

Kourtit, Karima; Nijkamp, Peter

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Research Article

Urban cultural vanguards why culture matters for urban success

Karima Kourtit^{a,b,c,d,*}, Peter Nijkamp^{a,b,c}^a Open University, Heerlen, the Netherlands^b Alexandru Ioan Cuza University, Iasi, Romania^c University of Technology (UM6P), Benguerir, Morocco^d Uppsala University, Sweden

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ABSTRACT

This paper addresses the multifaceted relationships between culture and urban performance. It seeks to identify and examine evidence-based characteristics of urban success (or socio-economic performance) that are related to the cultural profile ('urban cultural value') of a city. Also, the broader socio-economic context and significance of 'urban cultural magnets' is examined. The empirical analysis is based on a large international multivariate data base on the relevant characteristics of 40 global cities, and employs exploratory statistical analysis and regression models in a stepwise way. The analytical framework of our research is based on the overarching concept of an 'urban cultural complex'. The key cultural factors for urban performance are systematically assessed in a quantitative way. The study confirms the relevance of culture for the performance of contemporary large cities.

1. Introduction: culture and the 'New Urban World'

Large agglomerations in the present 'urban century' are growing in size, in number, and in economic importance (see Glaeser, 2011). This pluriform set of permanently growing cities – often moving towards becoming big metropolitan areas or even mega-cities – tend not only to turn into the new social, economic, cultural and technological 'crucibles' of our world, but also to evolve into resourceful and smart global 'urban empires', connected through physical, technological, economic, social, cultural and virtual networks of all kind (see Antwi-Afari et al., 2021; Glaeser et al., 2020; Neal, 2012; Stanley et al., 2017; Suzuki & Patuelli, 2021). This unprecedented and incessant dynamics in the urban history of our planet has recently been called the 'New Urban World' (Kourtit, 2019), reflecting a megatrend towards a new generation of ever growing urban settlements.

Nowadays, global cities all over the world are aiming to become frontrunners, not only from a technological or economic perspective, but also from a socio-political and cultural perspective. The economic history of cities and their socio-cultural performance are often mutually interwoven – witness the historical-cultural heritage in cities like Amsterdam, London, Moscow, Naples, Paris, Tokyo or Vienna. Clearly, urban agglomerations do not exhibit a uniform or identical pattern of development in the urban history of our world. Their profile appears to be highly differentiated, and hence the comprehensive appreciation and impacts of the cultural infrastructure provided by modern cities may also vary, among both residents and visitors. It is interesting that, besides the achievement of economic success, many cities are currently aspiring to become also recognised 'cultural magnets', so as to belong to the elite class of leading 'urban cultural vanguards'.

The present paper ties in with this new development in scientific and policy thinking on urban cultural opportunities in our 'urban

* Corresponding author. Open University, Heerlen, the Netherlands.

E-mail address: k_kourtit@hotmail.com (K. Kourtit).

century'. It seeks to provide an evidence-based methodology for tracing the critical attributes of cultural forerunners among a set of 40 world cities – in both the developing world and developed countries – that may be seen as global vanguards in urban cultural performance. The methodological framework employed in our study is based on the concept of an *urban cultural complex*.

In the present study cities are seen as essentially multi-tasking cultural agents, whose main task is the production and supply of cultural amenities and services to 'culture users', so as to achieve a prominent position among their peers on the competitive cultural performance ladder of cities, both nationally and globally. Using a multi-annual extensive worldwide database comprising cultural, economic and other relevant indicators relating to 40 global cities – in both prosperous and less prosperous countries – the paper seeks to pinpoint the critical characteristics of the best performing cities from a cultural perspective. This database (called the Global Power City Index – GPCI – produced by the Institute for Urban Strategies, Tokyo) contains a wealth of quantitative information on several essential aspects of the cities' cultural performance obtained from various groups of stakeholders (including experts and users) and forms the core data system for our analysis.

The present paper has the following research aims, namely to:

- identify a global ranking of 'urban cultural vanguards' in terms of their comprehensive performance through exploratory statistical analysis;
- assess in a quantitative sense the cultural strength of a large set of global cities from a many-sided and broad contextual perspective (including liveability, environment and accessibility);
- test the validity of the urban cultural complex concept by taking explicitly into consideration urban size and prosperity moderator impacts on urban performance, as well as a range of other relevant socio-economic variables (such as tourism or creativity).

Our study – besides having a broad cultural assessment approach to urban success – will highlight in particular two intriguing research issues, viz. (i) the impact of city size on the cultural performance of a city; and (ii) the significance of differences in prosperity for the position of a city on the global cultural achievement ladder, while other critical variables will be investigated in a second stage.

After this introductory section, the remaining part of the present paper is organised as follows. In Section 2 we introduce the policy context of our study, followed by an outline of the conceptual research framework of our analysis in Section 3. Next, in Section 4 we concisely present the GPCI database and the type of additional information gathered and used for our empirical analysis. Section 5 is devoted to an exploratory analysis of the urban cultural profile indicators in 40 global cities. Next, Section 6 presents the quantitative results of a contextual modelling analysis, using the cultural strength scores derived from the GPCI database, while Section 7 then examines the importance of the broader economic environment, including tourism demand, the housing market, and creativity knowledge factors. Finally, Section 8 makes some concluding remarks.

2. Culture and the city: a policy perspective

Nowadays, we are witnessing a rising interest in culture as an integral part of a balanced and sustainable urban development policy, as may be illustrated by some examples. Culture is, for instance, seen as a key factor in a clearly focussed and competitive annual programme for cities in Europe, called '*European Capital of Culture*'. Every year it seeks to identify a city in Europe with an outstanding cultural profile. Beside tourist attractiveness based on local cultural assets, this choice carries with it high international prestige and recognition.

In another context, the 2030 Agenda for Sustainable Development, published by the [United Nations \(2015\)](#) under the title "*Transforming our World*", presents a plan of action that addresses five major concerns in the contemporaneous global policy arena, viz. *people, planet, prosperity, peace and partnership*. It turns out that human settlements – including, in particular, cities – are directly and indirectly a focal point of this action agenda, with its emphasis on poverty, human health, inclusive education, social empowerment, water management, sanitation, labour markets, infrastructure, urban safety, resilient cities, environmental quality, land degradation, and so forth. This UN declaration also explicitly addresses also culture, and states: '*We acknowledge the natural and cultural diversity of the world and recognize that all cultures and civilizations can contribute to, and are crucial enablers of, sustainable development*' (item 36).

In an important publication by [UN Habitat \(2013\)](#) on '*The City We Need*', a new urban paradigm was launched, based on the premise that "*the battle for a more sustainable future will be won or lost in cities*". It is argued that well-planned cities provide all citizens with the opportunity to lead a safe, healthy and productive life, and at the same time they also favour social inclusion, resilience and prosperity. This UN document mentions several *don'ts* in urban planning and management in the form of policy lessons on things to avoid, such as: lack of coordinated urban policies, poor planning and 'short-termism', disregard of urban-rural linkages, poorly regulated real estate markets, mismanagement by all actors and tiers of government, loss of urban identity, lack of effective participation, and absence of effective implementation and financing mechanisms. It is noteworthy that this report refers explicitly to the loss of urban identity caused by the regretful destruction of *cultural heritage*, local bio-diversity and public space.

Many studies claim that the cultural base of a city is a prominent success factor for the liveability and sustainability of cities. For

instance, in this respect the above mentioned UN Habitat report (2013) claims: “... .. the city we need must recognize local contexts, cultures, and customs”, and: “The city we need has a singular identity and sense of place. It recognizes culture as key to human dignity and to sustainability. It involves cultural actors to unlock the creative potential of all citizens.”

In recent years, a vast series of policy documents focussing on tangible and intangible forms of culture (often related to cultural heritage in cities) has been published as part of a broader international policy agenda on sustainable development.¹ These documents were often produced against the background of rapid and usually uncontrolled worldwide urbanisation with inevitable – often adverse – consequences for culture and historical-cultural heritage. The common policy vision is that cultural values are to be harnessed for the benefit of communities, cities and regions. In this context, historic towns and areas, cultural amenities (e.g., art galleries, museums, churches, theatres, festivals), lively historic districts or streets, or an authentic urban ‘ambiance’ may all act as an attraction force for both residents and visitors, while they may also enable social cohesion and inclusion, especially if there is sufficient attractive public space for sharing identity, cultural values and jointly inspiring urban activities. Culture is then an enabler of mixed urban land use and of urban social buzz externalities which favour liveability, inclusiveness and sustainability in the modern urban fabric. In conclusion, culture is not a luxury, but an urgent necessity in any vital and creative city through its inherent value in articulating the sense of place, history, and identity for inhabitants and visitors.

It is thus clear that, historically and culturally, cities are not simply mechanisms or impartial agents; urban culture is a human construct (see Weber, 1921) and makes the city a cognitive socio-spatial organism. Cities' genesis and evolution are interactively co-shaped by the needs, desires and forces of citizens and local institutions. In addition, culture in the city is not a passive asset; it plays an active role in the satisfaction of its citizens and visitors, as well as in the external appreciation of the city concerned (e.g., in terms of its attraction for tourism or business).

3. Research context

As mentioned above, in the present paper we address the importance of culture in an urban context. The cultural domain is an intriguing area of interest, but in the history of urban science it has rarely played a prominent role. Only in recent years do we witness several publications on *culture-led urban growth* (see Fusco Girard and Nijkamp, 2009; Riganti & Nijkamp, 2009; Rizzo and Mignosa 2013; Kong et al., 2015; Gravagnuolo, Fusco Girard, Kourtit, & Nijkamp, 2021). The awareness has grown that the ‘*homo urbanus*’ is not only a human species acting on the stage of city formation and economic growth, but also an agent who creates or enjoys (urban) culture and is in turn also attracted by the city's potentially strong cultural magnet function (the ‘*urban cultural capability*’ function). Clearly, city size matters, but are there also other drivers involved?

The key determinants of the amazing growth in – and significance of - urban agglomerations (including suburban areas, edge cities, or polynuclear metropolitan regions) are manifold. These determinants comprise not only economic or demographic stimuli, but also technological, infrastructural, political or cultural factors. The rapid urbanisation of our world in recent times has generated a wealth of policy interests and research efforts (see, e.g., Acs, 2016; Batty, 2013; Geyer, 2002; Glaeser, 2011; Kourtit, Nijkamp, & Partridge, 2015, b; Kresl & Ietri, 2019; Zhou et al., 2021; Kissinger & Stossel, 2021). Clearly, a number of different scientific perspectives have been offered in the course of the past decades to enhance our understanding of the complex and dominant socio-economic landscape of cities in the geographical development of our rapidly urbanising planet. These evidence-based attempts to grasp urban lifestyle, culture and urban prominence are diverse and range from *macro-to micro*-based perspectives and analysis frameworks (see also Clark et al., 2002).

A *macro-oriented* analytical perspective on cities takes a helicopter view and seeks to explain urban evolution from a structural or morphological viewpoint in the form of expanding agglomeration patterns and population size, based on a long-range perspective on the macroeconomic, geographical, demographic, cultural and political force field of cities. There is an abundance of such systemic studies in this field. Historically, the seminal work of the great urban sociologist Max Weber (1921) ‘*The City*’ is illustrative of a structuralist thinking in the field of urban sciences. A more recent example of a fascinating contribution to the understanding of the emergence of important and mutually connected urban ‘*crucibles*’ in the world is the broad conceptualisation of what called ‘*topo-dynamic urban corridors*’ all over the globe by Tellier (2009) who addresses the integrated rise of global city connections in the world history. Other modern helicopter views on the ever-rising importance of permanently-growing large urban agglomerations are based not only on historical or political arguments, but also on a wealth of statistical and longitudinal data on urban characteristics and on socio-economic and cultural performance indicators. Recent studies present a map of the hegemony of cities mainly obtained from global ‘*big data*’ patterns of cities and are often inspired by scaling principles derived from nonlinear complex spatial systems analysis (see, e.g., West, 2016; Bettencourt, 2013; Reggiani and Nijkamp 2009).

Parallel to this macro-oriented view on the unprecedented rise of cities in our modern age, we observe an extant literature that is *micro-oriented* and starts from the individual or decentralised behavioural motives of urban agents to explain urban growth from increasing returns to scale – economic, social and ecological – in socio-economic and geographical space (see e.g. Suzuki and Nijkamp 2021; 2020). Despite much individual and spatial heterogeneity in urban areas, the aggregate activity space of spatial decisions on both the supply and demand side of urban agents may often lead to surprisingly well structured spatial patterns – and evolution therein - in

¹ Examples are: The Paris Declaration on Heritage as a Driver of Development (2011) (UNESCO, Paris); The UNESCO World Report: Investing in Cultural Diversity and Intercultural Dialogue (2009) (UNESCO, Paris); The Bali Promise (2011) (World Culture Forum, Bali); The Future We Want for All (2015a) (United Nations, New York); Cultural Heritage, the UN Sustainable Development Goals and the New Urban Agenda (2015) (ICOMOS, Paris); Cities of Tomorrow (2011) (European Union, Regional Policy, Brussels); Urban Agenda for the EU: ‘Pact of Amsterdam’ (2016) (European Commission, Brussels).

Table 1
List of 40 GPCI cities.

REGION	CITY
Europe	Amsterdam, Barcelona, Berlin, Brussels, Copenhagen, Frankfurt, Geneva, Istanbul, London, Madrid, Milan, Moscow, Paris, Stockholm, Vienna, Zurich
Africa	Cairo
Asia	Bangkok, Beijing, Fukuoka, Hong Kong, Kuala Lumpur, Mumbai, Osaka, Seoul, Shanghai, Singapore, Taipei, Tokyo
Oceania	Sydney
North America	Boston, Chicago, Los Angeles, New York, San Francisco, Toronto, Vancouver, Washington D.C.
Latin America	Mexico City, Sao Paulo

Source: Global Power City Index (GPCI) – [Institute for Urban Strategies \(2019, p. 5\)](#).

the form of, for example, concentric urban land use profiles and synergetic socio-economic functions which induce the structural growth of agglomerations (see, e.g., [Alonso, 1964](#); [Glaeser & Gottlieb, 2009](#); [Henderson, 2003](#); [Taylor, 2013](#)). Many of these studies find their origin in microeconomics, but in recent years we also observe a rising tide of micro-based or individually-oriented urban studies originating from behavioural psychology, urban sociology or quantitative geography. Fascinating examples can be found in recent well-being, quality-of-life or happiness studies on cities (see, e.g., [Delmelle et al., 2016](#); [Florida et al., 2013](#); [Kourtiti, Suzuki, & Nijkamp, 2020,b](#); [Östh et al., 2020](#); [Shucksmith et al., 2009](#); [Wahlström, 2017](#); [Wahlstrom et al., 2020](#)).

In the past years, the *micro*-based perspective on culture – defined in a broad sense – has found many applications in individual perception and preference studies, in particular, in discrete choice models, contingency valuation models and conjoint analysis (see, e.g., [Archer & Bezdecny, 2016](#); [Kourtiti & Nijkamp, 2018a,b, 2019](#); [Throsby, 2001](#)). Clearly, the *macro*-based view on ‘*cultural complexes*’ in the city from a broader and collective policy perspective has found several applications, in particular in assessment studies based on cost-benefit analysis, multi-criteria analysis or urban Imagineering studies (see, e.g., [Fusco Girard and Nijkamp, 2009](#); [Gravagnuolo et al., 2021](#); [Mommaas, 2004](#)). Finally, a merger of a micro-based and a macro-based approach to a culture-based urban perspective can be found in [Kourtiti and Nijkamp \(2013\)](#), where individual facebook data were used in an assessment of alternative meso-development plans for a historico-cultural district in Amsterdam.

Be it macro- or micro-oriented, urban theorising and analytics have identified a wide array of socio-economic, demographic, technological, logistic and institutional determinants in seeking to grasp and explain urban dynamics and large-scale urbanisation in a culture-led context. In the wealth of literature on urban economics, planning and architecture, the recent focus on a *meso* base of the city (either at a spatial sub-city level or at a sectoral activity level of cities), which combines individual and collective (or micro and macro) constituents and drivers of urban life is noteworthy. For example, urban geography issues such as neighbourhood and urban district analysis, ‘street-level’ urbanistics, walkable cities ghetto and gated-community research in cities, network-based localisation of urban ethnic enterprises, or local crime research, have all in recent years gained quite some momentum. The same holds for emerging sector-specific topics in a city, such as the urban geography of human health, historical-cultural neighbourhoods, urban green and agriculture districts, informal labour markets in specific urban areas, creative and educational districts, or urban cultural buzz areas (see, e.g., [Arribas-Bel et al., 2016](#)). In many respects, the city is still a mystery and deserves full-scale research attention.

In Section 4 we now sketch out our empirical database against the background of the research aims specified in Section 1.

4. Database and empirical research framing

4.1. Database on global cities

Our empirical investigation is based on an extensive database on global cities. In a worldwide multi-annual panel study on the successful performance of 40 large cities (called the GPCI – Global Power City Index a database produced by the Mori Memorial Foundation in Japan), detailed and systematic multi-annual information on approx. 70 relevant performance indicators have been collected and released. The multivariate database is published every year by the Institute for Urban Strategies in Tokyo. The quantitative indicators are clustered into six main categories, viz. (i) *Economy*; (ii) *Research & Development*; (iii) *Cultural Interaction*; (iv) *Liveability*; (v) *Environment*; and (vi) *Accessibility*.

In contrast to many current popular ranking systems for cities that address only particular domains (e.g., finance, technology, environment, tourism), the GPCI database zooms in on a comprehensive variety of measurable functions – quantified through multiple statistical performance indicators in order to evaluate the global potential and achievement of the cities under consideration, both in the developing world and in developed countries. In this way, a global ranking system of the integral performance of world cities has been created over a 10-year period. In other words, the GPCI database assesses the degree of multidimensional ‘magnetism’ of major world cities, from a comparative perspective, in terms of their attractiveness – or competitiveness for stakeholders and agents (households, visitors and business). In this way, the relative strengths and weaknesses of each city can be uncovered, while, at the same time, the policy focus and options regarding problems to be overcome may be articulated. The merits of the GPCI are thus: its international multi-level comparability and consistent benchmarking; its quantitative and carefully tested performance measurement over many years; its integration of a rich data set with the actors’ needs; and its inventory of information for many policy and marketing purposes (for applied studies see inter alia, [Kourtiti et al., 2017](#); [Suzuki & Nijkamp, 2017](#); [Suzuki & Nijkamp, 2021](#)). The cities concerned can be found in [Table 1](#).

The information contained in the GPCI database is updated annually and employed to create a global ranking of all the 40 large cities included, in order to detect the strengths and weaknesses of the cities under consideration.² In addition, also systematic profiles of five classes of stakeholders based on survey research (e.g., managers, researchers, artists) are collected and presented. It turns out that megacities such as London, New York, Paris and Tokyo usually have the lead in terms of a robust aggregate performance over recent years, whereas several large cities from the developing world such as Cairo, Mumbai, Sao Paulo or Mexico City tend to have low ranking positions. But it is also noteworthy that medium-sized cities such as Geneva, Amsterdam or Stockholm are performing rather well. Among these cities, there is clearly a high degree of heterogeneity at the meso-level of sectors. This observation also holds for the cultural sector in these cities. This leads to an intriguing question in the context of our study: if we would only zoom in on the cultural sector, would the overall cities' ranking then be different from the overall performance ranking? And would this ranking also depend on city size or on the level of prosperity in those cities? This calls for a more detailed empirical investigation of culture in relation to city size and wealth.

4.2. Culture and the city: framing the research

In the same vein as the currently popular Tourism-Led Growth (TLG) concept (see Castro-Nuno, Molina-Toucedo, & Pablo-Romero, 2013; Inchausti-Sintes, 2015; Bride et al., 2016; Liu et al., 2017; Li et al., 2020), we now witness the increasing popularity of Culture-Led or Culture-Driven Growth (see, e.g., Miles & Paddison, 2005; Sacco et al., 2014; Throsby, 2001; Wählin et al., 2016). In various recent studies the notion of cultural capital or cultural resources is employed as a conceptual framing of the idea that culture is a productive asset contributing to urban prosperity or performance (see Snowball, 2008).

The notion of cultural capital already has a long history. It plays a major role in the seminal work of Bourdieu (1986) who interprets cultural capital as a set of accumulated resources that empower individuals and groups to enhance their cultural competence and socio-economic position, e.g., through upward social mobility and rise in status of various kinds. Bourdieu's description of cultural capital differs from the previously mentioned view of Weber (1921) who conceives of local culture as an institutionalised set of local and historically shaped characteristics that determine the urban spirit from a structuralist perspective. Finally, it should be observed that the economic concept of creative and cultural capital and the notion of sustainable development also have quite a long history in shaping urban well-being and quality of life. These notions highlight the added value of urban cultural-oriented amenities which comprise locality-specific tangible and intangible assets (e.g., historical-cultural heritage, historical atmosphere in a city, historically determined social and political institutions or attitudes). Clearly, they also influence the different stakeholders' thinking and co-determine their preferences and values, choices and behaviours (Albaladejo-García et al., 2021). Empirical studies on the latter issues can again be either micro-based or macro-based (see, e.g., Russo & Borg, 2010; Arribas-Bel et al., 2016; Romão, Kourtiti, Neuts, & Nijkamp, 2018; Lagbas, 2019).

The question whether culture matters for urban success or for urban performance has indeed been a source of much empirical research. Various research trajectories can be distinguished in the literature, such as:

- culture as a constituent of an urban production function that generates urban value added (or output);
- culture as an urban attractor for specific types of labour force (e.g. the creative classes) who enhance the quality of urban output;
- culture as a symbol of a wealthy urban life style which may attract well-to-do citizens and artists.

Cities all over the world often have a great wealth of historical, archaeological and cultural goods that mirror their socio-economic, socio-political and historical significance and identity. Culture is by no means an unambiguous concept, but, generally most of the cultural heritage of cities is embodied in cultural amenities such as cathedrals, museums, theatres and the like, which are all part of the 'cultural complex' of a city. In a recent publication on historical-cultural assets in urban regions, Kourtiti and Nijkamp (2019), argue that: 'The cultural-economic significance of cities is determined not only by the supply and use of cultural goods or by the magnet value of historical assets, but also by socioeconomic spillovers to other sectors (e.g., retail development, hospitality revenues, real estate values)' (p. 3). Thus, a cultural cluster is an interwoven collection of various urban cultural assets that are historically embedded in the urban economy and contribute significantly to the economic role of the city.

The use (or demand) value of an urban cultural complex – and of its constituents – is hard to measure, although various solutions (e.g., hedonic pricing, contingent valuation, conjoint analysis) have been proposed to approximate the economic significance of culture in the city (see, e.g., Throsby, 1999; Florida, 2005; Fusco Girard and Nijkamp, 2009; Sanchez Serra, 2016). In our study we address in particular the meso/macro question of the socioeconomic role of cultural magnets (e.g. museums, theatres) in the cultural complex of a city. Based on a wealth of multivariate data on cultural assets in the 40 cities under investigation, we distil an urban cultural value based on a Principal Component Analysis.

In Fig. 1, we sketch out the force field of urban cultural values shaped by its magnet function. Culture and agglomeration advantages (e.g., number of inhabitants, wealth) are linked together, as is evident from urban economic history. But the urban cultural magnet function is also mirrored in a range of success indicators (such as those concerning tourism, entertainment amenities, creativity and well-served transportation systems). Thus, culture has a pivotal role in the urban fabric.

It is clear that culture does not capture a single one-dimensional concept that can easily be measured: there are museums of different significance; there are churches and cathedrals of different size and historical importance; and there are music halls and theatres with

² More information can be found through the following link: <http://mori-m-foundation.or.jp/english/ius2/gpci2/index.shtml>.

Urban Cultural Complex

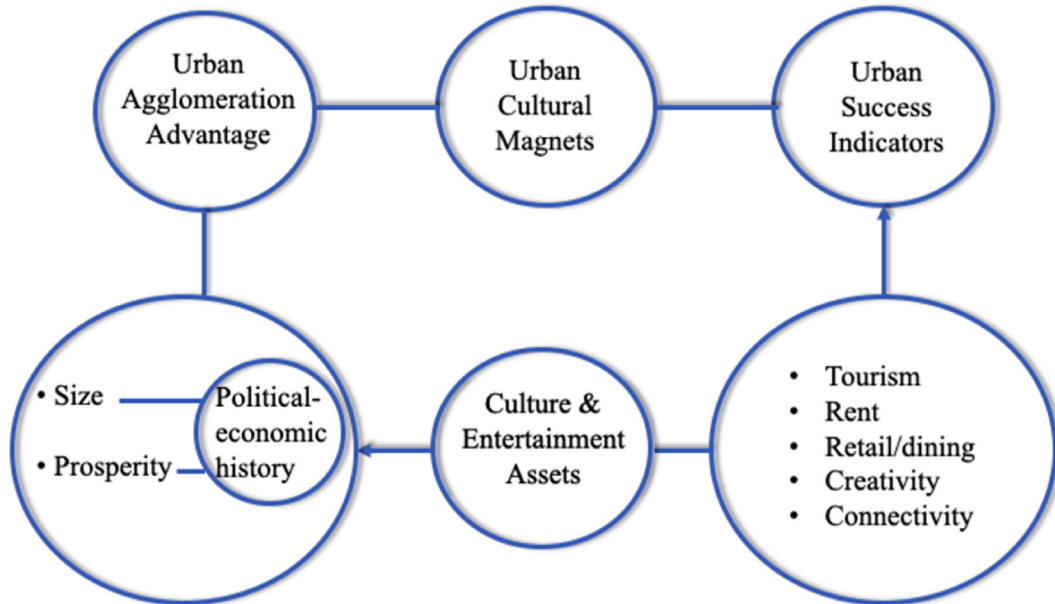


Fig. 1. Mapping the urban cultural complex.

different artistic qualities, etc. Therefore, a single unambiguous cultural indicator is difficult to establish. In much empirical research, we observe therefore, partial statistical experiments to test the correlation between some cultural amenities in the city and one or more urban performance indicators. In light of our extensive database, we adopt in our empirical analysis a triple-step approach: (i) first, in Section 5 we present the global cultural ranking of the 40 cities under consideration, based on the information extracted from the above mentioned GPCI database; (ii) then, in Section 6, we use a Multivariate Principal Component Analysis (PCA) in order to condense the rich but mutually correlated data into a single comprehensive index (the ‘urban cultural value’) and we provide more detailed empirical

Table 2
The set of cultural indicators.

Cultural Interaction	Trendsetting Potential	Number of International Conferences	Working Environment	Total Unemployment Rate
		Number of World-Class Cultural Events		Total Working Hours
		Cultural Content Export Value		Employee Life Satisfaction
	Cultural Resources	Environment of Creative Activities	Cost of Living	Housing Rent
		Proximity to World Heritage Sites		Price Level
		Cultural Interaction Opportunities		Security and Safety
	Facilities for Visitors	Number of Theaters and Concert Halls	Economic Risk of Natural Disaster	
		Number of Museums	Life Expectancy	
		Number of Stadiums	Well-Being	Social Freedom and Equality
	Number of Luxury Hotel Guest Rooms	Risk to Mental Health		
Attractiveness to Visitors	Number of Hotels	Number of Medical Doctors		
	Attractiveness of Shopping Options	Ease of Living	ICT Readiness	
	Attractiveness of Dining Options		Variety of Retail Shops	
International Interaction	Number of Foreign Residents		Variety of Restaurants	
	Number of Foreign Visitors			
	Number of International Students			
Environment	Ecology	Commitment to Climate Action	International Transportation Network	Cities with Direct International Flights
		Renewable Energy Rate		International Freight Flows
		Waste Recycle Rate		Transportation Infrastructure
	CO2 Emissions	Number of Runways		
	Air Quality	SPM Density	Inner-City Transportation Services	
		SO2 and NO2 Density		Public Transportation Coverage and Punctuality
	Natural Environment	Water Quality		Travel Time to International Airports
		Green Coverage	Commuting Convenience	
		Comfort Level of Temperature	Traffic Congestion	
			Traffic Convenience	Taxi Fare

findings from a set of partial regression analyses between distinct urban performance (or success) indicators and cultural indicators of the city; (iii) finally, we examine the relationship between the wider urban economic system and the cultural profile of a city ('urban cultural value'), including a range of more general background variables (Section 7).

5. A comparative analysis of cultural performance of global cities

In this section we analyse the cultural performance results of the 40 global cities in a series of analytical steps. Based on the cultural performance indicators from the GPCI database, we present in a stepwise way our findings, in which – in addition to the composite GPCI indicators – also urban size and prosperity of the cities play a distinctive role as moderator variables. The cultural indicators selected from the GPCI data base are contained in Table 2 (for details, see, e.g., [Institute for Urban Strategies 2016](#)). They contain information on both direct cultural variables and surrounding or contextual variables, so they provide broad information on the cultural profile of a city and its context. A comprehensive expression for the value of cultural assets in each city can then be obtained, for each of the four groups of categories in Table 2.

On the basis of systematic and multivariate statistical GPCI data analysis, the total scores of the four types of relevant indicators for each of the 40 cities are determined; all quantitative information can be derived from the available original GPCI database. The related aggregate cultural performance ranking or success profile of the 40 cities (in alphabetical order) can be found in Fig. 2. This figure clearly demonstrates the relative overall cultural dominance of cities like London, Paris, New York, Tokyo, Amsterdam, Vienna, Singapore and Berlin. It is also clear that cities like Cairo, Johannesburg and Jakarta are the lowest ranking cultural cities. Clearly, there is quite some variability in cultural performance among the 40 cities under consideration. This calls for a more detailed statistical analysis (using multivariate statistics and regression analysis (see Sections 6 and 7).

6. Contextual factors of urban cultural success

6.1. Introduction

In this subsection we will first contextualize our empirical research. The existing literature on the quality and quantity of urban cultural amenities and the urban historico-cultural ambiance (see, e.g., [Fusco Girard and Nijkamp, 2009](#); [Kotler et al., 1999](#); [Middelton, 2000](#)) suggests various key factors that shape the cultural strength of a city. Indicators for the cultural success of a city are in particular: number of theatres, concert halls, museums, other cultural resources, entertainment amenities, etc. However, a city has a complex magnet force for visitors that is not only related to culture in a strict sense. There are also entertainment amenities (e.g., sports halls) that attract many visitors. And, therefore, the cultural profile indicators will be extended with these additional features of the urban cultural environment. Consequently, the relevant data were not only distilled from the GPCI database, but also complemented with urban visitors' data on amenities extracted from the TripAdvisor platform (in particular, on the broader cultural environment and 'things to do'). These were then included in aggregate form in the multivariate PCA approach and formed next an ingredient of the 'urban cultural value'.

Clearly, city size and wealth may act as critical covariates. The prominent determinants of cultural strength, performance or success often used in empirical research on urban culture – and also employed by us – are:

- the size of the city (e.g., population) (see [Subsection 6.2](#));
- the prosperity of the city (e.g., income per capita) ([Subsection 6.3](#)).

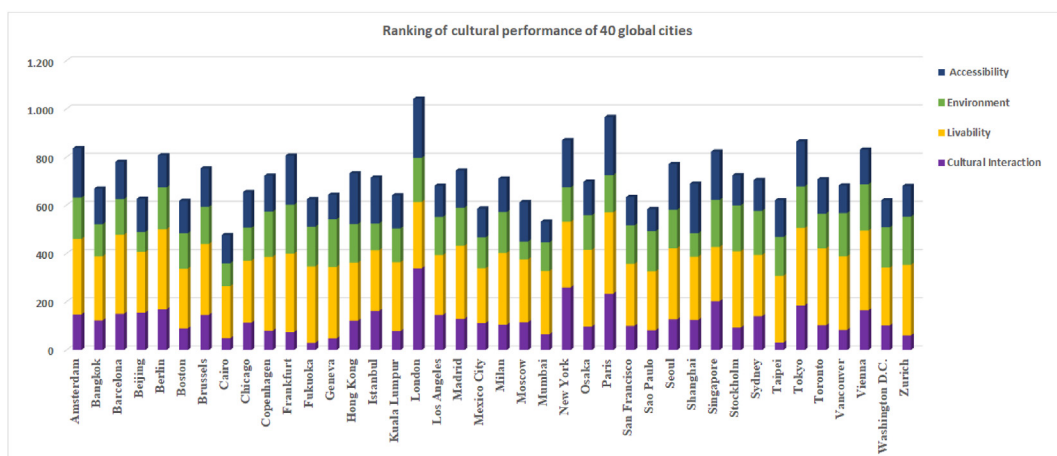


Fig. 2. Ranking of cultural performance of 40 global cities.

Source: Global Power City Index (GPCI) – Institute for Urban Strategies (2016); authors' own compilation.

It should also be noted that culture is usually a longstanding asset which may date back many centuries. The presence or availability of cultural amenities or a cultural ambiance may therefore, be co-determined by the economic or political history of a city. Hence, in the context of our research we add, a specific historical variable, based on the political and economic history of the city concerned: namely, by making a distinction between ‘mercantile’ and ‘imperial’ cities. Of course, such classes of cities can again be subdivided on the basis of size and prosperity indicators (see for a more detailed analysis Subsection 6.4).

6.2. Urban size and culture

In our empirical research, we first correlate the stock of cultural assets in a city with its population (see Fig. 3). We take the natural logarithm to reduce heteroskedasticity in the model and so to arrive at a more stationary pattern. The partial regression results show a clearly positive relationship between the (ln) size of the 40 cities from the GPCI database and the volume of longstanding cultural amenities (number of theatres, concert halls, museums, and cultural resources (local environment of creative activities), and ‘things to do’). These findings appear to be statistically significant. Fig. 3 shows that the ‘positive’ outliers are Paris, New York, London, Beijing, Moscow and Tokyo. This finding is in agreement with the visualisation of the first general ranking results in Fig. 2, with the exception of Moscow and Beijing (the relatively high position of Moscow and Beijing in Fig. 2 is caused by the size-income ratio in these cities).

6.3. Urban income and culture

The average income per capita (in ln) in a city is clearly a welfare indicator with a high degree of intra-city dispersion in socio-economic equality. The correlation – as a cross-section over all 40 GPCI cities – with cultural assets appears to be non-existent (see the correlation results displayed in Fig. 4). There is no clear or distinct pattern in the cloud of 40 observations, as is shown in the low R-squared value. A plausible explanation is that, especially in developing countries, masses of people move to the big cities for job reasons which are likely unrelated to the cultural values of the city. In this case, more place-based research would be needed to arrive at general conclusions.

6.4. ‘Imperial’ vs. ‘mercantile’ cities and city size

As mentioned above, in many parts of the world, culture has a longstanding history, in which culture was often part of an ‘imperial’ style in correspondence with the historical ‘grandeur’ of a national capital (e.g. Paris, London, Vienna, Moscow), while in other cases an abundance of cultural assets in a big city would symbolise a wealthy (‘mercantile’) position. Figs. 5 and 6 depict respectively the correlation results for the distinction between ‘imperial’ cities (i.e., capital cities before the year 1900) and the remaining significant wealthy (‘mercantile’) cities in relation to urban population size (in natural logarithms). The correlation results appear to be significantly positive for the year 2016. The cities with both an ‘imperial’ history and a ‘mercantile’ history appear in general to be well endowed with cultural assets, as can be seen from Figs. 5 and 6.

Fig. 5 shows a linear relationship between the size of ‘imperial’ cities and their cultural assets. There are a few outliers, on the positive side, viz. Tokyo and Moscow, and a few outliers on the negative side, viz. Cairo, Mexico City, and Bangkok.

The correlation results from Fig. 6 show a rather regular linear connection between the (ln) size of ‘mercantile’ cities and the

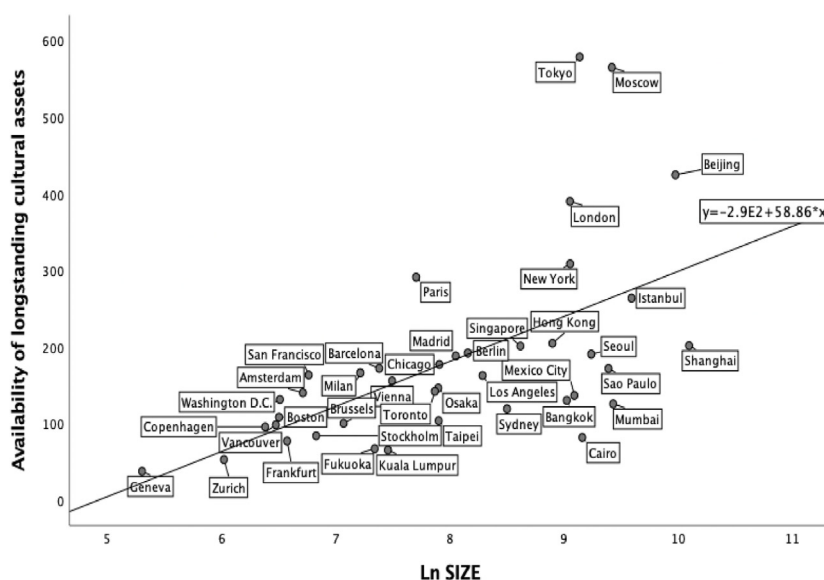


Fig. 3. Correlation between city population and volume of longstanding cultural assets.

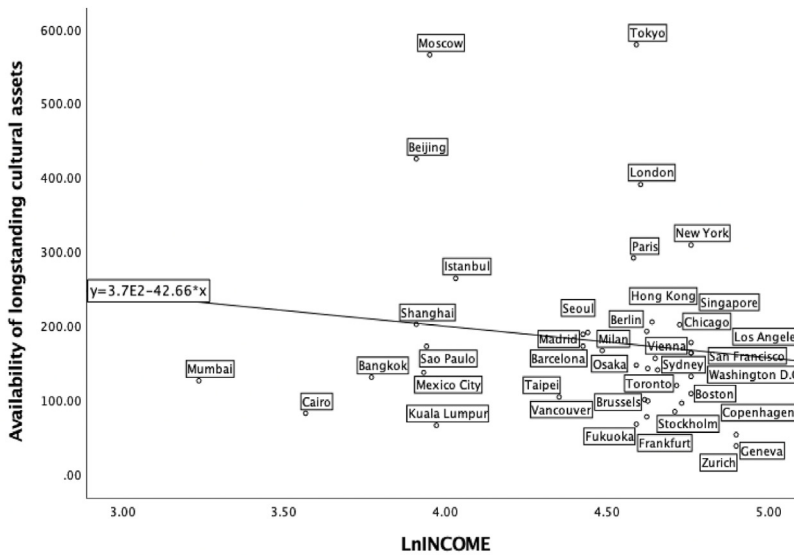


Fig. 4. Correlation between income and volume of longstanding cultural assets.

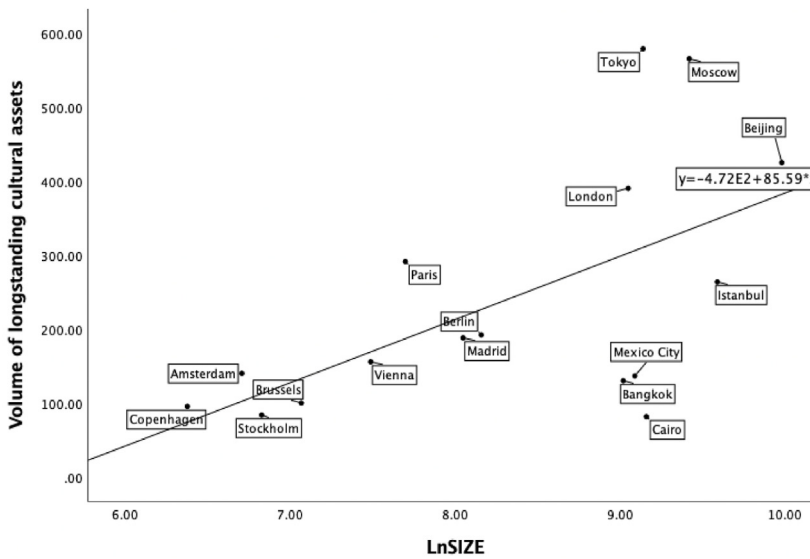


Fig. 5. Correlation between size of ‘imperial’ cities and volume of longstanding cultural assets.

availability of longstanding cultural amenities. There is only one outlier, viz. New York, which has – relatively – an abundance of cultural capital relative to its size.

6.5. ‘Imperial’ vs. ‘mercantile’ cities and prosperity

Given the negative results from Fig. 4, it can easily be seen that the correlations with city prosperity per sub-category will not show interesting patterns; the scatter diagrams are very dispersed. In the light of these less interesting results, already clear from Fig. 4 on the relationship between urban prosperity and cultural assets, we will not present here the scatter diagrams for the regression on ‘imperial’ vs. ‘mercantile’ cities.

6.6. Summary

The partial correlation analyses carried out above illustrate clearly that urban culture and urban success (in terms of the magnet function of urban size) show a general, positive relationship worldwide. In contrast, the direct correlation with urban income appears to

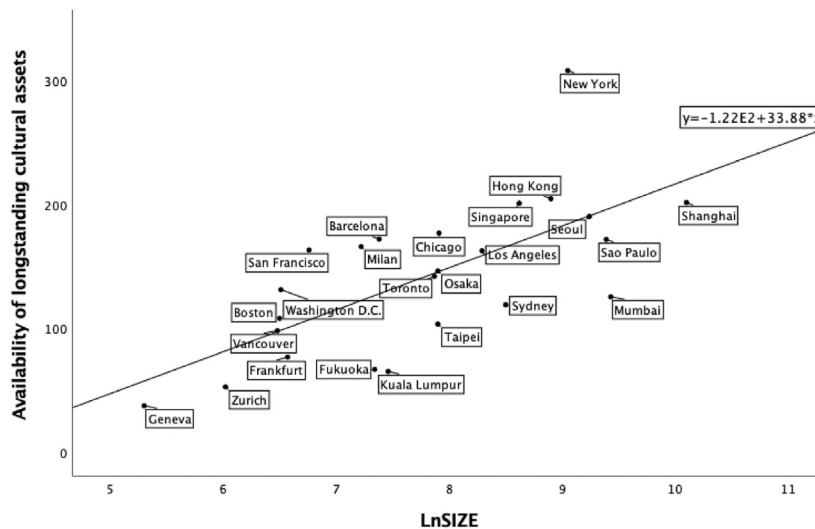


Fig. 6. Correlation between size of ‘mercantile’ cities and volume of longstanding cultural assets.

be largely absent. In the light of the above findings we may therefore conclude that the cultural performance of a city and its size tend to run parallel for many global cities. Clearly, there may be – besides cultural capital – other relevant moderator variables that induce urban success. This will be discussed in Section 7.

7. The broader economic environment of urban cultural success

The previous analysis of the cultural performance of the city – in relation to key background conditions – has captured mainly supply-side characteristics which have shaped the ‘urban cultural complex’. Cultural assets play an important economic role and generate, in general, several jobs in the city and meet the demand of clients or users, in particular visitors (or tourists). For a fuller picture though, it is also important to pay more detailed attention to the demand (user) side including also local visitors’ attractiveness, employment benefits, housing market conditions, knowledge and creativity orientation, and logistic connectivity. To analyse such effects we now employ the systematics from the urban cultural complex model sketched out in Fig. 1. It is then pertinent to collect for all 40 cities appropriate data on local employment levels (as an indicator of local well-being), as well as on volumes of tourists, while it is also interesting to examine whether urban events (e.g. big conferences, sports manifestations) that favour urban social interactions may be a complement to the volume and quality of cultural capital in the city in relation to urban success. In addition, correlation results on housing prices, creativity and knowledge orientation, and transport connectivity of the cities concerned will be provided.³

7.1. Culture and visitors: the outside world

There is an extant literature on the relationship between urban culture and visitors to the city (for an overview, see Fusco Girard and Nijkamp, 2009; Kourtii & Nijkamp, 2019). Especially in the context of a tourism-led-growth (TLG) strategy, culture is often seen as a major vehicle for generating economic benefits from tourism. The assumption that a high urban cultural value (measured as the availability of longstanding cultural assets) and the volume of tourism have a positive relationship has been tested by means of the above-mentioned GPCI database (complemented with TripAdvisor data). The results are mapped out in Fig. 7. These findings show that there is a positive correlation between the natural log of tourist volumes and cultural capital in the 40 global cities at hand. There are a few negative outliers (Mumbai, Taipei), but most global cities seem to be concentrated in an upward-sloping stretched cloud.

It is also interesting to observe that many global cities which are able to attract many visitors through their cultural complex also seem to be in a position to organise major events (sports events, large conferences, important manifestations). This may be a good strategy in view of the optimal use of hotel capacity and, in general, of all facilities offered by the hospitality sector in a large cultural sector in the city. This correlation is mapped out in Fig. 8, which largely confirms the above hypothesis of complementarity between the cultural sector and the event sector in cities.

It is often argued that visitors and tourists generate welfare in the city, in conformity with the TLG approach. Thus, it seems plausible to assume that large cultural cities with a significant presence of cultural capital may also show favourable employment figures. This hypothesis was tested and confirmed (see Fig. 9), with two interesting positive outliers from China, viz. Beijing and Shanghai.

³ We also tested the relevance of urban security and safety, but in none of our regressions did this indicator turn out to be significant for our sample of 40 cities.

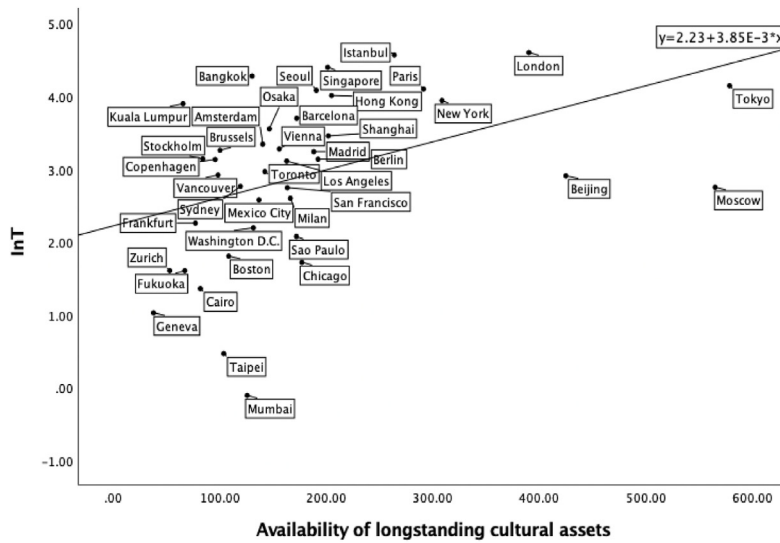


Fig. 7. Correlation between volume of longstanding cultural assets and tourism.

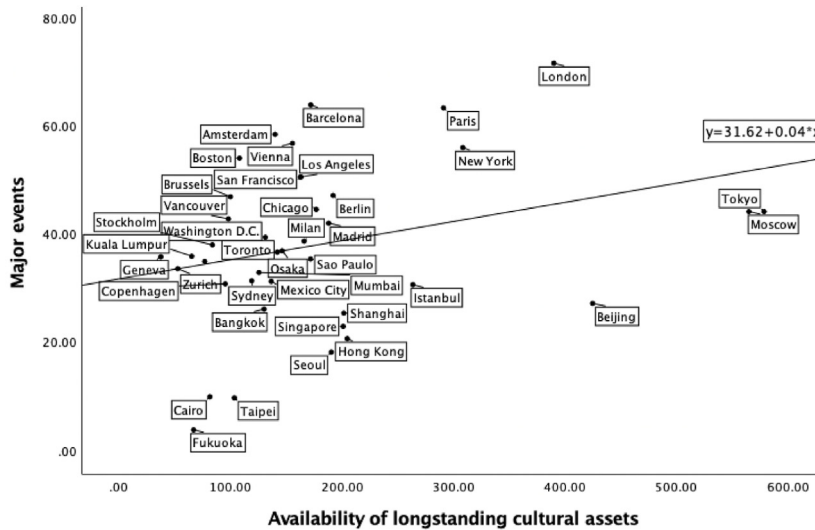


Fig. 8. Correlation between volume of longstanding cultural assets and events.

7.2. Culture and residents: the inside world

Culture may provide a positive contribution to urban welfare through external visitors (as we have seen in Subsection 7.1), but the attractiveness of a city may also have implications for housing prices inside the city. Clearly, urban housing markets are complex phenomena that are influenced by many factors (e.g., population demography, economic development, immigration), but it may be interesting to examine whether a culture-rich city may also have relatively high house prices. The results are presented in Fig. 10 and confirm the above hypothesis.⁴

7.3. Culture and ‘client ambiance’

Culture in a city is not a stand-alone activity; it presupposes the existence of supporting amenities. In the age of leisure time, with mass volumes of tourists entering popular tourist destinations, the presence of shopping and dining facilities are also part of an attractive

⁴ The above exercise was also undertaken for the rent level of studios and living spaces in all 40 cities. These results appeared to be consistent with the findings from Fig. 10.

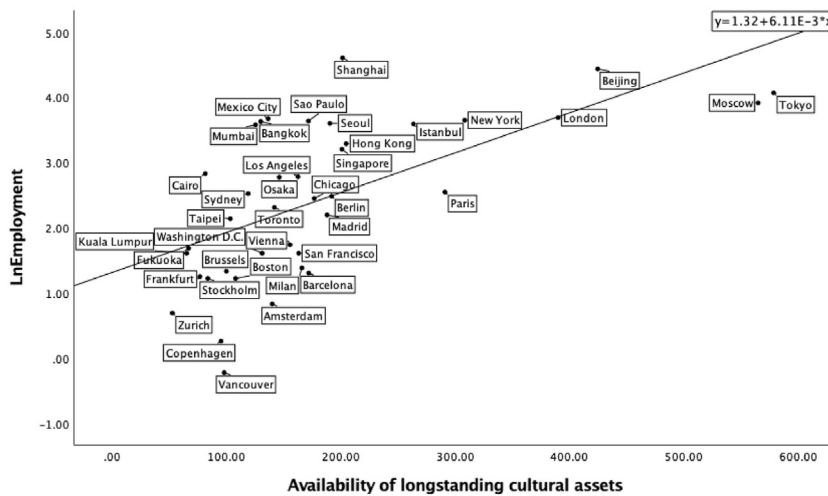


Fig. 9. Correlation between volume of longstanding cultural assets and urban employment.

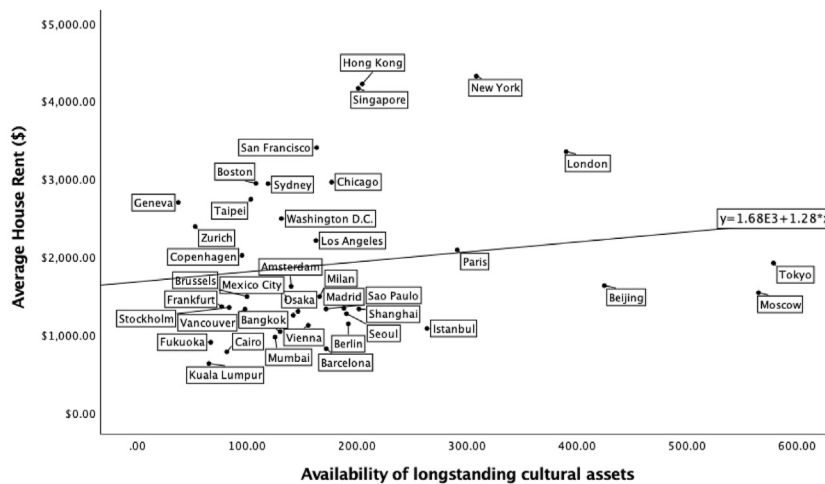


Fig. 10. Correlation between volume of longstanding cultural assets and average house rent.

urban cultural ambiance. Consequently, it seems likely that culture and cuisine and client orientation are positively correlated. This is indeed confirmed by the findings in Fig. 11. There are – as expected – a few very positive outliers, viz. Tokyo, New York and Paris, while Moscow and Beijing belong to the negative outliers.

7.4. Culture and creativity

The literature on the creative class (see Florida, 2005) has argued that the creative mind is greatly stimulated by the presence and enjoyment of cultural capital in a city, ranging from a rich historico-cultural ambiance to the abundant presence and enjoyment of cultural and artistic performance opportunities. An extensive overview and applied statistical analysis of this issue can be found in Kourtii and Nijkamp (2019). In our comparative study of 40 cities we have also tested the assumption that urban creativity – proxied by the urban research achievements (the number of registered industrial property rights) measured in terms of patents – is positively correlated with the available cultural amenities in a city. The results are given in Fig. 12, and confirm our hypothesis. Outliers (positive) are Seoul and New York, while outliers (negative) are Moscow, Beijing and London.⁵

⁵ We also performed a regression analysis with alternative urban research achievement indicators (no. of winners of highly-reputed science and technology prizes; and the ranking of urban universities in the world's top 200 universities), but these results did not provide new insights.

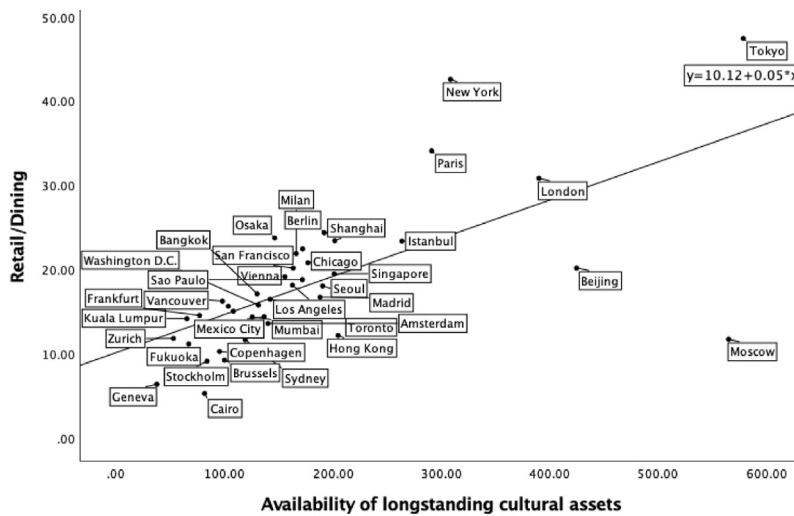


Fig. 11. Correlation between volume of longstanding cultural assets and retail/dining.

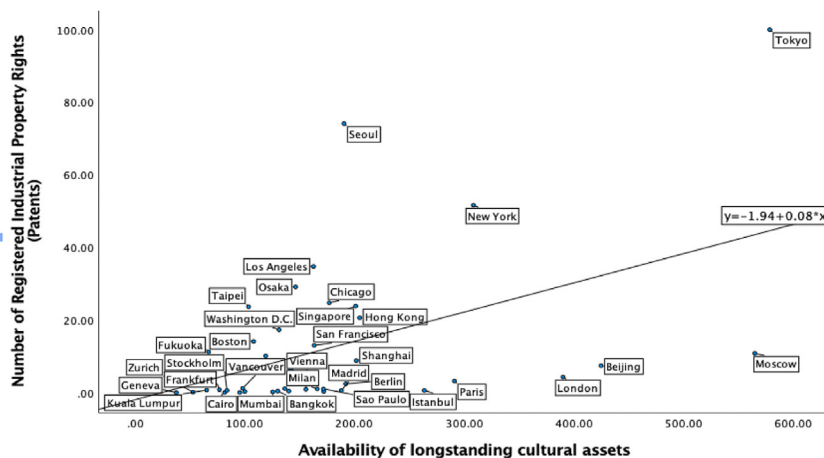


Fig. 12. Correlation between volume of longstanding cultural assets and patents.

7.5. Culture and connectivity

Cultural cities also derive their importance from their connectivity (e.g., linkage to local or international networks), which is often measured in terms of intra-urban connectivity and inter-urban accessibility. Again using the same GPCI database, we were able to produce Fig. 13 (regression diagram between urban culture and intra-urban transportation quality (intra-urban connectivity) and Fig. 14 (regression diagram between culture and (inter)national transportation linkage (inter-urban accessibility)). To a large extent, both figures confirm our hypothesis,⁶ that the quantity and quality of cultural assets in a city go hand in hand with its accessibility.

8. Retrospect and prospect

Structural and incessant urbanisation has become a prominent characteristic in many parts of the modern world. The current ‘urban century’ and its related global mobility have created a vast array of research and policy challenges, such as tourism-crowding effects, loss of local identity, disaster vulnerability, and decay of urban cultural history. It is clear that the highly praised UN Sustainable Development Goals (SDGs) are at stake here, in particular in regard to the ecological quality and cultural landscape of the city. The awareness is growing that culture is an important key to sustainable development in the ‘urban age’. The concept of a balanced culture-led social

⁶ Similar experiments were carried out for alternative related indicators, viz. the number of direct international flights, and the service level and coverage of public transportation.

- the results of our empirical investigation show pluriform outcomes, not only in terms of GPCI scores, but also in terms of general welfare levels and agglomeration size;
- the generic effects of the size and prosperity of global cities as cultural magnets are only positively confirmed in our empirical analysis for urban size, but not for income;
- a range of complementary background variables (e.g., housing market prices, jobs, tourists, retail facilities, creativity, connectivity) is also clearly associated with long-standing cultural assets in cities;
- the structural urbanisation of our world prompts inter-urban competition, not only in general, but also in particular regarding the cultural magnet function of global cities;
- culture-led urban growth becomes a popular policy signpost, and hence the success of this policy objective calls for a careful empirical investigation.

In conclusion, large cities play a significant role in the global urban arena, in which the quality of cultural services – and their efficiency – is of key importance. It is also evident from our research that city size and the nature of cultural amenities are important success conditions. Admittedly, the pluriformity of cities in our world – in terms not only of size or population growth, but also of cultural amenities – does not lead to uniformly valid conclusions on the ‘raison d’être’ of urban cultural vanguards all over the world. Intervening variables such as urban wealth, cultural history and place-based cultural services may also exert an important influence, so that straightforward and unambiguous conclusions need solid follow-up research, in which the concept of an urban cultural complex may play a pivotal role. Consequently, a further systematic uniform culture-based examination of cities according to their basic characteristics seems to be a logical approach to find evidence-based area- and sector-specific results for the culture policy strategies of cities.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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