Gateway Cities, Under-Connected Cities and Largely Disconnected Cities in Global Value Chains in Sub-Saharan Africa

Herman S. Geyer

1 Introduction

Globally, certain cities serve as gateways in global value chains (GVCs) through which commodities and services are traded between countries as inputs in value-added production (Scholvin 2017; Scholvin et al. 2017). In sub-Saharan Africa, lead firms from the Global North specifically target primary cities—as these serve as dominant entry points into hinterland markets for both buyer-led and producer-led chains. With communication and transportation being more costly in sub-Saharan Africa relative to the rest of the world, it is also more efficient for export-oriented local firms and state functions to concentrate in these cities—as they are where infrastructure networks are densest, increasing the potential for value-chain formations in these locations (Geyer et al. 2015). These cities are not limited to serving as intermediary terminal points in the global exchange of goods and services. They also have a global-integration function through the transmission of concepts, ideas and trends. This function enables firms in peripherally located cities to maintain their prominence despite the large distances between cities and the uneven distribution of them (Storper and Venables 2004). Global connectivity enables firms in these cities to integrate with the rest of the world, making local economies more competitive in the global market. The degree of global and regional connectivity distinguishes gateways from cities that merely serve as intermediary terminal points in global trade.

Yet, although the mean level of participation of sub-Saharan African countries in GVCs is high, the level of connectivity of most primary cities is relatively lower than one would expect given the size of urban and hinterland populations (Onyebueke 2011). The reason for this is that industries in these cities are focussed on the

H. S. Geyer (✉)
Department of Geography, Stellenbosch University, Stellenbosch, South Africa
e-mail: hsgeyerjr@sun.ac.za

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production of non-tradable goods and the export of low-quality, lower-tiered production inputs, limiting the capacity of these cities to provide the ancillary services necessary to upgrade the value of goods. In contrast to the expected scale–connectivity assumption of gateway cities (more on this later), most cities in sub-Saharan Africa do not have the integration functions necessary to improve the level of services and to raise the value of goods traded internationally. Although they are important intermediary terminals in GVCs, these types of city do not significantly participate in value-added production. These poorly connected cities within global networks have consequently been referred to as 'loose connections' and 'black holes' (Short 2004).

In this chapter, key factors that define cities as gateways as well as the functions of these within GVCs are examined in the context of the participation of sub-Saharan African cities in global trade and value-added upgrading. The low level of connectedness of primary cities in sub-Saharan Africa is shown, with particular focus on the structure of regional economies and factors that undermine their capability to attract foreign investment—and thus also work against growth in local value chain-addition. Particular attention is given to distinguishing gateway cities from under-connected (loose connection) and largely disconnected (black hole) ones, that by adapting a corresponding typology of cities based on the descriptions established by Short (2004). The related analysis measures the propensity of primary cities in sub-Saharan Africa to act as gateways by comparing their connectivity to population size, weighted by the economic value of their respective hinterlands. Finally, probable explanations for the spatial distribution of gateway cities as well as under-connected and largely disconnected ones are given. The dominant factors that result in the clustering of cities in the aforementioned topologies are identified via a factorial analysis.

2 Gateway Cities in GVCs

Gateway cities are intermediary nodes in GVCs that provide opportunities for global lead firms to access markets and resources in the hinterlands of distant locations. They serve as gateways because they provide a central location through which local products and services are distributed abroad, and through which concomitantly the local hinterland accesses foreign goods and services for local production and consumption (Scholvin 2017; Scholvin et al. 2017). However, most importantly, they serve as gateways through which the spillovers from the upgrading of products and production processes result in the increased competitiveness of local firms within GVCs (Rossi et al. 2007). Gateway cities hence provide an important development function for national economies, integrating these into the world economy and creating globally more competitive local industries. Increasingly the net value of the region is incorporated in the quality of global production functions concentrated in such gateway cities, regardless of the size of resources in the hinterland. Also seen more and more, communication and transportation technology

has reduced the distance and location areas between gateway cities and their external markets. This results in the development of important gateways such as Mauritius and Singapore in peripheral areas with small, poorly resourced local markets, distant from the larger ones that they interlink globally (Chap. 13 in this volume; Breul and Diez 2017).

In contrast to the world cities hypothesis, which is about the concentration of command and control functions and advanced producer services (Beaverstock et al. 1999; Taylor et al. 2002), the gateways concept provides a more comprehensive understanding that is more suitable for evaluating the connectivity of cities within GVCs. Gateway cities serve as a concentration point for five essential functions that are the basis of all interlinking within GVCs: logistics, manufacturing, command and control, consumer services and knowledge generation. They also provide a stable economic and political environment from which markets and resources can be more readily accessed in unstable regions (Scholvin 2017; Scholvin et al. 2017). Because of the large sunk costs in establishing production functions, gateway cities increasingly attract foreign investment in the zero-sum game of capturing market share in global exports (Short et al. 2000). Moreover, the concentration of essential global production functions creates positive spillovers for the relocation of other firms, in which the increasing returns associated with co-location result in continued growth and economic development. This concept is variable over time, as the mobility of firms and changes in the global economy result in shifts in the position of gateway cities in the global economy.

These two characteristics—stable business environments and the increasing returns of concentrated local functions—make certain cities attractive for the limited decentralisation of functions critical to GVCs. However, this does not explain why the de-concentration to gateway cities from world cities outside of sub-Saharan Africa is necessary. As noted by Scholvin (2017) and Scholvin et al. (2017), the world cities hypothesis does not explain why, in a hyperconnected global economy, all functions critical for GVCs would not be solely concentrated in world cities with the highest returns of scale. Yet there are still proximity effects, which makes de-concentration necessary. These effects are a product of the differences in governance and institutional frameworks between regions involved in GVCs. Regional differences in the governance of value chains, make midpoint gateway cities essential in bridging the gap between the codified technical standards in the primarily modular value chains in the Global North and the face-to-face interaction that is necessary in the primarily relational value chains in the Global South (Pietrobelli and Rabellotti 2011). Different regions also have different institutional settings, framed by their varying political and socio-cultural contexts (Bryson et al. 2013). In producer-led chains, lead firms establish regional headquarters and regional sales offices in gateway cities to bridge the institutional gap between their respective headquarters in world cities, on the one side, and national subsidiaries, on the other (Breul and Diez 2017; Scholvin 2017; Scholvin et al. 2017). In buyer-led chains, specialist first-tier buyers and suppliers—with intimate knowledge of both the upstream modular chain processes in the Global North and downstream relational chain networks in the Global South—similarly bridge the large institutional gaps

between regions, minimising risks for both producers and distributors alike (Chap. 2 in this volume).

What is more cities in sub-Saharan Africa are characterised by extremely high levels of social heterogeneity, far beyond what is experienced in the Global North. This heterogeneity enhances the competitiveness of the concerned cities both globally and regionally (Eyoh 1999). They are internally fragmented into a large number of different ethnicities of variegated cultures, languages and religions, clustering within enclaves in various areas of the city. Unlike the ethnic clustering and integration patterns in the Global North, most sub-Saharan African cities generally do not have a dominant local culture or language. They do not experience isomorphic assimilation, but rather coexistence within pluralistic societies. Previous research has found that higher levels of equally distributed ethnic diversity—meaning the absence of large, dominant such groups—correlates positively with political stability (Geyer et al. 2015). A diaspora externality is also recognised as an integral feature of the post-Fordist economy, as extreme ethnic diversity enables lead firms to establish themselves within trade networks reaching far into the hinterlands in the Global South (Rapoport 2004; Simone 2001). This is particularly the case in sub-Saharan African cities with their high concentrations of East Asian, European and South Asian communities, which—due to more extensive trade networks—evidence higher growth rates than cities with lesser degrees of ethnic diversity do (Bräutigam 2003).

Sub-Saharan Africa has a small number of world cities compared to other world regions (Globalisation and World Cities Research Network 2016), despite certain cities in sub-Saharan Africa growing to become some of the largest conurbations with also the fastest population growth rates anywhere on the planet. The world cities hypothesis is limited to measuring connectivity in terms of a narrow range of advanced producer services and command and control functions. A lack of such an epithet does not necessarily denote low connectedness, but merely marginality in terms of control and of the rents remunerated from global production (Short 2004). Despite lead firms concentrated in world cities in the Global North dominating GVCs through command and control functions, partner gateway cities in different regions of the Global South are also essential in providing lower-level chain functions—that by organising backward and forward linkages with their respective hinterlands (Martinus et al. 2015).

Sub-Saharan African cities are rapidly urbanising due to a higher level of investment in infrastructure, increasing rents from industry, better education and health, as well as continued growth in employment—all in comparison to their respective hinterlands (Potts 2012). Yet, the attractiveness of these cities as gateways is rather low because—relative to the significant rise in population—they have lower economic growth rates than urban areas in other parts of the world and higher poverty ones. They also tend to lack the advanced communication and logistics infrastructure necessary for efficient integration into GVCs, and are globally uncompetitive because they experience high operation costs and production inefficiencies (Laros and Jones 2014). For example, sub-Saharan African cities have the lowest density of transportation infrastructure per area worldwide (Lall et al. 2017). As noted, Short (2004) refers to these cities within the global urban network as either

loose connections or black holes. The former refers to cities whose global connectedness is less than expected relative to their size: they are under-connected. The latter, meanwhile, refers to cities that are largely disconnected due to high levels of poverty, limited markets, internal instability and self-exclusion.

Although the ethnic diversity of these cities enhances their competitiveness both globally and regionally, it can also create higher levels of instability due to increasing intra-city conflicts. Both types of city are marginalised within the global economy, having a negative residual in terms of their connectivity in GVCs relative to the size of city and hinterland population. The difference is one of degree. Administrative inefficiencies and high capital, communication, energy and transportation costs further complicate investment in these cities (Laros and Jones 2014). This risky economic environment also de-incentivises local production. Ironically, international policies—such as structural-adjustment programmes—have contributed to eroding local skill bases, without significantly increasing the competitiveness of national export economies in sub-Saharan African cities meanwhile (Babatunde 2009).

Part of the challenge in establishing gateway cities in sub-Saharan Africa is the structure of the export economies, focussed on low-quality, lower-tiered production inputs—primarily the output from mining operations (Lall et al. 2017). Although this does not limit the participation of sub-Saharan African countries in GVCs, it does undermine the attractiveness of these countries as destinations for significant investment by lead firms. Only the initial stages of value chains are found in sub-Saharan Africa. Everything else tends to concentrate in the Global North and, to a growing extent, in the Far East. As a consequence, although the degree of participation in GVCs as a percentage of total exports is high in sub-Saharan African countries, the per capita value of these goods is very low indeed—which is due to the lack of upgraded processes, products and related functions (Chap. 2 in this volume). This limits exports to those products for which sub-Saharan Africa has an absolute advantage (mostly scarce raw materials), with the remainder of local production focussed on non-tradable goods and services (Lall et al. 2017).

Furthermore, the low level of industrialisation in most countries in sub-Saharan Africa increases the costs of complementary services and imported foreign value-added production inputs, which are necessary conditions of the successful formation of gateway cities in the Global South. These limitations reduce the capacity of many cities in sub-Saharan Africa to effectively function as gateways, because the majority of the upgrading of export products in producer-led value chains occurs outside of the subcontinent. Instead, cities in sub-Saharan Africa—especially primary ones (which are, by definition, disproportionately larger in terms of economic output and population than any other cities in the national urban hierarchy)—tend to serve as nodes in buyer-led chains. Local first-tier buyers, being based in primary cities, acquire and distribute goods as agents of lead firms for further upgrading in other countries elsewhere (Chap. 2 in this volume). This maximises the accessibility of production inputs for lead firms, while simultaneously minimising the accompanying risks and investment costs. However, this also reduces the ability of primary cities to function as gateways.

A final feature of sub-Saharan African cities that has to be mentioned for methodological reasons is significant emigrant remittances and official development-aid inflows. This is particularly evident in resource-poor countries and ones experiencing political instability (Geyer et al. 2015). These countries generally have a dysfunctional local economy and a large expatriate population. Somalia, for instance, only produces approximately 20% of its gross national income within its own borders. The remainder is made up of international assistance and of remittances from the Somali refugee population resident in the Global North (International Fund for Agricultural Development 2007). Such remittances and development aid have a strong urbanisation effect, as the highly regulated and monopolised structure of money transfers and the concentration of education and consumption goods predispose the recipients thereof to move to cities—usually primary cities (Gupta et al. 2009). Donor funding and remittances do not have an important effect on the performance of cities in GVCs but they do increase the population size of these urban centres so as to be greater than the actual economic base upon which they operate, thereby contributing to the low-scale connectivity seen in under-connected and largely disconnected cities.

3 Connectivity of Primary Cities and Determinants Thereof

This study analyses the relative propensity of primary cities in sub-Saharan Africa to act as gateways in GVCs. The gateway status of cities is calculated as:

$$C_j = \left(\frac{Ex_j}{p_j} \Big/ \left(\frac{Ex_i}{p_i} \right) \right) \times GVP_j \times 100$$

$$GVP_j = r_j / r_{jmax}$$

$$r_j = \sum_{y=1}^{n} r_{yj}$$

The connectivity of cities is measured using a formula modified from Short (2004), where C_j represents the connectivity of cities. This is calculated by the city's per capita exports Ex_j relative to the population size of the city p_j in country *i*. The calculation is weighted by the national per capita exports Ex_i relative to the population of the country p_i to overcome scale distortions of poorly performing cities in larger countries. This calculation is multiplied by the GVC participation *GVP* of city *j*. GVP_j is calculated as suggested by Taylor (2001), and consists of the total producer services per city—as the sum of relational interactions r between firms y and cities r_{yj}, and expressed as a fraction of the connectivity of the maximally connected city r_{jmax}.

Nation states are selected as the territorial unit of analysis because of the fragmented trade agreements between countries in sub-Saharan Africa, resulting in

low levels of intra-African trade (Anyanwu 2014). Thus it is assumed that each primary city is the potential gateway to its respective host state, defined as the hinterland. Cities with significantly higher positive trade coefficients than those of the other cases are considered as being gateways, reaching higher levels of both intra-African trade and of international trade beyond the continent. Only primary cities are selected because, at least according to Short (2004), gateway cities dominate other urban centres in their spheres of influence, rarely sharing a hinterland with another gateway city. The population of cities is determined according to the size of contiguous conurbations, not the population of administrative boundaries. National data was compiled from the 2016 World Bank Development Indicators (World Bank 2016). City data was compiled from the 2017 Canback Global Income Distribution Database (Canback Dangel 2016). The GVC participation of cities was calculated by using formulas from the 2017 Global Network Service Connectivities Database. Small countries—Burundi, Djibouti, Equatorial Guinea, the Gambia and Guinea-Bissau—were excluded from the analysis, due to the unavailability of data for certain key variables.

Figure 1 below indicates the level of connectivity of primary cities in sub-Saharan Africa. The upper circle represents true gateway cities, with their high level of connectivity relative to population size. The uppermost urban agglomeration is Gauteng, South Africa, with a population exceeding ten million people. It can be regarded as the leading gateway city in the region, and is also considered a beta world city by the Globalisation and World Cities Research Network (2016). The other gateway city is Port Louis, Mauritius, with a population of approximately 150,000. However, despite its small size (it is the smallest city in the list), it has a disproportionately large representation in GVCs. The second circle represents under-connected cities, meaning cities whose connectedness is less than expected relative to their size. Although these cities have medium to large populations ranging

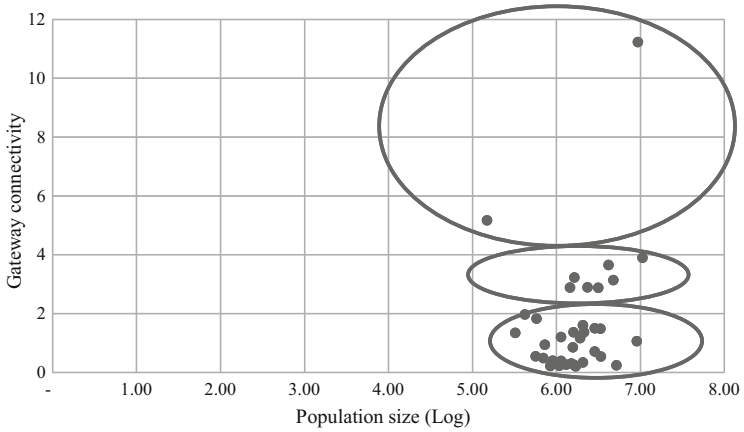


Fig. 1 Gateway connectivity of primary cities in Sub-Saharan Africa. Source: Author's own compilation, based on data from the Globalisation and World Cities Research Network (2016)

between 1.5 million and 10 million people, their connectivity is relatively low—suggesting that, despite large export economies, their role in GVCs is mostly limited to the export of raw materials rather than the upgrading of products, processes and functions. As Table 1 shows, meanwhile, all under-connected cities are located in relatively stable countries in which unprocessed agricultural and mining products are the dominant exports.

The lower circle in Fig. 1 comprises largely disconnected cities, with very low rates of producer service trade. These cities are in the majority in sub-Saharan Africa. With the exception of Gaborone and Libreville, these largely disconnected cities have limited markets for both non-tradable goods and foreign production inputs. Many of these cities—for example Bangui, Khartum, Kinshasa, Mogadishu and Monrovia—are located in countries that have relatively recently experienced significant political instability. Others such as Brazzaville and, again, Mogadishu are located in countries that self-segregate from global economic processes for political or religious reasons. Largely disconnected cities are also located in countries with outstandingly high levels of urban poverty as well as ethnically highly diverse populations.

In order to analyse the broader classification of sub-Saharan African cities as gateways, under-connected and largely disconnected ones, this study captures their performance on a range of criteria. First, the relative performance of cities is assessed based on those from the aforementioned papers by Scholvin (2017) and Scholvin et al. (2017). Second, factors that best explain the variance between cities in sub-Saharan Africa are taken into account, based on Geyer et al. (2015). Third, additional aspects proposed by Short (2004), ones that explain the existence of under-connected and largely disconnected cities, are further included. The list of variables selected is shown by the following Table 2.

The factor analysis presented in Table 3 below reveals the relationships between the participation of sub-Saharan African primary cities in GVCs and the topological characteristics of these cities. This analysis yields three factors corresponding to the three identified categories of cities—explaining 62% of the total variance therein. Factor 1 expresses a strong negative correlation between the participation of cities in mining exports and other GVC activities, particularly manufacturing and service exports. Although mining exports are relatively negatively invariant to connectivity in GVCs, they are positively correlated to corruption—indicating that political instability and business risk increase with the level of participation in such exports. This factor best categorises under-connected cities. The low variance in the connectivity index indicates that this factor is not exclusive to under-connected cities, however.

Factor 2 expresses a strong correlation between the logistics performance of cities and their global connectivity. The coefficients of both variables are negative for most of the cities studied in this chapter, indicating that they have a low ranking on these two factors. Cities that are highly ranked are gateways (Gauteng and Port Louis). Logistics performance and global connectivity are also negatively correlated with dependency on development aid and remittances as well as urban poverty, but positively with ethnic fractionalisation. This indicates that in gateway cities and in

Table 1 Categorisation of primary cities in Sub-Saharan Africa

City	Country	Connectivity	Population (in millions)	Category
Gauteng	South Africa	11.23	9.31	Gateway city
Port Louis	Mauritius	5.17	0.15	Gateway city
Lagos	Nigeria	3.9	10.58	Under-connected city
Abidjan	Ivory Coast	3.65	4.18	Under-connected city
Harare	Zimbabwe	3.23	1.63	Under-connected city
Luanda	Angola	3.14	4.77	Under-connected city
Accra	Ghana	2.89	2.34	Under-connected city
Lusaka	Zambia	2.89	1.45	Under-connected city
Nairobi	Kenya	2.88	3.14	Under-connected city
Gaborone	Botswana	1.97	0.42	Largely disconnected city
Libreville	Gabon	1.83	0.58	Largely disconnected city
Maputo	Mozambique	1.61	2.07	Largely disconnected city
Dakar	Senegal	1.50	2.86	Largely disconnected city
Dar es Salaam	Tanzania	1.48	3.35	Largely disconnected city
Kampala	Uganda	1.37	1.60	Largely disconnected city
Douala	Cameroon	1.37	2.13	Largely disconnected city
Windhoek	Namibia	1.34	0.32	Largely disconnected city
Monrovia	Liberia	1.20	1.13	Largely disconnected city
Ouagadougou	Burkina Faso	1.16	1.91	Largely disconnected city
Kinshasa	Democratic Republic of Congo	1.06	9.05	Largely disconnected city
Blantyre	Malawi	0.94	0.73	Largely disconnected city
Lomé	Togo	0.85	1.57	Largely disconnected city
Mogadishu	Somalia	0.71	2.86	Largely disconnected city
Asmara	Eritrea	0.55	0.56	Largely disconnected city
Addis Ababa	Ethiopia	0.54	3.39	Largely disconnected city
Bangui	Central African Republic	0.49	0.70	Largely disconnected city
Freetown	Sierra Leone	0.40	0.90	Largely disconnected city
Kigali	Rwanda	0.39	1.13	Largely disconnected city
Conakry	Guinea	0.34	2.07	Largely disconnected city
Brazzaville	Republic of Congo	0.30	1.51	Largely disconnected city
Niamey	Niger	0.26	1.30	Largely disconnected city
Antananarivo	Madagascar	0.26	1.61	Largely disconnected city
Khartum	Sudan	0.25	5.19	Largely disconnected city
Ndjamena	Chad	0.22	1.08	Largely disconnected city
Cotonou	Benin	0.22	0.84	Largely disconnected city
Bamako	Mali	0.21	1.70	Largely disconnected city

Source: Author's own compilation, based on data from the Globalisation and World Cities Research Network (2016)

Table 2 Variables for analysing the performance of primary cities

Factor/Feature	Proxy	Source
Logistics and transportation	Logistics performance index	Scholvin (2017) and Scholvin et al. (2017)
Industrial processing	Manufacturing share of gross domestic product	Scholvin (2017) and Scholvin et al. (2017)
Corporate control	Connectivity index	Scholvin (2017) and Scholvin et al. (2017)
Service provision and knowledge industries	Service exports	Scholvin (2017) and Scholvin et al. (2017)
Dependence on primary sector activities	Mining exports	Geyer et al. (2015)
Ethnic and religious diversity	Fearon's ethnic fractionalisation index	Geyer et al. (2015)
Dependence on international transfers	Net official development assistance and remittances/GNI	Geyer et al. (2015)
Informal employment	Percentage of workers in informal employment	Geyer et al. (2015)
Urban poverty	Urban population living below national poverty line	Short (2004)
Political stability, business risk	Informal payments to officials	Short (2004)

Source: Author's own compilation

Table 3 Factor analysis of primary cities in Sub-Saharan Africa

Variable	Factor 1	Factor 2	Factor 3
Logistics performance index	−0.128842	−0.836591	−0.050177
Manufacturing share of GDP	−0.637349	−0.222785	−0.227649
Connectivity index	−0.088132	−0.848259	−0.168629
Service exports	−0.690017	0.045870	−0.134778
Mining exports	0.865133	0.092346	0.057099
Fearon's ethnic fractionalisation index	0.181767	−0.429877	0.700268
Net official development assistance and remittances/GNI	0.002073	0.394143	0.506505
Percentage of workers in informal employment	0.073183	0.210432	0.647719
Urban population living below national poverty line	0.065033	0.384234	0.705733
Informal payments to officials	0.450220	0.332056	0.618597
Explanatory variance	1.900486	2.122015	2.151388
Proportional total	0.190049	0.212201	0.215139

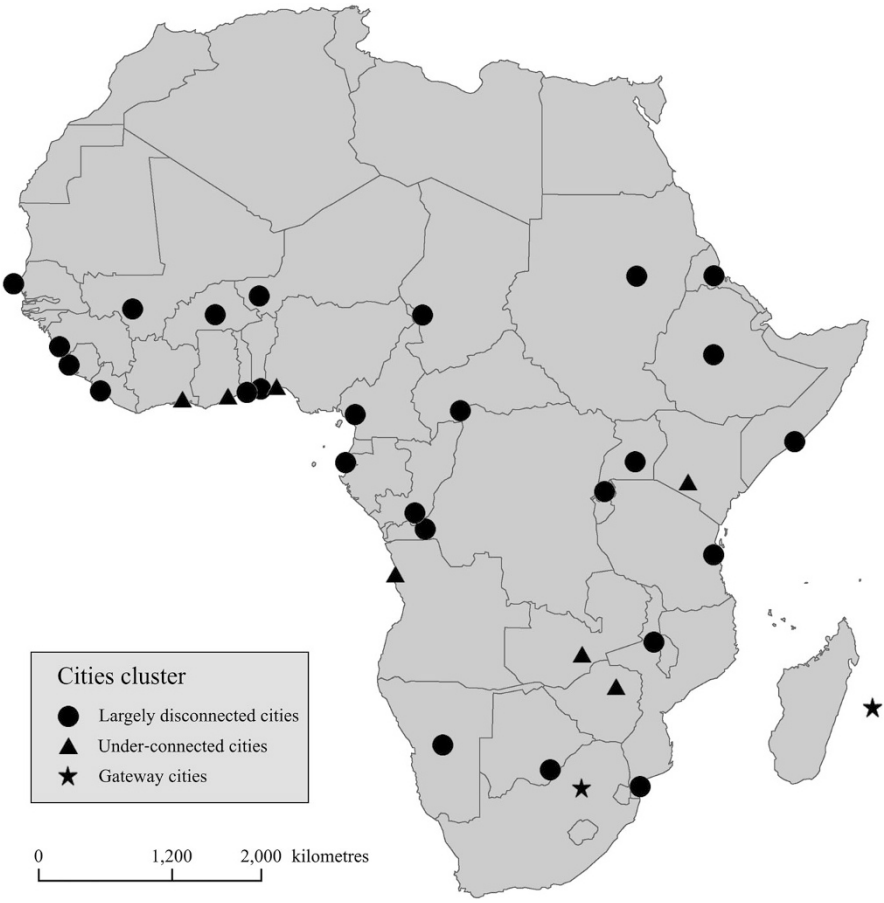
Source: Author's own calculations

under-connected ones that come relatively close to having gateway status, social diversity and pluralism increase the connectedness between different regions. Poverty, dependence on external remittances and insufficient logistical capacities do not affect these cities as much as they do less-connected ones.

Factor 3 best represents the features that hamper the participation of primary cities in sub-Saharan Africa in GVCs. This factor is highly significant in terms of the variables that represent largely disconnected cities as failed network ones per Geyer

et al. (2015) and Short (2004). The most significant component is ethnic fractionalisation. While this on its own is a neutral variable, when interpreted in the context of the other significant variables in Factor 3—being urban poverty, informal economies, corruption and a dependence on external remittances—this indicates that ethnic conflict may undermine the connectedness of cities. Factor 3 is most representative of largely disconnected cities. It is negatively correlated with variables from GVC participation.

When analysing the spatial distribution of gateway, under-connected and largely disconnected cities, as shown in Map 1, it is evident that the gateway function is a product of network centrality—regardless of the geographical location, the size of the population or the extent of the hinterland economy. The connectivity of gateway cities is based on the relative concentration of global production functions



Map 1 Gateway cities, under-connected and largely disconnected cities in Sub-Saharan Africa. Source: Author's own compilation

essential to GVCs. Gauteng has a local economy and population size similar to less connected, oil-exporting Lagos. Even though Gauteng is strongly linked to the export of mining resources, it also has well-established manufacturing and advanced services sectors that it combines with relatively good logistical infrastructure, resulting in a high level of connectivity. Port Louis, meanwhile, is the smallest of the cities analysed and has a modest hinterland economy. Its location is even more peripheral than that of Gauteng. However, it reaches an outstanding performance with regard to its logistics, manufacturing and advanced service sector activities.

In the zero-sum game of intercity competition for foreign investment and markets, as described by Short (2004), it is expected that many cities will remain under-connected or even largely disconnected. In sub-Saharan Africa, there is a clustering of under-connected cities in resource-rich parts of the subcontinent—particularly around the oil-rich Gulf of Guinea and in mineral-rich Southern Africa. Nairobi also appears to serve as a central node in agriculturally important East Africa. The largest category hereof is largely disconnected cities, with disproportionately low connectivity. These cities are characterised as experiencing, to different degrees, the effects of high levels of poverty, limited markets, internal instability and self-exclusion.

4 Conclusion

Gateway cities is a term used for locations that serve as critical nodes in GVCs, connecting regional hinterlands and global markets. Rather than serving as mere intermediary terminals, gateway cities host essential functions for value chains—ones that enable local firms to upgrade processes, products and related functions, thereby capturing a larger share of value-addition in GVCs. Gateway cities thus have a globalising role, in which spillovers enable local firms to better integrate and compete in the global market. This is a new concept, contrasted to that of world cities, because the concentration of global command and control functions does not necessarily correlate to the level of participation in GVCs. Instead, the gateway concept aims at divulging the particular role that each city plays in value-addition and related upgrading along entire value chains.

One of the most important implications of this concept is that the spatial centrality or peripheral nature of locations, as well as the size of regional hinterlands, become less important than the level of participation in global trade. The two cities identified as gateways in the research presented in this chapter are not centrally located in sub-Saharan Africa—and only one of them, Gauteng, has a major economic hinterland. The other, Port Louis, does not. In the global transmission of products and services, centrality becomes a function of the connectivity within value chains—which results from logistics performance, manufacturing capacities, command and control functions, consumer services and knowledge-generating industries, irrespective of the significance of local resources and spatial proximity. The analysis has implied that other context characteristics also become critical for acquiring gateway status: the stability of the city's host state, the ability to capture increasing

returns through the agglomeration of the aforementioned functions and a socially heterogeneous workforce—able to reach greater levels of networking within the region, and between the Global North and Global South more generally too.

In contrast to Gauteng and Port Louis, the remainder of the cities in sub-Saharan Africa are best classified as under-connected or largely disconnected. Under-connected cities have a lower level of connectedness in terms of the share of global services production, relative to the population size and scale of trade in value-added products occurring in the city and in hinterlands. As substantiated by the analysis, under-connected cities are typified as ones overly dependent on the export of unprocessed raw materials—particularly mining ores and liquid fuels. They lack the diversified local economies necessary for the provision of essential functions that would turn them into gateways. The analysis indicates that these cities are handicapped by poorly developed local manufacturing and services sectors. They are also plagued by corruption, increasing the risks in doing business there. Largely disconnected cities, which include the majority of primary ones in sub-Saharan Africa, have disproportionately low connectivity. They are further marginalised by high levels of urban poverty, limited markets, extensive corruption and political instability, a large informal sector, significant social fragmentation as well as heavy dependence on foreign aid and remittances.

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