential university or other research centre or some cultural institutions that radiate worldwide. Hence, these manifestations can be classified into political, economic, and socio-cultural. Some, if not most of them, are carefully planned and result from purposeful actions to increase the city's visibility and brand. A starting point for discussion as well as a theoretical embedment of the present paper is Blotevogel's[29] and Growe and Volgmann's[30] typology of metropolitan functions: "(1) the decision-making and control functions by public and private actors (governments and corporate headquarters); (2) innovation and competition functions (generation and transfer of knowledge of product and process innovations); (3) gateway functions (transport and communication functions); and (4) symbolic functions (the cultural and cultural–economic dimension)".[31]

Based on the applied criteria and probability sampling methods, the cities chosen for examination include the European cities of Aarhus (Denmark), Basel (Switzerland), and Tallinn (Estonia). The paper is based on qualitative research methods, primarily discourse analysis, multiple case studies, and literature analysis, as well as a selection of quantitative measures. It includes an analysis of relevant municipal documents such as *City of Aarhus Cultural Strategy 2021–2024*, *Internationalise with Aarhus: Branding of Aarhus 2015–2018*, *European Capital of Culture Aarhus 2017*, *Strategic Business Plan* of 2015, and *The Smart City Basel Strategy of 2018*.[32] Examination of these documents makes it possible to reconstruct the cities' planning and efforts to be more visible and active on the international plane.

Cities under examination

Since 1998, every two years the geography department of Loughborough University in the United Kingdom has prepared a classification of global cities dividing

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[29] H.H. Blotevogel, "Europäische Metropolregion Rhein-Ruhr: Theoretische, empirische und politische Perspektiven eines neuen raumordnungspolitischen Konzepts," ILS-Schriften, 1998, 135, https://www.econbiz.de/Record/europ%C3%A4ische-metropolregion-rhein-ruhr-theoretische-empirische-politische-perspektiven-neuen-raumordnungspolitischen-konzepts-blotevogel-hans-heinrich/10000994729.

[30] A. Growe and K. Volgmann, "Exploring cosmopolitanity and connectivity in The Polycentric German Urban System," *Tijdschrift voor Economische en Sociale Geografie* 107, no. 2 (2016): 214–231.

[31] K. Volgmann and A. Münter, "Understanding Metropolitan Growth in German Polycentric Urban Regions," *Reg Stud* 56, no. 1 (2022): 99–112.

[32] "The Smart City Basel Strategy of 2018," https://www.smartcity.bs.ch/en/strategy.html.

them into "Alpha", "Beta", "Gamma", "high sufficiency/sufficiency tiers". This is done on the basis of their international connectedness. The Globalisation and World Cities Research Network (GaWC), a university's think tank, examines the associations and interactions between the world cities in the context of globalization. Acknowledging the comprehensiveness of GaWC's ranking, the authors of this paper have extracted on this basis a set of cities that fulfill the criteria of small and medium-sized entities. Before the final selection, a decision was made to include only European cities in order to respond to the research question as accurately as possible, excluding cities that did not fit into the categorization grid. With the use of probability sampling methods, three cities were chosen for further examination – Aarhus, Basel, and Tallinn. According to the GaWC's city classification for 2020 Aarhus, Tallinn and Basel were placed in the category of sufficiency. Cities in the sufficiency category are not world cities but their services are sufficient for them not to depend too much on world cities. At this level of integration and connectedness, two specific city categories are prevalent: smaller capital cities and traditional centers of production regions.[33] In the GaWC's city classification for 2018 Aarhus was placed in the category of sufficiency, Tallinn and Basel – gamma. Gamma level cities are defined on the one hand as cities that connect smaller regions or states into the global economy and, on the other, as "important world cities whose major global capacity is not in advanced producer services while cities with sufficiency of services".[34]

Table 2 presents data on the populations of the cities under examination. It shows that the population of none of them exceeds 440,000, so they can be classified

Table 2. **The population of selected cities (Aarhus, Basel, and Tallinn).**

City	State	Population
Aarhus	Denmark	319 094 (2013)
Basel	Switzerland	346 640 (2021)
Tallinn	Estonia	438 341 (2020)

Source: The newest available information on selected cities' population retrieved from the official database of Eurostat.[35]

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[33] "GaWC City Link Classification," 2020, https://www.lboro.ac.uk/microsites/geography/gawc/world2020t.html; "The World According to GaWC," (nd), https://www.lboro.ac.uk/microsites/geography/gawc/gawcworlds.html.

[34] "GaWC City Link Classification," 2018, https://www.lboro.ac.uk/microsites/geography/gawc/world2018.html; "World According to GaWC."

[35] Eurostat, "City statistics," (nd), https://ec.europa.eu/eurostat/web/cities/data/database.

as small or medium-sized cities, depending on the criteria adopted. It should be remembered, however, that it is not only the size of the population, but the activities undertaken by the indicated cities in various spheres that affect their functioning in a globalized world.

A selection of quantitative measures was also useful for this research, as it provided an opportunity to compare Aarhus, Basel, and Tallinn. One comparison criterion is participation in city networks, as discussed in Acuto & Leffel.[36] Another valuable hierarchization of world cities was presented by Leffel *et al.*[37] The latter source of data describes the divergence of cities (based on an evaluation of 12 802 cities) from national economies.[38] In this article, the authors adopted the first approach, hence the analysis below indicates city networks of which Aarhus, Basel, and Tallinn are members.

Aarhus

Aarhus is Denmark's second-largest city. With approximately 325,000 inhabitants, it is now the largest urban center of the Central Denmark Region, which covers 19 municipalities and is inhabited by more than 1.3 million people. Aarhus is considered to be a city experiencing profound changes, as evidenced by the population growth forecast for 2005–2030 of 75,000 inhabitants,[39] which distinguishes the city from many urban centers in developed countries where the opposite trend can be observed. The importance of Aarhus for the Danish economy is demonstrated by its location on the eastern part of the Jutland Peninsula, at the crossroads of transportation routes, including links between the Baltic Sea and the North Sea through the Danish Straits. The city is home to Denmark's largest container port, which is also one of the 100 largest in the world. Within 100km of the city, there are two international airports, Aarhus and Billund, and external communication is based on highways, motorways, and ferries.[40]

Another reason for the importance of Aarhus, both in the domestic and foreign context, is its history. The origins of Aarhus as a city are believed to date back to the 8th century CE, making it one of the oldest cities in Scandinavia, and according to some researchers, the oldest. The city has witnessed numerous key events and processes, was an important religious and trade center during the Middle Ages and entered a period of rapid growth in the 19th century due to increased industrialization

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[36] M. Acuto and B. Leffel, "Understanding the global ecosystem of city networks," *Urban Stud* 58, no. 9 (2020).

[37] B. Leffel, M. Marahrens and A.S. Alderson, "Divergence of the world city system from national economies," *Global Networks,* 2022.

[38] Leffel, Marahrens and Alderson, "Divergence of the world."

[39] Eurocities, "Tallinn," (nd), https://eurocities.eu/cities/tallinn/.

[40] Business Aarhus, "Fact about Aarhus," 2019, https://businessaarhus.dk/eng/about-aarhus/facts-about-aarhus/.

processes. With the establishment of Aarhus University in 1928 the city became the most important scientific and cultural center in Jutland. Aarhus is an interesting example of a city that has taken a number of development initiatives while taking into account its own history and traditions. Today it can be described as an innovative city although in its context it is often referred to as "the world's biggest little town" or "the smallest metropolis in the world".[41] As illustrated by the examples presented below, both phrases seem to capture well the specificity of the city and its international engagement.

The population of Aarhus is considered the youngest in Denmark. The city has a higher share of immigrants in the total population than the country, at just under 16 per cent (compared to slightly over 12 per cent nationally). According to a study by Abdullah Alsmaeel,[42] the city is described as a 'desirable destination' for immigrants due to its job market, good transport links, and many social and cultural initiatives. Nevertheless, this does not mean that immigrants do not face problems. Among the most evident difficulties are the relatively high cost of living and the difficulty in obtaining the desired immigration status, which are not problems faced by the Aarhus municipality alone. Diversity and providing equal opportunities for residents is one of the priorities of the city government, as reflected in the *City of Aarhus Cultural Strategy 2021–2024*, which emphasizes that "[w]e want to be a city with room for variety, and we consider diversity and equal opportunities a strength – in terms of age, gender, and ethnicity".[43] This vision is reflected in the city government's commitment to the LGBT+ community, manifested, for example, in Aarhus becoming the first city in Denmark to join the Rainbow Cities Network.

In terms of economic issues, the 11 East Jutland municipalities' initiative, called Business Region Aarhus, is the basis for regional development and part of Aarhus campaign to create an attractive investment image. An important component of the project is internationalization, implemented through activities coordinated by the Internationalisation Committee. It is a body consisting of both private and public sector representatives, focusing on three initiatives: attracting young talents, also from abroad (including students), as well as companies and investments, improving the internationalization of companies already operating in the city, and developing foreigner-friendly city infrastructure.[44] Some of the largest companies operating in Aarhus include Arla, CSC, IBM, Google, Hummel, Jysk, Salling Group, and Terma.[45]

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[41] Danishnet, "Aarhus (Århus), Denmark," 2019, https://www.danishnet.com/travel-denmark/aarhus-denmark/.

[42] A. Alsmaeel, "Welfare Without Welcome in the "City of Smiles"," A Case Study of Refugees in Towns, Aarhus, Denmark, 2018, 4, https://www.refugeesintowns.org/aarhus.

[43] "City of Aarhus Cultural Strategy 2021–2024," 2021, 38, https://www.aarhus.dk/media/67709/kulturpolitikken_uk_version_tilgaengelig.pdf.

[44] "Internationalise with Aarhus: Branding of Aarhus 2015–2018," 2015, https://urbact.eu/sites/default/files/internationalise_with_aarhus.pdf.

[45] Business Aarhus, "Fact about Aarhus."

The city has several business clusters that operate according to a carefully outlined action plan. They cover areas such as food, health and welfare, IT, digitalisation and Smart City, architecture and design, clean tech, energy of the future, fashion, education, shopping and production. Selected units are responsible for achieving the goals in a given area. For example, according to the document *Internationalise with Aarhus: Branding of Aarhus 2015–2018*,[46] entities such as MedTech Innovation Centre and the New University Hospital were responsible for the 'health and welfare' area, whereas for 'education' those roles were performed among others by the Aarhus University and VIA University College.

Aarhus is home to various international educational institutions, still the largest ones, besides the mentioned Aarhus University and VIA University College, are Aarhus Tech, Business Academy Aarhus, Kochs International School, and The Royal Academy of Music. The most well-known institution is Aarhus University, according to the Academic Ranking of World Universities (the so-called Shanghai Ranking) for 2021 ranked 2nd in Denmark, 11th in the European Union (EU), and 71st in the world.[47] Students make up a significant percentage of the city's population as their number reaches 40,000. They not only contribute to the development of the local economy, primarily by supporting the service sector, but also are part of the city's unique character, being recognized by decision-makers as integral components of the city's international brand.

In 2012, the Smart Aarhus project was officially launched. The initiative addresses issues concerning the city's functioning in areas such as culture, energy, infrastructure, and sustainability. Smart Aarhus is managed by a secretariat, which in turn works closely with the local government and other entities, including universities and research institutes.[48] The new strategy for Smart Aarhus, implemented in 2021, expressed the following challenges which were considered crucial for the success of the project: to "transform into a CO2-neutral City by 2030; […] strengthen our focus on value for and with citizens and companies; […] help citizens to be more self-reliant in the social and health area; […] bring digital learning tools into action; […] create more coherent solutions for the employment area; […] strengthen our digital foundation".[49] The willingness to achieve climate neutrality by 2030 should be considered particularly ambitious in the context of shaping the international image of Aarhus as an active urban center and a model for other cities in

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[46] "Internationalise with Aarhus: Branding of Aarhus," 37, 39.

[47] Aarhus University, "AU in the world rankings," 2022, https://international.au.dk/about/profile/rankings.

[48] C.C. Snow, D.D. Håkonsson and B. Obel, "A Smart City Is a Collaborative Community: Lessons from Smart Aarhus," *Calif Manage Rev* 59, no. 1 (2016): 92–108.

[49] Nordic Smart City Network, "Smart City Update from Aarhus: Flipping the Smart City mindset," (nd), https://nscn.eu/cityupdate/Aarhus/FlippingSmartCityMindset.

the world. This goal has also been included in the "Go Green with Aarhus" initiative and contains, among other provisions, a number of projects aimed at integrating modern technologies into the existing transmission infrastructure. An investment that can be considered a showcase for Smart Aarhus is Århus Waterfront. As noted by Olga Gazińska,[50] the redeveloped waterfront fits well into the idea of smart city; this is evidenced, for example, by the fact that it is accessible by public transport and on foot, it is characterized by functional diversity, and it blends well with the adjacted residential area. One of the greatest attractions of the place is the public library, whereas the surrounding areas have been designed in a way that makes it possible to organize cultural events, sports and concerts. Århus Waterfront symbolizes a modern way of thinking about the functionality of the city and it can be an inspiration for cities that are implementing sustainable projects. Some other ecological solutions applied in Aarhus can also be inspiring, e.g. the revamped waste management, including the system of collection of inorganic dry waste that is considered "very innovative".[51]

Although the number of initiatives in the field of smart city is relatively large for a city of this size, and Aarhus' attractiveness for business and investment is growing, the city's main field of activity is culture. As rightly pointed out by Leila Jancovich and Louise Ejgod Hansen,[52] Aarhus has a well-developed cultural infrastructure, which consists not only of well-known institutions such as the Aarhus Symphony Orchestra, ARoS Art Museum, or the Danish National Opera, but also culture houses located in individual housing estates. The most important success, and at the same time a benchmark for subsequent activities, was Aarhus winning the title of the European Capital of Culture in 2017. In connection with this award, a number of cultural initiatives were organized in Aarhus and the 18 municipalities of Central Denmark Region. The organizers intended to use the title of the European Capital of Culture as an opportunity to promote the city and the region and to stimulate their development, as well as to develop a legacy from which to draw in the years to come.[53] As late as the end of 2017, Aarhus, in agreement with other municipalities from the region, expressed its willingness to continue cooperation

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[50] O. Gazińska, "Przestrzenie publiczne duńskich miast w modelu smart city. Waterfronty w Aarhus i Aalborg," *Technical Issues* 4 (2016): 9–14, 11–12, https://docplayer.pl/50696014-Przestrzenie-publiczne-dunskich-miast-w-modelu-smart-city-waterfronty-w-aarhus-i-aalborg.html.

[51] M. Thomsen *et al.*, "Environmental-Economic Analysis of Integrated Organic Waste and Wastewater Management Systems: A Case Study from Aarhus City (Denmark)," *Sustainability* 10, no. 10 (2018): 3742.

[52] L. Jancovich and L.E. Hansen, "Rethinking participation in the Aarhus as European Capital of Culture 2017 project," *Cultural Trends* 27, no. 3 (2018): 6, 173–186.

[53] "European Capital of Culture Aarhus 2017/Strategic Business Plan," 2015, http://www.aarhus2017.dk/media/3289/arhus_2017_strategic_business_plan_uk.pdf.

in the field of culture, thus highlighting its crucial importance for the development of the Central Denmark Region.[54]

Despite taking active measures at the regional level, an important part of Aarhus' cultural strategy is its internationalization, also manifested in the organization of significant international events. Examples of events included in the *Event Strategy City of Aarhus 2020–2025*[55] are Aarhus Dance Festival Break 2020, World Championship 29er 2021, and The Ocean Race Stopover 2023. The first three of the 10 focus areas included in the aforementioned strategy are sufficient to characterize the city's strategic goals in this field. They state that "[t]he event strategy has an overall international aim, but it also focuses on major national, regional or local events that can contribute to achieve the goals" (no. 1); "[e]vents in sports, culture, and tourism are the main focuses of the strategy, but other areas can also be included" (no. 2); "[e]vents as showcase for how the city of Aarhus will focus on sustainability and green change" (no. 3).[56] This type of listing, on the one hand, shows innovation in the city's approach to shaping its international image, and on the other, consistency in promoting programs and values such as sustainability and green change, considered strategic in previous documents. Worth noting is especially Aarhus' activity in the field of organizing sports events. In 2017 the city hosted SportAccord Convention, and in recent years also top-level competitions in golf, badminton, or sailing.[57]

Aarhus' global orientation is also reflected in the vision of the *City of Aarhus Cultural Strategy...*, taking the wording "Aarhus – Culture in our heart, our eyes on the world".[58] This type of approach was also underscored by the city's commitment to the UN's Sustainable Development Goals, with eight of the 17 goals identified as most important: 3. Good health and well-being; 4. Quality education; 5. Gender equality; 10. Reduced inequalities; 11. Sustainable cities and communities; 13. Climate action; 16. Peace, justice and strong institutions; and 17. Partnerships for the goals.

Since 1946 Aarhus has established sister city relationships with seven cities: Bergen (Norway), Gothenburg (Sweden), Turku (Finland), Harbin (China), Rostock (Germany), Kujalleq (Greenland), and St. Petersburg (Russia). Aarhus is also active

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[54] Jancovich and Hansen, "Rethinking participation in the Aarhus," 173–186.

[55] "Event Strategy City of Aarhus 2020–2025," 2020, https://aarhusevents.dk/media/45119/event-strategy-city-of-aarhus-2020-2025.pdf, 3.

[56] "Event Strategy City."

[57] Aarhus, Denmark, "How Sports Events Contribute to the Development of a City's Sustainability Brand," in *Sport Tourism (R)evolution,* 2021.

[58] "City of Aarhus Cultural Strategy 2021–2024," 13.

in several city networks, including Eurocities, European Climate Alliance, Smart Cities Network, Strong Cities Network,[59] and the Union of the Baltic Cities. In recent years, there have also been collaborations with other urban centers, e.g. Hamburg (Germany), Manchester (UK), and Nanjing (China). However, these have not taken the form of sister cities, but have focused on specific projects in the area of arts and culture. Aarhus also continues its cooperation with other cities awarded the European Capital of Culture title and tries to set further objectives in line with the adopted model of development and promotion. One of the initiatives that seems likely is the future city's application for the title of the United Nations Educational, Scientific and Cultural Organization (UNESCO) City of Literature.[60]

A number of rankings confirm the attractiveness of Aarhus for residents and visitors. For example, the 2021 Global Destination Sustainability Index (the GDS-Index) ranks Aarhus third, behind Gothenburg and Copenhagen, and ahead of such destinations as Brussels, Sydney and Helsinki.[61] Similar findings are provided by Tessa Watt, who ranked Aarhus first on her list of mindful cities, i.e. cities that "contribute to the well-being of their citizens by inspiring and enabling mindful practices".[62] Aarhus can thus be considered a well-managed city that can serve as an inspiration for other small and medium-sized towns. Although in size Aarhus cannot compare to metropolises such as Paris, London or Tokyo, it can undoubtedly be considered a global city. In the case of Aarhus, numerous aspects of its "global" nature deserve attention, but the character of the city seems to be best described by the words of the *City of Aarhus Cultural Strategy...*[63] that "Aarhus as an international city where culture sets an agenda". The example of Jutland's largest city proves that small and medium-sized cities can successfully conduct a global cultural policy and implement solutions, e.g. in the field of sustainability and carbon neutrality, which may become a model for others.

Basel

The city of Basel, located in the northwest of Switzerland, is one of the most dynamic economic regions in the country. Its population as of 2021 is approx. 178,000 people. The city is known due to its high level of internationalisation and a specialised economy based on high-tech manufacturing and a knowledge-intensive service sector.

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[59] Aarhus Kommune, "International Relations," (nd), https://www.aarhus.dk/english/collaborate-with-the-city/international-relations/.

[60] "City of Aarhus Cultural Strategy 2021–2024."

[61] "Global Destination Sustainability Movement," (nd), https://www.gds.earth/2021-results/.

[62] M. Buehler and K. Hirano, "Can a city be mindful? And which cities do it best?," 2017, https://www.weforum.org/agenda/2017/02/worlds-most-mindful-cities-top-10.

[63] "City of Aarhus Cultural Strategy 2021–2024," 5.

Basel has a long and impressive history. The beginnings of the city date back to the 5th century BC. During the Holy Roman Empire, Basel was one of the seven cities that were subject only to the authority of the emperor or German king and were called Free Imperial City, Reichsstadt or Freie Reichsstadt. Basel dropped this honourable and unique name after the Swabian War in 1499 and – as a consequence – on its accession to the Swiss Confederation in 1501.

Undoubtedly, the Basel metropolitan area is unique mainly due to its location at the meeting point of three countries: Switzerland, Germany and France. In most circumstances, the state border negatively affects opportunities and puts brakes on exchange and cooperation due to cultural, institutional, and regulatory differences. Basel is the complete opposite; what is more, it is an example of how even the most unfavourable circumstances can be turned into an advantage. Here, the city located at the Swiss-German-French border represents a source of new opportunities at many different levels. This location enables the local authorities to gain increased autonomy thanks to unique means of cooperation and alliances formed across borders from the political perspective. In case of the three mentioned countries, it also increases Basel's chances to apply for financial resources designated to help cross-border cooperation (i.e. EU Territorial Cooperation (INTERREG) fund or agglomeration policy programs available in Switzerland). On the other hand, the presence of state borders provides additional opportunities on the institutional level. It enables invention of original forms of governance, particularly given the much greater flexibility of law and regulatory provisions regarding cross-border cooperation. Such favourable circumstances often lead to innovative programs and facilitate experiments with original tools. On an economic and functional level, Basel location offers unique conditions and attracts large and often international companies (easier commuting possibilities for a skilled workforce not only from Swiss Confederation but also Germany and France), which increases opportunities at the global level of competition.

Basel, Aarhus and Tallinn have several common features, which justify their importance as global cities. These relatively small metropolitan centres (in terms of the population size) are endowed with a higher rank than expected, mainly because they have been successful in inviting global institutions and companies. Therefore, they are often called "small yet global" cities. Many international and multinational companies and well-known brands have their headquarters and branches located in Basel. Currently, Basel is a business hub for life sciences, finance, logistics, and trade. With Basel's tri-border location, its proximity to an international airport (Basel-Mulhouse-Freiburg) and intercontinental airport (Zurich), and access to the Swiss Rhine ports, it was a matter of time to establish the Basel Area – a unique economic powerhouse Swiss business and innovation hub. The Basel provides all advantages for a business location: an excellent educational system, competitive tax rates, a business-friendly environment, and super quality of life. The Basel Area is a home for over 700 life sciences companies, 200 research institutions,

among which not only global pharma leaders can be found (i.e. Actelion, Basilea Pharmaceutica, Ciba Speciality Chemicals, Clariant, Hoffmann-La Roche, Novartis, Syngenta), but also a large number of successful start-ups and spin-offs focusing on healthcare technologies and micro-technologies.[64]

Over centuries, Basel has been a place of residence for many famous scientists and researchers: i.e. Erasmus of Rotterdam, Hermann Hesse, Karl Jaspers, Carl Jung, and Friedrich Nietzsche. The contemporary city continues this tradition and is still perceived as an excellent place for study, work and research. The University of Basel, the oldest Swiss university founded in 1460, has a stable place in the top 100 universities ranked globally (i.e. Times World University Rankings, Shanghai Jiao Tong Ranking, CWTS Leiden Ranking). In 2007, the ETH Zurich (Swiss Federal Institute of Technology Zurich) established the Department of Biosystems Science and Engineering (D-BSSE) in Basel. The city also hosts several academies: Fachhochschule Nordwestschweiz/Fachhochschule NW (FHNW), the FHNW Academy of Art and Design, FHNW Academy of Music, and the FHNW School of Business. Therefore, it is no surprise that Basel has been a relentless magnet for scientists, researchers, and professionals from all over the world.

While looking for the Bank for International Settlements (BIS) location, its founders could not reach an agreement on the seat city. Thanks to the perception of Switzerland as a neutral country, Basel won over cities such as Amsterdam, Brussels, and London because it guaranteed to stay out of the influence of the significant powers; another advantage was the city's location, including EuroAirport Basel-Mulhouse-Freiburg excellent railway connections. Operating for almost a century, BIS associates leading central banks, which are private entities, and sets recommendations that become standard for the world's commercial banking system.

Additionally, the Basel Committee on Banking Supervision (BCBS) responsible for the Basel Accords (Basel I, II and III) is also located in Basel. BCBS consists of Central Banks representatives and authorities accountable for banking regulations, and it sets international banking standards regarding risk management.

The Global Infrastructure Basel Foundation (GIB), operating in the field of infrastructure has also its headquarters in Basel. GIB supports various stakeholders in designing, implementing and financing sustainable projects meeting resilience criteria. The city of Basel is also a co-headquarter (together with Zurich) to UBS Group AG – a Swiss multinational investment bank and financial services company that is the largest Swiss banking institution and the largest private bank in the world operating in all major financial centres around the globe.

In 2012 the Canton of Basel-Stadt was one of the founders of the Basel Peace Office. Together with the University of Basel, Swisspeace, International Physicians for the Prevention of Nuclear War Switzerland (IPPNW) and many international

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[64] "The Basel Area," https://invest.baselarea.swiss/.

partners among which were World Future Council (WFC), Global Security Institute (GSI), Middle Powers Initiative (MPI), Parliamentarians for Nuclear Non-proliferation and Disarmament (PNND), and Schweizer Anwälte für Nukleare Abrüstung (the Association of Swiss Lawyers for Nuclear Disarmament). The Basel Peace Office is a world-renowned institution that conducts advanced research and pursues policy-development programs dedicated to international peace, con-flict resolution, and security to achieve the global abolition of nuclear weapons. It brings international organisation to Basel that has a long record of successful work on international security and nuclear disarmament.[65]

Basel also hosts important trade shows and fairs, including Art Basel (modern and contemporary art), Baseworld (watches and jewellery), Swissbau (construction and real estate), and Igeho (HoReCa sector).

The presence of global and international companies would not be possible if not for the joint efforts to establish the Swiss association Regio Basiliensis. In 1963 rep-resentatives of the civil society, the private sector, the cantons, and the academic sector created foundations for regional cooperation in the Upper Rhine region based on trinational location (https://www.regbas.ch/en/). More recently, coopera-tion ideas were strengthened by creating the Metrobasel initiative – a platform and think-tank established by the canton of Basel City and Novartis in 2005. Metrobasel is an analytical centre for developing the Basel trinational metropolitan region and ensuring economic prosperity and international competitiveness.[66] Such initia-tives prove that both the Swiss and foreign private sector is becoming more aware of its unique location, has a sense of belonging to the city and is concerned about its future.[67]

Additionally, Basel belongs not only to the European but also to world role mod-els regarding environmental and climate policy. Since 2009, 100 per cent of the electricity generated by the regional energy provider has come from renewable sources. Moreover, Basel actively fights climate change by being a member of the German-French-Swiss TRION-climate network and of the European Climate Alliance, and participating in cross-border water pollution control (https://www.bs.ch/en/Portrait/cosmopolitan-basel/traffic-hub.html).

Yet Basel is not only a center for researchers and professionals. It is also a cul-tural metropolis with Theatre Basel widely recognizable in Europe (Opera of the Year in 2009 and 2010, Theatre of the Year in 2018), internationally renowned museums (i.e. Art Museum of Basel – hosting the world's oldest art collection accessible to the public, Basel Historical Museum, Music Museum, Sports Museum of Switzerland,

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[65] "The Basel Peace Office," https://www.baselpeaceoffice.org/article/about-us.

[66] "Metrobasel official website," https://www.metrobasel.org/ch/.

[67] P. Sarasin, *Stadt der Bürger, bürgerliche Macht und städtische Gesellschaft, Basel 1986–1914* (Göttingen: Vandenhoek and Ruprecht, 1997), https://digi20.digitale-sammlungen.de/de/fs1/object/display/bsb00044374_00004.html.

Pharmacy Historical Museum of the University of Basel and many others) and the largest Swiss orchestra – Sinfonieorchester Basel alongside with many other orchestras and choirs. One of the above-mentioned events, Art Basel, is the most important art fair for the top art collectors and gallery owners (https://www.bs.ch/en/Portrait/cosmopolitan-basel/traffic-hub.html).

Many rankings confirm that Basel ranks very high with regards to the quality of life, innovation and socio-economic environment. Basel has been often included in the premier league both nationally and internationally. Moreover, in fDi Magazine's survey "European Cities and Regions of the Future" published by the Financial Times, the city of Basel was ranked eighth among western European cities and fourth in the "Small Cities" category in the 2020/21 edition. According to the "Quality of Living" ranking published by the international consulting firm Mercer in 2019, Basel was placed among the top ten cities with the best quality of life. In turn, in 2020 Basel ranked second by Credit Suisse and UBS as one of the most attractive Swiss locations for companies (https://www.bs.ch/en/Portrait/cosmopolitan-basel/international-competitiveness.html).

Undoubtedly, Basel's distinctive features make it a global city. A business-friendly environment, first-class support for research and education, diverse and international population, openness combined with creativity and knowledge-intensity, as well as the appreciation of art and culture place Basel among the best. Its case proves that big agglomerations and smaller ones may stand for the missing link in the world economy.[68]

Tallinn

Tallinn is the capital of Estonia and at the same time its largest city with a population of about 430,000 inhabitants. It lies on the northern coast of the state. The city has a special two-fold character combining history with modernity: the former is represented by a Hanseatic old town and the latter by a prosperous business center with hotels, skyscrapers, and conference and relaxation venues. 51 per cent of the Estonia's gross domestic product is generated by Tallinn, mostly coming from its industrial, transport, retail trade, construction, and shipbuilding sectors. There is one more extraordinary facet of Tallinn – is has been established to be one of the most digital cities in the world. It was a result of low taxes and well-educated employees, which contributed to the development of the IT sector in Tallinn. In 2011 the capital was announced the European Capital of Culture, which reflected that Tallinn offers a promising and vibrant cultural scene and well-preserved heritage (here again modernity blends well with tradition). Its beautiful old town was entered on the UNESCO World Heritage List, which is also important as cultural tourism generates a

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[68] A. Thierstein *et al.*, "Changing Value Chain of the Swiss Knowledge Economy: Spatial Impact of Intra-firm and Inter-firm Networks within the Emerging Mega-City Region of Northern Switzerland," *Reg Stud* 42, no. 8 (2018): 1113–1131.

substantial income of the city.[69] Furthermore, Tallinn offers good quality educational services, provided for example by the Tallinn University of Technology (the website of the University: https://taltech.ee/en),[70] the Estonian Arts Academy, and one of the biggest English-language film and media institutions in Europe and the only one in northern Europe – the Tallinn University Baltic Film and Media School.[71] Apart from being the European Capital of Culture in 2011 Tallinn also won the European Green Capital 2023 Award.[72]

Concerning Tallinn two fields should be focused on: Tallinn as a smart and digital city and its participation in city networks. This determines Tallinn's international position as a "globalized city" or "city in globalization", in other words a city with manifestations of globalization.

Without doubt, the sustainable society of the future will be a smart and digital one that is relevant for Tallinn as it has branded itself as one of the most technologically-positioned cities of the world. Digital technologies and services facilitate the everyday life of people by contributing to more efficient and affordable communications. Such technologies offer new products and services and provide access to information. They also assist ordinary citizens in making their voices heard. Tallinn adopted the method of "Think Global, Test in Tallinn" as a way to transform the city into a smart city. The capital city of Estonia is well prepared to deliver business support devoted to smart city enterprises and share the knowledge and good practices coming from real case studies conducted in cooperation with other cities.[73]

As the first state in the world, Estonia proclaimed access to the Internet as a basic human right, accepted digital signatures in most transactions, introduced online voting, and, in 2018, provided high-speed 5G network capability. All of these processes had an influence on Tallinn. Estonia's amazing transformation from Soviet state to a technologically advanced hub launched Tallinn onto the global arena. Worldwide innovation incubators are set up by start-ups such as Starship Technologies, a producer of "delivery robots", by the Skype co-founders (also

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[69] R. Alatalu, "Responsible local communities in historic inner city areas: Historic Centre (Old Town) of Tallinn, Estonia," in *World Heritage (Benefits Beyond Borders)*, ed. G. Amareswar (Cambridge: Cambridge University Press, 2012), 121–131.

[70] See also L. Sarv, K. Kibus and R.M. Soe, "Smart city collaboration model: a case study of university-city collaboration," (2020): 674–677.

[71] Tallinn, (nd).

[72] "Congratulations to Tallinn, Valongo and Winterswijk, the new winners of European Green City awards!" 2021, https://environment.ec.europa.eu/news/congratulations-tallinn-valongo-and-winterswijk-new-winners-european-green-city-awards-2021-09-10_en.

[73] Eurocities, "Aarhus, City of museums: Investing in new generation museums to boost local attractiveness," (nd), http://wsdomino.eurocities.eu/culture/resources/Case-study-Aarhus-City-of-museums-WSWE-9XMLR8.

Estonian e-invention). And 2/3 of Estonia's population lives in Tallinn.[74] Tallinn 2035 development strategy concentrates on urban development and sustainability, digitalization and education. The most important objectives include: 1. creating friendly urban space, 2. strengthening community, 3. implementing green revolution, 4. turning Tallinn into a world city, 5. providing proximity to home (15 minutes to city which is connected with the idea of the compact city), 6. contributing healthy and mobile lifestyle. To realize these objectives all the actions should be based on the following five main values: "1. purposefulness in achieving targeted results and curiosity for finding best solutions, 2. cooperation and independence, 3. wisdom and courage to make decisions and take responsibility, 4. reliability and openness of city officials and 5. customer focus and friendliness".[75] This strategy is part of transforming Tallinn into smart, digital and sustainable city. These efforts were crowned in 2019 when Tallinn was rewarded with the International Smart City Award 2020.[76] According to the Smart City Index 2021,[77] Tallinn was ranked 56 out of 118.

In the context of the position of Tallinn as a digital city, one may mention that the NATO Cooperative Cyber Defence Centre of Excellence is headquartered in Tallinn. Its purpose consists of supporting NATO and its member states with exceptional interdisciplinary knowledge and skills in the domain of cyber defense research, exercises, and training. Such activities should concentrate on technological, strategical, operational and legal issues.[78] The flagship research initiative of the Centre is so-called Tallinn Manual which is known globally to the community of international lawyers and cyber experts. The first edition of Tallinn Manual (published in 2013 by Cambridge University Press)[79] focused on the most serious cyber operations – meaning operations that breach the ban on the use of force, authorize states to exert their right of self-defense, or take place in the framework of armed conflicts. The updated version, the Tallinn Manual 2.0 was published in 2017 and the Tallinn Manual 3.0 is supposed to be published in 2026. Today the Tallinn Manual is recognized as an influential and authoritative publication used by policy experts

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[74] M.K. Duckett, "Smart Cities: Tallinn, Estonia," 2018, https://www.nationalgeographic.com/travel/article/tallinn-estonia; L. Sarv and R.M. Soe, "Transition towards Smart City: The Case of Tallinn," *Sustainability* 13, no. 8 (2021): 4143.

[75] Sarv and Soe, "Transition towards Smart City," 4143; Tallinn 2035 development strategy sets ambitious targets for the city, 2020.

[76] "Tallinn to be awarded intl smart city prize," 2020, http://www.baltic-course.com/eng/good_for_business/?doc=152782.

[77] "Smart City Index," 2021, https://www.planbe.com.gr/news/smart-city-index-2021, 120.

[78] CCDCOE, https://ccdcoe.org/about-us/.

[79] M.N. Schmitt, *Tallinn Manual on the International Law Applicable to Cyber Operations* (Cambridge: Cambridge University Press, 2013).

and legal advisers managing cyber problems.[80] Tallinn seriously cooperates in the field of cyber security.[81]

Tallinn is also very active in the framework of multilateral cooperation of cities as a member of many city networks such as Eurocities,[82] Organization of World Heritage Cities, Union of the Baltic Cities, Covenant of Mayors for Climate & Energy Europe and Impacts (Sustainable Mobility and Transport for Livable Cities). Its bilateral cooperation is also quite extensive due to a long list of its sister cities (there are 21 of them): Annapolis (United States), Berlin (Germany), Beijing (China), Chengdu (China), Hangzhou (China), Helsinki (Finland), Kiel (Germany), Kyiv (Ukraine), Kotka (Finland), Moscow (Russia), Odesa (Ukraine), Riga (Latvia), Saint Petersburg (Russia), Schwerin (Germany), Seoul (South Korea), Stockholm (Sweden), Tbilisi (Georgia), Turku (Finland), Vienna (Austria), Venice (Italy), and Vilnius (Lithuania).[83] Cooperation with Helsinki, leading to the creation of Helsinki-Tallinn Euregio, a cross-national form of governance, is underway and symbolizes another avenue of Tallinn's embracement of innovation, among others in the information and communication technologies.[84]

The International Relations and Protocol Department within the City Council is responsible for planning and coordinating Tallinn's international relations. Such relations and interactions include "cooperation with partner cities, international and regional organisations and networks, developing and implementing eurointegration policies". Its tasks also encompass activities of a more protocol-ceremonial character such as organizing the city's guest reception and partaking by Tallinn's officials in international events. The International Relations and Protocol Department is responsible for concluding cooperation agreements with Tallinn's partner cities international institutions and city networks and monitoring their implementation. In matters of city's international relations and eurointegration, this department prepares projects of legislation.[85]

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[80] M.N. Schmitt, *Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations* (Cambridge: Cambridge University Press, 2017); The Tallinn Manual, (nd), https://ccdcoe.org/research/tallinn-manual/.

[81] V. Burksiene, J. Dvorak and G. Burbulytė-Tsiskarishvili, "City Diplomacy in Young Democracies: The Case of the Baltics," in *City Diplomacy. Current Trends and Future Prospects*, eds. S. Amiri and E. Sevin (Cham: Palgrave Macmillan, 2020), 305–330.

[82] Burksiene, Dvorak and Burbulyte-Tsiskarishvili, "City Diplomacy in Young Democracies," 305–330.

[83] Burksiene, Dvorak and Burbulyte-Tsiskarishvili, 305–330; Tallinn City Municipality, "Tallinn has cooperative relationships with 21 cities around the world," 2021, https://www.tallinn.ee/eng/business/Tallinn-has-cooperative-relationships-with-21-cities-around-the-world.

[84] For more details see C. Nauwelaers, K. Maguire and G. Ajmone Marsan, "The Case of Helsinki-Tallinn (Finland-Estonia) – Regions and Innovation: Collaborating Across Borders," OECD Regional Development Working Papers, OECD Publishing, 2013.

[85] International Relations and Protocol Department, "Tallinn City Council," https://www.tallinn.ee/eng/International-Relations-and-Protocol-Department.

Similar to Aarhus and Basel, Tallinn successfully pursues its aspiration to be a global, smart, and sustainable city.

Discussion

European cities examined in this article are well connected within the world city network. They engage in international city networks, the latter constituting a robust, complex, and interconnected ecosystem, which strengthens the position of cities in the international arena (multilateral diplomacy) as well as in bilateral diplomacy (sister city system). They carefully plan their international image and consequently implement it. Each of them has chosen one particular area as their main and distinctive field of activity and promotion on the international arena – Aarhus is a city with strong cultural profile, Basel is a cross-border meeting point for business and innovation, and Tallinn is a digital city. As small and medium-sized cities, Aarhus, Basel and Tallinn are globalized to lesser or bigger extent: in different ways and to different degrees. Such manifestations may be varied but what they have in common is that they are evidence of cities with increasingly active participation in international relations and a process of global multi-level governance. Cities gathered in international city networks are capable of solving local and even global problems such as climate change and migration crisis. For example, climate change may be addressed within the city network of Covenant of Mayors for Climate & Energy Europe. In this field, Eurocities cooperates with the Covenant of Mayors. Hence these are perfect tools for cities to accelerate their actions, share good practices, and exchange information.

Due to many issues mentioned above, all three cities can be considered as centres capable of producing new knowledge and reaping the benefits of innovation. Manifestations of globalization of small and medium-sized cities on the basis of the Aarhus, Basel, and Tallinn are summarised in the Table 3 below. These manifestations clearly fit into the typology of metropolitan functions mentioned at the beginning of this article. The three examined cities serve as governments' and corporates' headquarters (hence they act as decision-making centers); they are spaces of innovation and competition (consequently, they generate knowledge of product and process innovations and then facilitate the transfer of such knowledge); they are essential elements in transportation and communication processes; and finally, they fulfill the symbolic functions in the field of culture and economy.[86]

What is typical for the three cities examined is their active participation in various international city networks as well as bilateral sister city relations. In the economic field, Basel focuses strongly on the banking sector while for Aarhus and Tallinn the concept of smart city is important – for Tallinn even more so as it builds

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[86] For more details see Espon, "Territorial Dynamics in Europe Gateway Functions in Cities," 2013, https://www.espon.eu/topics-policy/publications/territorial-observations/territorial-dynamics-europe-gateway-functions.

Table 3. Manifestations of the globalization of small and medium-sized cities.

Manifestations of globalization	Political	Economic	Socio-cultural	Other
Aarhus	Participation in international city networks (multilateral diplomacy): Eurocities, European Climate Alliance, Smart Cities Network, Strong Cities Network, Union of the Baltic Cities	Well-operating business clusters within the city Numerous smart city programmes in place, with emphasis on environmental protection	Sister cities system (bilateral diplomacy encompassing mostly socio-cultural cooperation): Bergen, Gothenburg, Turku, Harbin, Germany, Kujalleq, St. Petersburg Distinctive and recognizable cultural and event agenda	Aarhus University + other international educational institutions and their impact on city's identity and development
Basel	Participation in international city networks (multilateral diplomacy): ICLEI – Local Governments for Sustainability, Mayors for Peace (the official representative is the Basel Peace Office), Global Covenant of Mayors for Climate & Energy, Milan Urban Food Policy Pact, European Climate Alliance, TRION – climate network	The headquarters to the Bank for International Settlements, the Basel Committee on Banking Supervision, UBS Group AG – the largest Swiss banking institution and the largest private bank in the world, and the Global Infrastructure Basel Foundation	Sister cities system (bilateral diplomacy encompassing mostly socio-cultural cooperation): Shanghai, China (since 2007) US state of Massachusetts (since 2002) Miami Beach, USA (since 2011), Toyama prefecture, Japan (since 2009), Rotterdam, Netherlands – a partner city since 1945, and a pilot twinning program with Abidjan/Yopougon, Ivory Coast (limited period 2021–24).	University of Basel; Department of Biosystems Science and Engineering (D-BSSE) in Basel in cooperation with ETH Zurich; Fachhochschule Nordwestschweiz/Fachhochschule NW (FHNW), FHNW Academy of Art and Design, FHNW Academy of Music FHNW School of Business

Manifestations of globalization	Political	Economic	Socio-cultural	Other
Tallinn	Participation in international city networks (multilateral diplomacy): Eurocities, Organization of World Heritage Cities, Union of the Baltic Cities, Covenant of Mayors for Climate & Energy Europe, Impacts (Sustainable Mobility and Transport for Livable Cities NATO Cooperative Cyber Defence Centre of Excellence headquarters	Digital and smart city – a distinctive recognizable brand radiating globally	Sister cities system (bilateral diplomacy encompassing mostly socio-cultural cooperation)	Development of international law on cyber operations (The Tallinn Manual)

its image as a smart and digital city. All three cities put much emphasis on the development of cultural and educational institutions and events. Development and growing importance of international city networks has facilitated participation of cities in transnational relations. Aarhus, Basel and Tallinn are part of that phenomenon and skilfully use the instrument of city networks to strengthen their position and become more visible and recognizable on the global scale.

Conclusions

Conclusions that flow from this paper prove that progressive urbanization, economic integration, development of the world economy and modern technologies, lead to the emergence of a new generation of cities that are globally networked attracting capital, ideas and people from around the world.[87] And size is not the most significant factor influencing the importance of a city. At least equally important are: innovation, activity in city networks, dynamics and the activity of the

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[87] M. Pieńkowski and K. Rybka-Iwańska, "Miasta globalne i ich znaczenie w polityce zagranicznej," *Studia Politologiczne* 42 (2016): 347–362, http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.desklight-bd9af4d1-08c0-4360-bedd-13c2d901186c/c/Milosz_Pienkowski__Katarzyna_Rybka-Iwanska.pdf.

inhabitants, the quality of life. Hence the relatively small cities like Aarhus, Basel, Tallinn but also Brussels or Geneva may play a bigger role than cities where often the only distinguishing feature is their size, such as e.g. Mexico City, Dhaka, Karachi, Mumbai, Lima, or Kolkata,[88] even though they are also facing different kind of challenges.[89] Taking the above discussion into account the authors state that the hypothesis that regardless of size, cities including small and medium-sized ones, show some manifestations of globalization, has been confirmed. As shown in Table 3 such manifestations may be classified as political, economic, socio-cultural and other.

Today all cities have become global (or globalized or globalizing at the least): the space of flows in which they operate today allows them to establish connections across the globe if the situation requires it. While a number of urban geography researchers still limit the use of the label "global city" to metropolises whose participation in global flows is self-evident, newer studies suggest that the concept of "non-global" cities may have become a thing of the past.[90] World cities or global cities constitute economic, cultural and institutional centres of in the global network of flows. As such they are channels through which, on the one hand, national and provincial resources are introduced into the global economic system, and on the other, global impulses are transmitted back to national and provincial regions.[91] Such perception of world/global cities and their creation processes reveals that the characteristic features of current globalisation make all cities global: today (almost) every city acts in the space of flows that empowers them to operate globally. Many of their actions are more outward than inward. Consequently, while many scholars in the urban studies, urban geography disciplines, sociology or political science (including international relations subdiscipline) use the notion of "global city" to mean the prominent world metropolises that epitomize the space of global flows, this article as well as literature reviewed here clearly show that today every or almost every city is – to some extent – global. Therefore, Taylor *et al*.'s suggestion, that "it is no longer possible to talk of 'non-global' cities"[92] proved to be true in the context of small and medium-sized cities selected for this research.

Data availability

No data are associated with this article.

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[88] Pieńkowski and Rybka-Iwańska, "Miasta globalne," 347–362.

[89] See also S. Häußler and W. Haupt, "Climate change adaptation networks for small and medium-sized cities," *SN Soc Sci* 1, no. 11 (2021): 262; A. Tennøy, F. Gundersen and K.V. Øksenholt, "Urban structure and sustainable modes' competitiveness in small and medium-sized Norwegian cities," *Transp Res D Transp Environ* 105 (2022): 103225.

[90] Taylor *et al.*, *Cities in Globalization*.

[91] Taylor *et al.*

[92] Taylor *et al*.