

# WORKING PAPER-REIHE DER AK WIEN

NETWORKS OF THE SUPER-RICH  
IN AUSTRIA

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238



MATERIALIEN ZU WIRTSCHAFT UND GESELLSCHAFT

Materialien zu Wirtschaft  
und Gesellschaft Nr. 238  
Working Paper-Reihe der AK Wien

Herausgegeben von der Abteilung Wirtschaftswissenschaft und Statistik  
der Kammer für Arbeiter und Angestellte  
für Wien

***Networks of the super-rich in Austria: Evidence from an  
explorative case study***

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November 2022

Die Working Paper Reihe "Materialien aus Wirtschaft und Gesellschaft" behandelt aktuelle Fragen der Wirtschafts- und Sozialwissenschaften und dient als offenes Medium für den Austausch von wissenschaftlich fundierten Erkenntnissen. Die Reihe wird von der Abteilung Wirtschaftswissenschaft und Statistik betreut. Wie bei Working Paper Serien üblich erfolgt keine formelle Begutachtung.

Die Deutsche Bibliothek – CIP-Einheitsaufnahme

Ein Titeldatensatz für diese Publikation ist bei  
der Deutschen Bibliothek erhältlich.

ISBN: 978-3-7063-0935-6

Kammer für Arbeiter und Angestellte für Wien  
A-1041 Wien, Prinz-Eugen-Straße 20-22, Tel: (01) 501 65, DW 12283

## **Abstract**

The increasing concentration of income and wealth on the national and international level is a topic that has received increased attention both in social science research as well as public policy debates. Even severe crises such as the GFC in 2008 or the current Covid-Pandemic have not led to any trend reversal in this respect. On the contrary, the wealth of the top 1% has continued to rise sharply. Yet, it has been shown, that the huge wealth discrepancy is mainly driven by a small group of High Net Worth (HNW) individuals and families (households). While data availability is a well-known and often-lamented problem in wealth studies, due to missing statistical data and information, especially the group of HNW households remains largely unexplored. Our case study on networks of super-rich in Austria aims to address this research gap and contributes to a deeper understanding of the impact of HNW households and their networks on current wealth distributions. Against this background, we first provide an extensive review of the literature on national and international research on HNW households. Second, based on the insights from this review, we conduct an explorative study on the networks of HNW households in Austria. In doing so, we collect data from various databases and individual biographical research based on Austria's top HNW individuals and families (listed in wealth rankings of the richest Austrians). Methodologically, we follow a two-fold approach: On the one hand, we focus on institutional ownership and control and apply social network analysis (SNA) of two-mode networks (institutions and persons) to highlight networks of corporate ownership and (indirect) control. On the other hand, we apply SNA to investigate personal ego-networks of HNW individuals and families to highlight characteristics of the social field of super-rich in Austria. Overall, findings from our SNA suggest a strong link between the accumulation and preservation of mega-wealth and political proximity.

**Keywords:** Super-rich, High Net Worth individuals and families, Wealth Concentration, Social Network Analysis, Austria.

## **Zusammenfassung**

Die zunehmende Konzentration von Einkommen und Vermögen auf nationaler und internationaler Ebene ist ein Thema, das sowohl in der sozialwissenschaftlichen Forschung als auch in politischen Debatten zunehmend Beachtung findet. Selbst schwere Krisen wie die Finanzkrise im Jahr 2008 oder die aktuelle Covid-Pandemie haben in dieser Hinsicht nicht zu einer Trendwende geführt. Im Gegenteil, der Reichtum der obersten 1 % hat weiter stark zugenommen. Es hat sich jedoch gezeigt, dass die enorme Vermögensdiskrepanz hauptsächlich von einer kleinen Gruppe vermögender Einzelpersonen und Familien (Haushalte) getragen wird. Während mangelnde Datenverfügbarkeit ein generelles Problem in der Vermögensforschung darstellt, bleibt insbesondere die Gruppe der HNW-Haushalte aufgrund fehlender statistischer Daten und Informationen weitgehend unerforscht. Unsere Fallstudie über Netzwerke von Superreichen in Österreich soll diese Forschungslücke schließen und zu einem tieferen Verständnis des Einflusses von HNW-Haushalten und ihrer Netzwerke auf die aktuelle Vermögensverteilung beitragen. Vor diesem Hintergrund geben wir zunächst einen umfassenden Überblick über die nationale und internationale Forschungsliteratur zu HNW-Haushalten. Zweitens führen wir, basierend auf den Erkenntnissen aus diesem Überblick, eine explorative Studie über die Netzwerke von HNW-Haushalten in Österreich durch. Dabei sammeln wir Daten aus verschiedenen Datenbanken und individueller biographischer Forschung auf Basis von Österreichs Top-HNW-Personen und -Familien (aufgelistet in Vermögensrankings der reichsten ÖsterreicherInnen). Methodisch verfolgen wir einen zweifachen Ansatz: Einerseits wenden wir die soziale Netzwerkanalyse (SNA) von bimodalen Netzwerken (Institutionen und Personen) an, um Netzwerke von Unternehmenseigentum und (indirekter) Kontrolle aufzuzeigen. Andererseits wenden wir die SNA an, um persönliche Ego-Netzwerke von HNW-Individuen und -Familien zu untersuchen, um Merkmale des sozialen Feldes der Superreichen in Österreich zu beleuchten. Insgesamt deuten die Ergebnisse unserer SNA auf einen starken Zusammenhang zwischen der Anhäufung und dem Erhalt von (Super-)Reichtum und politischer Nähe hin.

**Schlagwörter:** Superreiche; Überreichtum, Vermögenskonzentration; Soziale Netzwerkanalyse; Österreich

## 1. Introduction and Motivation

The increasing concentration of income and wealth on the national and international level is a topic that has received increased attention both in social science research as well as public policy debates. Even severe crises such as the GFC in 2008 or the current Covid-Pandemic have not led to any trend reversal in this respect. On the contrary, the wealth of the top 1% has continued to rise throughout these crises. Since 1995 the share of global wealth possessed by billionaires has risen from 1% to over 3%. This inequality has even increased during the Covid pandemic and global data shows that 2020 marked the steepest increase in global billionaires' share of wealth on record (Chancel et al., 2021). The crisis-resilience of wealth concentration can be observed for almost all European countries and is again particularly strong for the top 1% of the wealthiest households. In the explorative case study of this paper, we particularly focus on the example of Austria. While due to different data availability issues, it is very difficult to come up with exact data on the wealth share of very wealthy individuals and households, different authors and studies estimate the wealth share of the top 1% in Austria from 25% to 41%. The very ambitious and widely-used World Inequality Database, founded by Thomas Piketty and several colleagues estimates the wealth share of this group in Austria with about 31% in 2021.

Notwithstanding the debates about how to best measure and present wealth inequality, there is large agreement in the literature, that the huge wealth discrepancy is mainly driven by a very small group of High Net Worth (HNW) individuals and families (henceforth: HNW households<sup>1</sup>), who have increased their wealth share over the last decades (Bach et al., 2019; Piketty & Saez, 2014; Saez & Zucman, 2022).

Besides the increasing academic interest in economic inequality, sparked by the seminal works of authors such as Thomas Piketty, Emanuel Saez and Tony Atkinson, the extreme concentration of wealth and income has also become a prominent topic in various public debates, particularly in times of economic crisis.

First, the crisis-resilience of HNW individuals and households is at the center of a moral debate and has led to several calls for the introduction of wealth taxes. Since the abolishment of the net wealth tax in 1994 and the inheritance and gift tax in 2008, Austria has one of the lowest

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<sup>1</sup> Our sample, based on popular rankings of super-rich in Austria includes HNW individuals and families. We use the term HNW households to refer to both categories. Although HNW families arguably are sometimes composed of more than one household (e.g. the Porsche-Piech family), we decided to use this general term, which is also used in the literature on income and wealth inequality. Moreover, most of the HNW households in our sample have accumulated their wealth over many generations, involving different individuals and families.

wealth tax rates in international comparison. The real estate transfer tax, the only remaining wealth tax in Austria therefore only leads to a share of wealth taxes of 1.4% of total tax revenue in 2020, which is far below the OECD average of about 5.5% (OECD, 2022). Accordingly, comparative European studies have shown that the effect of inheritances is particularly strong in Austria and thus the intergenerational economic mobility is very low in Austria. More concretely, Fessler and Schuerz (2015) have shown that, on average, inheritances increase the position in the wealth distribution by 52%.

Second, several authors have argued that a high concentration of wealth also bears some non-trivial societal consequences as HNW households are often able to use their economic power to influence political decisions. They do this either directly by generously donating for individual politicians or political parties or indirectly by owning or paying big and influential media companies to influence public debates according to their interests. While such phenomena have been observed and documented for different countries, in Austria particularly in the last few years several corruption scandals around the right-wing-conservative government were made public. In this context, the involvement of several wealthy individuals and the potential impact on economic and financial policies were at the center of controversial debates. However, besides these recent scandals there have also been several other attempts of wealthy individuals to gain political impact. The most prominent example was the political engagement of the Austro-Canadian billionaire Frank Stronach, who funded and financially supported a political party, which made it into the Austrian parliament in the 2010s. Against this background, wealth concentration can also be discussed as a severe threat to democracy, as it provides a very small number of people a privileged access to political power and allows them to impact on public debates (see, e.g. Frank Stronach's suggestion to "end the dominance of party politics", Stronach (2022)).

Finally, there is also an increasing debate on the ecological dimension of wealth discrepancy, i.e. the very unequal distribution of carbon emissions among world regions and again especially between HNW households and the rest. Besides the obvious fact that the highly luxurious lifestyles of super-rich people in general is also associated with a high ecological impact (Otto et al., 2019), private space tourism is yet another special case. The estimated carbon dioxide emissions associated with the fuel needed for a private space flight are about 300 tons (Dallas et al., 2020; Gammon, 2021), which is about a quarter of the total carbon emissions of all 11.5 million inhabitants of Burundi on that day (Global Carbon Project, 2021).

To sum up, wealth discrepancy is a multi-dimensional societal challenge and still increasing in most countries even throughout crises. Yet, as we will show in this paper, there are several blind spots in the academic literature, particularly concerning the upper group in the wealth

distribution and here again the small fraction of very wealthy high net worth individuals. More specifically, there are hardly any comprehensive studies on the interconnections and networks of HNW households.

Against this background, this paper aims to contribute in filling this gap in the debate on wealth concentration by providing a mixed-method explorative case study on the networks and various impact channels of HNW individuals and families in different societal fields in Austria. Our focus on the wealthiest Austrian individuals and families allows to highlight common biographical, socioeconomic and institutional patterns among this group. This way we want to answer the following research questions: First, which patterns of sociodemographic characteristics, professional career paths and institutional embeddedness can be observed? Second, how are Austrian HNW individuals and families interconnected with each other and within international networks of the super-rich? What are characteristic points of contact, meeting places, institutions, think tanks, foundations etc.? Third, how and to what extent are super-rich in Austria aiming to exert influence on different social fields (e.g. economy, politics, media, sports and society)? What are the main potential channels of impact within different types of HNW individuals and families?

The remainder of the paper is structured as follows: In section 2 we present results from an extensive literature review related to HNW households. Section 3 describes the data and data collection strategy we used in our study. Section 4 describes our methodological approach and section 5 some preliminary results based on selected examples. Finally, section 6 provides some preliminary conclusions.

## **2. Literature Review**

The literature we reviewed in this paper consists of studies from different fields that try to systematically capture and analyze information on the world's super-rich. We used two different sampling strategies: First, we looked for studies that had a research goal or method similar to our study (socio-demographic characteristics, network analysis and influence of super-rich) via searching for "super-rich" on Google Scholar and looking for relevant studies using Social Network Analysis (SNA) such as studies on elites. In a next step we applied a snowball-sampling procedure and identified related literature. As a second sampling strategy we searched for the keywords "High Net Worth Individual" and "super-rich" in the 'Web of Science' database. Through these two strategies and after a manual selection, we isolated 40 relevant studies, which were recorded and analyzed in a structured literature database. In this database we collected information on author, article, year, journal, research question, methods, data and

relevant results of the study (see Table A1 in the appendix for a preliminary selection of the relevant literature).

An overall conclusion from our review is that there is a growing interest in studying the super-rich during the last years. However there are still a lot of research gaps that need further investigation such as accounting for missing wealth data, analyzing main common characteristic of super-rich in different national contexts and examining the structures and networks that enable them to gain wealth and political influence (Sin Yee Koh et al., 2016).

Much of the challenges associated with research in this field are due to a severe lack of statistical data. Macro-economists have developed different mathematical methods to account for worldwide capital and wealth distribution and estimate the wealth of the ‘missing rich’ (Atkinson, 1970; Chakraborty & Waltl, 2018; Piketty, 2017; Hope & Limberg, 2022; Wildauer & Kapeller, 2022; Vermeulen, 2016). These studies use various statistical correction methods to address the problem that super-rich households are either not part of the sample in official wealth surveys or are not willing to participate in such surveys. However, since the degree of wealth concentration is extremely high, even a small number of HNW households significantly distort the distribution. In Austria for instance the wealthiest household in the first three waves of the “Household Finance and Consumption Survey” (HFCS) survey owns a net worth from 20-40 million euros, leading to an estimated average net wealth of about 2 million euros for the top 1% and a share of total wealth of about 25% (Fessler et al., 2019). Comparing these estimates with ranking lists of the richest Austrians published by magazines such as Trend or Forbes, it gets obvious that the wealth of the top edge of the wealth distribution is heavily underestimated. More specifically, the total accumulated wealth of the top 1% in the official HFCS-data set equals the wealth of the eight wealthiest individuals and families in these rankings. Applying a statistical correction method for correcting for the upper tale of the wealth distribution Ferschli et al. (2017) show that the richest 1% holds 41% of total wealth in Austria. These macro-economic analyses gather important data on national and global inequality and wealth of a super-rich elite; however, they cannot provide further information on the characteristics and networks of these individuals or groups.

Other works analyze socio-demographic characteristics of super-rich: Freund and Oliver (2016) describe changes in extreme wealth and find that half of European’s billionaires inherited their wealth, which is particular relevant for the Austrian case, where inheritance taxes have been completely abolished in 2008. Anand and Segal (2017) provide a global perspective on inequality, by showing that in 2012, advanced economies only comprised 14% of the world's population, but accounted for 77% of the top 1% global rich. At the same time other studies

such as Wai and Lincoln (2016) chose more individual, psychological explanations for wealth and draw a connection between elite education, cognitive ability and the super-rich. Moreover, they found that “[s]marter and more educated people tended to be wealthier, give more, and have wider, wealthier, and more powerful social networks.” (Wai & Lincoln, 2016, p. 14)

Another research strand that systematically studies networks of powerful individuals is elite studies (Bühlman et al., 2017; Hartmann, 2018; Lunding et al., 2020). Information about elites is gathered via public databases, CVs, interviews, (newspaper) articles and other various sources and is used to show connections between influential individuals by applying Social Network Analysis (SNA). Main questions of elite studies are: Who are the elites? How do they influence politics? What is their social background and how is the elite recruited? Korom (2013), for instance, conducted a study about Austria’s economic elites, where he analyzed the background, political affiliations and networks of Austria's top managers. However, the target group of elite studies differs from our study, because “elites” are not to be equated with “super-rich”. In many studies, the criteria for being part of the elite, is whether individuals have the power to influence society through their (societal) position, which does not necessarily include being super-rich (Hartmann, 2018).

García and Mateos (2021) provide an interesting overview of public administration projects in Spain that are related to tax control: The Spanish Tax Agency is using SNA in the areas of tax collection, control of ultra-high-net-worth individuals and money laundering. More specifically, the agency locates communities that are a potential tax risk by analyzing their network patterns. Therefore, it collects data of “natural persons, in our case taxpayers, that are related to each other in the present (e. g., parents and children) or in the past (e. g., former spouses). The inspectors generally need to know: a) the current family network; b) the network of companies partially owned by the taxpayers; c) data declared by the taxpayer, and d) data imputed to the taxpayer” (García & Mateos, 2021, p. 168). To overcome the lack of data on individual wealth, the agency estimates the net worth of taxpayers as it has access to data declared by the taxpayer. Furthermore, they draw from expertise from tax and accounting experts, big data analysts and programmers (data scientists are part of the research team). However, the purpose of this study is not categorizing different forms of network patterns of super-rich, but using network patterns as a tool to find individuals and companies with potential tax risk. García and Mateos (2021) also state that they are not aware of any other project or institutions using the same approach.

In all, there are hardly any comprehensive studies on the interconnections and networks of HNW individuals and families. On the one hand, the rich literature in quantitative inequality research has shown that official data underestimate the very edge of the wealth distribution.

However, they do not address possible explanations and consequences of wealth concentration and do not focus on the very small number of HNW individuals and families, who arguably have an even statistically significant impact on the wealth distribution. On the other hand, qualitative ethnographical studies on socioeconomic elites do not capture the hidden networks of all super-rich individuals, because wealth is not the relevant criteria and power through capital is not always exerted in a direct and obvious way, but through informal connections. Additionally, the research on elite networks in Austria is rare compared to Switzerland, where researchers also created the 'Swiss Elite Database' to gather information on national elites (Bühlman et al., 2017). And while characterizing the super-rich and their behavior, qualitative studies by Freund and Oliver (2016) or Wai and Lincoln (2016) do not identify concrete networks.

In the case of Austria and similar to other countries, there is little information about the super-rich, although they hold a huge part of economic power through their capital. Nevertheless, some connections between super-rich and politics are publicly known such as Frank Stronach, who founded his own political party, or Heidi Goess-Horten (2019), Stefan Pierer (2017), Klaus Ortner and his family (2019) and many more, who donated huge amounts of money to the Austrian people's party (ÖVP). Although there are many indications that the group of super-rich are a relevant and influential factor for the organization of economy and politics there is a current research gap on this issue, in particular the personal, economic, and political networks of HNW households. The literature review shows that the method of combining descriptive data and SNA is a very new and promising approach to shed light on these hidden networks.

### **3. Data and data collection strategy**

In this section, we describe the data sources that we use for our empirical analysis. For the selection of HNW households we use a ranking of the wealthiest Austrians for the year 2022 created by the German-based "Vermögen Magazin"<sup>2</sup>. The ranking contains 67 households and for our pre-study we select 6 households based on a structured sampling procedure. In doing so, we aim to cover different backgrounds of HNW households by using the main source of wealth as a selection criterion (e.g. is the wealth of a household rather based on the ownership of (industrial) companies, heritage or on real estate?).

For the examination of the structures of corporate ownership and control we use company data from the "Wirtschafts-Compass", a platform that provides business information about Austrian

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<sup>2</sup> <https://www.vermoegenmagazin.de/die-reichsten-oesterreicher/>

companies (with company headquarters/registered offices in Austria)<sup>3</sup>. It allows us to collect data on the organizational structure of firms as well as on ownership structures and individuals in top management positions of these companies. Wirtschafts-Compass uses and compiles data from the Register of Beneficial Owners (WiEReG) provided by the Austrian Ministry of Finance. The WiEReG was established “for the purpose of preventing money laundering and terrorist financing, and contains data on the beneficial owners of companies, foundations and trusts”<sup>4</sup>. A beneficial owner is defined as “those individuals to whom a company, foundation or trust can ultimately be economically attributed”<sup>5</sup>. Using Wirtschafts-Compass (instead of directly using WiEReg) has two advantages: First it allows for searching individual persons (and not only companies). Second it provides additional information on whether persons that are involved in these structures might have (potential) links to “politically exposed persons” (e.g. members of the parliament, persons in public office nominated by political parties, etc.). For the analysis of private personal and institutional social networks (ego-centric networks) we draw information from multiple sources such as online archives (e.g. Munzinger Online/Personen), biographies of HNW individuals and families and extensive internet and media research. In doing so, we aim to collect as much information as possible to gain insights into the structure of the often-informal networks that may be used by HNW households to build connections to other HNW households. Furthermore, we want to develop a deeper understanding of potential channels of societal and political impact based on these network structures.

#### **4. Methodological Approach**

In this paper, we apply a mixed-methods approach by combining qualitative and quantitative analyses of various forms of HNW households’ connections within the business environment in particular and society in general. More precisely, we rely on social network theory<sup>6</sup> to examine the social structure and networks of HNW households in Austria. In social science there is a long tradition to employ social network analysis for capturing a great variety of

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<sup>3</sup> The very fact that official statistical data on corporate ownership are provided by a for-profit company subject to charge further aggravates research and yet another example of harmful commercialization of data. However, this issue goes beyond the scope of this paper.

<sup>4</sup> <https://www.bmf.gv.at/en/topics/financial-sector/beneficial-owners-register-act/Register-of-Beneficial-Owner.html>

<sup>5</sup> see *ibid.*

<sup>6</sup> We use the software Pajek, which was developed for the analysis and visualization of graphs and large networks (Mrvar & Batagelj, 2016; Nooy et al., 2018).

relations (e.g., friendship, communication, control, etc.) between different actors (e.g., individuals, companies, institutions, countries, etc.) (Freeman, 2004; Granovetter, 1983, 1985). Ego-centric (ego) networks more specifically focus on the different kind of relationships (strong or weak ties) and the different forms of resources and capital within one`s personal or company network (Hollstein & Pfeffer, 2010; Vidmar et al., 2020; Wellman, 2007). Against this background, we apply Social Network Analysis (SNA) to map networks of ownership and control around HNW households and ego-centric (ego) networks to examine typical socio-economic and political field positions of HNW individuals in Austria. On the one hand, we construct two-mode networks (Latapy et al., 2008), where individual persons (including HNW individuals) and business institutions represent different classes of nodes and individuals` company positions (i.e. shareholders, CEO, board of directors) represent the edges of the network. On the other hand, we apply SNA to investigate ego-networks of HNW individuals and household. Here, we reconstruct one- and two-mode networks of individual personal and institutional connections, i.e. we aim to capture the mutual relations of HNW individuals and households. Ego networks in this paper comprise two classes of nodes (persons and institutions) and different categories of edges (e.g. friendship, family link, professional links, positions, membership, etc.), organized around one specific HNW individual or household.

Our empirical research strategy is based on a snowball sampling procedure in order to analyze company ownership and control on two levels (starting from the business institution a HNW household is directly associated with). In doing so, we focus on interlocking directorates, i.e. multiple positions of individuals in different companies which we treat as a proxy of an HNW households` ability to exert *indirect* control on these companies. Table 1 provides an illustrative example of the compiled data that informs the SNA of corporate ownership and control.

ID	Person/Institution	Institution	Position	Capital	Share
1	Scheuchenegger, Josef	ENGEL AUSTRIA GmbH	Board of directors		
6	Steger, Barbara	ENGEL AUSTRIA GmbH	Board of directors		
11	Engleder, Stefan	ENGEL AUSTRIA GmbH	CEO		
15	Engel Holding Gesellschaft m.b.H.	ENGEL AUSTRIA GmbH	Shareholder		100%
17	ENGEL AUSTRIA GmbH	DAIM GmbH	Shareholder		50%
21	Steger, Barbara	Engel Holding Gesellschaft m.b.H.	Board of directors		
32	Steger, Barbara	EBS Beteiligungs GmbH	CEO		
33	Ludwig Engel GmbH & Co KG	EBS Beteiligungs GmbH	Shareholder		100%
39	FRIES Beteiligungs GmbH	Ludwig Engel GmbH & Co KG	Limited partner	628.300,26 €	22,65%

Table 1. Illustrative data example for SNA of corporate ownership and control.

For the analysis of private personal and institutional social networks of HNW households, we

apply SNA to map ego-networks of single HNW individuals and households. In doing so, we explore several categories of links to politics, economy, sports/arts/culture, personal ties, family, and other civil-society institutions such as foundations, NGOs and Think Tanks. Table 2 provides an illustrative example of the compiled data that informs the SNA of ego-networks.

Field	Person (ego)	Person (alter)	Institution (alter)	Type of relationship
Personal	Frank Stronach	Siegfried Wolf		strong personal ties
Personal	Frank Stronach	Pierre Trudeau	<b>Liberal Party (Canada)</b>	Friends
Family	Frank Stronach	Belinda Stronach		daughter
Politics	Frank Stronach	Belinda Stronach		Minister of Human Resources and Skills Development (Canada)
Politics	Frank Stronach	Gertraud Knoll	<b>SPÖ</b>	support of election campaign Austrian presidency
Science	Frank Stronach		<b>Univ Innsbruck</b>	funding + honorary degree
Science	Frank Stronach	Christian Ortner	<b>Frank Stronach Institute for Socio-Economic Justice</b>	scientific board
Sports	Frank Stronach		<b>Österreichische Bundesliga</b>	former president
Culture	Frank Stronach		<b>Wiener Staatsoper</b>	sponsor

*Table 2. Illustrative data example for SNA of ego-networks.*

For the interpretation of the social network structures, we make use of three main social network measures. First, we interpret overall degree centrality, i.e. the number of edges connected to one node as an indicator of involvement and importance in a network. Second, we interpret network density, i.e. the number of edges between nodes within a network divided by all possible networks as an indicator for cohesion and proximity within a sub-network. Third, we refer to the strength of ties and interpret the percentage of company shares as an indicator for control. In the visualization of the HNW household networks in section 5 in the case of shareholders, the thickness of the edges depends on the size of company shares (strength of ties) and the size of the nodes depends on the number of companies that are under control and/or ownership (degree centrality).

## 5. Preliminary Results

In this section, we present preliminary results from our analysis of networks of HNW households in Austria. As mentioned above, we used the “Vermögensmagazin”-ranking comprising the richest 67 Austrian households and applied a structured sampling procedure to select 6 households, which represent different types of HNW households by using the main

source of wealth as a selection criterion. The preliminary results in this paper contain two different examples of networks of ownership and control (Ingrid Flick and family and the owners of the ENGEL company) and one example of an ego-network of HNW households (Frank Stronach).

### **5.1. Example 1: Ingrid Flick (and family)**

As a first example, we use the case of Ingrid Flick and her family. In what follows, we shortly describe the biographical background of this HNW household (based on Munzinger online): Ingrid Flick was the third wife of Friedrich Karl Flick, the youngest son of Friedrich Flick, a German business entrepreneur and investor who owned and built up a steel empire in Nazi Germany. After WWII he was sentenced to prison as a beneficiary of the Nazi regime and lost most of his fortune. However, Friedrich Flick was a far-sighted company trader and managed to acquire shares in several companies in the manufacturing industry which enabled him to build up the biggest industrial empire in Germany within 20 years. Shortly after his death, Friedrich Karl Flick became the sole owner of the company group. In 1985 he sold the company to the Deutsche Bank and retired to private life. In 1990, he married his long-term girlfriend Ingrid Ragger (Ingrid Flick) a former hotel receptionist and daughter of a Carinthian carpenter. In 1994, Flick settled in Austria and obtained the Austrian citizenship in the same year. In Austria, he established the Flick Foundation. The couple had twins, Victoria-Katharina and Karl-Friedrich (born 1999). Friedrich Karl Flick died in 2006.

Figure 1 shows the network of ownership and control for Ingrid Flick (and family). The squares denote business institutions (companies, foundations), the circles persons involved in these institutions. Starting point for the analysis of networks of ownership and control in this case are two business institutions: the Flick Foundation mentioned above (Flick Privatstiftung) and the Ingrid Flick Holding GmbH (squares in red; the red circles denote involved members of the HNW household).

The network indicates that Ingrid Flick owns a lot of real estate and to some extent also agricultural businesses (e.g. White Panther Produktion GmbH, a shrimp farm). She manages her real estate assets through various corporate nestings. These companies have legal forms that allow risks regarding liability to be dispersed (e.g. GmbH & Co KG). This nesting arrangements are also conducive to tax avoidance as profits and losses can easily be shifted across companies. The central position of trustees and lawyers (the yellow nodes) who manage not only multiple of her companies but appear to manage wealth of other wealthy households (i.e. diverse other private foundations) is significant. In this context, the pink circle indicates either a politically

exposed person (PEP)<sup>7</sup> or person that has at least business links to a PEP. This example suggests, that HNW individuals have at least indirect links to each other but also to politically exposed persons via top-level trustees and lawyers who have specialized in the management of HNW wealth.

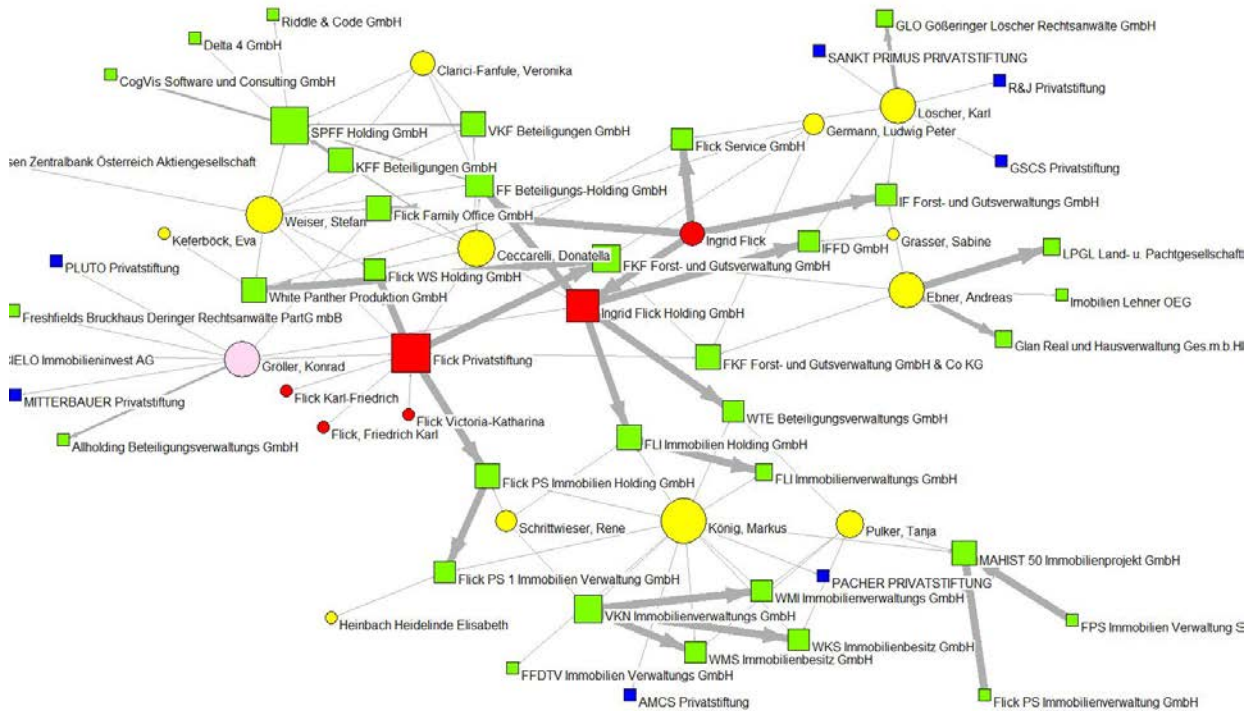


Figure 1: Corporate social network of Ingrid Flick and family

## 5.2. Example 2: Engleder & Neumann (& families)

As a second example, we analyzed the Engleder & Neumann family which owns a big industrial empire in the fourth generation, the ENGEL company. ENGEL is a world leader in the production of injection moulding machines located in Upper Austria and presents itself as a traditional family-owned medium enterprise. Founded in 1945 by Ludwig Engel, ENGEL has 9 production sites around the world with annual sales of 1.5 billion euros and approximately 7,000 employees. It is a very strongly export-oriented company with an export ratio of 95%<sup>8</sup>. In 1965, Ludwig Engel's daughter Irene and her husband Georg Schwarz took over the

<sup>7</sup> Wirtschafts-Compass refers to definition of a PEP according to § 1 Abs. 6 ff Geldwäschegesetz (GwG): a PEP is a natural person who hold a high-ranking, important office or exercise a public office whose political significance is comparable. Family members or persons with a close economic relationship to a PEP may themselves be classified as PEP.

<sup>8</sup> <https://www.engelglobal.com/de/at/unternehmen/daten-fakten.html>

management of the company. In the following decades, the company remained in family hands and is currently managed by Stefan Engleder, the great-grandson of company founder Ludwig Engel (CEO).<sup>9</sup>

In the “Engel network” two companies serve as the starting point for our network analysis: the Engel Austria GmbH (where the production of moulding machines takes place) and the Engel Holding Gesellschaft m.b.H. (serves as a holding without operative activities). Similar to the first example, Figure 2 shows a strong nesting of different companies and private foundations. However, in contrast to the network of Ingrid Flick, the members of the Engleder and Neumann family (the red nodes) exert more active control in the network (which again points toward a strong family dynasty). For instance, Birgitte Engleder (3rd generation; the big red node in the middle) is a central person within the networks as she holds positions in 40 different companies (including a position in the Kurier Beteiligungs-Aktiengesellschaft a shareholder of the Kurier, an Austrian newspaper) and is often responsible as a sole signatory (“alleinzeichnungsberechtigt”) for the ongoing business. Furthermore, the high network density in the center of the overall network indicates also a high level of control, exercised by core members of the family, such as Stefan Engleder, Birgitte Engleder, Barbara Steger and Helga Neumann.

The blue squares in Figure 2 indicate private foundations where assets are largely parked, a strategy which is, in addition to nested corporate structures, also rational in terms of tax avoidance in Austria<sup>10</sup>. Hence, while corporate control is secured mainly through the mutual connections and interlinkages of the owner family (“interlocking directorates”), particularly the financial capital of this HNW household is held in rather opaque legal forms.

Furthermore, the “Engel network” also demonstrates that different HNW households can be connected directly to each other, at least by means of corporate linkages: For instance, the HNW household of top-level investor Rudolf Fries (and family), which is ranked #41 in the “Vermögen Magazin” ranking, has strong links with the Engleder family either via board positions or company shares. Furthermore, there are strong linkages with intra-industry actors as demonstrated by the examples of Armin Albert Rau or Helmut Obermaier. Rau had previously a position as a CEO at Trumpf Maschinen Austria GmbH (another large engineering company) and is now in the supervisory board of both main companies of the “Engel network”. Obermaier owns a medium-enterprise company in the construction industry and his company Obermaier Beteiligungs GmbH holds shares from the Ludwig Engel GmbH & Co KG, an important node in the “Engel-network”. Furthermore, Obermaier also holds shares of the Rudolf Fries GmbH.

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<sup>9</sup> <https://www.engelglobal.com/de/at/unternehmen/unternehmensgeschichte.html>

<sup>10</sup> In Austria, all contributions to a private foundation are subject to a foundation entrance tax of only 2.5%.

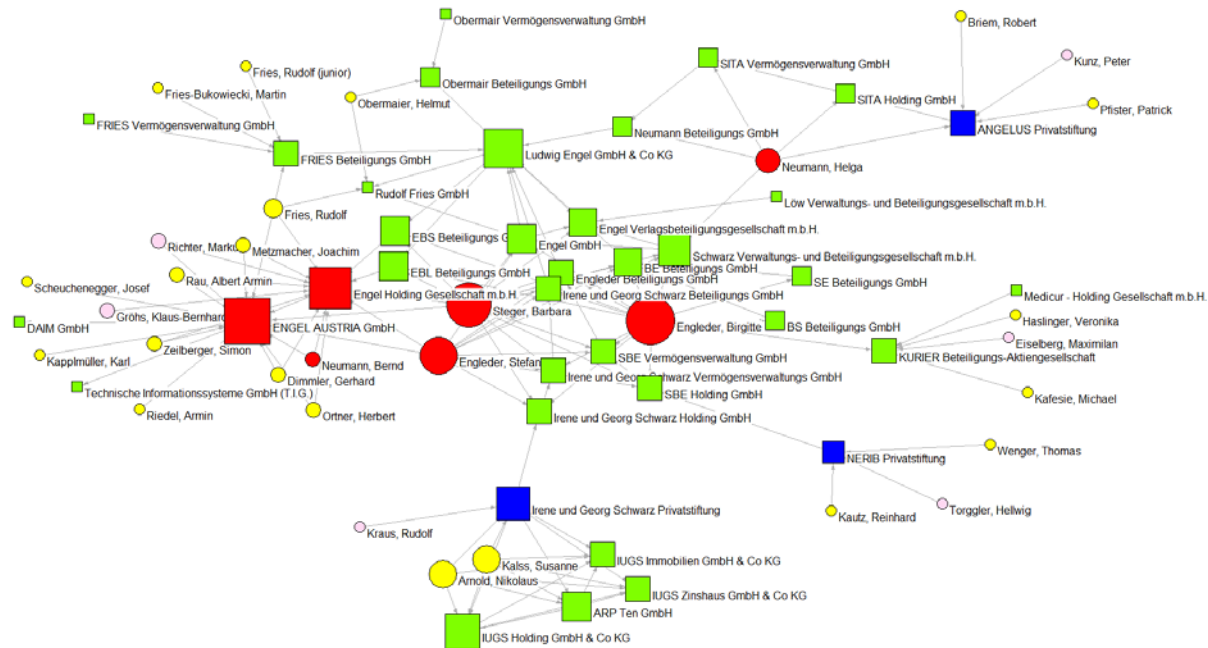


Figure 2: Corporate social network of Engleder and Neuman family (ENGEL Austria). Note: For readability reasons we did not apply a weighting of the edges.

The “Engel-network” is also characterized by a relative high occurrence of PEP’s that have positions both at the periphery of the network as well as in the two main companies (Engel Holding Gesellschaft m.b.H. and Engel Austria GmbH).

### 5.3. Example 3: Frank Stronach

Finally, as a third example an ego-network of an HNW individual who has attracted much public attention in the past is presented: Frank Stronach. He has played a special role in Austria<sup>11</sup> as he was not only a businessman, but also a politician and founder of his own political party in Austria. Frank Stronach’s wealth accumulation at first sight best fits the narrative of the “dishwasher to millionaire” story. Born in Austria, he emigrated to Canada and started with a garage company<sup>12</sup>. Gradually, he built up his automotive empire, the Magna corporation, from which he largely withdrew in 2010. He was actively involved in politics not only in Canada but also in Austria where he founded a new political party, the “Team Stronach”. For a more detailed

<sup>11</sup> And he still plays a role today by supporting a candidate of his choice for the next presidential election in Austria.  
<sup>12</sup> However, despite his often-told individual success story, which was translated into a meritocratic narrative of being responsible for your own private business, Stronach’s companies several times were supported and even saved by state interventions, e.g. in the case of Magna Austria in the 1990s, see e.g.: Fürweger (2013b); Mappes-Niediek (2004).

description of his career, his political involvement in Canada and Austria and his manifold activities see: Fürweiger (2013a); Lilley (2008); Pühringer & Ötsch (2013).

The case of Frank Stronach serves as a good example for the construction of an ego-network, as a rich body of biographical literature and media articles are available, a circumstance that is also owed to his media affinity and his active engagement in the very popular Austrian tabloid newspaper “Kronen Zeitung”. Between 2010 and 2012 Stronach published an op-ed in the Kronen Zeitung entitled “Frank’s Welt” (Frank’s World), in which he presented his world-view as successful businessman, comprising calls for a flat-tax or his “golden rule” of business (“He who pays the piper calls the tune”) and eventually also prepared the readership for his entry into Austrian politics (Pühringer & Ötsch, 2013). Figure 3 displays the ego-network of Frank Stronach which shows both direct but also strong indirect links to politics (across almost all Austrian parties)

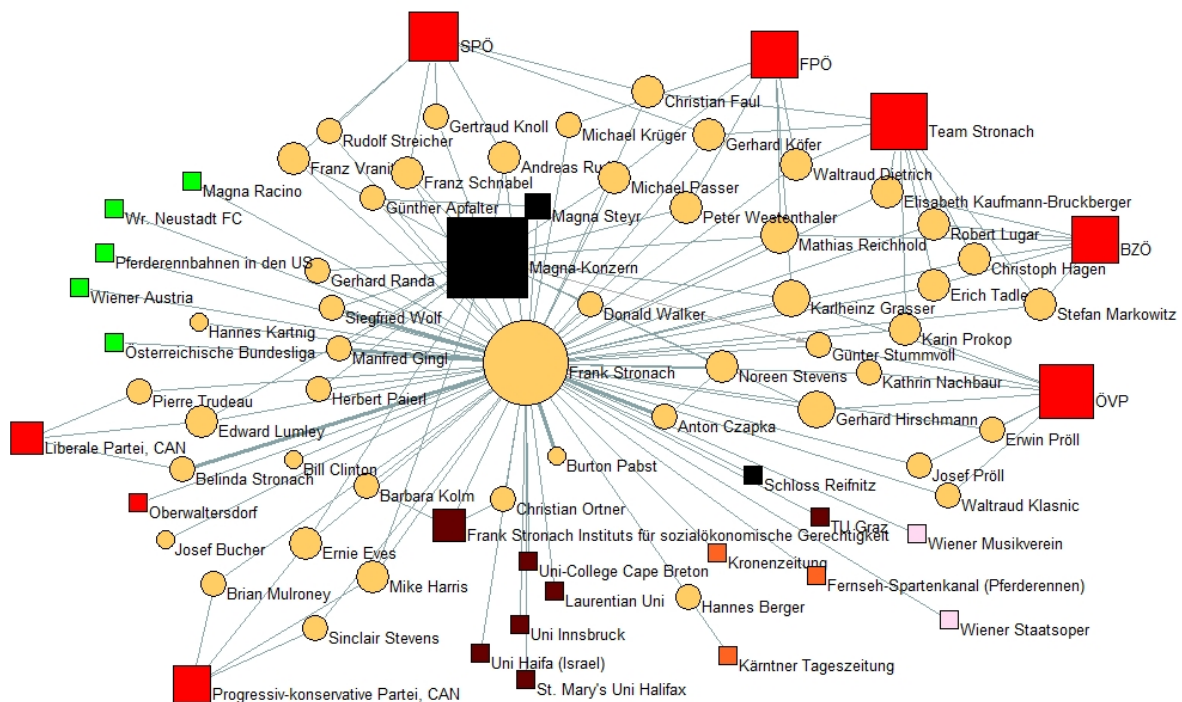


Figure 3: Ego-network of Frank Stronach

Frank Stronach’s ego-network is very heterogenous. The first and most interesting aspect is the very dense connection of Frank Stronach to several political parties across the politico-ideological spectrum in Austria as well as in Canada. Particularly in the Austrian case these connections indicate a very telling example of a revolving-door-effect or “golden handshake”. Many prominent politicians (e.g. the Austrian chancellor Franz Vranitzky, or the Austrian Minister of Finance, Karl-Heinz Grasser) from the Austrian social democrats (SPÖ), the

conservative people's party (ÖVP) as well as the two right-wing parties BZÖ and FPÖ have also held positions in the Magna-network (Magna International, Magna Austria or Magna Steyr) either before they entered politics or after they left politics. This way, Stronach build up a strong network to different political parties, which helped him to assert his business interests on several occasions (for examples see Fürweger (2013b) and Mappes-Niediek (2004)). In this respect, a very close proximity to the Austrian political system seemed to be of crucial importance for the wealth accumulation and business success of Stronach. Second, Stronach was and is still acting as a patron in the field of sports and arts/culture, particularly for soccer and horse sport, which also helped him to build up a public prominence in Austria. Third, Stronach financially supported universities by funding distinct programs or endowment chairs in Graz, Innsbruck. Furthermore, he funded the Frank Stronach Institute for Socio-Economic Justice, which was run by prominent proponents of the institutional network of Austrian neoliberal Think Tanks (e.g. Christian Ortner and Barbara Kolm).

## **6. Conclusion**

The increasing concentration of income and wealth on the national and international level is a topic of crucial importance given the increasing societal challenges associated with it (e.g. socio-economic impacts of wealth inequality, carbon inequality). In this context, we identify a research gap in the literature on the super-rich: Most studies either focus on quantitative inequality research ("macro-level") or on qualitative ethnographical (case) studies on socioeconomic elites ("micro-level") while the "meso-level" regarding HNW households receives less attention. There are hardly any comprehensive studies on the interconnections and networks of HNW individuals and families. We argue that this gap needs to be filled to provide valuable insights into the mechanisms on how the super-rich are able to exert influence on different fields of society.

Aim of this paper was to present preliminary results from our study of networks of the super-rich in Austria. First of all, we want to emphasize that this study was explorative in nature and further (comparative) research is needed to get a more comprehensive understanding of network patterns among HNW-household. Second, we identify significant challenges regarding data availability, in particular for the construction of ego-networks. Our analysis so far has shown that extensive detailed research is necessary to collect private personal data for many HNW households and sometime such data is simply not available (the case of Frank Stronach might serve as an exceptional case in this regard). Nevertheless, our approach of combining data from

very heterogeneous sources from newspapers articles, home-stories in wealth magazines to official biographical sources, seems to be a promising strategy for further research. However, data for the construction of networks of ownership and control is widely available (although there are some data limitations such as the 25% share threshold as a criterion for beneficial ownership defined by the WiEReG).

Our findings so far can be summarized as follows. First of all, the super-rich in Austria are strongly male-dominated. In the ranking of the 67 richest households, we find more than 6 times as many men listed as women (note further that, for instance, Ingrid Flick or Heidi Horten inherited the wealth of her husbands). Second, our network analysis establishes a strong link between the accumulation and preservation of mega-wealth and political proximity. This is not only demonstrated more explicitly by the example of Frank Stronach but maybe also more implicitly by the example of the Engleder family, which holds many connections to politically exposed persons. Third, we identify connection arenas and particular networks between HNW households via strategic investments and clusters (e.g. Engleder family), Think Tanks (Frank Stronach's connections to the network of Austrian neoliberal Think Tanks) and trustees/beneficial owners (e.g. Ingrid Flick) that may result in the reconstruction of different "wealth-biographies": For instance, the network of the Engleder family may stand as an archetypical example for an "industrial mode" of wealth accumulation while the network of Ingrid Flick may represent a more "discrete mode" via acquisition of real-estate. However, what is a rather common feature for all forms of wealth accumulation are company nestings and constructions of different legal forms that can be well used to save large amounts of taxes (e.g. private foundations).

It is particular the latter case, that points to an increasing societal challenge which we finally want to emphasize in our conclusion: the increasing incompatibility of unfettered wealth accumulation with the functioning of democracy and democratic institutions. Again, we point to an archetypical example: Frank Stronach and his particular network of patronage and control that enables him to gain influence and public acceptance in various societal arenas. In this respect it is not only the still wide-spread use of quite opaque and non-transparent legal forms around private foundations, which allow HNW households to potentially hide their wealth. Even more, our explorative analysis of HNW households has shown that there are several attempts of superrich to exert influence on politics and the public opinion, both directly and indirectly. First, there are several recent examples of direct funding of political parties by superrich but also network patterns involving (companies) of HNW households, political parties and individual politicians. Second, we also found some connections of HNW households to media corporations (e.g. Frank Stronach and the Engel-Network). Yet although there is no

evidence of a direct influence on the reporting of these newspapers, in the long run, newspaper managers will have to pay attention to the newspaper financial situation. Third we also found some mutual relations of HNW households and neoliberal think tanks in Austria. Since influencing public opinion and political decision-making is one of the main aims of successful think tanks, linkages and again financial support for neoliberal think tanks provides an opportunity for HNW households to impact on public debates, e.g. on the issue of wealth concentration and its societal implications. This way, Frank Stronach in 2012 in an interview with the Italian TV-broadcaster Rai frankly announced that “I will have to buy the media, in order to get to the population” (Ich muss mir die Medien kaufen, um dass ich zur Bevölkerung komme”, Presse (2012)). Against this background, it is quite telling that among the financial support group (“Förderkreis”) of the Agenda Austria, the most prominent and well-connected Austrian neoliberal think tank (see e.g. Pühringer & Stelzer-Orthofer (2016) and Schlögl & Plehwe (2015)), there are at least ten companies (formerly) owned by one of the 67 top HNW households of our sample.

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## 8. Appendix

*Table A1. Relevant literature on super-rich and wealth concentration.*

Author/Year	Article	Place	Research Question	Methods	Data	Results
<b>Urban Studies</b>						
1	Atkinson, R. (2016)	London	How do the wealthiest inhabitants in one of the world's wealthiest cities engage with public settings?	analysis of interviews and other demographic, census and survey data	World Wealth Reports by Capgemini and Merrill Lynch	The city allows the very wealthy to experience London as a democratic and welcoming space underwritten by high levels of domestic security, spatial divisions/buffers and public-private security apparatuses that facilitate their relative invisibility and safety. The wealthy take on a cloaked co-presence that prevents the need for disagreeable encounters with poverty, facilitated by the built structures and networks of the city.
2	Atkinson, R. (2020)	Great Britain	What is the influence of superrich and the fact that London is a financial centre on London's city planning?	-	City analysis, various statistics	The consequences of the transformation of London for capital is the brutal expulsion of the urban poor, austerity, cuts, demolitions, and a catalogue of social injustices. This has resulted in the sale and destruction of public assets, while the rich turn a blind eye toward criminal money laundering.
3	Beaverstock, J. V., Hubbard, P., & Short, J. R. (2004)	international	How can the geography of super-rich be studied?	Literature Review	Literature on Super Rich	There is a surprising lack of study of the world's super-rich. This implies a need for studies that explore how global networks work to the advantage of the very wealthy, creating super-rich enclaves and consumer spaces in the process.
4	Beaverstock, J.V. and J.R. Faulconbridge (2014)	international	What is the concept of 'socio-technical systems of super-rich' and how can it be used?	-	Empirical examples from corporate life and the social worlds of the super-rich (within the framework)	The analysis helps differentiate between the mobilities of different classes of super-rich, in the process acting as a reminder of the importance of mobility as a form of capital (Kaufmann et al., 2004), social distinguisher (Nowicka, 2006) and meaningful practice (Cresswell, 2006).

5	Hay, I. (2013)	Geographies of the super-rich	international	What are the geographical implications of the super-rich?	-	-	-	This book brings together a group of distinguished and emerging international scholars to critically consider the geographical implications of the world's super-rich, a privileged yet remarkably overlooked group.
6	Pow, C.-P. (2011)	Living it up: super-rich enclave and transnational elite urbanism in Singapore	international	How are elite localities and transnationalism being socially and spatially reproduced in city-state?	Qualitative analysis of interviews	Interviews with 22 households residing in Sentosa Cove (Singapore)	22	Singapore's case explicitly shows how the state has attempted to actively court the global super-rich through specific place-based strategies including customized urban policies such as creating a favourable tax(-free) environment and 'fast-track' permanent residency status coupled with the deployment of dazzling real estate products and super-rich enclaves such as Sentosa Cove.

### Sociology

7	Keister, L.A. (2014)	The one percent	United States	What is the current state of knowledge on the top one percent of income earners and wealth owners?	Literature review	Studies and Surveys of Consumer Finances (SCF)		The top one percent of income earners and wealth holders and showed that these households are typically male, white, and married with children. There is little focus on top wealth holders (versus income earners) and there is relatively little knowledge of the demographic or life course processes that contribute to resource concentration.
8	Keister, L.A. and H.Y. Lee (2014)	The one percent: top incomes and wealth in sociological research	United States	Who are the top one percent? What patterns exist in the concentration of wealth and income?	statistical analysis	Survey of Consumer Finances (SCF)		The one percent have unique asset and debt portfolios that, to some extent, insulated them from the ill effects of the recent recession.
9	Koh, S.Y., Wissink, B. & Forrest, R. (2016)	Reconsidering the Super-Rich: Variations, Structural Conditions and Urban Consequences	international	What is the current state of research on super-rich? What structural conditions encourage extreme wealth?	Literature Analysis	Studies on Super-Rich		The super-rich are a diverse group, that generated wealth in different ways and live varying social lives. They function within broader structural forces that make and sustain their capital. And other actors (eg. governments and transnational corporations), structural forces and intermediaries are implicated in the production of the super-rich.
10	Sayer, A. (2014)	Why We Can't Afford the Rich	international	What are the impacts of the lifestyle of the rich? What is the ideology that legitimizes their existence?	Statistical data, discourses, literature	-	-	Extreme concentrations of wealth are not only unjust, but also reduce the resources available for the less-well off and seriously damage democracy and the environment.

11	Volscho, T.W. and N.J. Kelly (2012)	The rise of the super-rich: power resources, taxes, financial markets, and the dynamics of the top 1 percent, 1949 to 2008	United States	Do politics and policy influence income shares of the super-rich in the United States?	Single-equation error correction models	Annual economic and political indicators	The rise of the super-rich is the result of rightward-shifts in Congress, the decline of labor unions, lower tax rates on high incomes, increased trade openness, and asset bubbles in stock and real estate markets.
Psychology							
12	Leckelt, M., Richter, D., Schroeder, C., Kuefner, ACP., Grabka, MM & Back, MD (2019)	The rich are different: Unravelling the perceived and self-reported personality profiles of high-net-worth individuals	Germany	What are the stereotypically perceived and self-reported personality profiles of high-net-worth individuals	Comparison of data; Big Five Inventory-SOEP	Annual poverty and wealth report; German Socio-Economic Panel study; online survey	Stereotypes about wealthy people's personality are accurate albeit somewhat exaggerated and that wealthy people can be characterized as stable, flexible, and agentic individuals who are focused more on themselves than on others.
13	Michaelidou, N., Christodoulides, G. & Presi, C. (2021)	Ultra-high-net-worth individuals: self-presentation and luxury consumption on Instagram	international	How do UHNWIs self-represent on Instagram in relation to luxury consumption?	Visual picture analysis of 815 Instagram pictures of UHNWI from Forbes Billionaire List	Pictures, Forbes Billionaire's List	Through Instagram images UHNWIs engage in inconspicuous consumption via subtle displays of luxury possessions and more cues that indicate luxury experiences, power, and social connections. The results further identify four dimensions of self-presentation in luxury consumption on social media: ostentatious, humble, revealed, and hidden.
14	Wai, J. & Lincoln, D. (2016)	Investigating the right tail of wealth: Education, cognitive ability, giving, network power, gender, ethnicity, leadership, and other characteristics	international	To what extent are which people in the right tail of wealth highly educated and cognitively able?	-	Standardized IQ-tests of 18,245 ultra high net worth (UHNW) individuals	Today, the typical UHNW individual profile includes U.S. married (Christian and Jewish) men who are largely Chairman and CEO, Republican, and earned their money in finance, banking and investments. This study provides evidence for the clustering of brains, wealth and power, and suggests that elite education may matter in the trajectory of developing expertise in wealth and power generation.
15	Wai, J. (2014)	Investigating the world's rich and powerful: Education, cognitive ability, and sex differences	international	Who becomes member of the global elite?	-	Intelligence tests for school admissions of world's billionaires, WEF attendees, most powerful people (according to Forbes Magazine)	Females were underrepresented among all groups, especially among self-made billionaires. These global elites were largely drawn from the academically gifted, with many likely in the top 1% of ability.

16	Zitlmann, R. (2017)	Psychologie der Superreichen	Germany	What are personality traits of the super-rich and how are they connected to their financial success?	Qualitative analysis of interviews	Interviews with 45 super rich individuals in Germany	-
<b>Macro-Economics</b>							
17	Alvaredo, F., Atkinson, A. B., Piketty, T., & Saez, E. (2013)	The top 1 percent in international and historical perspective	international	How did top income shares change over place and time over recent decades? What are the causes and implications of the evolution of top income shares?	Statistical analysis	World Top Incomes Database	The paper highlights four main factors that have contributed to the growing income shares: tax policy, changes in labor market, capital income and correlation between earned income and capital income.
18	Anand, S., & Segal, P. (2017)	Who are the global top 1%?	international	Is the composition of the global income rich changing (developing vs. advanced economies)?	Calculation, comparison	National household surveys, data on the income share of the top 1% in 28 countries from the World Top Incomes Database.	The representation of developing countries in the global top 1% declined until about 2002, but that since 2005 it has risen significantly. This coincides with a decline in global inequality since 2005.
19	Atkinson, A. (1970)	On the measurement of inequality	-	How can inequality be measured with accounting for the 'missing reich'?	Theory, mathematical formulas	-	-
20	Eckerstorfer, P., Halak, J., Kapeller, J., Schütz, B., Springholz, F., & Wildauer, R. (2016).	Correcting for the missing rich: An application to wealth survey data	Österreich	How can wealth data be corrected for the non-observation bias of the missing rich?	Distributional statistics	HSFC (Household Finance and Consumption Survey)	Our results suggest that the alleged non-observation bias is considerable, accounting for about one quarter of total net wealth in the case of Austria.
21	Ferschli, B., Kapeller, J., Schütz, B., & Wildauer, R. (2017)	Bestände und Konzentration privater Vermögen in Österreich	Österreich	What is the amount of private capital in Austria? How much money would a wealth tax generate?	Statistical calculation	HSFC (Household Finance and Consumption Survey) + Statistische Berechnungsmethode	Wealth and wealth inequality are underestimated in the HFCS raw data. Using the adjusted data, total wealth rises from 998 bn. to 1,317 bn. euro, average wealth rises 83,000 euro, and the top one percent's share of total wealth jumps from 25 to 41 percent. Depending on tax exempt amounts, tax rates and tax evasion, such taxes could generate 2.9 to 8.3 billion Euros in Austria.

22	Hay, I. (2016)	On plutonomy: economy, power and the wealthy few in the second gilded age	global	What forces power plutonomy? What are its economic and geographical implications?	-	Literature, data on income & wealth	Plutonomies (such as economies of Australia, Canada, USA, UK) have two key characteristics: 1) The Rich control a gigantic portion of the economy. 2) There is no "average consumer", only a few rich consumers and the rest.
23	Hope, D. & Limberg, J. (2022)	The economic consequences of major tax cuts for the rich	OECD	What was the impact of tax cuts on wealth?	Comprehensive measure for tax cuts, panel data analysis (GDP, inequality, tax cuts)	Statistical data	Tax breaks bring higher income inequality and no significant effect on economic growth.
24	Lindner, P., & Schürz, M. (2020)	The joint distribution of wealth, income and consumption in Austria: a cautionary note on heterogeneity	Austria	What is the joint distribution of wealth, income and consumption? What is the best way to measure social inequality in Austria?	Statistical data + methods	Household Finance and Consumption Survey (HFCS), European Statistics on Income and Living Conditions (EU-SILC), Households Budget Survey (HBS)	There is an enormous difference between the three indicators (income, wealth, consumption) usually used for describing the joint distribution. These differences can be identified in particular for specific subgroups. Only one comprehensive source of data – (HFCS) – should be used to estimate the joint distribution.
25	Piketty, T. (2017)	Das Kapital im 21. Jahrhundert	international	Where is the capital concentrated in the 21st century?	-	-	The ratio of wealth to income is rising in all developed countries. Absent extraordinary interventions, we should expect that trend to continue. If it continues, the future will look like the 19th century, where economic elites have predominantly inherited their wealth rather than working for it. The best solution would be a globally coordinated effort to tax wealth.
26	Schürz, M. (2022)	Überreichtum	USA & Europe	How is wealth measured? What is extensive wealth? How is wealth legitimized?	-	Literature analysis, data on wealth	-
27	Vermeulen; p. (2016)	Estimating the Top Tail of the Wealth Distribution	international	How can wealth surveys be corrected for non- and underreporting?	Pareto tails, comparison with national accounts	Wealth survey: HFCS; Forbes World's Billionaire's List	Adjusting data for underreporting using comparisons with national accounts and adding Pareto tails to wealth considerably improves wealth share estimates.

28	Wildauer, R. & Kapeller, J. (2022)	Tracing the invisible rich: A new approach to modelling Pareto tails in survey data	international	How can the bias of the 'missing rich' in wealth data be corrected without any additional data?	Rank Correction Approach	Wealth survey data (HFCS, FCS, WAS)	The rank correction approach might generally prove useful in contexts, where the tail of a Pareto-distributed variable is not adequately covered by the available data.
<b>Elite Studies</b>							
29	Abbink, J. & Salverda, T. (2013)	The Anthropology of Elites	international	What are elites? How are elites formed (education, jobs, finance sector) and building a network?	-	Book with different single case studies	-
30	Araujo, P. (2020)	The New Swiss Banking Elite? Plurality and Polarization of Careers	Switzerland	Is there an emergence of a new international elite in the Swiss banking sector?	Prosopography, Multiple Correspondence Analysis, Sequence Analysis	OBELIS: Swiss Elite Observatory (Biographical database), Interviews; banking reports & presentations, LinkedIn-profiles, newspaper archives and magazines specializing in or with a strong focus on the Swiss financial center	There is a new banking elite, characterized by its internationality and its relationship to performance. However, this new group did not replace the old ones and Swiss banking elites remain a group defined by its plurality.
31	Bühlman, F. (2020)	How to Study Elites' "International Capital"? Some Methodological Reflections (Chapter 19 in 'Researching Elites and Power')	-	Do studies on international capital (field and capital theory) have a useful framework and methods for studying the power of international elites?	Literature Analysis	Literature on "international" or "cosmopolitan" capital, methods to study it and its use in practice	International or cosmopolitan capital has become a promising new concept of the social sciences which allows us to understand how elites acquire and utilize internationality in order to control access to and coordination of elite positions. Further study on the value and utilization of international capital and possible combinations between international and local capital is needed.
32	Bühlman, F., Beetschen, M., David, T., Ginalski, S. & Mach, A. (2017)	Elites in Switzerland: the rise and fall of a model of elite coordination	Schweiz	What are the characteristics of Swiss elites? How did they change over time?	Biographical analysis, network analysis	OBELIS, Swiss Historic Dictionary, biographical lexicons, annual reports of firms, the website of the Swiss parliament and different libraries and archives	Swiss elites are in transformation; in the past: higher network characteristics within board members of corporations (same person in multiple firms); today two kinds of elites: national and international focussed elites.

33	Hartmann, M. (2017)	Die kosmopolitischen Eliten – ein Mythos	D, FR, GB, USA	To what extent are there cosmopolitan elites?	Research and statistics on political decision makers and economic elites (CEOs)	studies on elites	There are neither cosmopolitan elites in politics nor in business; the famous business schools and elite universities are not hotbeds of cosmopolitan elites; the national processes of elite formation are still dominant.
34	Hartmann, M. (2018)	Die Abgehobenen: wie die Eliten die Demokratie gefährden	Germany (+ international)	Who are the elites? How do elites influence politics? Which positions do elites represent and how is this linked to their social background?	Interviews, research on individuals and their networks, articles	Current state of research on elites, case studies, anecdotes	The elites in the large Western industrialized countries are predominantly socially exclusive and homogeneous. Social exclusivity and homogeneity of the elites were and are a crucial prerequisite for the implementation of neoliberal politics. The attitude of the elite towards social inequality and neoliberal politics is decisively shaped by their social background. The answer to disenchantment with politics and right-wing populism can only lie in a fundamental turning away from the prevailing neoliberal politics.
35	Korom, P. (2013)	Die Wirtschaftseliten Österreichs: Verflechtungen von Großunternehmen, Parteinähe und Adel	Austria	How are economy and politics interconnected? What is the social origin of economic elites? What are typical ways of recruiting and careers?	Network analysis, Interviews with 'Aufsichtsräten', CEOs, Managers, lobbyists and former politicians	Hoppenstedt-company database, newspaper articles, CVs, information from offices (boards of 100 largest companies, "Aufsichtsräte")	The Austrian Economic Elite is heterogeneous, descendants of Austrian nobility have better starting positions for manager careers, Change in Austro-capitalism leads to a change in elite and elite production, still careers within companies are most common (not international).
36	Lunding, J., Houman Ellersgaard, C. und Larsen, A. (2020)	The Craft of Elite Prosopography	Denmark	Which methods and data sets can be used for prosopography?	Multiple Correspondence Analysis (MCA), Social Network Analysis (SNA), Sequence Analysis (SA)	Who's Who (biographical database), LinkedIn, Wikipedia, list of organisations, affiliation via snowball-method, CVs, biography, portraits in newspapers	The quality of an analysis based on prosopographical data rests upon a well-defined, theoretically relevant population, and on access to credible and multifaceted sources and a data collection done with the particular data formats needed, for e.g. social network analysis or sequence analysis, in mind.
37	Rossier, T., Ellersgaard, C. H., Larsen, A. G., & Lunding, J. A. (2022)	From integrated to fragmented elites. The core of Swiss elite networks 1910–2015	Switzerland	How did relations and composition of central circles in Swiss Elite Networks change in the time span of 1910 to 2015?	Social Network Analysis	Swiss Elite Database	It moved from being a unitary corporate elite following family-based elite reproduction, before 1945, to an integrated corporatist elite involved in educational and professional-based reproduction, between the 1950s and 1980s, before fragmenting into a loose group in the 1990s onwards.

## Others

38	Freund, C. & Oliver, S. (2016)	The Origins of the Superrich: The Billionaire Characteristics Database	international	How do the superrich change in US, Europe and other states? Is wealth inherited or 'selfmade'? What industry does extreme wealth come from?	Statistics and research	Forbes Billionaires List & internet research	Half of European and one third of US-Billionaires inherited their wealth. Billionaires in the Europe are on average 20 years older than in USA. In Europe traditional sectors account for more than 50% of increase in wealth, in the US finance and technology sector.
39	García, IG & Mateos, A. (2021)	Use of Social Network Analysis for Tax Control in Spain	Spain	Is it possible to detect patterns of fraud in attributed networks using SNA concepts?	Mathematical calculation of net worth; Social Network Analysis	Tax data, personal information on individuals (no information on how to retrieve)	Social network analytics can be used efficiently to discover and control fraud patterns and that state-of-the-art SNA methods can be used to provide tax agencies with much more precise knowledge of the economic reality.
40	Schröder, C., Bartels, C., Grabka, M. M., König, J., Kroh, M., & Siegers, R. (2020)	A novel sampling strategy for surveying high net-worth individuals—a pretest application using the socio-economic panel	Germany	Can the underrepresentation of high-wealth individuals be remedied through the use of socio-economic panels?	Comparison of data and results from interviews	Public data from 270 million companies worldwide, interviews with 124 households	Our analysis shows that values of shareholdings from register data highly correlate with individual ranks in the wealth distribution, that the quality of personal information, particularly the residential address, is sufficiently high for subsequent interviewing, and that the approach can fill a major data and research gap in the study of high-wealth individuals.

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<p><b>„Materialien zu Wirtschaft und Gesellschaft“</b>  <b>Die Working Paper-Reihe der AK Wien</b></p>
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978-3-7063-0935-6