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The global urban elite: the sources of wealth and residential networks of the super-rich in 10 cities

Rowland Atkinson [a], Katie Higgins [b] and Jonathan Bourne [c]

ABSTRACT

We report on work using new data to offer profiles of the resident wealth elite of 10 key cities across the globe. We look at the wealth elites of Frankfurt, Hong Kong, Johannesburg, Lagos, London, Mexico City, New York, Rio de Janeiro, San Francisco and Sydney – cities with among the greatest concentrations of the super-rich in each global region. Using machine learning techniques applied to commercial data on the super-rich we consider what this data tells us about each city elite's: (i) sources of wealth by industrial sector, (ii) dynastic or 'self-made' bases of wealth, (iii) global distribution of the residences that they own and, finally, (iv) a typology of the character of each city's wealth elite. We conclude with a brief discussion of the value of using machine learning to help us understand wealth elites in a context of growing unease around expansions in urban wealth inequalities.

KEYWORDS

Wealth elite; social elites; cities; wealth; second homes; super-rich

JEL R; D31; D63
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1. INTRODUCTION

The rich have become an important focal point for the social sciences, with new work raising questions about their influence on urban settings (Atkinson, 2020), on the ways in which their capital is directed at assets in the built environment (Rogers & Koh, 2017), their social and physical mobility (Knowles, 2022), and the reproduction of dynastic forms of family and corporate wealth in urban settings (Higgins, 2022). Alongside these research efforts, public scrutiny of wealth elites and the sources of their wealth can be linked to increasingly unstable, unequal and challenging social and political conditions (Piketty, 2020). Despite emerging work on the rich, many basic questions about the composition, location and sources of wealth of the rich in urban spaces has not been developed at a global scale, or between key metropolitan centres. This has often been due to a lack of data within cities, or a similar absence of sources at the global scale (excepting the frequently reported national surveys offered by banks and wealth

CONTACT Rowland Atkinson rowland.atkinson@sheffield.ac.uk
[a] Department of Urban Studies and Planning, University of Sheffield, Sheffield, UK
[b] Department of Social Policy and Intervention, University of Oxford, Oxford, UK
[c] Centre for Advanced Spatial Analysis, University College London, London, UK

management institutions). Our aim here is to present an empirical analysis using commercial data to offer a sketch of the top segment of the wealth elite of 10 cities.

Cities have long been identified as core centres of power, leisure and the reproduction of wealth elites (Mills, 1956; Pinçon, 1999). While the wealthiest often own more than one residence, may have more than one passport, and are in general highly mobile (Birtchnell & Caletrio, 2014), it remains the case that they tend to focus their time in particular places and to engage with the institutional landscapes and the key power networks of key cities (Forrest et al., 2017a, 2017b; Knowles, 2022). While research has examined the local networks and effects of wealth elites in different urban spatial settings and institutions (Holmqvist, 2017; Pow, 2017; Pinçon, 1999; Stein, 2019; Wiesel, 2018), little is known about the broad composition of the uppermost wealth elite of cities around the world. Social scientists have more often tended to use available data sources to try to map the broad geographical distribution of the extremely wealthy within specific cities (Beaverstock et al., 2004; Beaverstock & Faulconbridge, 2013; Beaverstock & Hay, 2016; Burrows et al., 2017; Koh et al., 2016).

In this article, we offer a data-driven profile of the wealthiest 400 residents of 10 cities – Frankfurt, Hong Kong, Johannesburg, Lagos, London, Mexico City, New York, Rio de Janeiro, San Francisco and Sydney. We begin by detailing existing research on the wealth elites of cities and their work or industry activity, their financial roots and residence patterns to frame the following analysis which details these aspects of the wealth elite in each city. Our methodological approach is then described and the specific techniques we have used to analyse the profiles of each city's richest individuals. We then present our key findings on the sources of wealth of the rich (by industrial sector), the extent of inheritance as a source of wealth, and a network analysis of their homes around the globe. We end by offering a typology of the cities based on a composite of the three elements we have been able to analyse and offer some suggestions of the implications of our findings for future social scientific analysis.

2. URBAN WEALTH ELITES

How we understand and measure the global distribution of the rich depends on how we define this group. According to the economist Milanovic (2016) the top 1% of individuals in terms of income (not wealth) worldwide (adjusted for purchasing power parity, and after taxes) amount to about 70 million people in 2008. Half of this group live in the USA and a little more than a third live in Western Europe, Canada and Oceania. While residents of Japan represent one tenth. The rest of the world constitute less than one tenth of this global 1%. However, the World Inequality Report in 2018 demonstrates that over the last four decades, the incomes of the top 1% – and even more so of the 0.1%, 0.01% and the 0.001% – have been rising at a much faster pace in China, India or Russia than in the USA and Europe (Alvaredo et al., 2018). Geographies of extreme wealth have thus spread beyond the Anglo-European context in recent decades.

Over the last two decades, inequality has decreased *between* countries, particularly as some economies have seen rapid growth. At the same time, inequality has increased *within* most countries (Bourguignon, 2015; Chancel et al., 2022). Here it is also important to note that the twenty-first century has seen a 'growing metropolitanization of capitalism' (Le Gales & Pierson, 2019, p. 48). Many cities across the world have become important hubs for contemporary wealth elites, who 'depend on, mobilise in, and accumulate in cities' (Savage, 2022, p. 239). This trend has seen the rise of the plutocratic city in which raw money-power increasingly dictates urban social, political and symbolic landscapes (Atkinson et al., 2016).

While analysis of inequalities at the level of the city poses challenges in terms of getting adequate data and knowing where to draw city boundaries, Savage (2022) uses the Palma ratio, which is defined as the share of income taken up by the top 10% of urban residents compared to the bottom 40%, to rank the most unequal and most equal major cities in the world. Of

the twenty most unequal cities in the world in 2016, this ranking includes five of the cities we are focusing on here – Frankfurt, Johannesburg, Lagos, New York and Rio de Janeiro (p. 235). Of the ten most expensive cities in the world in 2018, this ranking includes four of the cities we are focusing on, namely Hong Kong, London, New York and Sydney (p. 244).

Wealth elites often invest in real estate primarily in 'first-tier' global cities (such as London, New York and Singapore) and luxury tourist destinations (such as Courchevel, Cabo San Lucas and some islands in the Caribbean), and secondarily in 'second-tier' global cities that are simultaneously urban cultural centres (such as Paris, Amsterdam, Miami) (Lauermann & Mallak, 2023). These sites are 'woven together in a web – a virtual country of the super-rich' (Hay, 2013, p. 8) over which movements of wealthy bodies, their capital and assets flow are fixed in luxury spaces, whether these are primary or one of several additional homes (Paris, 2017).

The neighbourhoods of the resident super-rich, whether in Sydney, Johannesburg or Rio de Janeiro, can be understood as spaces where the urban rich accumulate capital in its varied economic, social and cultural guises (Holmqvist, 2021; Wiesel, 2018); and as sites were elite residents can increasingly withdraw behind more securitised, gated urban designs (Morales et al. 2021). The security concerns of wealth elites may also mean they are less likely to allow their secondary residences to be known in the public realm. For instance, Johannesburg has extensive demographic, political, and economic connections with Africa, Asia, Europe, and North America that date back to colonial times (Crankshaw & Parnell, 2004), but relatively few of its super-rich residents appear to be linked with secondary residences compared with other cities.

Buying a property in the most desirable neighbourhoods in the most desirable cities allows the wealthy to fix capital in place via housing assets, while retaining high levels of mobility through private transport systems. Housing is often perceived to be a stable asset that enables access to the social circuits of key destinations, while also being capable of acting as a 'safe deposit box' that can be accessed if needed (Fernandez et al., 2016). In 2012, 85% of all high-end residential real estate in London and 50% in New York was bought by foreign buyers (Sassen, 2014). More recently, it has been estimated that around half of all prime sales in London are to overseas buyers by luxury agents (Atkinson, 2020). Using a study of largely vacant luxury condominiums in London, Atkinson (2019) terms the resulting phenomenon 'necrotecture', 'a built environment that is almost solely in service of capital investment rather than the creation of homes and social value' (p. 3). These luxury modes of elite emptiness in city cores as the result of investment patterns by the wealthy have been identified in cities like New York, Paris and Vancouver (Soules, 2021).

The remnants of empire are visible in the ongoing prominence of cities such as London, New York, and Hong Kong (although the situation of the latter is increasingly unstable) as hubs of financial, social and cultural capital for diverse wealth elites (Atkinson 2020; Ho & Atkinson, 2018; Knowles, 2022; Mears, 2020; Wissink et al., 2017). Whereas Frankfurt – situated with substantial concentrations of wealth – may be positioned more as a regional financial hub for continental Europe (Florida et al., 2016). The wealth of urban residents in our typology also mark the ascendency of novel sources of wealth, as with San Francisco, where the rise of the IT industry has transformed the whole Bay Area in recent decades, helping to accelerate the gentrification of the central city and Silicon Valley (Storper et al., 2015). A boom in commodities such as oil, natural gas and minerals have been a large driver for Nigeria's economy and the immense wealth of a fortunate few in Lagos (Mayah et al., 2017).

The wealth management industry has contributed to the production of the super-rich as an identifiable social group. Through the publications of annual wealth reports, press releases, infographics and new data, the research arms of the industry have helped to discursively produce the clientele that it serves and seeks to court. Indeed, reports on wealthy lifestyles, luxury spending and investment preferences (Knight Frank, 2024) have helped to solidify the impression of a coherent group with identifiable, if not homogenous, tastes, beliefs and residential aspirations (Koh et al., 2016). In the mid-twentieth century, the highly influential work of C. Wright

Mills in his work on the power elite in the USA (1956), mapped cleavages, between old and new money, in and out of town social roots, and by differing educational background and industry sources. More recently, commercial data analysts still highlight variations, by city and by nation, in the industrial sources of the resident super rich's wealth, whether fortunes are recorded as 'self-made' or dynastic in origin, and which residences are most attractive for a highly mobile elite.

Academics now draw on data published by companies specialising in wealth research to estimate the extent and geographical distribution of the extremely wealthy across the globe (Beaverstock et al., 2004; Beaverstock & Faulconbridge, 2013; Beaverstock & Hay, 2016; Burrows et al., 2017; Koh et al., 2016). For instance, in their examination of the 'alpha territories' of London, Burrows et al. (2017) draw on commercial classifications as a means of offering a 'sensitizing conceptualization', 'a general sense of reference and guidance in approaching empirical instances … [that] … merely suggest directions along which to look' (Blumer, 1954, p. 7). This work has helped to locate the rich in social and physical space and provided one route to generate intermediate conceptualizations of the urban rich as a socio-spatial phenomenon. This has led to the development of typologies of elite urban space, such as the reworking of the socio-demographic elite 'alpha territory' classification used by commercial data provider Experian (Burrows et al., 2017, p. 190).

The citation of commercial data by non-governmental organisations (NGOs) (such as Oxfam, 2023) and academics (Burrows et al., 2017) has lent a mark of veracity to commercial sources which otherwise are often built on opaque methodologies, given the proprietorial nature of the data – a risk we acknowledge in our own contribution here. However, given the difficulty of collecting data on the ultra-wealthy, we nevertheless make a case for the value of analysing this previously unstudied commercial dataset to sketch three key characteristics of the urban rich across ten cities.

3. METHODOLOGICAL APPROACH

Our analysis draws on a commercially produced database that was first created in 2010 by the company Wealth-X, and which now claims to hold the world's largest collection of records on wealthy individuals. The database is a large number of profiles of people around the world who are identified as being ultra-high net worth individuals (UHNWIs). Each dossier has 19 sections covering financial and personal information, including net worth, age, hometown, clubs and boards, known associates, their places of education, and known philanthropic interests. There is also a biography describing the individual's family background and career. In relation to the analysis that follows, it is important to note that not all of the profiles offered enough data (sometimes none at all) that would allow us to determine which economic sector they occupied.

Wealth-X determines primary residence on the basis of whether a property is owned privately (not via a company), where the owner spends most of their time over the course of the year which is based on where the property owner's primary business is based. Secondary homes, which we also examine here, are determined by whether these properties are held by the same person and also held privately. Each individual in the dataset is located in a city by virtue of where they are registered for tax purposes, within the world's 200 major cities ranked by GDP. Cities are defined on the basis of urban agglomerations (UAs) and metropolitan (metro) areas, which include the built-up areas outside the administrative core, rather than city administrative cores because more residents are likely to work and spend within the metro/UA boundaries. The valuations for each individual based on estimation of net worth defined by asset holdings, including privately and publicly held businesses and investable assets, but excluding the value of fixed capital assets like homes.

Drawing on Mills' (1956) analysis of the 'Metropolitan 400', our analysis focuses on the richest 400 residents of the cities of Frankfurt, Hong Kong, Johannesburg, Lagos, London, Mexico City, New York, Rio de Janeiro, San Francisco Bay Area and Sydney (fewer where there were not this many UHNWIs recorded in particular cities) using data that we paid to access from Wealth-X.[1]

We downloaded the dossiers in August 2021. As Wealth-X provides a live data set the landscape is constantly shifting and will likely have changed somewhat since then. Our choice of these cities was guided by two key factors. First, we used multiple reporting sources on the key concentrations of UHNWIs in cities around the world assembled by Credit Suisse and Wealth-X in their series of annual reports assembled over the period of 2017–2021. We also ensured that our selection was checked against the list of Alpha and Alpha+/++ cities on the Globalization and World Cities (GAWC) database at Loughborough University. This combined selection procedure produced a long list of cities which were then, to offer a practical way forward for our analysis, reduced to a selection of contrasting cities from in each continent – Africa, Europe, Asia, Oceania, North America and South America. We acknowledge that other cities could be seen as viable contenders for selection and note again that the numbers of UHNWIs and billionaires shifts over time.

We analysed the Wealth-X dataset for our 10 selected cities to examine the sources of wealth by industrial sector, whether their wealth is inherited or self-made, and the location of the secondary residences of the 10-city wealth elite as a whole. Wealth-X market themselves as providing comprehensive wealth intelligence and claim that their dossiers are 'built, verified and updated by a team of 400+ researchers'. Wealth-X gather data from the public domain, and themselves subscribe to commercial data sets, after which, '[d]etails in dossiers are substantiated by two independent, credible sources deliver[ing] accurate insight into wealth source, known associates and demonstrated interest' (Altrata, 2024, n.p.). To give an indication of the composition of each city's wealth elite we provide the estimated net wealth and key figures in each city in Table 1.

The data available in each profile was in many cases detailed and extensive, but our analysis focused on three aspects of the data. We examined:

(i) Source of Wealth by industrial sector: Where each dossier identifies the career history of each person. We used the GICS classification (see Table 3) to identify the industrial sectors each individual's wealth had arisen from. We aggregated this to city-level to create a distribution representing the city's overall wealth source profile.
(ii) Wealth Acquisition: This aspect of the dataset examined the origins of individual wealth, distinguishing between self-made fortunes and those from inherited wealth.
(iii) Residence Network: Where each UHNWIs hometown and other residences are located. This element of our analysis examined patterns of multiple residence, in the bulk of cases, across multiple cities. Here we explored how connected the cities are, in terms of residence rather than social networks. This was measured in terms of the degree to which named cities were home to wealthy individuals possessing homes in cities in other countries.

The three areas of data analysis – Source of Wealth, Wealth Acquisition and Residential Networks – were quantified using data in each dossier. This new, extracted data was then developed into a simple typology of the cities using these three characteristics, noting that not all cities had as many as 400 UHNWIs. Not all the data in the dossiers could be successfully parsed, and some did not have a biography (see Table 2). Certain cities were more likely to have records of individuals with no biography than others, notably here Frankfurt and Sydney.

3.1. Text categorisation with large language models

One of the key elements of our method was the use of a large language model (LLM). This was used to read the biographies and categorise identified sources of wealth in the dossiers into the GICS industry classes. LLM's are a recent development in the field of machine learning that use deep neural networks that employ the transformer architecture, a technique that contextualises meaning within writing to provide a much more nuanced and useful quantitative representation

Table 1. The wealth and the wealthy of 10 key cities. Source: Wealth-X (2022).

City	Net wealth to be in richest; no. individuals	Richest five individuals, estimated net wealth, company, self-made or inherited wealth
Frankfurt	$5 m (400)	Stefan Quandt, $23.bn, BMW, Inherited and self-made
		Bergit Douglas, $2.7bn, Oeter KG, Inherited
		Stefan Messer, $1.6bn, Messer group, Inherited and self-made
		Stephen Orenstein, $1bn, Supreme group, Inherited and self-made
		Claus-Friedrich Wisser, $960 m, Institute for the Study of Labor, Self-made
Hong Kong	$360 m (400)	Huateng Ma, $98bn, Tencent Holdings, Self-made
		Yuqun Zeng, $52bn, Contemporary Ampex Technology, Self-made
		Yun Ma, $36bn, Huayi Bros Media, Self-made
		Wei Wang, Sustainable Finance, $28bn, Self-made
		Ka Shing Li, $26bn, CK Hutchison Holdings, Self-made
Johannesburg	$5 m (126)	Nicholas Oppenheimer, $9bn, Tswalu Kalahari Reserve, Inherited and Self-made
		Ivan Glasenberg, $6.7bn, Glencore, Self-made
		Patrice Motsepe., $2.4bn, African Rainbow Minerals, Self-made
		Isabel Dos Santos, $2.3bn, NOS, Self-made
		Strive Masiyiwa, $1.6bn, Econet Group, Self-made
Lagos	$2 m (272)	Aliko Dangote, $10.5bn, Dangote Group, Self-made
		Abdul Rabiu, $4.5bn, BUA Group, Inherited and Self-made
		Gilbert Chagoury, $4.2bn, Chagoury Group, Self-made
		Michael Adenuga Jr, $3.4bn, Mike Adenouga Group, Self-made
		Ronald Chagoury, $2bn, Chagoury Group, Self-made
London	$400 m (400)	Michael Bloomberg, $45bn, Bloomberg, Self-made
		Jianlin Wang, $26bn, Dalian Wanda Group, Self-made
		Hassanal Ibni Omar, $19.9bn, Sultan of Brunei, Self-made
		Leonard Blavatnik, Access Industries, $19.4bn, Self-made
		Charlene De Carvalho-Heineken, Heineken, $17.5bn, Inherited and Self-made
Mexico City	£30 m (109)	Carlos Slim Helu, $19.6bn, Grupo Carso, Inherited and Self-made
		Alberto Gonzalez, $16.3bn, Grupo Bal, Inherited and Self-made
		German Larrea Mota-Velasco, $8.4bn, Grupo Mexico, Inherited and Self-Made
		Ricardo Salinas Pliego, $6.7bn, Grupo Salinas, Inherited and Self-made
		Carlos Slim Domit, $6.7bn, Grupo Carso, Inherited and Self-made
New York	$640 m (400)	Jeff Bezos, £200bn, Amazon.com, Self-made
		Alice Walton, $62bn, Walmart, Inherited
		Michael Dell, $54bn, Dell Technologies, Self-made
		Michael Bloomberg, Bloomberg, $42bn, Self-made
		Leonard Blavatnik, $35bn, Access Industries, Self-made

(*Continued*)

Table 1. Continued.

City	Net wealth to be in richest; no. individuals	Richest five individuals, estimated net wealth, company, self-made or inherited wealth
Rio de Janeiro	$5 m (52)	Joao Marinho, $7.3bn, Grupo Globo, Inherited and Self-made
		Joa Moreira Salles Jr, $4.1bn, Itau Unibanco, Inherited and Self-made
		Reingold Geiger, $3.1bn, L'Occitane, Self-made
		Jose Marinho, $2.5bn, Grupo Globo, Inherited and Self-made
		Julio De Aragao Bozano, £2.1bn, Bozano Investiments, Self-made
San Francisco Bay Area	$420 m (400)	Lawrence Page, $123bn, Alphabet, Self-made
		Sergey Brin, $117bn, Alphabet, Self-made
		Mark Zuckerberg, $115bn, Meta, Self-made
		Lawrence Ellison, $101bn, Oracle, Self-made
		Masayoshi Son, $30.5bn, SoftBank, Self-made
Sydney	$30 m (400)	Scott Farquhar, $24.8bn, Atlassian, Self-made
		Michael Cannon-Brookes, $24bn, Atlassian, Self-made
		Harry Triguboff, $11.3bn, Meriton Group, Self-made
		Melanie Perkins, $6bn, Canva, Self-made
		Cliff Obrecht, $6bn, Canva, Self-made

Table 2. Summary of relative machine reading success at locating GICS type of source of wealth for each resident in the database. Source: Wealth-X.

City	Individuals classified in GICS	Individuals not classified into GICS	Total UHNWI individuals
Frankfurt	103	229	332
Hong Kong	384	14	398
Johannesburg	124	2	126
Lagos	246	25	271
London	394	6	400
Mexico City	104	3	107
New York	389	11	400
Rio de Janeiro	52	0	52
San Francisco Bay Area	390	9	399
Sydney	56	67	123
Total	2,242	366	2,608

of textual data. In this paper, we used OpenAI's GPT-3.5-turbo API to read the biographies of the individuals in our cleaned dataset to assign them to an appropriate GICS industrial classification. To help GPT to provide the data in a consistent format we had to provide a 'prompt' (see

Table 3. Composition of the 11 GICs classifications.

Sector name	Industries included
Financials	Banking, financial services, consumer finance, capital markets and insurance activities
Consumer discretionary	Automobiles, components, household durable goods, leisure products, textiles, apparel. Services include hotels, restaurants, distributors and retailers
Industrials	Aerospace, defence, building products, electrical equipment, machinery, construction & engineering services
Real estate	Real estate development and operation, related services and Real Estate Investment Trusts (REITs)
Energy	Exploration, production, refining, marketing, storage and transportation of oil & gas, coal and other fuels
Materials	Chemicals, construction materials, glass, paper, packaging, metals, minerals, mining, steel
Consumer staples	Food, beverages, tobacco, food, drug retailing
Health care	Providers and services, manufacturing/distribution of health care equipment, supplies, health care technology companies, companies involved in research, production and marketing of pharmaceuticals and biotech
Information technology	Software and information technology services, manufacturers/ distributors technology hardware & equipment such as communications equipment, cellular phones, computers & peripherals, electronic equipment and related instruments, semiconductors
Communication services	Communication and related content and information, telecom, media and entertainment companies, interactive gaming
Utilities	Electric, gas and water utilities, power producers, energy traders, generation/distribution of electricity and renewables

DATA REPOSITORY – https://github.com/JonnoB/wealthnets). This is a set of instructions used by the machine to interpret the most appropriate response.

3.2. Analysing of the results using Shannon entropy

The three areas of analysis – Source of Wealth, Wealth Acquisition and Residential Network – are effectively multi-class data tables. Source of Wealth has 11 classes, one for each GICs sector, Wealth Acquisition has two classes (Inherited or Self-Made), and Residential Network had up to 262 classes, these being the total number of countries in the world. In order to provide an interpretable analysis we employed a technique known as information entropy, sometimes called Shannon Entropy. Information entropy describes the measure of disorder or randomness of a system, and is defined as follows:

$$H(\mathrm{X}) = -\sum_{x \in \chi} p(x) \log p(x)$$

Where p(x) is the probability of class x from the set of classes χ. A high entropy value means that the information has a more random distribution, whilst a low entropy is more predictable. At its most extreme, in the lowest entropy all probability is concentrated into a single option (for example, all of the rich in a city have wealth stemming from mining), whilst at the other extreme, the highest entropy score will have equal probability for all options. In this analysis, we show

normalised entropy as a value between 0 and 1, which is equivalent to:

$$H_{norm} = \frac{H}{H_{max}}$$

Entropy measures are used here to show how much uncertainty exists within a particular system – in this case each city. We might hypothetically expect most cities to have a distribution of sectors that lies broadly at the median position. Thus the measure of entropy shows the degree to which a city's results are surprising, or vary, from this assumed outcome. In another sense the measure of entropy tells us how concentrated our results are. If there is generally an even distribution of sectors then this will produce a high entropy score, since there is no concentration in a particular sector or industry. However, if most sources of wealth relate to a particular sector, then a low entropy score will result.

3.3. Bootstrapping distributions

Whilst we can find the mean entropy score for Source of Wealth, Residence Networks, or fraction of inherited wealth, we also wish to know if the differences *between* the cities are statistically significant. To do this we use statistical bootstrapping (Efron & Tibshirani, 1993), a process by which we randomly sample, with replacement, the individual within a city until we have sampled the same number of times as there are individuals. We then find the average and repeat the process *n* times. We end up with the distribution of the mean value and can then compare the group means using an ANOVA test, to find if there is a statistically significant difference between them. We then performed Tukey's Honest Significant Difference (HSD) test (Tukey, 1949). Tukey's HSD is a multiple comparison technique, which is essentially a t-test that corrects for the family wide error rate Table 3.

3.4. Network analysis

One of the key data points is the city location of known residence/s of each individual. Each person in the dataset has at least one residence in one of the ten cities included in this study but they most often possessed residences in cities in other countries (as defined earlier). In certain cases individuals appear in more than one city. However, these cases appear to be few in number and do not detract from the overall observed patterns. We constructed a network where an 'edge', or link, is created whereby an individual has a residence in two countries. We choose to perform this analysis at country level as we do not have enough data to be able to create a reliable network at city level. As there will be many individuals connecting specific countries together, we created a weighted network where the edge weight (number of links) is the sum of the co-occurring countries. For example, if an individual has properties in Nigeria, UK and the USA, then the following edges will be created Nigeria-UK, Nigeria-USA, UK-USA. The edge weight will be 1 for all edges. If a second individual has property in Nigeria and UK, then no new edges will be created, however the edge weight of the Nigeria-UK edge will increase by 1 to 2. If a third individual has property only in the UK then no new edges will be created and the edge weights of existing edges will remain unchanged. This allows us to produce a simple measure of the relative density of connections between residences in different nations.

Constructing a network in the above way allowed us to construct a representation of the residential networks of the elites of the ten cities studied. We gained insight into the nature of this network by examining the betweenness centrality (Barrat et al., 2004; Freeman, 1977) of the countries in the network and the communities that form in the network. Betweenness centrality is a measure of node importance, for our analysis such nodes represented countries. This measure shows the number of shortest paths between all other nodes that pass through a given node. The

more paths that pass through a node the more important it is. As our network is weighted, we used weighted betweenness centrality.

Community detection describes groups of nodes that have more connections between themselves than they do with nodes of other communities. As with Heemskerk and Takes (2016) we used the 'Louvain algorithm' (Blondel et al., 2008) to detect these communities. The Louvain algorithm groups the network nodes (in this case countries) into the optimum number of communities by optimising the 'modularity' metric (Newman, 2006), which is a measure of broadly how separable a network is. As a result of this network analysis, we were able to find out which countries were the most important among the richest residents of our ten-city study and also whether there was a geographical structure to the residential networks.

4. A PROFILE OF THE URBAN WEALTH ELITES IN THE TEN CITIES

4.1. Sources of wealth, diversity of industry involvement and residential networks

We begin by reporting on the three key elements of the data that we were able to extract from the dossiers. In Figures 1, 2, and 3 we see the results of each proxy measure:

(1) Economic diversity – how concentrated each city's wealth elite is in terms of involvement with particular economic sectors, measured by GICs classification.
(2) Social-mobility – the concentration of each city's wealth elite in terms of whether its wealth is self-made or inherited.
(3) Residential dispersion – the degree to which each city's wealth elite has additional homes in other nations and cities.

Starting with the question of which industrial sectors dominate in each city we can see that, at the extremes, we find San Francisco with the lowest economic diversity, and London with the highest. London is thus showing its wealth elite to be working across and owning

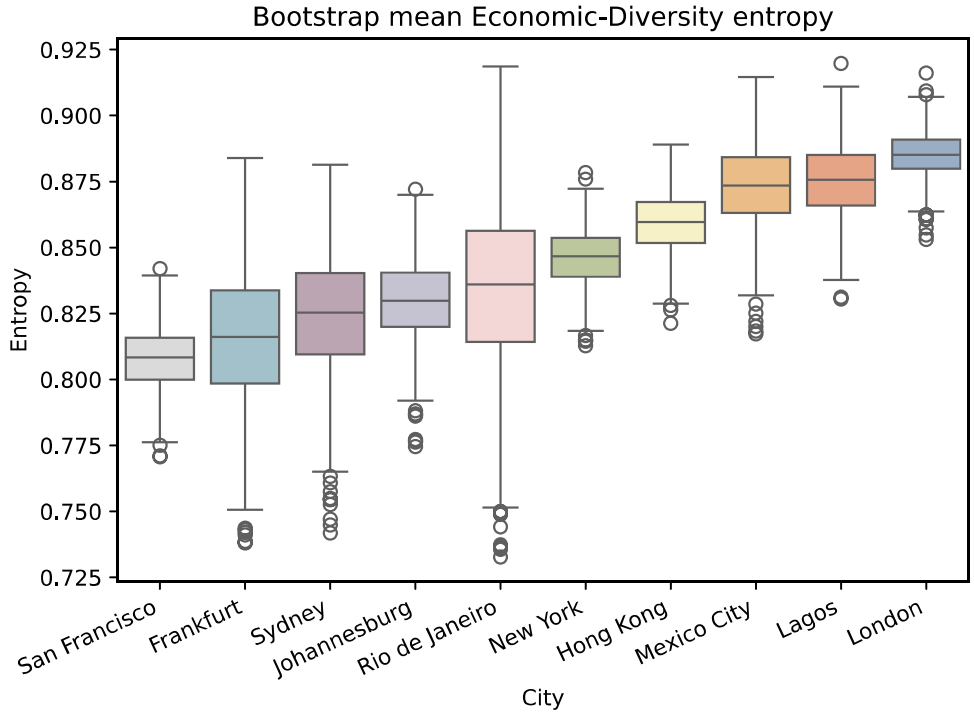

Figure 1. Entropy score for the economic-diversity of each city.

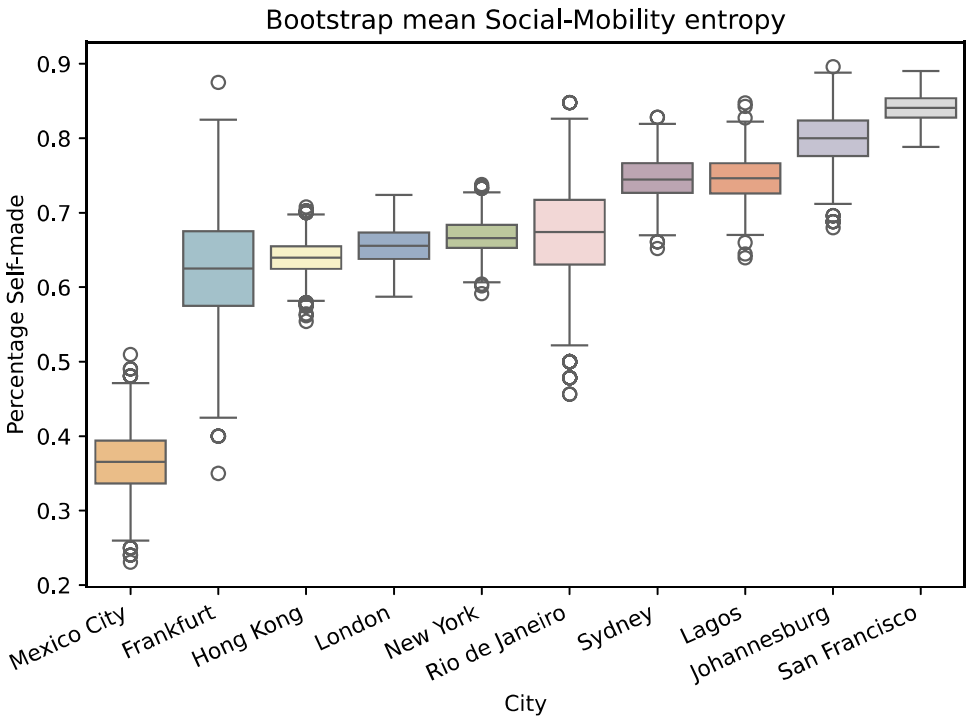

Figure 2. Entropy score for social mobility (whether wealth is inherited or self-made) in each city.

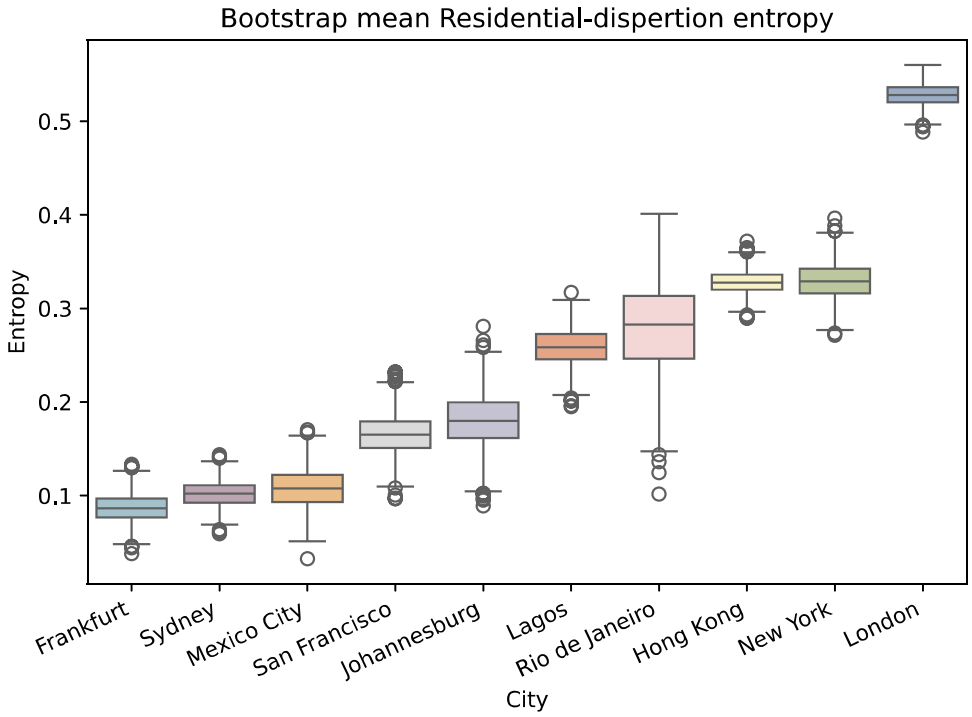

Figure 3. Entropy of residential dispersion of each city.

businesses in multiple sectors. San Francisco, on the other hand, has a substantial fraction of wealth created in the Tech sector. Here we must note of course that the 'character' of the assets, holdings and company ownership of this tiny fraction may vary from the economy of the city in which the rich themselves live. Here London lives up to its reputation for being a space in which finance, tech, property and many other sectors are all represented, but it is certainly not simply a case of the city's 'local' finance economy driving or characterising the

economic profile of its wealthiest residents. Our findings here appear to reflect the role of London as a finance hub that then draws in a broader, cosmopolitan wealth elite from around the world. The most notable feature of the economic-diversity values shown in Figure 1 is that the total range is relatively small covering only around 10% of the normalised range, indicating that although the differences are statistically significant they are still relatively small in scale.

Figure 2 reports on the relative concentration of each city's wealth elites' holdings of self-made or inherited wealth. Here we find that Mexico City has significantly fewer 'self-made' UHNWIs than the other cities. This city stands out for having the most significant number of UHNWIs who are inheritors – only 36% are self-made. In contrast, no doubt thanks to its dominant tech sector, San Francisco has the highest fraction of self-made UHNWIs, with 84% of these individuals being self-made. Two other notable findings can be drawn from Figure 2. First, Frankfurt, Hong Kong, London and New York, established metropoles with particularly enlarged finance centres, all appear somewhat at the lower of the distribution, highlighting slightly higher levels of inheritance. This finding perhaps fits with established notions of these centres as containing relatively significant dynastic, old wealth, alongside new elites drawn from new finance, commodities and other sectors in more recent decades. Second, alongside San Francisco, we can see that Sydney, Lagos and Johannesburg possess higher percentages of self-made individuals. This also confirms a sense that these are more 'dynamic', newer sites of wealth accumulation.

Figure 3 turns to show how 'outward facing' each city's resident rich are based on the degree to which their wealthiest residents have second homes in other countries. We use this as a proxy measure of social and economic networks, proposing that second homes are important permanent entry points into the society, culture and commerce of other urban centres. Here we find that London's residents have by far the highest number of additional international residences, with a normalised entropy score of 53%, in contrast Frankfurt, the lowest scoring city, only reaches 9%. The only cities beginning to approach London's distributed cosmopolitanism are New York and Hong Kong. The image of the city's wealth elites presented here shows that London is unique, not for its overall number of UHNWIs or billionaires, but for the distributed nature of its richest residents, having a core foothold in the city and addresses in many other cities and nations as well. Meanwhile Frankfurt, Sydney and Mexico City have wealth elites with much fewer residential connections to other cities.

We can now return to a much more detailed view of the differences in economic sectoral distribution (GICs) which is shown in Figure 4. In this figure the y axis is the fraction of each industry sources of wealth for each city's wealth elite – this shows the contribution of each sector in a way that allows us to compare between city wealth elites and within them, simultaneously. Here we can see, for example, that information technology makes up 31% of San Francisco's sources of wealth whilst it only makes up 1% for Mexico City. The plot shows that there are significant differences between the sources of wealth both between and within cities. This analysis is particularly useful for showing us that, among these urban wealth elites as a whole, we can see the relative importance of the finance, consumer discretionary, industrial and real estate sectors. Conversely the sectors that appear to play a relatively slender role in the assets of all of the city's wealth elites are consumer staples, energy (surprisingly, and only notable for Lagos), health care, information technology (apart from an overwhelming concentration for San Francisco), and utilities. If we look within particular cities using this figure we see how industrial, financial and real estate dominate Frankfurt's wealth elite, while in Johannesburg the standout contributing sectors are financials and consumer discretionary. The value of this mapping of the data is thus our ability to see a little more clearly the kinds of wealth distributions within and between cities, and a more general sense of what is important for all of the city's wealth elites as a whole.

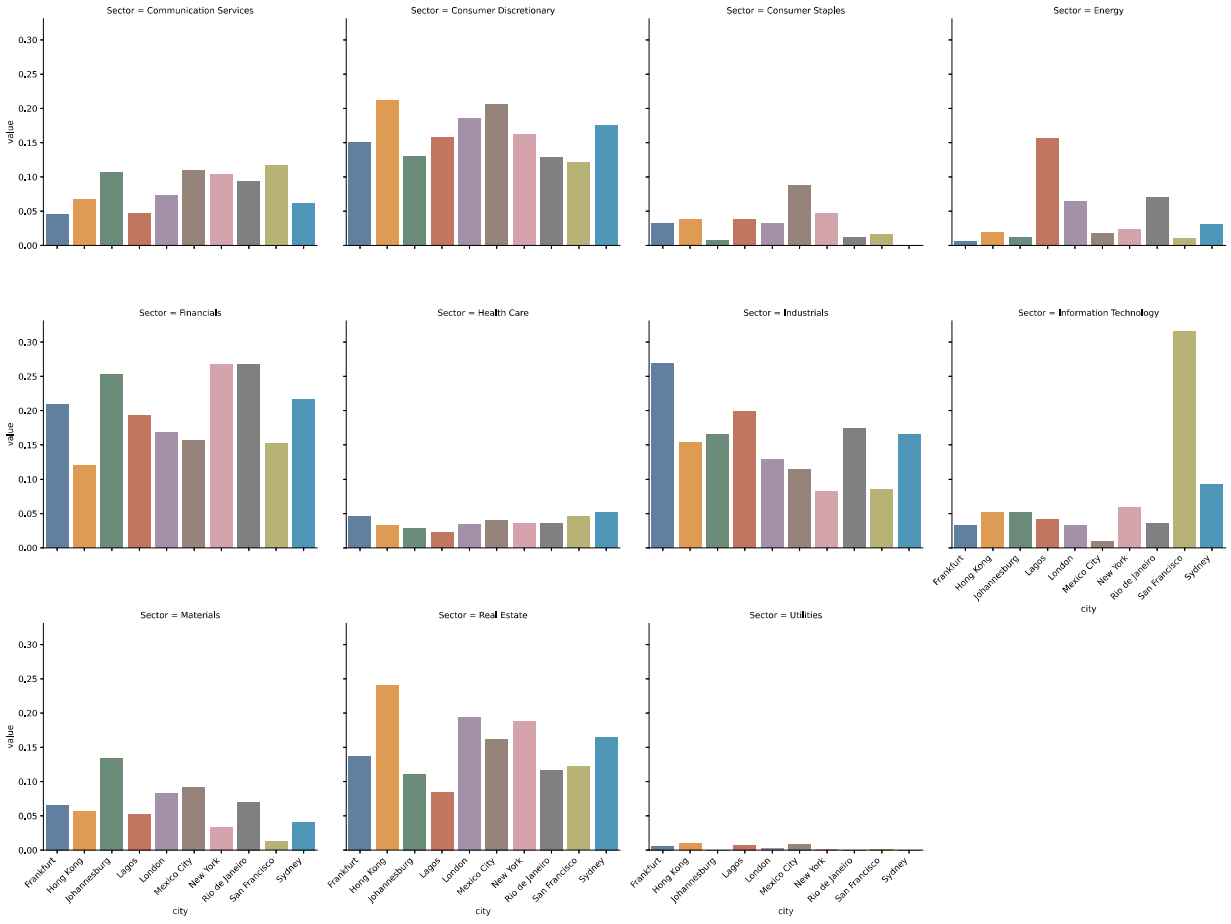

Figure 4. The differences in relative sectoral composition for each city.

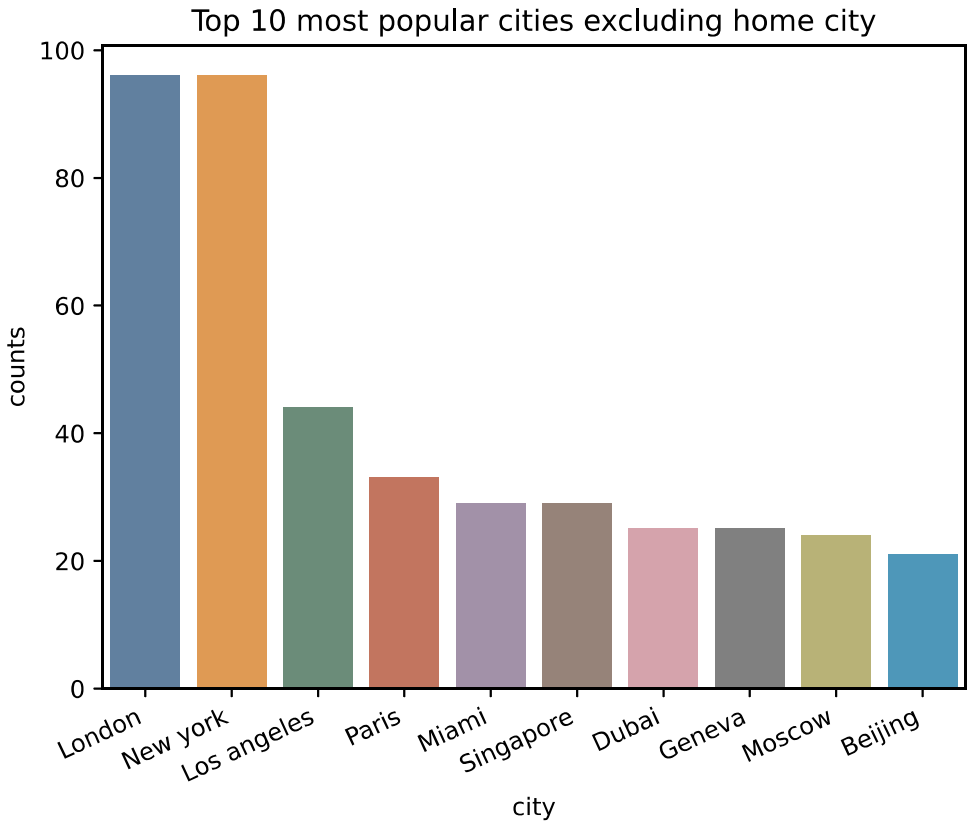

Figure 5. The countries of cities most frequently named for second (or additional) homes. Source: Wealth-X.

4.2. Residential networks

Figure 5 shows the Top 10 cities our dataset of urban UHNWIs have residences in. The figure highlights the prevalence of secondary residences across different cities, without considering the individuals' home cities. This means, if an individual's home city is London and they have residences in New York and Paris, this results in a count of one for New York and one for Paris, but zero for London. Only three of the 10 cities in our dataset appear in the top 10 most popular cities for ultra-rich homeowners (Millson, 2023). These cities are Hong Kong, London and New York, contemporary financial and cultural hubs, whilst Hong Kong in particular is a key site for UHNWIs resident in East Asia.

Creating the country level residential network allows us to see which countries are popular in the global network of elites. Figure 6 shows this network, whilst Figure 7, shows the relationship between the weighted network centrality and the overall country occurrence counts. The Louvain Algorithm detected four communities here. Of these, the two main ones together contained 95% of all the countries in the analysis. The main communities are essentially split into East Asian and associated countries, and 'The rest of the world'. The East Asian community contains 18 countries (21% of the dataset) including almost all the East Asian countries as well as Australia, Canada, Denmark, and Chile. These non-East Asian countries appear to be in the community due to their strong co-occurrence with Hong Kong and China. The rest of the world community contains 63 countries (74% of the dataset). The final two communities contain two countries each Angola-Portugal, which is perhaps an unsurprising grouping due to their colonial relationship, while Croatia-Mali may likely be due to statistical noise.

Looking at the betweenness centrality of the countries, shown in Figure 6, we see that, perhaps unsurprisingly, the US and UK are the most high-ranking countries. The UK is higher ranking than the US which is surprising given that the US has two cities in the analysis and substantially more residences overall. This may be partly because the US rich are less likely to have residences outside the US than the ultra-rich from the other cities analysed. However, the UK is an extremely highly connected node supporting its reputation as a key location for the world's ultra-wealthy to access services and facilities, or in Bullough's (2022) terms, becoming a kind of 'butler to the world' (Bullough, 2022).

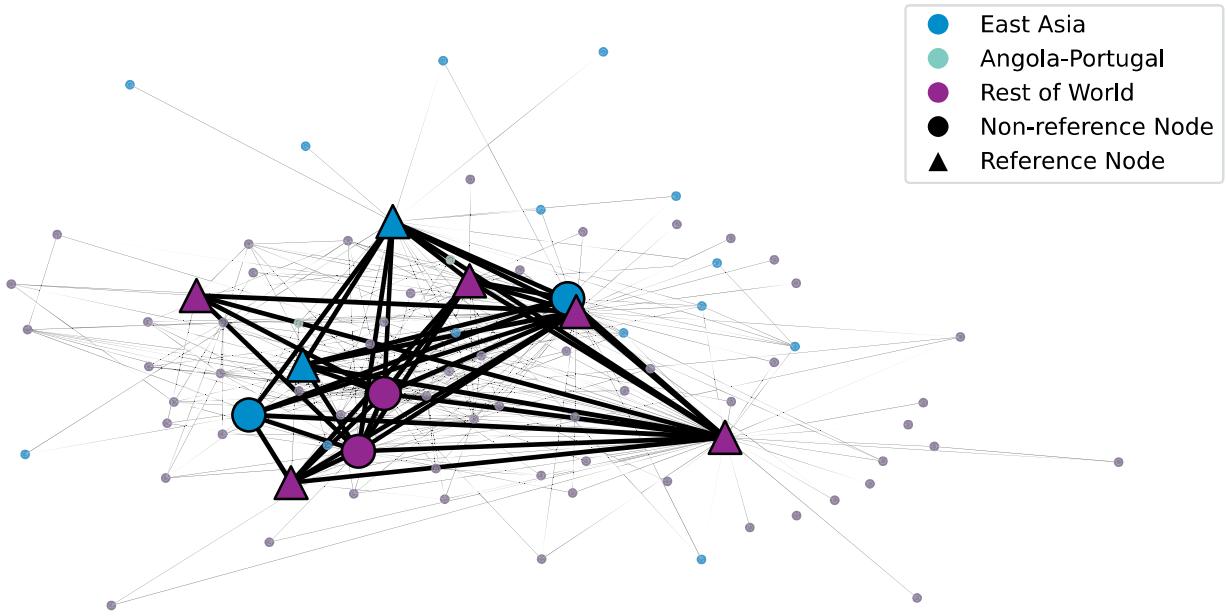

Figure 6. Network of cities based on co-ownership of residences. Triangle nodes are cities in the dataset, node colour shows which cluster the nodes are part of.

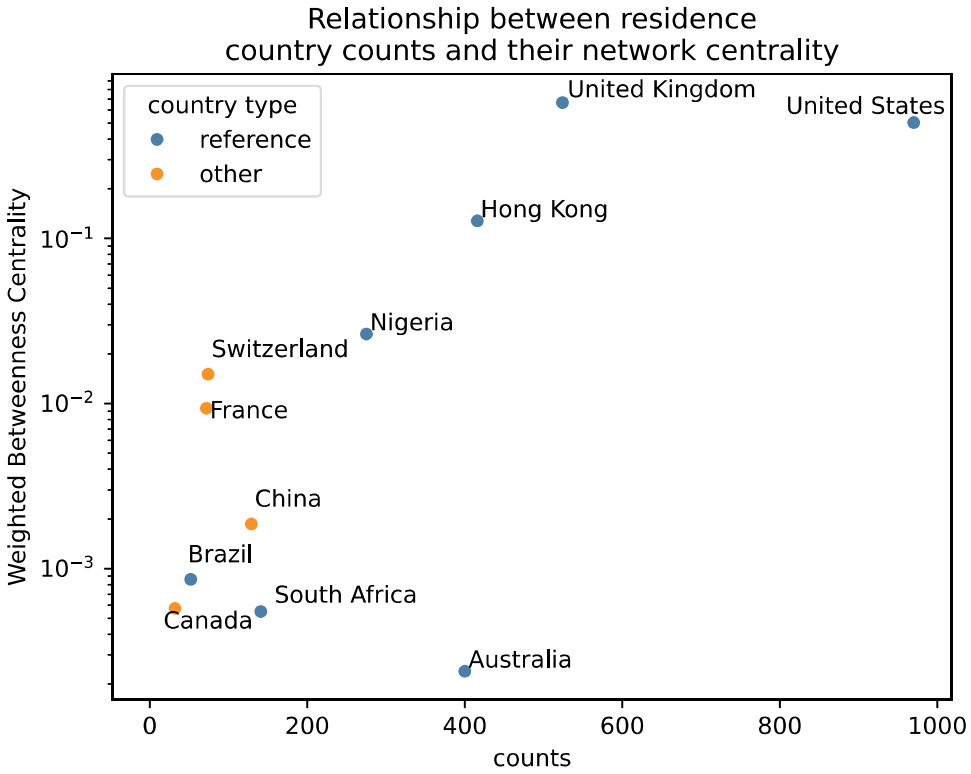

Figure 7. The relationship between counts and network centrality provide two alternative measures of country importance to the network.

What is more surprising here is the high betweenness centrality of France and Switzerland which do not have cities in the analysis. The reason for this high ranking is that Switzerland and France form a sort of connectivity square with the US and UK, that is all four countries are highly connected, making Switzerland and France major secondary routes connecting the US and UK with the rest of the network. Switzerland is traditionally popular with the global ultra-rich due to its history of tax-free banking and secrecy. While France is a social and cultural hub for the ultra-rich. Canada, although it does not have a large number of UHNWIs, is closely

Table 4. A city typology based on the characteristics of each wealth elite (sources of wealth, inheritance and international distribution of homes).

Urban elite city type	Cities included	Economic diversity	Social mobility	Residential dispersion
Dynamic	Lagos	Diverse	High	Extended
Traditional	Mexico City	Diverse	Low	Contained
Metropole	Hong Kong	Diverse	Low	Extended
	London			
	New York			
Nouveau	Johannesburg	Low diversity	High	Contained
	San Francisco			
	Sydney			
Cosmopolitan	Rio de Janeiro	Low diversity	High	Extended
Insular	Frankfurt	Low diversity	Low	Contained

connected to the US, UK and Hong Kong, making it an important linking node. China is a key node due to the large number of international ultra-rich resident there.

5. A TYPOLOGY OF THE CITIES OF URBAN WEALTH ELITES

Here we show our attempt at building a typology of the residential wealth elite for each city in our study. This exercise is distinct from characterising the local city economy or some deeper character of each city. To help build the typology we grouped the cities into the top and lower 50% of each of the three metrics to create a simple typology, around economic sectoral diversity in the assets of the wealth elite, on the differences between self-made and inherited wealth, and on the degrees of residential dispersion of additional homes. This revealed six distinct types of city, shown in Table 4.

The typology shows us that there are significant economic and cultural differences between the clusters of UHNWIs in each city. Here we see that San Francisco and New York are very different in terms of the character of their wealth elites. We offer labels to characterise the resident wealth elite, such as the term Insular to refer to Frankfurt's low diversity of industries involved in generating the sources of that city's wealth for its elite, its low levels of self-made wealth (most is inherited here), and the relatively low number of additional residences held in other cities around the world. It is possible that this typology could be used to guide discussion of the character and relationship between city wealth elites and the forms of political, social and economic life of other metropolises were it possible to add further cases and cities to the dataset we analysed here.

6. CONCLUSION

The availability of commercial data is often limited for social scientists due to the cost of gaining access. There are also risks in using systems that may be relatively shrouded by corporate rules on privacy and methodology. Our response to these concerns is to suggest the need for cautious pragmatism when faced with limited data on a pressing social issue. Commercial data providers clearly respond to commercial imperatives for data gathering and intelligence, but we see value in engaging such sources where they appear to help us to understand more about a powerful and closed elite. Using this data we have been able to profile three key aspects of the wealth elite of 10 cities around the world. The use of machine learning techniques has enabled us to scan thousands of records of wealthy residents, providing an intra-metropolitan analysis of the sectoral sources of wealth of this group, their status as 'self-made' or inheritors of their fortunes, and the networks of secondary residences beyond the ten cities.

On the question of the sources of wealth of each city's elite, we found that there tended to be a relative dominance of particular sectors in each city. However, there was still significant variation between cities, with San Francisco possessing the most homogenous sources of wealth, with a marked concentration in information technology. In contrast, London has the most diverse sources of wealth across its elites. Importantly, the results showed that the wealth elite may be relatively disconnected from the main industry sources in the 'local' urban economy. This is not so surprising given the diverse asset bases of many among the rich and seems only to highlight the peripatetic nature of residence among this group globally. On the variability of 'self-made' fortunes there were significant differences in the percentages of UHNWI residents categorised as self-made or inheritors, with the extremes in this case being Mexico City, with very little newly acquired wealth among the ultra-wealthy, and San Francisco, with considerably more.

We then examined the degree to which cities offer a clear primary base for their resident rich or whether they also reside in other settings around the world. Here we found that there was

substantial heterogeneity in terms of overseas ownership of secondary residences. In this case, London, once again, represented an extreme case, with many of its resident rich owning secondary homes elsewhere, whereas Frankfurt's rich have relatively very few. New York and San Francisco also showed substantial heterogeneity from one another, in relation to this and every other measure, showing potential differences between urban wealth hubs within the same country. Finally, we devised a new typology and applied this to combined types within the 10 cities we analysed.

The implications of our work appear to be twofold. First, we have shown the potential value of using new machine techniques that may allow social scientists to generate broad profiles of the wealth elites of countries and cities in ways that have hitherto either not been possible or would be fantastically time consuming if they were pursued. Second, we believe that the central promise of these new avenues of work lies in enabling national and city populations to learn more about who occupies elite positions, and to begin to think through what kinds of influence may stem from these positions and the networked connections that sit between residents internationally. Even allowing for the opaque and pay-walled nature of commercial data, such as we used here, this is not a reason to avoid commercial sources. Our analysis in this research note suggests that the further use of machine learning and commercial data may offer further, insightful, avenues. Such work may lead towards the more detailed profiling of the kind of people that form the apex of the wealth elite in urban centres and thus also assist in generating more informed social and political conversations about the character and impact of urban wealth elites.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

NOTE

1. One route this article could have taken would have been to check the relationship of Wealth-X data to academic databases, such as the World Elite Database (https://worldelitedatabase.org/). However, we had not negotiated permission to do so with Wealth-X so were unable to pursue this avenue of inquiry. Future research should critically engage with the influence of commercial data sources on our epistemic framing as scholars and activists, given their methodological opacity and profit-oriented interests.

ORCID

Rowland Atkinson http://orcid.org/0000-0001-9801-9380
Katie Higgins http://orcid.org/0000-0002-8624-8044
Jonathan Bourne http://orcid.org/0000-0003-2616-3716

REFERENCES

Altrata. (2024). *World Wealth Report, 2024*. Wealth-X.

Alvaredo, F., Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2018). *World Inequality Report 2018*. The Belknap Press of Harvard University Press.

Atkinson, R. (2019). Necrotecture: Lifeless dwellings and London's super-rich. *International Journal of Urban and Regional Research*, *43*(1), 2–13. https://doi.org/10.1111/1468-2427.12707

Atkinson, R. (2020). *Alpha City: How the super-rich captured*. Verso.

Atkinson, R., Parker, S., & Burrows, R. (2016). *The plutocratic city: Elite formation, power and space in contemporary London*. Theory, Culture & Society.

Barrat, A., Barthelemy, M., Pastor-Satorras, R., & Vespignani, A. (2004). The architecture of complex weighted networks. *Proceedings of the National Academy of Sciences*, *101*(11), 3747–3752.

Beaverstock, J., & Faulconbridge, J. (2013). Wealth segmentation and the mobilities of the super-rich. In T. Birtchneel & J. Caletrio (Eds.), *Elite Mobilities* (pp. 40–61). Routledge.

Beaverstock, J., & Hay, I. (Eds.) (2016). *Handbook on wealth and the super-rich*. Edward Elgar Publishing.

Beaverstock, J., Hubbard, P., & Short, J. (2004). Getting away with it? Exposing the geogrpahies of the super-rich. *Geoforum; Journal of Physical, Human, and Regional Geosciences*, *35*(4), 401–407. https://doi.org/10.1016/j.geoforum.2004.03.001

Birtchnell, T., & Caletrío, J. (Eds.). (2014). *Elite mobilities*. Routledge.

Blondel, V. D., Guillaume, J. L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, *2008*(10), 126–136. https://doi.org/10.1088/1742-5468/2008/10/P10008.

Blumer, H. (1954). What is wrong with social theory? *American Sociological Review*, *18*(1), 3–10. https://doi.org/10.2307/2088165

Bourguignon, F. (2015). *The globalisation of inequality*. Princeton University Press.

Bullough, O. (2022). *Butler to the World: The book the oligarchs don't want you to read-how Britain became the servant of tycoons, tax dodgers, kleptocrats and criminals*. Profile Books.

Burrows, R., Webber, R., & Atkinson, R. (2017). Welcome to 'Pikettyville'? Mapping London's alpha territories. *The Sociological Review*, *65*(2), 184–201. https://doi.org/10.1111/1467-954X.12375

Chancel, L., Piketty, T., Saez, E., & Zucman, G. (Eds.). (2022). *World inequality report*. Harvard University Press.

Crankshaw, O., & Parnell, S. (2004). Johannesburg: Race, inequality, and urbanization. In J. Gugler (Ed.), *World cities beyond the west: Globalization, development and inequality* (pp. 348–368). Cambridge University Press.

Efron, B., & Tibshirani, R. (1993). *An introduction to the bootstrap*. Chapman & Hall/CRC.

Fernandez, R., Hofman, A., & Aalbers, M. B. (2016). London and New York as a safe deposit box for the transnational wealth elite. *Environment and Planning A: Economy and Space*, *48*(12), 2443–2461. https://doi.org/10.1177/0308518X16659479

Florida, R., Mellander, C., & Ritchie, I. (2016). *The geography of the global super-rich*. Martin Prosperity Institute, Rotman School of Management, University of Toronto.

Forrest, R., Koh, S. Y., & Wissink, B. (2017a). *Cities and the super-rich: Real estate, elite practices and urban political economies*. Springer.

Forrest, R., Koh, S. Y., & Wissink, B. (Eds.). (2017b). In search of the super-rich: Who are they? Where are they? *Cities and the super-rich: Real estate, elite practices and urban political economies*, 1–18.

Freeman, L. C. (1977). A set of measures of centrality based on betweenness. *Sociometry*, *40*(1), 35–41. https://doi.org/10.2307/3033543

Hay, I. (2013). *Geographies of the super-rich*. Edward Elgar Publishing.

Heemskerk, E., & Takes, F. (2016). The corporate elite community structure of global capitalism. *New Political Economy*, *21*(1), 90–118. https://doi.org/10.1080/13563467.2015.1041483

Higgins, K. (2022). Dynasties in the making: Family wealth and inheritance for the first-generation ultra-wealthy and their wealth managers. *The Sociological Review*, *70*(6), 1267–1283. https://doi.org/10.1177/00380261211061931

Ho, H. K., & Atkinson, R. (2018). Looking for big 'fry': The motives and methods of middle-class international property investors. *Urban Studies*, *55*(9), 2040–2056. https://doi.org/10.1177/0042098017702826

Holmqvist, M. (2017). *Leader communities: The consecration of elites in Djursholm*. Columbia University Press.

Holmqvist, M. (2021). Creating and upholding an elite community:'Consecrating exclusion'in Djursholm, Sweden. *The Sociological Review*, *69*(5), 956–973. https://doi.org/10.1177/0038026121991786

Knight Frank. (2024). The Wealth Report. *Knight Frank: The Intelligence Lab*. Retrieved March 7, 2024, from https://www.knightfrank.com/wealthreport

Knowles, C. (2022). *Serious Money: Walking Plutocratic*. Penguin.

Koh, S., Wissink, B., & Forrest, R. (2016). Reconsidering the super-rich: Variations, structural conditions and urban consequences. In I. Hay & J. Beaverstock (Eds.), *Handbook on wealth and the super-rich* (pp. 264–283). Edward Elgar Publishing.

Lauermann, J., & Mallak, K. (2023). Elite capture and urban geography: Analyzing geographies of privilege. *Progress in Human Geography*, *47*(5), 645–663. https://doi.org/10.1177/03091325231186810

Le Gales, P., & Pierson, P. (2019). Superstar cities' and the generation of durable inequality. *Daedalus*, *148*(3), 46–72. https://doi.org/10.1162/daed_a_01750

Mayah, E., Mariotti, C., Mere, E., & Odo, C. (2017). Inequality in Nigeria: Exploring the drivers. *Oxfam International*. Retrieved May 15, 2024, from https://www.oxfam.org/en/research/inequality-nigeria-exploring-drivers

Mears, A. (2020). *Very important people: Status and beauty in the global party circuit*. Princeton University Press.

Milanovic, B. (2016). *Global inequality. A new approach for the age of globalisation*. Harvard University Press.

Mills, C. W. (1956). *The power elite*. Oxford University Press.

Millson, A. (2023). These are the cities with the most super-rich homeowners. https://www.bloomberg.com/news/articles/2023-03-08/wealth-news-new-york-london-hong-kong-have-most-ultra-rich-homeowners

Morales, E. R., Atkinson, R., & Higgins, K. (2022). Road – gate – enclosure: Elite securityscapes in London and Mexico City. *Journal of Urban Design*, *27*(*3*), 328–347. http://doi.org/10.1080/13574809.2021.1997141

Newman, M. E. J. (2006). Modularity and community structure in networks. *Proceedings of the National Academy of Sciences*, *103*(23), 8577–8582. https://doi.org/10.1073/pnas.0601602103

Oxfam International. (2023). *Survival of the Fittest: How we must tax the super-rich now to fight inequality*. Oxfam.

Paris, C. (2017). The super-rich and transnational housing markets: Asians buying Australian housing. In R. Forrest, S. Y. Koh, & B. Wissink (Eds.), *Cities and the super-rich: Real estate, elite practices and urban political economies* (pp. 63–83). Palgrave Macmillan.

Piketty, T. (2020). *Capital and ideology*. Harvard University Press.

Pinçon, M. (1999). *Grand fortunes: Dynasties of wealth in France*. Algora Publishing.

Pow, C. P. (2017). Living it up: Super-rich enclave and transnational elite urbanism in Singapore. *Geoforum; Journal of Physical, Human, and Regional Geosciences*, *42*(3), 382–393. https://doi.org/10.1016/j.geoforum.2011.01.009

Rogers, D., & Koh, S. Y. (2017). The globalisation of real estate: The politics and practice of foreign real estate investment. *International journal of housing policy*, *17*(1), 1–14. https://doi.org/10.1080/19491247.2016.1270618

Sassen, S. (2014). *Expulsions: Brutality and complexity in the global economy*. Harvard University Press.

Savage, M. (2022). *The return of inequality: Social change and the weight of the past*. Harvard University Press.

Soules, M. (2021). *Icebergs, zombies, and the ultra-thin: Architecture and capitalism in the 21st century*. Princeton Architectural Press.

Stein, S. (2019). *Capital city: Gentrification and the real estate state*. Verso Books.

Storper, M., Kemeny, T., Makarem, N., & Osman, T. (2015). *The rise and fall of urban economies: Lessons from San Francisco and Los Angeles*. Stanford University Press.

Tukey, J. W. (1949). Comparing Individual Means in the Analysis of Variance. *Biometrics*, *5*(2), 99–114. https://doi.org/10.2307/3001913

Wealth-X. (2022). World Ultra Wealth Report, 2022. *Wealth-x Reports*. Retrieved March 7, 2024, from https://wealthx.com/reports/world-ultra-wealth-report-2022

Wiesel, I. (2018). *Power, Glamour and Angst: Inside Australia's Elite Neighbourhoods*. Springer.

Wissink, B., Koh, S. Y., & Forrest, R. (2017). Tycoon city: Political economy, real estate and the super-rich in Hong Kong. In R. Forrest, S. Y. Koh, & V. Wissink (Eds.), *Cities and the super-rich: Real estate, elite practices and urban political economies* (pp. 229–252). Palgrave Macmillan US.