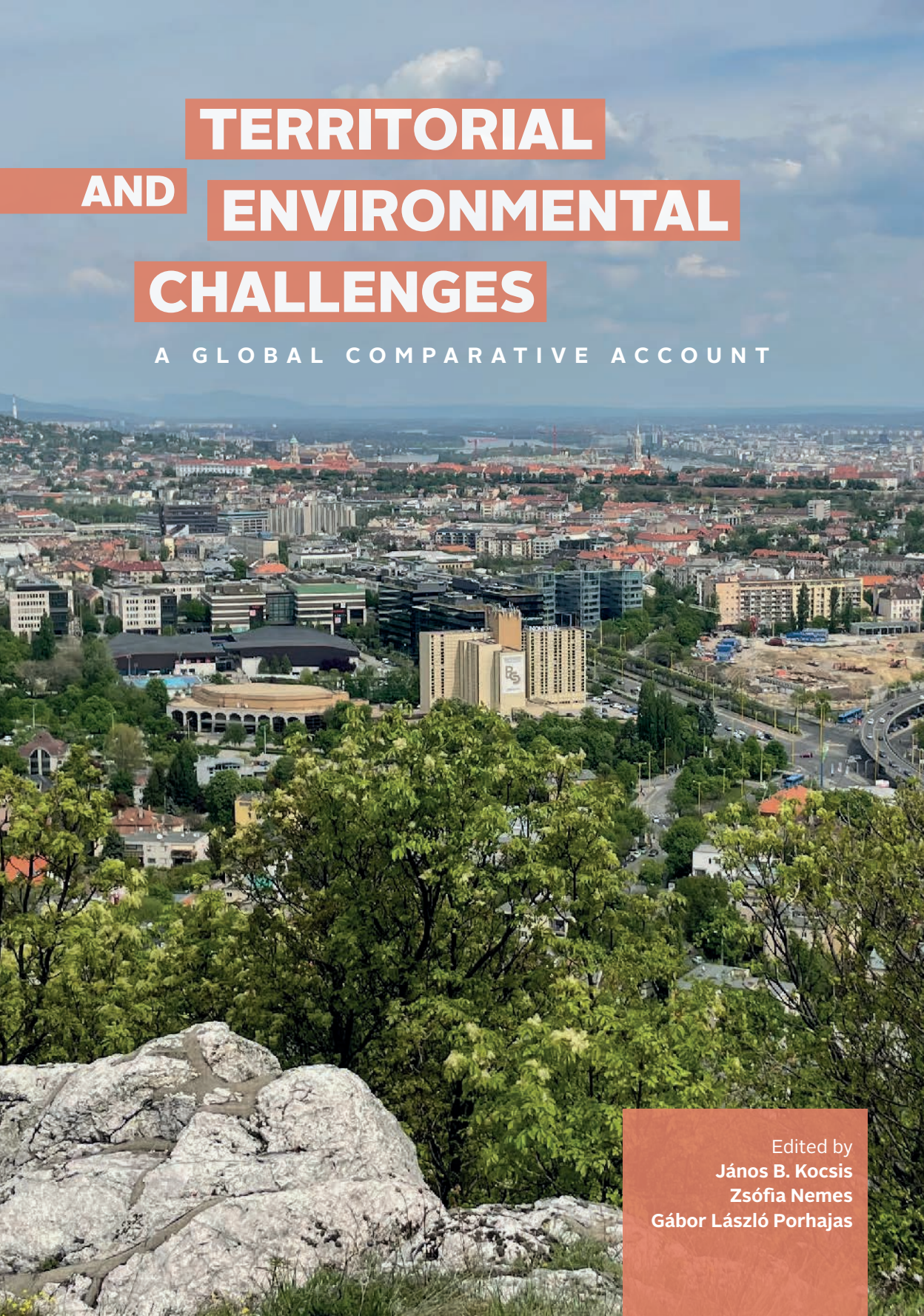
TERRITORIAL AND ENVIRONMENTAL CHALLENGES

A GLOBAL COMPARATIVE ACCOUNT



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János B. Kocsis
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Territorial and Environmental Challenges:

A Global Comparative Account

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A Global Comparative Account

Edited by János B. Kocsis, Zsófia Nemes and Gábor László Porhajas

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1. FOREWORD

In the 21st century, the university is not only a sublime arena for knowledge transfer and academic research, but also a meeting point. Its international dimension involves that it is a meeting point for the knowledge and experience of cultures from different countries around the world, while at the same time it is a place where different generations meet and cross-fertilise each other's perspectives and experiences. The book in hand was inspired by the launch in 2019 of an international master programme in regional and environmental economics in English at Corvinus University of Budapest that attracts talented students from a great variety of countries worldwide.

The professional community of the Department of Geography, Geo-economics and Sustainable Development, primarily in charge of the programme, is deeply committed to the principle of learning by doing, and to the importance of bringing together the experiences of people of various areas and cultures, sharing their views in a professional dialogue, in an approach that recognises and respects diversity in different regions, cultures and social strata. The mission of this volume is to explore, from the perspective of different territories, certain issues related to territorial development, geopolitical and environmental challenges, by mobilising our highly talented university students, the promising planning and development professionals of the near future.

Márton Péti
Head of Department

Géza Salamin
Formed Head of Department

Institute of Sustainable Development
Department of Geography and Planning

2. INTRODUCTION

János B. KOCSIS

Delineating, discerning and scrutinising major topics, and issues of territorial, spatial, and environmental development within a comparative framework based on case studies in various countries offer a deep and detailed insight into the subtle and underlying workings and mechanisms of economic and social processes and the effects of geographical, historical and societal conditions. Furthermore, scientific analyses from various, less developed areas of the world provide an excellent opportunity to attest to the strength and merits of the theoretical approaches and conclusions, usually drawn from phenomena in more developed countries and shed light to the ways in which global processes manifest themselves at, and exert influence on, local levels.

The studies prepared by teams of master students of Regional and Environmental Economics students under the guidance of professional tutors are the results of intensive and elaborated undertakings and plainly demonstrate the potentials and values of such endeavours and contribute to the scientific discourses and debates.

The present selection contains the best papers produced in 2020 and 2021. The topics reflect the expertise of the professors and the interests of the students, and the case studies were all processed along the similar principles and methodology, to ease the analytical comparison and formulation of useful and fruitful conclusions.

Comparative analysis of territorial planning systems of China, Indonesia and Vietnam is discussed firstly that is followed by evaluations of two aspects of gentrification in Azerbaijan, China, Estonia, Georgia, Nigeria, Mongolia, and Turkey. The next two chapters focus more on economic angles: scrutiny of labour mobility is detailed in Africa and Asia whereas various features of the Brazilian economy are detailed next. The last chapter seeks to map the perspective and appreciation of climate change among young adults.

The editors would like to thank the hard labour of all participants in preparation of this volume.

3. COMPARING PLANNING SYSTEMS OF CHINA, INDONESIA, AND VIETNAM

Safira ANDRISTA – Peicheng JIANG – Thi Duy Linh NGUYEN
Géza SALAMIN

3.1 Introduction

Planning is considered as an important means of managing public interests and regulating economic development, restructuring infrastructure, and appropriately distributing land use for each region and sector, etc. Planning systems also tend to have more significant development promotion functions. Planning is a continuous process consisting of goal setting, deciding on the actions and measures required to achieve these goals, and monitoring the impacts of actions to see their effectiveness, as well as the need for subsequent modification of arrangements. The planning system of a country involves the management, control, and regulation of socio-economic, political, and spatial aspects of a country in the public interest. A variety of actors may be involved in planning activity – for instance, governmental bodies, experts, and stakeholders.

The aim of a planning system is to help achieve sustainable development and improvements in quality of life. As each country has different development goals and challenges, countries' planning systems may vary from one to another. The spatial levels of planning (urban-local, regional, national, etc.), the instruments (e.g. development, regulation, coordination) and even the basic motivations for planning vary widely.

The planning competences of the different territorial levels, the central government and the municipalities, the legal mandate, the approach and the basic function of planning, are often very different. This can also be traced back to differences in the constitutional arrangements, administrative structures, political ideologies and geographical and cultural characteristics of countries, which are reflected in planning policies and practices. Planning is a coordinating governance function within the governance system of a country (region, city), and also reflects the geographical characteristics of the country as a specific spatial function. (Salamin 2021)

This paper will discuss the planning systems of three countries on the Asian continent: China, Indonesia, and Vietnam. The study is conducted to answer the question '*What planning systems are implemented in China, Indonesia, and Vietnam, and what are their characteristics*? We aim to identify certain planning systems, to compare the planning systems of the three different countries.

Based on the analysis of broad literature of European planning Salamin and Péti in their 2019 study developed a comparative theoretical framework model for

identification of various planning systems. The model called "Planning Map" was based with the aim to organise the widest possible range of spatial planning activities in different types of practices, making it possible to compare different planning systems and even planning types along four dimensions: motivations, spaces, objects and instruments. Salamin (2021) along these four dimensions, distinguished the more traditional and the rather innovative planning forms. The forms close to the centre in Figure 3.1 are typically associated with more traditional planning practices, which have been joined over time by newer types, shown further from the centre.

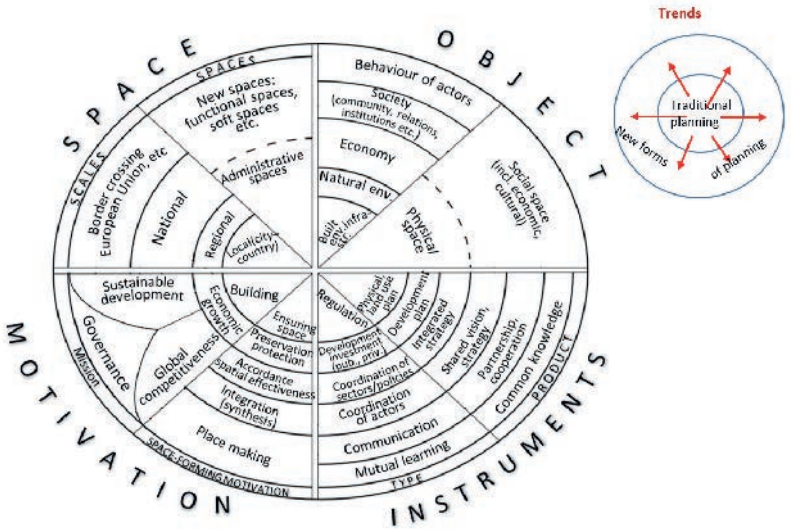


Figure 3.1: The 'Planning Map: Comparative tool for spatial planning systems'
Source: Salamin – Péti, 2019 and Salamin 2021.

The Planning Map is composed of four dimensions – *Space, Motivation, Object, and Instruments* – and will be further discussed in the methodology section. After the planning systems are identified, our goal is to conduct a comparative analysis of the spatial systems of China, Indonesia, and Vietnam. We expect to find certain characteristics of planning systems in each country and some similarity in the planning systems of the three Asian countries. This paper begins with an (1) Introduction, which describes the question and objectives of the research; followed by (2) a Methodological Review, which explains the Planning Map that was utilised

for the planning system analysis; (3) a Study Case of countries' planning systems; (4) a Comparative Analysis of the three Asian countries' planning systems; and (5) a Summary of the paper. Each study case of country planning systems is composed of the following contents:

- General geographical characteristics
- Regional-local administrative structure
- Legislative and institutional framework of planning
- Planning instruments
- Visualisation of the specific planning types

3.2 Methodology

A desk study is utilised to observe the planning systems of China, Indonesia, and Vietnam. Secondary data related to the country profile and characteristics (quantitative) as well as legislative documents (qualitative) are analysed to provide a comprehensive review of the countries' situation and planning systems. As mentioned in the previous part, each study case of country planning systems is composed of five areas: General geographical characteristics; Regional-local administrative structure; Legislative and institutional framework of planning; Planning instruments; and Visualisation of the specific planning types.

General Geographical Characteristics

In this section, we provide descriptions of the geographical characteristics as well as current situations in China, Indonesia, and Vietnam. Secondary quantitative data such as surface area, GDP, and GDP per capita, population, and urbanisation data are depicted and explained in this section as the underlying circumstances that lead to the planning system in each county.

Regional-Local Administrative Structure; Legislative and Institutional Framework of Planning; And Planning Instruments

In these sections, we aim to observe and analyse the administrative structure of each country in question in relation to its legislative as well as institutional framework of planning, which likely results in the planning instruments enforced in the planning system of the country. Document study as well as document analysis is conducted to identify the administrative structure, planning systems, and planning instruments of each country. Qualitative data such as laws and regulations with regard to planning activities of China, Indonesia, and Vietnam are the main sources for identifying the administrative structures and planning characteristics of the countries.

Visualisation of Specific Planning Types

To visualise the characteristics of planning instruments in China, Indonesia, and Vietnam, the 'Planning Map' (Salamin – Péti, 2019) is utilised as the basis of planning identification. Seeing that each country has its own distinctive planning types, the 'map' is useful for identifying the differences as well as the similarity between countries' planning systems. A specific plan can be visualised by the colouring on the diagram, which is intuitive and convenient to read. The closer the planning type lies to the centre of the map, the more traditional and formal the planning type is. On the contrary, if the planning system is located on the edge of the map, the more modern and flexible the planning type is (see Figure 2.1).

The Planning Map is composed of four dimensions: *Space, Motivation, Object,* and *Instruments*. *Motivation* area shows the basic motivation for planning and answers the question 'why the planning is done,' consisting of the mission and space-forming motivation of the planning. *Space* area highlights the geography of the planning activities in terms of scale and type of space. *Object* area answers the question 'what is actually planned?' as well as 'what elements are addressed through the planning activities?' Finally, the last area of the planning map concerns *Instruments*, which are the 'vehicles' between planning and real development. This aspect aims to convey the type of plans that are created by specific planning types and their products – the specific outcome of planning process – that are utilised to achieve certain visions or goals.

3.3 Planning System in China

3.3.1 General Geographical Characteristics

China, officially the People's Republic of China, is the third largest country in the world, and the largest one in East Asia, with a land area of about 9.6 million square kilometres, more than double the size of the EU. China is a vast territory, with a difference of about 50° latitude from the northernmost to the southernmost edge and spans five time zones from the westernmost to the easternmost. Therefore, complexity is the best adjective for describing China's geographical environment. In terms of topography, it is high in the west and low in the east, and can be divided into three steppes, from west to east. The first steppe is the Qinghai-Tibet Plateau with an average altitude of above 4000 meters, where the world's highest peak, Everest, is located; the second steppe is composed of the Inner Mongolia Plateau, the Loess Plateau, the Yungui Plateau, and the Tarim Basin, the Junggar Basin, and the Sichuan Basin, with an average altitude of 1000-2000 meters; The third steppe is the coast of the Pacific Ocean. From north to south, there is the Northeast Plain, North China Plain, and the middle and lower reaches of the Yangtze River. Altitude drops to from 500 meters to 1,000 meters in this area. China has a variety of terrains, including

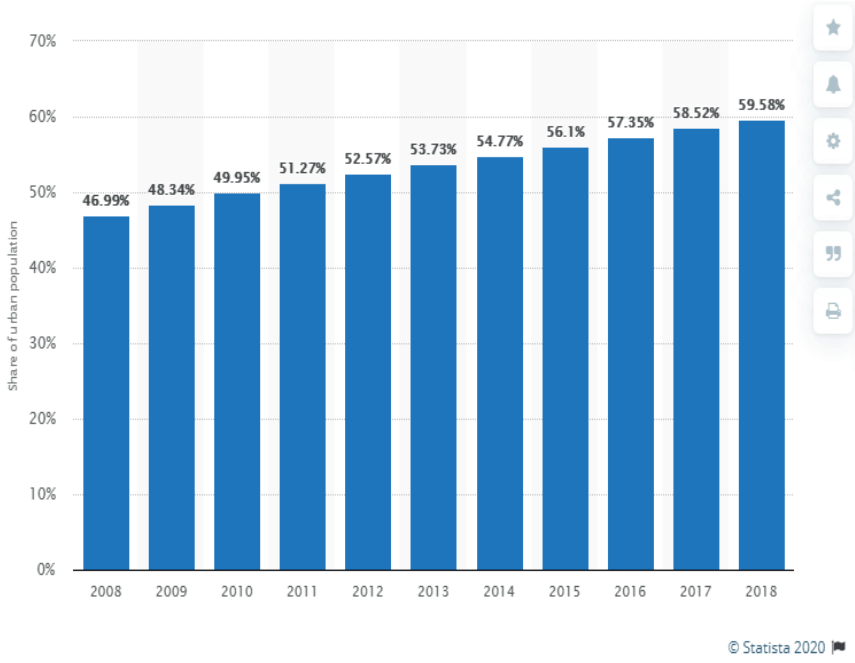
Mountains (33%), Plateaus (26%), Hills (10%), Lowland Plains (12%) and Basins (19%). In addition, China is one of the countries with the most rivers in the world. There are more than 1,500 rivers, with a drainage area of more than 1,000 square kilometres, among which the Yellow River and the Yangtze River are birthplaces of Chinese civilisation.

Surface area	9.6 million km² [1]
Population	1.4 billion
Population density	145/km²
Percentage of urban population	61.4%

3.1. Table: Country profile: China Source: China Geography Overview (2005)

By 2020, China's population was estimated to be about 1.4 billion (The World Factbook, 2020), making it the most populous country in the world. In 2020, more than three-fifths of Chinese people were living in urban areas, accounting for 61.4% of the population. Due to the dual urban-rural social structure dominated by the household registration system since the 1950s, China's urbanisation was stagnant for a long time in the last century. The free movement of urban and rural residents was restricted at that time. However, since the reform and opening that commenced in 1978, China's urbanisation process has begun to accelerate. In the past decade, China's urbanisation process has increased by more than 10 percentage points, which is remarkable (see Figure 2.2). In 2018, the urbanisation rate was close to 60% (vs. 20% in 1978), rising faster than the rate in the US (1880-1950) and Japan (1950-2010). China's urban population increased at an annual rate of 2.42%+ between 2015 and 2020. A research team of Morgan Stanley (2019) expects China's urbanisation rate to reach 75% by 2030, up from 60% today, translating into 220 million new urban dwellers. With an extensive high-speed rail network, high penetration of mobile payment, and strong human capital, China is welcoming an era of 'Urbanisation 2.0' characterised by smart cities, city clusters, and agricultural modernisation (see Section III.1.4 for more details).

[1] Depending on the measurement method, the results may vary slightly.

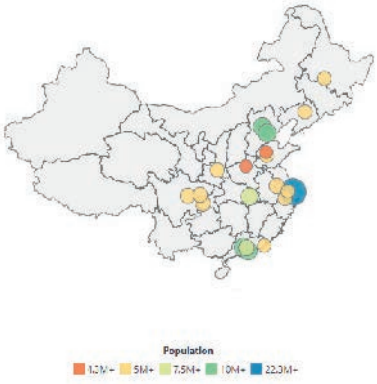


3.2. Figure: Degree of urbanisation in China from 2008 to 2018; Source: Statista.com (2020)

China's average population density is currently 145 people per square kilometre, lower than many other countries in Asia and Europe. The vast majority of the population is distributed in the eastern part of China; the western part of the country is sparsely populated due to the presence of vast mountainous and desert areas. Population density in Shanghai, the largest city and economic centre in mainland China, is 3,810 people / km^2; in the second largest city, capital, political and cultural centre, Beijing, the population density is 1,323 people / km^2; and in the western province, Xinjiang, the population density is only 13.1 people per square kilometre (Ministry of Housing and Urban-Rural Development, n.d.). Chinese geographer Hu Huanyong (1901-1998) proposed the use of a 'contrast line' to divide China's population density in 1935 – namely, the Heihe – Tengchong line, or Hu line, which is an imaginary straight line that runs through China's territory (see Figure 2.3).

3.3. Figure: The Heihe-Tengchong line; Source: Lew, S. (2007)

The line starts in Heihe City, Heilongjiang Province, northeast China, and extends to Tengchong City, Yunnan Province, southwestern China. West of the line accounts for 57% of the country's total area, but the proportion of the population is only 6%; east of the line covers 43% of area, but 94% of the population. Using this line, we can clearly see the disparity in the distribution of the population in the southeast and northwest of China. There are currently five



3.4. Figure: China Population Density Map; Source: Worldpopulationreview.com

3.5. Figure: Regional distribution of China's GDP/capita, 2014; Source: Wang et al., 2007

cities with more than 10 million permanent residents in China, namely Shanghai, Beijing, Chongqing, Guangzhou, and Shenzhen, all of which are located east of the Heihe-Tengchong line (see Figure 2.3).

China's GDP reached $15.269 trillion in 2020, making it the second-largest economy in the world in terms of total GDP. During the same period, GDP per capita was around $10,000, ranking 59th globally, which was relatively low comparing to the stunning achievement of total GDP. China's Gini coefficient has always been high, reaching 0.473 in 2013, thereby exceeding the internationally stipulated 'warning line' of 0.4. This inequality is not only reflected in the huge gap between regions (as shown by the Heihe -Tengchong line above, the economy in the southeast is far more developed than in the northwest region; see Figure 2.5), but also in the huge division regarding urban and rural residents' income (the income gap between urban and rural residents). Seasonal migration between urban and rural areas is a major way for many agricultural practitioners to increase their income.

3.3.2 Regional-Local Administrative Structure

China is a unified country and a centralised one. The central government has absolute authority and leadership over the following levels of government. It has responsibilities in various fields such as national security, foreign affairs, national currency and finance, legislation and justice, governance, and planning. The central government can make framework arrangements for the above areas in the form of legislation. At the same time, on the basis of not violating the central laws, the provincial-level government can formulate local laws that adapt to local conditions. Governments at the provincial level manage economics, education, science, culture, health, civil affairs, public security, sports, family planning, environment and resource protection, urban and rural construction and finance, ethnic affairs, judicial administration, and other affairs within their administrative areas. Governments below the provincial level do not have the legislative power, but they can formulate applicable rules and regulations in their administrative areas.

The administrative structure of China is divided into five levels of government, namely the central government, provincial government, prefectural (or regional) government, county government and township (or village) government. China's administrative structure includes 34 provinces, which could be further divided into 334 prefecture-level administrative regions, 2851 county-level administrative regions and 3968 township-level administrative regions (see Table 2.2 and Figure 2.6). Among them, the provincial-level administrative regions include 23 provinces, four municipalities, five autonomous regions and two special administrative regions. Their respective characteristics and differences are as follows:

23 provinces: Most of the provinces, except for the provinces in the northeast, have boundaries which were established long ago in the Yuan Dynasty, with a history of 600-700 years. Sometimes provincial borders form cultural or geographical boundaries.

5 autonomous regions: A minority subject which has a higher population of a particular minority ethnic group along with its own local government. The governor of the Autonomous Regions is usually appointed from the respective minority ethnic group. These 5 autonomous regions are Guangxi Zhuang Autonomous Region (广西壮族自治区), Inner Mongolia Autonomous Region (内蒙古自治区), Tibet Autonomous Region (西藏自治区), Xinjiang Uyghur Autonomous Region (新疆维吾尔自治区) and Ningxia Hui Autonomous Region (宁夏回族自治区).

4 municipalities: A Large city with a relatively concentrated population and a particularly important position in politics, economy, and culture, directly under the jurisdiction of the State Council. These 4 municipalities are Beijing (北京), Tianjin (天津), Shanghai (上海) and Chongqing (重庆).

2 special administrative regions (SARs): A highly autonomous and self-governing subnational subject of the nation where capitalism is applied according to the 'One country, two systems' policy. The SAR's government is not fully independent, as foreign policy and military defence are the responsibility of the central government, according to the Basic Laws of the two SARs. These 2 Special administrative regions are Hong Kong (香港) and Macau (澳门).

The people's congresses at the provincial, prefectural, and county levels each elect the heads of their respective government organisations. These include governors and deputy governors, mayors and deputy mayors, and heads and deputy heads of counties. The people's congresses (the highest authority in China) also have the right to recall these officials and demand explanations for official action. As the basic principles of democratic centralism continue to dominate, which is the foundation of China's national constitution, these lower levels are always vulnerable to changes in the direction and decision-making of the central government. In this regard, all local authorities are essentially extensions of the central government authorities, and therefore are responsible for the 'unified leadership' of the central authorities.[2]

For these reasons, China's urban planning often lags. For example, the construction of urban support facilities cannot keep up with the needs of urban growth. The Chinese government is also aware of this problem, so it proposed slogans like 'Simplify government and decentralise power,' and 'Transform government functions' in 2013.3 Subsequently, the State Council of China made improvements in resource allocation, reducing and decentralising investment approval items, reducing overlaps and decentralising departmental responsibilities, reforming social organisation management systems, and strengthening administration according to law.

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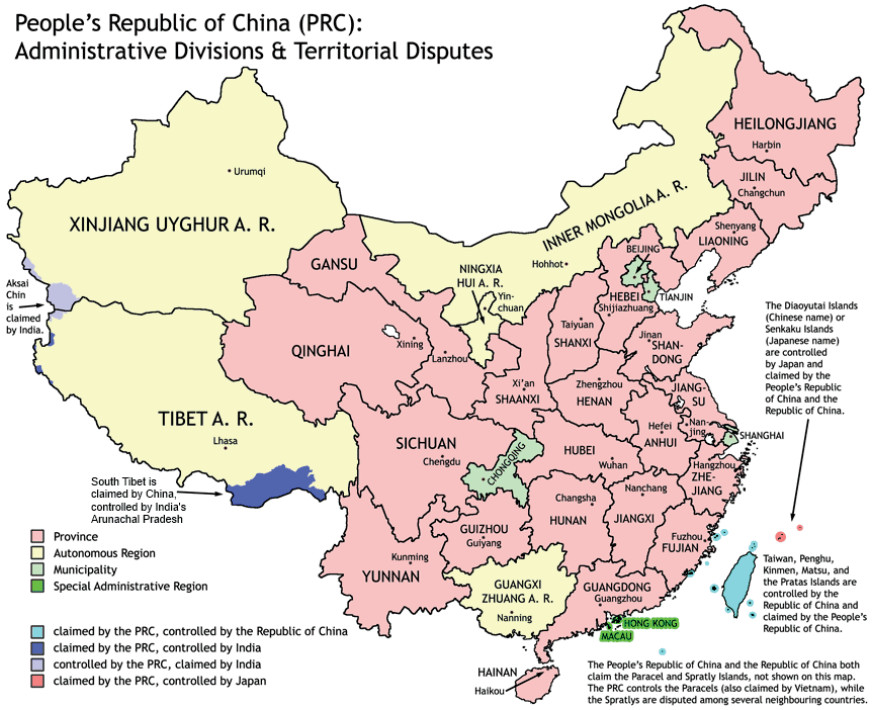
[2] China's State Organisational Structure, in https://www.cecc.gov/chinas-state-organisational-structure
[3] Decision on the State Council's institutional reform and function transformation plan, in http://www.gov.cn/2013lh/content_2354397.htm

Level	Name	Types
1	Provincial level (1st)	23 Provinces (省; shěng) 5 Autonomous regions (自治区; zìzhìqū) 4 Municipalities (直辖市; zhíxiáshì) 2 Special administrative regions (特别行政区; tèbié xíngzhèngqū)
2	Prefectural level (2nd)	293 Prefecture-level cities (地级市; dìjíshì) 8 Prefectures (地区; dìqū) 30 Autonomous prefectures (自治州; zìzhìzhōu) 3 Leagues (盟; méng)
3	County level (3rd)	954 Districts (市辖区 / 区; shìxiáqū / qū) 366 County-level cities (县级市; xiànjíshì) 1,360 Counties (县; xiàn) 117 Autonomous counties (自治县; zìzhìxiàn) 49 Banners (旗; qí) 3 Autonomous banners (自治旗; zìzhìqí) 1 Special district (特区; tèqū) 1 Forestry district (林区; línqū)
4	Township level (4th)	8,122 Subdistricts (街道 / 街; jiēdào / jiē) 20,942 Towns (镇; zhèn) 9,660 Townships (乡; xiāng) 2 County-controlled districts (县辖区; xiànxiáqū) 985 Ethnic townships (民族乡; mínzúxiāng) 152 Sum (苏木; sūmù) 1 Ethnic sum (民族苏木; mínzúsūmù)
5	Basic level autonomy (5th)	104,083 Residential Committee (居民委员会; jūmínwěiyuánhuì) 558,310 Village Committee (村民委员会; cūnmínwěiyuánhuì)

3.2. Table: Structural hierarchy of the administrative divisions of the People's Republic of China; Source: cecc.gov (n.d.)

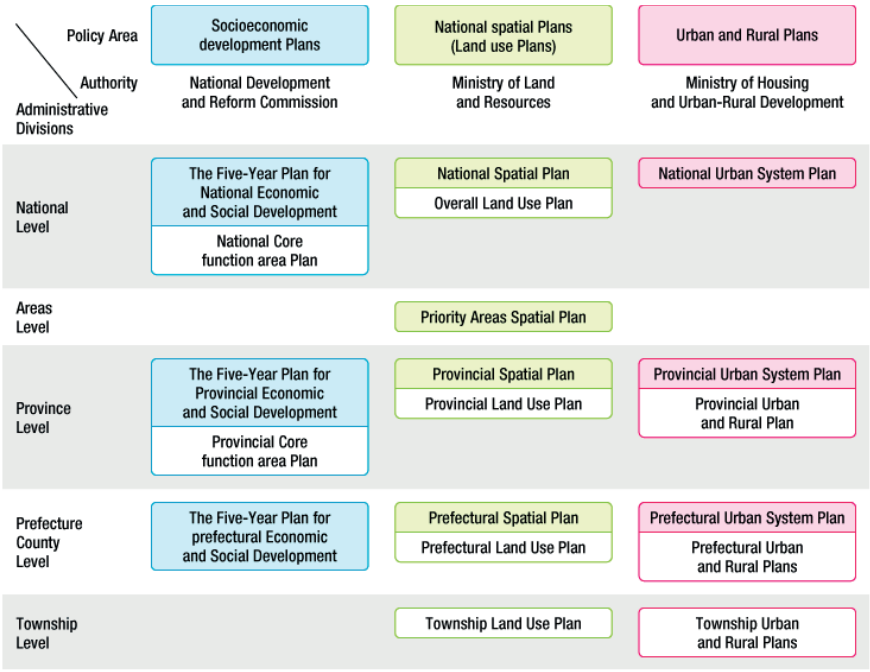


3.6. Figure: China Administrative Map; Source: Wikipedia.org (2011)

3.3.3 The Legislative and Institutional Framework of Planning in China

The goal of China at the current stage is: From 2020 to 2035, on the basis of fully building a well-off society in 2020, continue to struggle for 15 years and basically implement socialist modernisation. The second stage: 2035-2050, based on realising modernisation, continue to struggle for fifteen years, and build China into a prosperous and powerful, democratic, civilised, harmonious, and beautiful socialist modern power. To serve this goal, the following major plans are being made.

China's planning is related to three planning systems: socioeconomic development plans, spatial plans, and urban and rural plans (See Figure 2.7). These three plans are respectively the responsibility of the National Development and Reform Commission, The Ministry of Natural Resources, and The Ministry of Housing and Urban-Rural Development. Under the unified leadership of the State Council, these plans cover the socioeconomic as well as spatial elements of development.



3.7. Figure: Administrative System Concerning Urban Planning;
Source: Ministry of Land, Infrastructure, Transport and Tourism, Japan MLIT (n.d.)

The socio-economic development plans refer to the arrangements made for the activities of the national economy, scientific and technological progress, and social development during the planning period. China is a socialist country with a market economy. The plan is an important means for the government to guide and macro-control the national economy. The Five-year Plan (See Section III.1.4 for more details) led by The National Development and Reform Commission is an important part of the planning system. After the Five-year Plans are formulated and issued at the central level, local governments at all levels will also follow the instructions of the central government to make five-year plans within the respective administrative areas. In other words, socioeconomic development plans are created at each of the four administrative levels of the national, the provincial, the prefecture, and the county level.

The spatial plans are also national spatial plans because the framework of the plan is formulated by the central government. As mentioned in the previous section, when the central government makes plans from the central level, local governments at all levels will also follow, making plans at each level within the framework of central-

level planning. Therefore, the overall plan is applicable to all levels of government.[4] The content covered by the spatial planning plan include: overall protection, system restoration, and comprehensive management of mountains, waters, forests, fields, lakes and grasses; the preparation of control lines such as the red line for ecological protection, permanent basic farmland, and urban development boundaries; establishment of spatial layout; annual utilisation plan of natural resources such as land and sea; conversion of land, sea areas, islands and other national land space uses, etc. The plan is under the responsibility of the Ministry of Natural Resources.

Urban and rural plans involve the comprehensive deployment, specific arrangements, and implementation management of urban and rural development, involving land use, spatial layout, and various constructions within a certain period. The Ministry of Housing and Urban-Rural Development is responsible for this plan.[5] The content covered includes urban public facilities construction; safety and emergency management; scientific and standardised engineering construction standards; low-rent (affordable) housing policies; village and small town construction; rural dilapidated house reconstruction; the improvement of human settlements and the ecological environment in small towns and villages; the nationwide construction of key towns, etc.

It is worth noting that the content of the above several plans are not completely independent. There are also overlapping parts. For example, spatial planning and urban-rural planning both contain land use content; urban-rural planning and socioeconomic development planning both contain economic and social development content, but the focus is different. Socioeconomic development planning focuses on non-spatial content such as economic and society; Spatial planning focuses on land use and environmental quality management; Urban and rural planning focuses on physical spaces. There is a lack of overall planning that incorporates all factors.

Such overlapping and inter-departmental functions have become more serious in previous years. In the context of the 'simplification of government and decentralisation' mentioned in the previous section, in March 2018 the first meeting of the 13th National People's Congress of the People's Republic of China voted to adopt a decision on the State Council's institutional reform plan-rectification of government agencies. Among them, the Ministry of Land and Resources (the current Ministry of Natural Resources) and the Ministry of Housing and Urban-Rural Development were also under rectification. The management responsibilities of nature reserves, scenic spots, natural heritage, and geoparks of the original Ministry

[4] Provisions on the Functional Allocation, Internal Institutions and Staffing of the Ministry of Natural Resources, 2016

[5] Notice of the General Office of the State Council on Issuing the Main Responsibilities of the Ministry of Housing and Urban-Rural Development, 2018

of Housing and Urban-Rural Development were included under the Ministry of Natural Resources. The functions of different departments have been reorganised, and this situation has been greatly improved.

But even so, to achieve these plans, coordination among different departments is required. For example, urban and rural planning must consider the construction land quota in spatial planning and the guidance requirements in socio-economic planning.

The implementation of the above plans is inseparable from the protection of various laws and regulations. Table 2.3 shows the hierarchies of legislation and examples concerning China's planning. China's legal system includes the Constitution, Laws, Administrative regulations, Local regulations, Administrative rules, Local government rules and Technical standard / codes, whose legal coercive force weakens in this order. Among them, national and provincial administrative regions have the power to make laws, and governments below the provincial level do not have legislative power, but they can make lower-level regulations.

Level	**Examples**	**Notes**
Laws	Urban and Rural Planning Law Land Administration Law	
Administrative regulations	Regulation on the Protection of Famous Historical and Cultural Cities, Towns and Villages	
Local regulations	Regulations of Shanghai Municipality on Urban and Rural Planning	
Administrative rules	Measures for Formulating City Planning	Administrative rules enacted by departments under the State Council have the same legal authority to local government rules.
Local government rules	Technical Regulations of Hangzhou Municipality on Urban Planning Administration	
Technical standard/codes	Standard for basic terminology of urban planning (GB/T 50280-98) Standard for urban residential area planning and design (GB 50180-2018)	Among national standards, mandatory standards are prefixed "GB," and recommended standards are prefixed "GB/T."

3.3. Table: Hierarchies of Legislation and Examples Concerning Planning; Source: cecc.gov (n.d.)

China's current legislative framework for planning is relatively backward. The socioeconomic development plans of high status involve no other laws and regulations except for a few provisions of the Constitution; the Ministry of Natural Resources that is responsible for spatial plans just completed the integration of functions two years ago, and various laws need to be improved; the legalisation of urban and rural plans (see Section III.1.4 for more details) is relatively the most advanced, but there is a lack of laws regarding 'overall planning of the city (county),' 'urban system planning in the city (county),' and 'village system planning in the county (town).'

All plans basically involve a trinity of preparation, implementation, and supervision. They lack scientific and democratic decision-making and restriction mechanisms. The ways and means of planning implementation rely too much on administrative power and lack a legalisation supervisory mechanism (Weigang, 2019).[6]

3.3.4 Planning Instruments

There are three different types of plans that are prepared according to planning legislation: socioeconomic development plans, spatial plans, and urban and rural plans.

Five-Year Plan

This belongs to the socioeconomic development plan. The Five-year Plan is divided into national level, provincial level, prefectural level, and county level. In accordance with the division of responsibilities, the State Council decomposes and implements the main tasks proposed by the central government to all regions and departments and incorporates the completion of each region into the annual assessment. Governments at all levels draw up their own five-year plans in their respective administrative areas.

The Five-year Plan focuses on the socioeconomic dimension, contains the planning of major national construction projects, and sets goals and directions for the country's economic development vision. The National Development and Reform Commission is responsible for the five-year plan at the central level, and the Local Development and Reform Commission is responsible for the five-year plans for local governments. The five-year planning time framework of governments at all levels is consistent. Each plan covers five years. The first five-year plan began in 1953. The thirteenth plan (2016-2020) currently under implementation focuses on innovation, greening, and healthcare. During the thirteenth planning period, policies including the 'Belt and Road Initiative' (一带一路), 'Made in China 2025' (中国制造2025), and 'New Urbanisation' (新型城镇化建设) were introduced.

[6] Yang Weigang, member of the National Committee of the Chinese People's Political Consultative Conference, 2019

Here, the New Urbanisation Strategy will be elaborated in detail. Since 'reform and opening up' in 1978, China has benefited a lot from demographics, a high savings rate, and the globalisation of the supply chain. China has made unprecedented progress in the urbanisation process with its urban population increasing fivefold from 172 million in 1978 to nearly 1 billion today, which has increased China's status as a global manufacturing centre, making it a middle-and-high-income country. China has 33 cities with more than five million population, far surpassing the United States, which currently has only nine major cities. This stage is called urbanisation 1.0. However, China's urbanisation development is also facing bottlenecks with various major urban problems being highlighted, including traffic congestion, crime, pollution, high housing prices, and inappropriate education and medical resources.

With this background, China launched a new urbanisation policy in the 13th Five-Year Plan (Route map for new urbanisation, 2020).[7] These initiatives will be based on digital infrastructure and continuous Hukou (Household Registration System) and land reforms.[8] Through the reform of Hukou, the barriers between urban and rural areas are expected to break down, achieving the free flow of population between urban and rural areas; Smart cities driven by 5G, artificial intelligence and a big data strategy will be built to improve the carrying capacity of big cities; and the construction of urban agglomerations will strengthen the coordinated development between regions.

With an extensive high-speed rail network, high penetration of mobile payment, and stronger human capital, China is welcoming an era of urbanisation 2.0 characterised by smart cities, city clusters, and agricultural modernisation (Morgan Stanley, 2019).

Urban Agglomerations Plan

This belongs to the socio-economic development plan. Urban Agglomeration, or city clusters/groups, refer to a city group with compact spatial organisation, close economic ties, high co-urbanisation, and high integration within a specific geographical area, relying on developed transportation and other infrastructure networks. Urban agglomeration is an advanced spatial organisational form of urban development at the maturity stage. It generally takes more than one mega city as the core and more than three large cities as the constituent units. Through the urban agglomeration plan, coordinated development between regions is expected to be

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[7] Route map for new urbanisation, in 2020 http://www.xinhuanet.com/fortune/2020-04/18/c_1125872706.htm

[8] Key tasks of new urbanisation construction and urban-rural integration development in 2020 http://www.gov.cn/zhengce/2020-04/10/content_5500749.htm

promoted. The planning of urban agglomerations is designed by the State Council and implemented regionally.

By 2019, ten national-level urban agglomeration plans were being implemented.[9] (See Figure 2.8), including the plans of The Yangtze Delta Urban Agglomerations (长江三角洲城市群), Guangdong-Hong Kong-Macao Greater Bay Area (粤港澳大湾区), Chengdu-Chongqing City Group (成渝城市群), Triangle of Central China (长江中游城市群), Harbin-Changchun Megalopolis (哈长城市群), Central Plains Urban Agglomeration (中原城市群), Beibu Gulf Urban Agglomeration (北部湾城市群), Guanzhong Plain City Group (关中平原城市群), Lanzhou-Xining City Area (兰西城市群) and Hohhot-Baotou-Ordos-Yulin City Group (呼包鄂榆城市群). Additionally, more urban agglomeration plans have been submitted and are awaiting approval from the State Council such as plans for the Beijing-Tianjin-Hebei Urban Agglomeration (京津冀城市群), and Urban Agglomeration on the West Side of the Straits (海峡西岸城市群).

The Yangtze River Delta urban agglomeration is located in the lower reaches of the Yangtze River in China, on the edge of the Yellow Sea and the East China Sea. It is the largest urban agglomeration in Asia under planning, with Shanghai at its core, including Nanjing, Wuxi, Changzhou, Suzhou, Hangzhou, Wenzhou, Ningbo, etc. (41 cities in total), covering all the administrative area of Jiangsu, Anhui, Zhejiang and Shanghai. This urban agglomeration covers 358,000 square kilometres, with 225,000 square kilometres as the central area (State Council, 2019).[10]

The land area of the urban agglomeration only accounts for 3.74% of the country, but GDP accounts for nearly 25%; the cargo throughput of every port in the area accounts for 39% of the country total; the number of listed companies is 1,219, accounting for nearly one-third of those in the country; annual R & D expenditure accounts for about one-third of the country total; 23 '211 universities' (key universities) gather here, accounting for about one-quarter of all key universities; the urbanisation rate is the highest here, reaching 66.66% in 2019 (China Social Science, 2019).[11]

The spatial pattern of the Yangtze River Delta includes 'One Core, Five Circles and Four Belts' (See Figure 2.9). "One Core" refers to Shanghai as the core. The Outline of the Yangtze River Delta Regional Integration Development Plan pointed out that it is a must to accelerate the promotion of Shanghai's core competitiveness and comprehensive service functions in accordance with the requirements of building a core world-class city.

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[9] Opinions of the Central Committee of the Communist Party of China and the State Council on Establishing a More Effective New Mechanism for Coordinated Regional Development (2018), Retrieved from: http://www.gov.cn/zhengce/2018-11/29/content_5344537.htm

[10] State Council (2019): Outline of the Regional Integration Development Plan for the Yangtze River Delta https://www.ndrc.gov.cn/xxgk/zcfb/ghwb/201606/t20160603_962187.html

[11] China Social Science (2019): How to realise the integration of the Yangtze River Delta 1 + 1 + 1 + 1>4 http://ex.cssn.cn/zhcspd/zhcspd_tt/201912/t20191217_5060248.html?COLLCC=1676027788&COLLCC=3594598031&COLLCC=1967443991

'Five Circles' refers to five metropolitan areas: Nanjing Metropolitan Area (南京都市圈), Hangzhou Metropolitan Area (杭州都市圈), Hefei Metropolitan Area (合肥都市圈), Suzhou-Wuxi-Changzhou metropolitan area (苏锡常都市圈), and Ningbo metropolitan area (宁波都市圈).

"Four Belts" refers to the development belts starting from Shanghai and extending in four directions: Shanghai-Nanjing-Hangzhou-Ningbo Development Belt (northward), Along River Development Belt (westward), Shanghai-Hangzhou-Jinhua Development Belt (south-westward), and Coastal Development Belt (southward).

The purpose of setting up "One Core, Five Circles and Four Belts" is to promote the networked spatial pattern of this area. The urban agglomeration of the Yangtze River Delta has a vast economic hinterland, with modernised river/seaport clusters and airport clusters, a sound highway network, a nationwide-leading density of highway and rail transportation, and a three-dimensional comprehensive transportation network.

The Yangtze River Delta urban agglomeration plan aims to build a world-class urban agglomeration that is global-oriented, Asia-Pacific radiating, and country-leading, making this area the most economically dynamic resource allocation centre, a globally influential technological innovation highland, a globally important modern service industry centre, an important international gateway in the Asia-Pacific region, creating a new round of reform and opening-up vanguards in the country, and a beautiful China construction demonstration zone (State Council, 2019).[12]

Spatial Plan

The spatial plans are divided into national level, provincial level, prefecture level, and county level. Governments at all levels formulate their own space plans in their respective administrative areas in accordance with the instructions of higher-level governments. The spatial planning at the central government level is managed by the Ministry of Natural Resources (Ministry of Land and Resources before 2018), and the content covered by the spatial planning plan includes: overall protection, system restoration, and comprehensive management of mountains, waters, forests, fields, lakes and grasses; the preparation of control lines such as the red line for ecological protection, permanent basic farmland, and urban development boundaries; establishment of spatial layout; annual utilisation plan of natural resources such as land and sea; conversion of land, sea areas, islands and other national land space uses, etc. The plan mainly focuses on the ecological environment and land factors.

[12] State Council, Outline of the Regional Integration Development Plan for the Yangtze River Delta 2019 https://www.ndrc.gov.cn/xxgk/zcfb/ghwb/201606/t20160603_962187.html

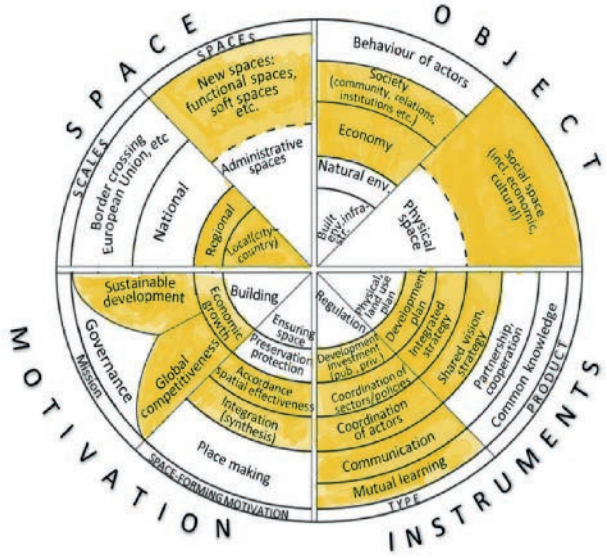
Urban and Rural Planning

Urban and rural plans are formulated under the *Urban and Rural Planning Law* to promote the comprehensive, coordinated, and sustainable development of urban and rural area. This plan is divided into national level, provincial level, prefecture level, and county level. Governments at all levels formulate their own space plans in their respective administrative areas in accordance with the instructions of higher-level governments.

Urban and rural plans at the central government level are managed by The Ministry of Housing and Urban-Rural Development. The content covered include urban public facilities construction; safety and emergency management; scientific and standardised engineering construction standards; low-rent (affordable) housing policies; village and small-town construction; rural dilapidated house reconstruction; improvement of human settlements and the ecological environment in small towns and villages; the nationwide construction of key towns, etc. The plan mainly focuses on physical space factors.

3.3.5 Visualisation of Specific Planning Types of China

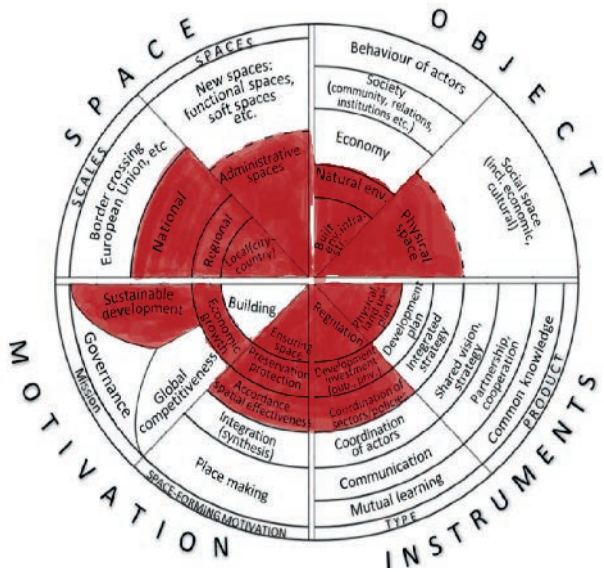
Judging from the visualisation of main planning instruments in China, namely Five-year Plans, Urban Agglomerations Plan, Spatial Plan and Urban and Rural Planning, a quite diverse trend can be seen – while Spatial Plans and Urban and Rural Plans have traditional



3.8. Figure: Urban agglomeration plan of China
Source: Edited by the author based on Salamin - Péti (2019)

features, Five-year Plans and Urban Agglomeration Plans possess rather contemporary characteristics.

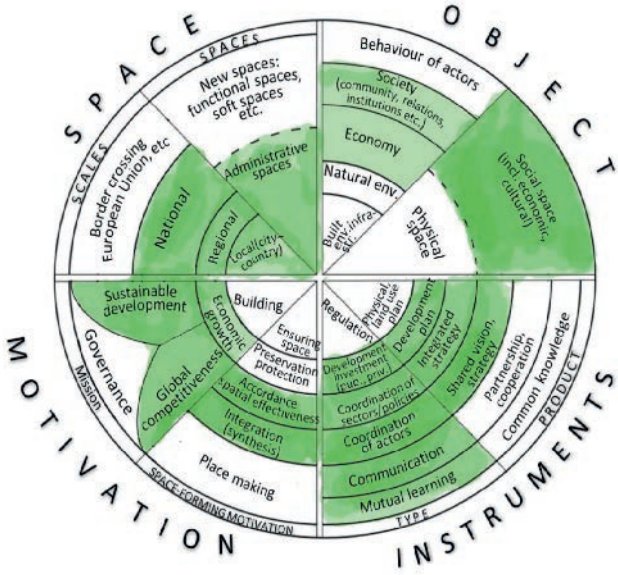
Regarding the 'motivation' dimension, the missions of the Spatial Plan and Urban and Rural Plan focus on economic growth or even building in terms of he Urban and Rural plan. But for the Five-year Plan and Urban Agglomeration Plan, promoting sustainable development and global competitiveness are the targets. For the 'space' dimension, all the plans cover the local, regional, and national scale, except for the Urban Agglomerations Plan which is not involved with the national scale since it involves a regional city-clusters plan that aims at the integration of neighbouring cities. The same trend has been noticed in terms of spaces. All three plans are limited to traditional administrative spaces, while the Urban Agglomerations Plan implements resource allocation and regional integration across administrative regions, covering new spaces, including functional and soft spaces.



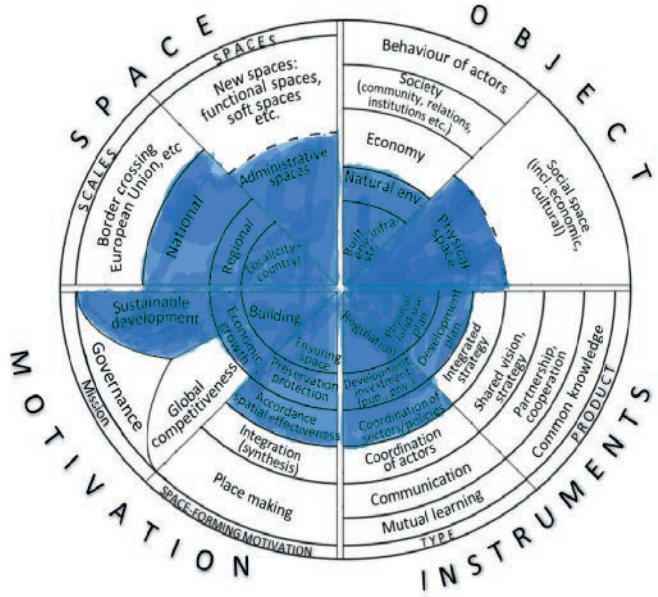
3.9. Figure: Urban and rural planning system of China
Source: Edited by the author based on Salamin - Péti (2019)

The opposite trends can be inferred in terms of the 'object' dimension. While the Spatial Plan and Urban and Rural Plan focus on more traditional elements containing built environmental infrastructure, and natural environmental and physical spaces, the Five-year Plan and Urban Agglomeration Plan pay attention to socioeconomic ones, including economy, society, and social spaces.

The 'instruments' dimension of all the planning shows a similar divided trend. The Spatial Plan and Urban and Rural Plan have the regulation, development, investment, and coordination of sectors/policies as their instrument types, while the Five-year Plan and Urban Agglomeration Plan implement tools ranging from development investment to mutual learning as theirs. Regarding the issue of products, a more flexible trend appears. While the Spatial Plan only focuses on physical land use planning, Urban and Rural Planning also include development plans. Not surprisingly, both the Five-year Plan and Urban Agglomeration Plan make the development plan, integrated strategy, and shared vision their products.



3.10. Figure: Five-year Plan of China;
Source: Edited by the author based on Salamin – Péti (2019)



3.11. Figure: Spatial plan of China
Source: Edited by the author based on Salamin - Péti (2019)

3.3.6 Summary of China's Planning System

To sum up, China faces the Pacific Ocean to the east and Eurasian inland to the west, with a complex geography, climate, and hydrological conditions. As the most populous nation in the world, China's urbanisation rate was maintained at an extremely low level until reform and opening up policy in 1978, after which it experienced explosive growth from 20% to 60% in 2020. However, China's population distribution is extremely uneven, with five metropolises whose residents' number more than 10 million, all located east of the Hu-line. Similar characteristics are also reflected in GDP/capita, which contributes to the phenomenon of migrant workers.[13]

In terms of administrative structure, it can be divided into five levels from top up to down – namely, the central government, provincial government, regional government, county government, and township government. Different from the

[13] In 2020, China had around 290 million migrant workers, referring to those peasants who have left their regis-tered permanent residence and are temporarily working in the cities.

federal system, China's central government has absolute authority and leadership over governments at all levels below. Officials at all levels are appointed by their superiors and are accountable to them. The central government makes overall arrangements and legislation about issues of national security, foreign affairs, governance, and planning and so forth. Provincial governments are able to make more detailed legislation within the framework of higher-level laws. Governments below the provincial level do not have legislative power, but they can formulate applicable rules and regulations in their administrative areas. Due to the overly bureaucratic system, China's spatial planning often lags behind the needs of actual development. Local operators who know local information quite well may not have the power or budget to implement activities, while high-level decision makers who control the authority or fund may know nothing about the local situation. After 2013, the State Council called for streamlining administration, delegating power, strengthening regulation, and improving service to deepen administrative reform and transform government functions, which improved resource allocation and organisational management to a certain extent.

China's planning is related to three planning systems: socioeconomic development plans, spatial plans, and urban and rural plans. Under the unified leadership of the State Council, these plans cover the socioeconomic and the spatial elements of development. All plans, initiated at the central level and implemented at all levels of government, are basically a trinity of preparation, implementation, and supervision. Together, they are geared to achieving China's two-stage goals. The laws related to the above plans involve Constitution, Laws, Administrative regulations, Local regulations, Administrative rules, Local government rules and Technical standards / codes. Their legal effects weaken in this order, meaning that lower-ranking laws or regulations shall not undermine higher level ones. At present, China's legislative framework related to planning needs to be improved, meaning that the legal details of various aspects after administrative integration need to be supplemented.

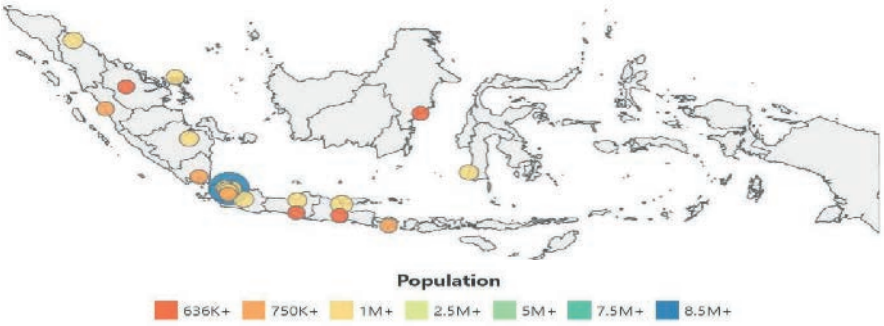
In summary, this section introduces four main planning instruments implemented in China: currently, namely Urban Agglomeration Plans, Five-year plans, Spatial Plans and Urban and Rural Plans, providing a more comprehensive and detailed understanding for readers.

3.4 The Planning System in Indonesia

3.4.1 General Geographical Characteristics

Indonesia is the largest country in Southeast Asia, with total area of 7,8 million km^2. Land areas account for 35 per cent of its total area, while water areas account for 65

percent. Indonesia is the largest archipelago in the world, with as many as 17,500 islands, lying across the equator, between the Indian and Pacific Ocean. The Indonesian archipelago consists of five major islands – namely, Sumatera, Java, the Indonesian part of Borneo, Sulawesi, and the Indonesian part of New Guinea, which account for three-quarters of the territory, and about 30 smaller island groups.



3.12. Figure: GDRP Distribution in Indonesia
Source: The Economist, 2016.

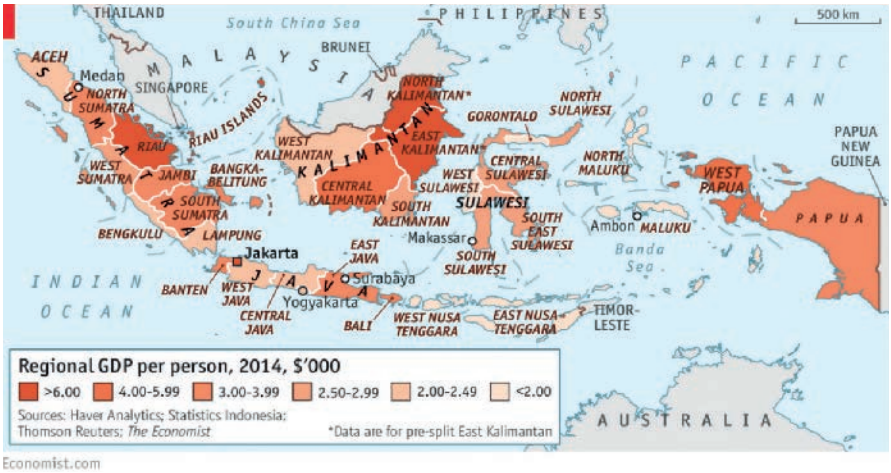
Located along the volcanic as well as continental plates, volcanic eruptions and earthquakes frequently occur. In addition to its mountainous landscape, with around 100 active volcanoes, much of the area in Indonesia is covered in dense tropical rainforest. Indonesia is the most heavily forested region in the world after the Amazon (The World Factbook, 2020).

Surface Area	1,905 million km²
Population	273,26 million
Population Density	151/km²
Percentage of Urban Population	55.8%

3.4. Table: Country Profile: Indonesia
Source: World Population Review (2020), Worldometers (2019) in Databooks Katadata (2019).

As of 2020, the population of Indonesia is estimated to be approximately 273 million people (World Population Review, 2020). Indonesia is the fourth most populous country in the world after China, India, and the United States (Ministry of Land, Infrastructure, Transport and Tourism, Japan (MLIT), 2017). More than half of Indonesians live in urban areas, accounting for 56 per cent of population. The urban population of Indonesia increased at an average rate of 4.1 percent per year

between 2000 and 2010, faster than in any other country in Asia (The World Bank, 2019).[14] The share of urban population in Indonesia is expected to grow to 68 per cent of the population by 2025 (The World Bank, 2019b)[15] Most urban centres are located on the island of Java, and around 56 percent of the entire Indonesian population lives in Java, which accounts for only 6 per cent of the country's land area. In contrast, as many as 6000 islands, or about 38 per cent of the total land area, is uninhabited.



3.13. Figure: Population Distribution in Indonesia;
Source: World Population Review, 2020

The average population density of Indonesia is currently 151 individuals per square kilometre. In Java, the population density is 1,121 individuals per square kilometre, while in the capital city the population density is around 16,700 individuals per square kilometre. Java is one of the most densely populated islands in the world (The World Factbook, 2020). Jakarta, the capital city, is the most populous city in Indonesia as well as in South East Asia. The Jakarta greater region, known as *Jabodetabek metropolitan area,* which consists of Jakarta and the surrounding regions of West Java province, has a population of over 30 million – ranking as the third largest in the world, and one of the largest conurbations on earth. As of 2010, only 37 per cent of urban land was located in Greater Jakarta, while 42 percent lies in West Java province (World Bank, 2020).

[14] The World Bank, "National Urban Development Project (NUDP)," 2019, in http://documents.worldbank.org/curated/en/165851549767981671/text/Project-Information-Document-Integrated-Safeguards-Data-Sheet-National-Urban-Development-Project-NUDP-P163896.txt.

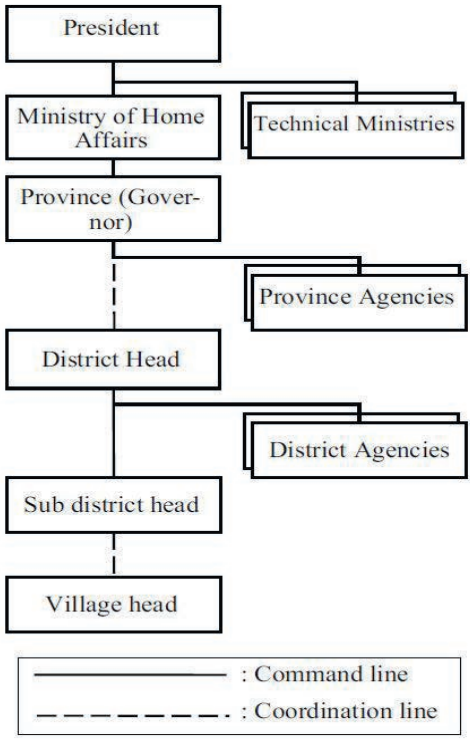
[15] The World Bank, "Indonesia: Integrated Development to Improve Lives of Growing Urban Population," 2019, in https://www.worldbank.org/en/news/press-release/2019/06/11/indonesia-integrated-development-to-improve-lives-of-growing-urban-population.

The GDP of Indonesia amounted to USD 1 trillion in 2018 (The World Bank, 2015). With a GDP per capita of USD 3,800 in the same period, Indonesia is classified as a lower-middle income country. The Gini Index is 0,39 – in other words, the level of inequality in Indonesia is relatively high. Around 83 per cent of economic activity is concentrated in the western part of the country, while there is disparity between Java and 'non-Java' (Ministry of Land, Infrastructure, Transport and Tourism, Japan (MLIT) 2017). However, in absolute terms, the majority of the total poor population of Indonesian live in Java and the western part of the country. In relative terms, the eastern part of the country displays much higher rates of poverty, particularly rural poverty. Migration to urban areas is often perceived as the only way to escape this poverty.

3.4.2 Regional-Local Administrative Structure

Indonesia is a unitary country, and one of the largest decentralised countries in the world. With decentralisation taking place, local governments gain considerable power, responsibilities, and autonomy through the partial devolution of central government authorities. Central government retains its responsibility for the areas of national security; foreign affairs; national monetary and fiscal policy; justice; governance and planning; as well as religious affairs. On the other hand, local governments have authority in the areas of health; primary and middle-level education; public works; environment; communication; transport; agriculture; manufacturing industry and trade; capital investment; land; cooperatives; labor force; infrastructure services; and local finance (OECD, 2016).

The administrative structure of Indonesia is divided into five layers of government – namely, central government, provincial government, regency and municipality (district) government, sub-district government, and urban community and rural village government. Indonesia's administrative structure includes 34 provinces, further divided into 416 regencies and 98 municipalities, 7,024 districts, and 8,488 urban communities and 74,953 rural villages. Each province is administered by a governor who is chosen by election. Districts are administered by *Bupati* (for regencies) and *Mayor* (for municipalities), appointed in the same manner as governors. Each sub-district is administered by a *Camat* that is appointed by Bupati or Mayor, while the heads of the urban community or rural village are appointed by the *Camat*.



3.14. Figure: Intergovernmental Structure of Indonesia
Source: Sutiyo and Maharjan, 2017.

Indonesia's Regional Autonomy Law (Law No. 32/2004) has delegated a degree of authority to two levels of regional government – provinces at the first-order administrative level and regencies and municipalities at the second-order administrative level – to make their own policies and local laws. This shows that regencies and municipalities hold greater authority, political power, and financial resources, bypassing the provincial government. The aim is to encourage greater involvement of regency and municipality governments in the management of their day-to-day affairs and in the provision of public goods to satisfy regional interests that can result in better local service delivery (Nasution, 2016).

The regional development of Indonesia is now run by the four sub-national tiers of government – namely, province; regency and municipality (district); sub-district; and urban community and village. Decentralisation may improve regional performance by promoting competition between regions in the area of efficient provision of services and investment creation. Indonesia's administrative structure

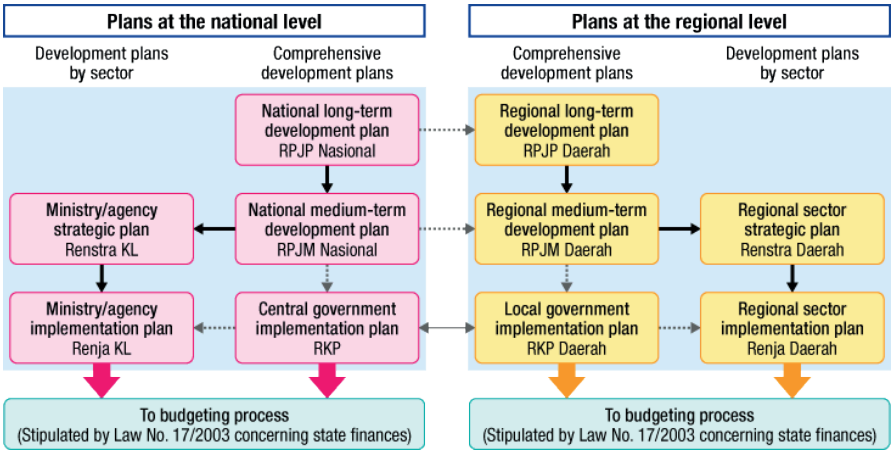
and its autonomous function has helped broaden and spread growth; stimulated regional competition in attracting investment in infrastructure, resources, and agriculture; encouraged participation in the political process; and led to a broadening of political ideas rather than concentrating them (Kurlantzik, 2012). Devolution of authority is expected to improve community participation, local capacity, transparency, accountability, responsiveness, and the targeting accuracy of government programs.

3.15. Figure: Indonesia Administrative Divisions
Source: On the World Map, with additional information from the writer (newly established province of Kalimantan Utara and its capital city).

3.4.3 Legislative and Institutional Framework of Planning

The planning system in Indonesia can be differentiated into two types of planning: namely, development planning and spatial planning. Development planning covers the socio-economic elements of development, coordinated by Ministry of National Development Planning (National Development Planning Agency). On the other side, spatial planning encompasses the spatial elements of development, and is coordinated by the Ministry of Agrarian Affairs and Spatial Planning (National Land Agency). The integrated planning system, with consideration of spatial elements in development planning and socio-economic elements in spatial planning, as well as harmonious development and spatial plans, are key to the successful development process.

The main objectives of the current development planning of Indonesia are to create an orderly, developed, peaceful, and socially just society; competitive and innovative population; just democracy; social and developmental equality among all people and all areas in the country; and to become an important global economic and diplomatic force (Indonesia Investments, n.d.).[16] The national-level development plan in Indonesia is planned on the basis of National Development Planning System Law (Law No.25/2004). According to the law, development planning is conducted in order to achieve effective, efficient, and targeted development. Plans at the national level consist of 20-year period National Long-term Development Plan, five-year National Medium-term Development Plans, and an Annual Implementation Plan.



3.16. Figure: Development Planning System of Indonesia;
Source: https://www.indonesia-investments.com/projects/government-development-plans/item305

Indonesia's Law No.32/2004 on Regional Administration serves as the basis of decentralisation policy in Indonesia as it encompasses the devolution of authority spectrum to the sub-national government. Regional and local development planning are in the hands of the provincial and district government as the result of decentralisation policy. The regional as well as local level of development planning is prepared by the provincial and district government, with the Local Planning Agency as the coordinator. In accordance with national-level development plans, plans at the regional level consist of 20-year Regional Long-term Development Plans, five-year Regional Medium-term Development Plans, and Regional Annual Implementation Plans.

[16] Indonesia Investments, *"Government Development Plans of Indonesia,"* in https://www.indonesia-investments.com/projects/government-development-plans/item305

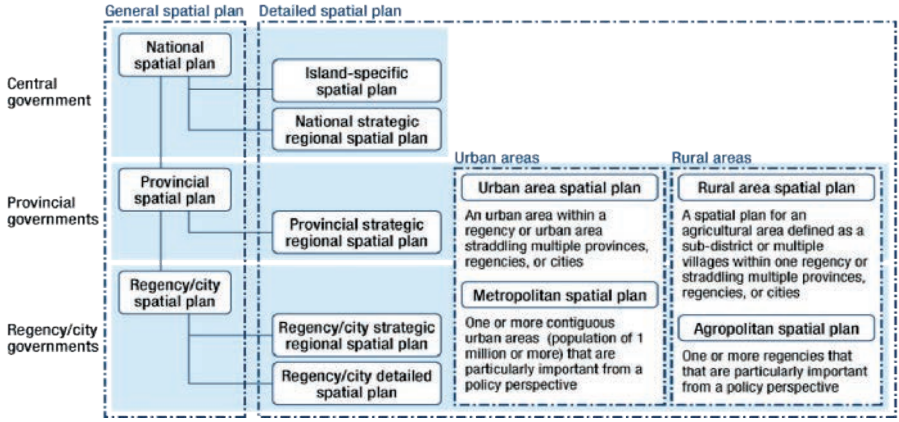
As development planning in Indonesia is divided into national and regional development planning, different planning affairs are regulated by different levels of government. Central government is responsible for national-scale system development, including inter-provincial and national strategic interests; provincial governments are responsible for regional-scale system development, including inter-regency and/or inter-municipality; and regency or municipality governments responsible for local-scale system development within their administrative areas. Development plans at both the national and regional level are comprised of comprehensive development plans on the basis of timelines and sectoral development plans which include sectoral strategic plans and implementation plans. As for financing, national-level development plans are financed by the national budget, while regional development plans are financed by regional budgets.

In addition to socioeconomic development planning, the spatial element is another important consideration in development progression. The government of Indonesia describes spatial planning as a process of determining the space structure and space pattern which consists of preparing and determining a spatial plan (Spatial Planning Act of Indonesia, Law No 26/2007). The national-level spatial plan in Indonesia is planned based on the Spatial Planning Act (Law No. 26/2007). Spatial plans at the national level are made for a 20-year period and evaluated once every five years. The revision of spatial plans is conducted subsequently, with the aim of adjusting the plans according to changes in physical conditions.

According to the Spatial Planning Act, spatial planning is conducted through a hierarchical, top-down approach, where spatial plans of a lower hierarchy must confirm higher-level spatial plans (Susetyo, 2017). In this case, the draft of provincial regulation on spatial planning must obtain prior approval regarding substance from the Minister, while the draft of district regulations on regency or municipal spatial planning and detailed arrangements of spatial planning must obtain prior approval of substance from the Minister, subsequent to the Governor's recommendation. The National Land Agency is responsible for administrative work related to spatial planning, including the coordination of interests among local governments, local planning capacity improvement and development, as well as the implementation of spatial plans. The Spatial Planning Act delegated spatial affairs to be managed by regional and local government.

The aim of spatial planning with regard to the Act is to achieve a safe, comfortable, productive, and sustainable national space based on the Archipelagic Point of View and National Defence through harmony between natural and artificial environment, integrity in utilisation of natural and artificial resources with respect to human resources, as well as the protection of space function and prevention of negative impacts on the environment due to space utilisation. The classification of spatial planning in Indonesia is based on the system, main function, administrative

region, activity, and strategic value of the area. Spatial planning based on 'system' consists of the regional system and the urban internal system.



3.17. Figure: Spatial Planning System of Indonesia
Source: Ministry of Land, Infrastructure, Transport and Tourism (MLIT) Japan, 2017.

Spatial planning based on the main function of the area consists of the conservation area and cultivation area. Spatial planning based on the administrative region consists of urban spatial management and rural spatial management. Finally, spatial management based on the strategic value of the area consists of national strategic area, provincial strategic area, and regency or municipality strategic area.

Two categories of planning document, namely general spatial plan and detailed spatial plan are generated through the process of spatial planning. The general spatial plan comprises the administrative level of spatial plans – national spatial plan, provincial spatial plan, and regency and municipality spatial plan. Detailed spatial plans, derived from general plans, encompass the functional aspects of spatial plans – island-specific spatial plan; national strategic area spatial plan; provincial strategic area spatial plan; regency and municipal detailed spatial plan; and regency and municipal strategic area spatial plan. One of the important provisions of the Spatial Planning Act is the requirement that at least 30 per cent of urban areas should be green open spaces, with at least 20 per cent public open space. The Act also validates the importance of public participation in spatial planning.

3.4.4 Planning Instruments

National Development Plan

The national development plans of Indonesia include the 20-year long-term development plan, 5-year medium-term development plan, and yearly government development plan. The plans encompass the vision and mission of the country, focusing on the political, economic, and social development of Indonesia. The responsible body for delivering the national development plans is the Development Planning Agency. National development plans act as the guideline for Ministries and governmental Institutions to implement their work programs.

Regional Development Plan

The regional development plans of Indonesia include the 20-year long-term regional development plan, 5-year medium-term regional development plan, and yearly regional development plan. Both the provincial government and district (regency or municipality) government have their own regional development plans that focus on the economic and social development of the region. Development plans at a regional level must be aligned with national development plans. The responsible body for delivery is the Regional Development Planning Agency. Regional development plans act as the guideline for local government and institutions to implement their work programs.

General Spatial Plan

General spatial plans are arranged based on an administrative territory approach, covering space structure management and space outline management. The plans include national spatial plan, provincial spatial plan (regional spatial plan), and regency or municipality spatial plan (district spatial plan). The division of spatial plans according to the administrative level is implemented as the authority of spatial planning is divided between central government, regional government, and local government. General spatial plans focus on infrastructure management and the development of the country, province, and regency or municipality with regard to economic, socio-cultural, and environmental elements. The duration of the plans is 20 years, to be reviewed once every five years. The responsible body is the National Land Agency for national spatial planning and regional or local government for provincial spatial planning and the local government for regency or municipality spatial planning.

Island-Specific Spatial plan

The island-specific spatial plan is an archipelago spatial planning arrangement that acts as the operational tool for national spatial planning arrangements. The plan aims for the coordination as well as synchronisation of island development programmers.

There are seven Island-Specific Spatial Plans enacted by Indonesian Presidential Decrees: Island-Specific Spatial Plans of Celebes Island (Presidential Decree No. 88/2011), Island-Specific Spatial Plans of Kalimantan Island (Presidential Decree No. 3/2012), Island-Specific Spatial Plans of Sumatera Island (Presidential Decree No. 13/2012), Island-Specific Spatial Plans of Java and Bali Islands (Presidential Decree No. 28/2012), Island-Specific Spatial Plans of Nusa Tenggara Island (Presidential Decree No. 56/2014), Island-Specific Spatial Plans of Papua Island (Presidential Decree No. 57/2014), and Island-Specific Spatial Plans of Malacca Islands (Presidential Decree No. 76/2014).

Strategic Area Spatial Plan

Strategic regional spatial plans arrange land use planning and regulation for prioritised areas due to their importance in term of state sovereignty, defence and state security, economy, society, culture, and environment. The plans include national strategic area spatial plan, provincial strategic area spatial plans, and regency or municipality strategic area spatial plans. Spatial planning with regard to the strategic value approach is aimed at developing, preserving, protecting, and/or coordinating the integration of the development of prioritised areas to achieve successful, useful, and sustainable utilisations. An area's strategic value at the national, province, and regency or municipality level is measured based on externality, accountability, and efficiency aspects, with reference to the Law on Regional Government.

Regency and Municipality Detailed Spatial Plan

The regency and municipality detailed spatial plans include spatial planning management and zoning regulation, and act as the foundation of the space utilisation control of the regency and municipality.

Urban Area Spatial Plan

Activity that is urban-area characteristic covers the urban residence area and concentration as well as distribution for non-agricultural activity, governance service activity, social service activity, and economy activity. The urban area referred to in the urban area spatial plan can be take the form of small urban area, medium urban area, metropolitan area (urban area with more than 1 million residents), or a megapolitan area (urban area with more than 10 million residents). The national urban system is formed from the urban area with hierarchal scale service, which covers the national-scale activity centre, territorial scale activity centre, and local scale activity centre. Spatial planning based on the internal urban system – i.e., based on space structure and the space pattern of urban area – constitutes an approach to spatial planning that has service reach in urban areas.

Rural Area Spatial Plans

Activity that is rural-area characteristic covers rural residence areas, agricultural activity, activity concerning natural botanical management, natural resources management activity, governance activity, social service activity, and economy activity. Rural areas referred to in the rural area spatial plan can take the form of an agropolitan region. An agropolitan region is an area which consists of one or more activity centres in a rural area such as an agricultural production system and natural resource management, indicated by its functional relevance and space hierarchy for each residential system and agribusiness system. A rural area spatial planning arrangement is a part of regency territory spatial planning arrangement that can constitute a space utilisation instrument for optimising agricultural activity.

3.4.5 Visualisation of Specific Planning Types of Indonesia

Looking at the visualisation of plans in Indonesia, it can be concluded that all of the planning instruments – Regional Development Plan, General Spatial Plan, Island-specific Plan, and Urban Area Spatial Plan – tend to be traditional and/or formalised in terms of characteristics. It can be seen from the colouring of the Planning Map that the former are closer to the centre of the map in all dimensions (see Figure 2.18 below). However, only in the 'object' dimension are the planning types more flexible and adaptable to circumstances, as well as the 'space' dimension in the Island-specific Spatial Plan that is more modern.

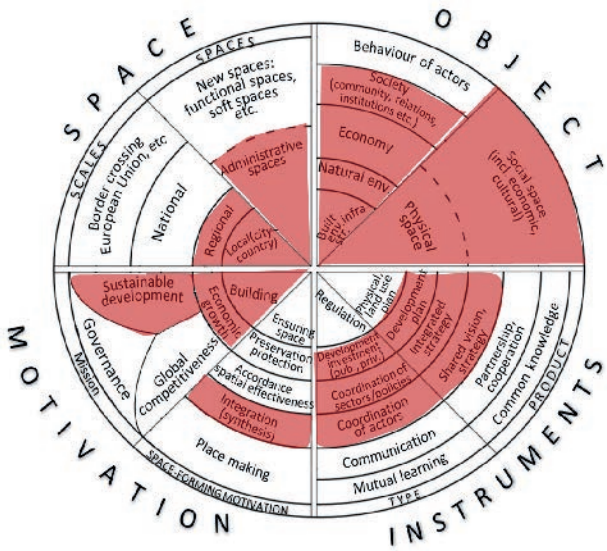
In the 'motivation' dimension, the missions of planning instruments in Indonesia are focused on building or establishment, supporting economic growth, and promoting sustainable development. This can be seen in all planning types visualised. The space-forming motivations are also similar in the spatial plans: ensuring space, nature protection, and according spatial effectiveness. As for development plans, the space-forming motivation is integration.

In the 'space' dimension, the plans cover the local, regional, and national scale, but not cross-border. Regional Development plans cover the local and regional extent, while General Spatial Plans covers the local, regional and national extent; Island-specific Spatial Plans cover the national extent; and Urban Area Spatial Plans cover a local extent. Regional Development Plans, General Spatial Plans and Urban Area Plans are limited to traditional administrative spaces. In contrast, Island-specific Spatial Plans cover new spaces such as functional and soft spaces.

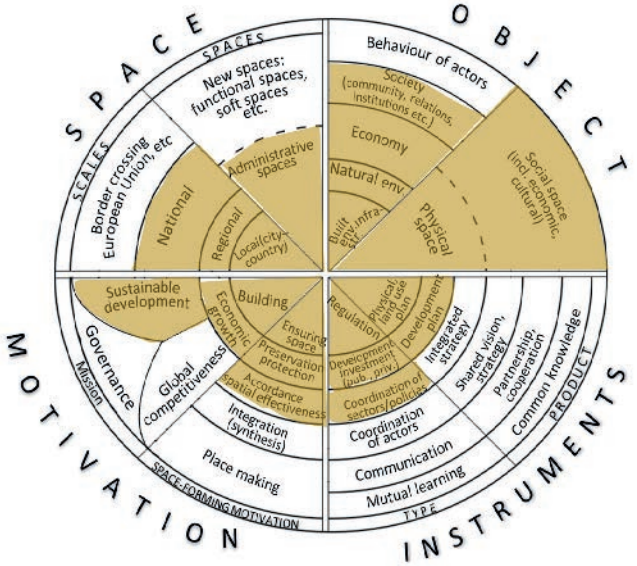
With all planning types that are visualised the 'object' dimension ranges from traditional and formalised characteristics to modern and flexible characteristics. The plans are intended to target physical and social spaces, as can be seen in all planning types visualised. In addition, the plans target the building of environmental infrastructure,

natural environment, economy and society (except for Island-specific Spatial Plans, which do not focus on society as this area is already covered by other plans).

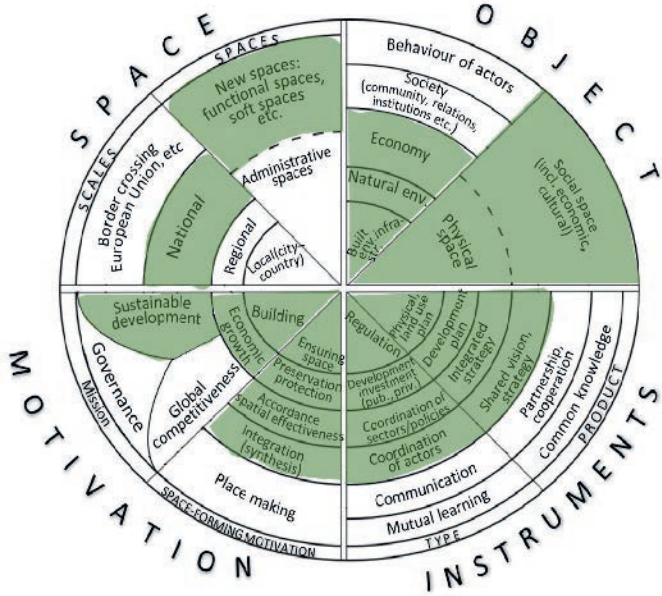
The outcomes ('instruments') of the planning process in all planning types tend to be more formalised. All four planning types involve the use of instrument types such as regulations, development investment, and the coordination of sectors and policies. Additionally, both Regional Development Plans and Island-specific Spatial Plans coordinate the actors involved in the socioeconomic/spatial planning activities. The product of Regional Development Planning are development plans, an integrated strategy and shared vision/strategy; while the product of General Spatial Planning as well as Urban Area Spatial Planning are physical, land use plans, and development plans; and Island-specific Spatial Plans produces physical, land use plans, development plans, and an integrated strategy and shared vision/strategy.



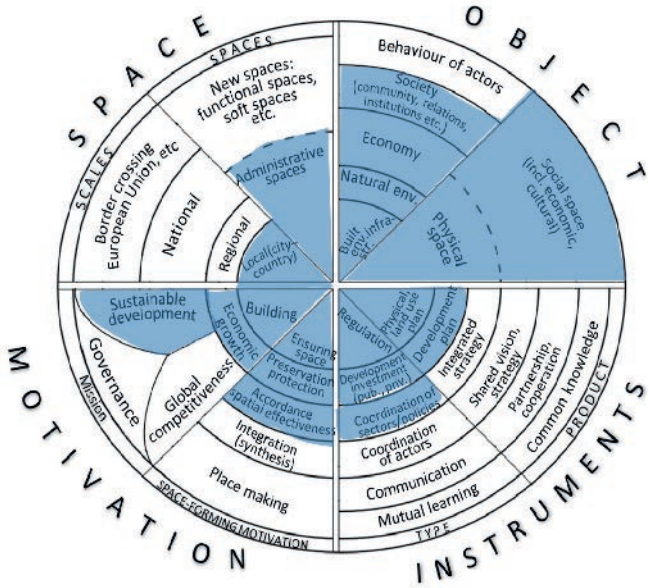
3.18. Figure: Regional Development Plan (province level and district level)
Source: Edited by the author based on Salamin – Péti (2019)



3.19. Figure: General Spatial Plan
Source:Edited by the author based on Salamin – Péti (2019)



3.20. Figure: Island-Specific Spatial Plan
Source:Edited by the author based on Salamin – Péti (2019)



3.21. Figure : Urban Area Spatial Plan
Source:Edited by the author based on Salamin – Péti (2019)

3.4.6 Summary of Indonesia's Planning System

Indonesia is a unitary country, and one of the largest decentralised countries in the world. The administrative structure of Indonesia is divided into five layers of government – namely, central government, provincial government, regency and municipality (district) government, sub-district government, and urban community and rural village government. The planning system in Indonesia can be differentiated into two types of planning, namely development planning and spatial planning. Development planning covers the socioeconomic element of development, and is coordinated by Ministry of National Development Planning (National Development Planning Agency). On the other hand, spatial planning encompasses the spatial element of development, and is coordinated by the Ministry of Agrarian Affairs and Spatial Planning (National Land Agency). Planning instruments in the Indonesian planning system include national development plans, regional development plans, general spatial plans, island-specific spatial plans, strategic area spatial plans, regency and municipality detailed spatial plans, urban area spatial plans, and rural area spatial plans.

Development planning is divided into national development planning and regional and local development planning. Decentralisation policy leads to different planning affairs regulated by different levels of government: central government for

national-scale system development, including inter-provincial and national strategic interests; provincial governments for regional-scale system development, including inter-regency and/or inter-municipality; and regency or municipality governments for local-scale system development within their administrative area. Development plans at both the national and regional level are comprised of comprehensive development plans on the basis of timelines and sectoral development plans which include sectoral strategic plans and implementation plans. National, regional, and local development plans consist of 20-year long-term development plans, 5-year medium-term development plans, and annual implementation plans.

Spatial planning in Indonesia is conducted through a hierarchical, top-down approach, where spatial plans of a lower hierarchy (managed by the local and/or regional government) must confirm the higher-level spatial plan (managed by the regional and/or national government). The national Land Agency is responsible for administrative work related to spatial planning, including the coordination of interests among local governments, local planning capacity improvement and development, as well as the implementation of spatial plans. The classification of spatial planning in Indonesia is based on the system, main function of the areas, administrative region, activity of the area, and strategic value of the area. Two categories of planning document – namely, general spatial plan and detailed spatial plan – are generated through the process of spatial planning. At the national level, spatial plans are made for a 20-year period and evaluated once every five years. Revision of spatial plans is conducted subsequently, with the aim of adjusting plans according to changes in physical conditions.

3.5 The Planning System in Vietnam

3.5.1 General Geographical Characteristics

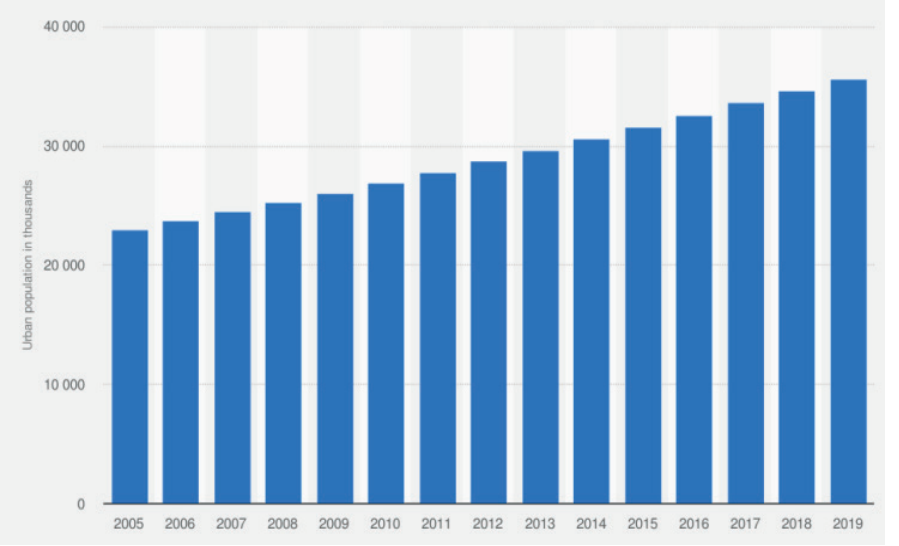
Vietnam, officially known as the Socialist Republic of Vietnam, is located in South-eastern Asia bordering the Gulf of Thailand, the Gulf of Tokin, and the South China Sea (Ministry of Land, Infrastructure, Transport and Tourism, Japan, 2017). In addition, Vietnam also considers the Paracel Islands (Vietnamese: Đảo Hoàng Sa) and Spratly Islands (Vietnamese: Đảo Trường Sa) as its territory. With a land border of 3,730 kilometres, Vietnam is a neighbouring country with Cambodia, China, and Laos. The mainland territory of Vietnam is an S-shaped area covering over 331,690 square kilometres, and 75 percentage of the total mainland is mountains, hills, and plateaus. Vietnam's topology is relatively diverse as well. The North includes the plateau and Red River Delta, Central areas are the coastal lowland and highlands along the Annamite Mountains; and the South is the Mekong River Delta. The highest point in Vietnam is 3,144 meters at the top of Fansipan, belonging to the

Hoang Lien Son range. Arable land accounts for 17 percent of the total land area in Vietnam. Each region takes advantage of its territory to develop agricultural activities, such as the Red River Delta and Mekong River Delta's priority for growing rice, while coastal lowlands prefer aquaculture activities.

Surface area	329,241 km²
Population	97.34 million
Population density	308 people/km²
Percentage of urban population	35.92 percent

3.5. Table: Country profile: Vietnam; Source: General Statistical Office and World Bank Data

Vietnam is the 15th most populous country in the world and the third in Southeast Asia (after Indonesia and the Philippines) (General Satistical Office in Vietnam, n.d.). Its population reached 97.34 million in the first half of 2020 and is expected to hit 100 million by the end of 2024 (worldpopulationreview.org, n.d.) Vietnam's population is projected to hit its peak of 109.78 million people in 2054. It increases by about 1% each year, adding about 1 million per year. Despite this, the annual population rate is increasing each year and eventually the population will begin decreasing after 2055. Currently, 35.92 percent of the population in Vietnam is urban (over 35 million people) concentrated in big cities such as Hanoi (8 million people), Ho Chi Minh City (9 million). It has been forecast that the share of the urban population will surpass that of the rural population by 2050. The urban population is rapidly increasing due to the number of immigrants and economic reforms as well as higher living standards. However, there are some social problems with urbanisation, such as inadequate accommodation, water, land, and environmental pollution. Public services also are under pressure because of overpopulation.



3.22. Figure: Urban population in Vietnam from 2005 to 2019;
Source: Statista.com (2019)

The average population density of Vietnam is currently 311 individuals per square kilometre of land area. Vietnam also is among those with the highest population density, ranking eleventh in the Asia Pacific region (statista.com, n.d.). The two cities with the highest population density in Vietnam are Hanoi (2,398 people/ km^2), and Ho Chi Minh City (4,363 people/ km^2). The population density of these two socio-economic centres is 10 times higher than that of the whole country. The distribution of population among socio-economic regions is also significantly different. The Red River Delta is the largest population area in the country with 22.5 million people, accounting for nearly 23.4 percent of the country's population. Next are the North and Central Coast regions, with 20.3 million people, accounting for 21 percent. The Central Highlands is the region with the smallest population, with 5.8 million, accounting for 6.1 percent of the whole country's population.

According to a report by the World Bank (2020), Vietnam now is one of the most dynamic emerging countries in the East Asia region. Vietnam's development over past 30 years has been remarkable under the 'Doi Moi' Reform launched in 1986, which has spurred rapid economic growth, transforming what was then one of the world's poorest nations into a lower-middle income country with a dynamic market economy that is deeply integrated into the global economy. Between 2002 and 2018, GDP per capita increased by 2.7 times, reaching over US$2,700 in 2019, and more than 45 million people were lifted out of poverty. Poverty rates declined

sharply from over 70 percent to below 6 percent (US$3.2/day PPP).[17] However, the vast majority of Vietnam's remaining poor (86 percent) are ethnic minorities living in the highlands, and remote and isolated areas. In 2019, Vietnam's economy continued to demonstrate fundamental strength and resilience, supported by robust domestic demand and export-oriented manufacturing. Vietnam has one of the fastest growth rates in the region.

3.5.2 Regional-Local Administrative Structure

Vietnam has a three-tiered system of local government. According to Article 110 of the 2013 Constitution (Enacted on 1st Jan 2014), Vietnam consists of 58 province and 5 centrally controlled cities existing at the same level as provinces: Hanoi, Ho Chi Minh City, Can Tho, Da Nang, and Hai Phong as the first layer. A province consists of a prefecture, prefecture-level cities and towns, while a centrally controlled city consists of districts, prefectures, and towns. A prefecture consists of townships and counties; a prefecture-level city or a town consists of wards and counties; and a district consists of wards.

<table>
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<tr><td rowspan="12">VIETNAM</td><td rowspan="6">Centrally controlled cities
(5 cities: Hanoi Capital,
Ho Chi Minh City, Hai Phong,
Danang)</td><td>Districts</td><td>Wards</td></tr>
<tr><td rowspan="2">Prefectures</td><td>Townships</td></tr>
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<tr><td rowspan="2">Towns</td><td>Wards</td></tr>
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(58 provinces)</td><td rowspan="2">Prefectures</td><td>Townships</td></tr>
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<tr><td>Counties</td></tr>
<tr><td rowspan="2">Towns</td><td>Wards</td></tr>
<tr><td>Counties</td></tr>
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3.6. Table: Administrative structure in Vietnam
Source: The Law of Constitution, 2013.

[17] The report about overview of Vietnam of World Bank. https://www.worldbank.org/en/country/vietnam/overview

According to Article 4, Provision 2, Chapter I of the Law on Urban Planning, urban centres are classified into six Grades, including Special Grade and Grades I, II, III, IV and V based on the position, function, role, structure and level of urban socio-economic development; population size; population density; percentage of non-agricultural labor and infrastructure development level. Centrally controlled cities must be an urban centre of Special Grade or Grade I; prefecture-level cities must be an urban centre of Grade I, II, III; towns must be an urban centre of Grade III or IV and township must be urban centre of Grade IV or V. Also based on the Urban Development Agency, on 31 Dec 2014 there were total 774 cities and towns, including: 2 cities at Special grade; 15 cities at grade I; 21 cities at grade II, 42 cities and towns at grade III and 68 towns and townships at grade IV and 626 townships at grade V. Almost 50 percent of the urban population is concentrated in 16 big cities.[18]

The government specifies the classification and administrative management level to create suitable policies for each stage of socioeconomic development.

3.23. Figure: Administrative Map of Vietnam
Source: One World Map, n.d.

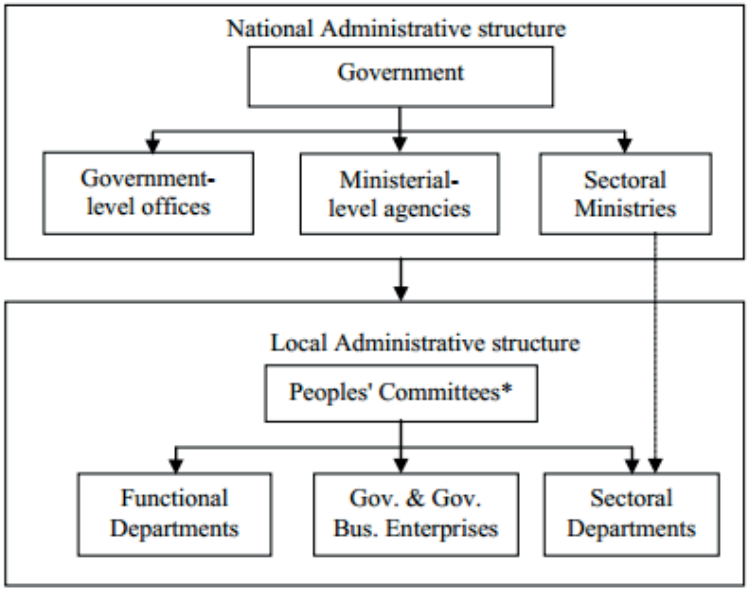
[18] An Overview of Spatial Policy in Asian and European Countries, Ministry of Land, Infrastructure, Transport and Tourism, Japan (MLIT). https://www.mlit.go.jp/kokudokeikaku/international/spw/general/vietnam/index_e.html

In Vietnam, there are three constitutional components of government – legislative, executive and judicial (Ho et al., 2012).[19] The National Assembly is a legislative body that has the highest powers and approves the Constitution, Resolutions, and all laws. The Judiciary consists of agencies or bodies responsible for enforcing the laws of Vietnam to solve conflict or disputes. The executive components consist of administrative agencies designated as a hierarchical system. These agencies issue legal documents that guide implementation of the constitution, resolution, and laws approved by the National Assembly. At a national level, while the government has power to promulgate decrees and decisions coming into effect over the country, sectoral ministries have power to issue circulars and decisions that are applied to particular sectors. At the local level, agencies such as provincial, district, or commune Peoples' Committees[20] approve and sign legal documents, which are applied to day-to-day management and governance activities.

The organisational structure of the Vietnam Government can be divided into two nested sub-structures based on geopolitical allocation: (i) the National administrative sub-structure: this includes government offices, ministries, and other national-level offices responsible for administratively steering the implementation of all aspects of socio-economic development, and for the execution of legal documents throughout the whole country. (ii) The local administrative sub-structure consists of Peoples' Committees at province, district, and commune levels. Several agencies at these levels are responsible for administrative processes to ensure that socioeconomic activities are developed as planned at the equivalent geopolitical scale. In addition, government agencies at each level can be designated either as administrative management agencies, government enterprises, or government business enterprises (Figure 2.25). They have different mandates and legal rights and are constrained by specific regulations. While administrative management agencies consult Peoples' Committees in the execution of formal regulations, other functional departments and enterprises assist the Peoples' Committees in implementing and delivering socio-economic activities and services.

[19] Perceived barriers to effective multilevel governance of human-natural systems: an analysis of Marine Protect-ed Areas in Vietnam in https://www.researchgate.net/publication/266012904_Perceived_barriers_to_effective_multilevel_governance_of_human-natural_systems_an_analysis_of_Marine_Protected_Areas_in_Vietnam

[20] Peoples' Committees exist at three different levels – province, district, and commune.

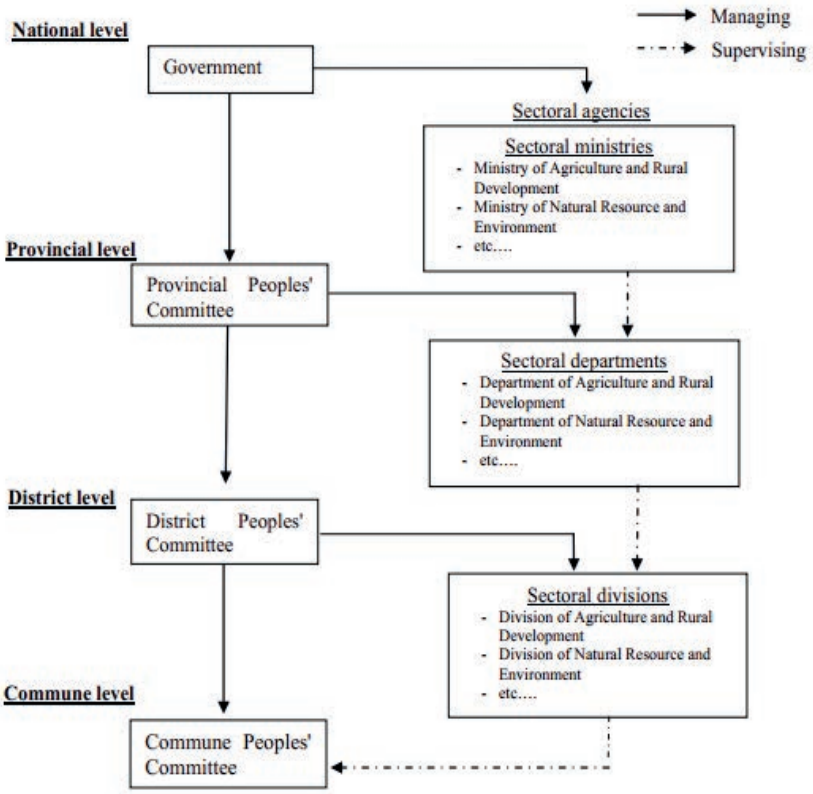


3.24. Figure: The organisational structure of the Vietnam Government based on geopolitical allocation. Source: National Administrative Institute, 2008

On the other hand, Figure 2.26 (below) illustrates the vertical hierarchical system among responsible jurisdictions. The Government and Peoples' Committees, from provincial to commune level, are administrative agencies and are responsible for general jurisdictions of certain locations. Other agencies, such as Ministry of Agriculture and Rural Development, Ministry of Natural Resources and Environment, and similar departments at provincial, district and commune levels, are sectoral agencies and are responsible for specific technical jurisdictions of that particular sector in line with the assigned scale.

As indicated in Figure 2.26, a sectoral Provincial agency that integrates administrative management mandates and technical functions is responsible to two entities: (i) the Provincial Peoples' Committee for general administrative management; and (ii) the sectoral Ministry for technical supervision. For example, a sectoral agency, the Provincial Department of Agriculture and Rural Development, is administratively managed by a responsible Provincial Peoples' Committee and steered at the Ministerial level (e.g., the Ministry of Agriculture and Rural Development) to observe strategic development and to implement sectoral legal documents at the provincial level, with technical instructions from this sectoral agency. The same structure is repeated at the district level. However, at the commune level, the Commune Peoples' Committees are mainly responsible for administrative

management. Sectoral tasks, such as fisheries and agriculture, are undertaken by mass organisations like the Farmers Association because of the limited number of staff that are provided and the significant demand at this level. (Figure 2.26).



3.25. Figure: Vietnam government's organisational structure based on the mandates of agencies
Source: National Administrative Institute, 2008

3.5.3 Legislative and Institutional Framework of Planning

The planning system in Vietnam can be divided into two types of planning – namely, National Socio-Economic Development Planning and Spatial Planning. Development Planning covers the tasks related to the strategic tasks for developing economic and society, coordinated by the Ministry of Planning and Investment (Vietnamese: *Bộ Kế hoạch và Đầu tư*). On the other hand, Spatial Planning consists of the spatial element of development, and is the responsibility of the Ministry of

Construction (Vietnamese: *Bộ Xây Dựng*). The harmony between development planning and spatial planning is key to the success of sustainable development in Vietnam.

3.26. Figure: Planning System in Vietnam
Source: 'Report on the 2008 National Spatial Policy Seminar' (2009)
National and Regional Planning Bureau, MLIT, Japan

The objective of Socio-Economic Development Planning is to make the country modern and industrial with socio-political stability, agreement, democracy, and discipline; people's physical and spiritual life should be clearly improved; and independence and territorial unification firmly maintained, and Vietnam's position in the international arena is to be continually improved, creating firm premises for higher development in the next period. At the national level, the two components of the centrally planned Vietnam Socio-Economic Development are the 10-year 'Socio-economic Development Strategy' and the corresponding and consecutive two '5-year Socio-Economic Plans.' The stated objective of the current 10-year strategy is 'to accelerate national industrial and modernisation along the socialist line and to build the foundation for the country to basically become an industrialised nation by 2020.'

In addition to the socio-economic development planning, spatial planning is another important consideration in development progression. Spatial planning is seen as a process of determining the space structure and space pattern, which consists of preparing and determining the spatial plan. The spatial plan in Vietnam is planned on the basic of the Planning Law[21] in 2017 and responsibility belongs

[21] The Planning Law is the first official law about planning in Vietnam, issued in 2017.

to the Ministry of Construction. The planning period of the national planning system is 10 years. The vision of the national planning system is from 30 years to 50 years, and for regional and provincial planning from 20 to 30 years. The budget for making plans in Vietnam uses public investment capital according to a provision of the law on public investment. Planning evaluation expenses shall be taken from regular funding sources in accordance with the law on the state budget.[22]

According to these laws, spatial planning in Vietnam is differentiated into four types: namely, national-level planning. which includes national master planning, national marine spatial planning, national land use planning, and national sector planning; Regional planning; Provincial Planning; and Urban and Rural planning. The objective of spatial planning is to arrange and distribute socioeconomic, defence, and security activities associated with infrastructure development, natural resource use, and environmental protection in a given territory for the purpose of sustainable development in specific period. The government engages in national-level planning with the general goals of developing the country, while the next level of plans such as regional, provincial, and urban and rural plans have to follow national level plans to ensure that plans are within the framework of national-level planning.

The Planning Law (Act of January 1, 2019) is considered to be an important means of helping the national plan to develop space, and ensuring synchronous connection between master plans. National, regional planning, and provincial planning are designed to maximise the potential and advantages of the country to support sustainable socio-economic development. On the other hand, the Planning Law helps accelerate the implementation of strategic breakthrough infrastructure development; and to eliminate overlapping planning that obstructs investment and makes it difficult for enterprises to mobilise resources and production and business activities. The Law on Planning introduce three key changes: i) it attempts to ensure consistency in the legal system that governs planning activities, ii) it lays a legal foundation for the unified direction and management of planning activities, and iii) it changes the planning methodology, following an integrated and multi-sectoral approach, which is expected to help effectively address cross-sectoral, interregional and interprovincial issues. Additionally, the Law on Planning focusses on introducing an integrated, holistic, multisectoral and interprovincial spatial planning approach to improve coherence between socioeconomic development, environmental protection, and climate change adaptation.

However, the spatial planning system in Vietnam is still considered incomplete and has caused inflexibility in the development process as well as wasted time and financial resources, affecting quality of life and sustainable development in the

[22] Planning Law, 2017

whole country. Therefore, there is a need for strong international association and cooperation with overseas countries to advance spatial planning work. In the future, spatial planning in Vietnam should focus on integrating the coordination of multi sector planning and enhancing community and civil organisation participation in planning process to attain the goal of sustainable development and environmental protection, as well as improve quality of life rather than promote city sprawl.

3.5.4 Planning Instruments

Five-Year Plans in National Socio-Economic Planning

The national government formulates five-year plans designed to guide the development of the Vietnamese economy at each specific stage of the revolution. This type of planning is a key characteristic of centralised, communist economies, and one plan that is established for the entire country normally contains detailed economic development guidelines for all its regions.

The overall objectives[23] of such Five-year Plans are to ensure macro-economic stability; strive for better economic growth than the previous five-year period; to promote strategic breakthroughs; to restructure the economy around a modern mode of growth and enhance efficiency, effectiveness and competitiveness; to develop culture, promote social security and welfare, and improve the living standards of people; to actively respond to climate change, effectively manage natural resources, and protect the environment and to strength national defence and security, and persistently fight for the protection of independence, sovereignty, and territorial integrity, and ensure political security, social order and security. To obtain these objectives, Five-Year Plan concentrates on three main pillars, including economic, social and environmental goals. After five years, the Central Government assesses the results and makes a vision for the next plans.

The National Level in Spatial Planning

The content of national-level planning determines the spatial distribution and spatial organisation of socio-economic, defence, security, and environmental protection activities of the nation. Strategic inter-regions on the territory include the mainland, island, archipelago, seas and airspace.

The main activities of national-level planning encompass analysis and assessment of natural conditions, national development status, domestic and international development trends, major development guidelines and orientations,

[23] The Five-Year Socio-Economic Plan in Vietnam http://pubdocs.worldbank.org/en/839361477533488479/Vietnam-SEDP-2016-2020.pdf

relevant plans, and development resources; development trends in science and technology; military and protected areas; areas that need to be preserved, restored areas, forecasted development trends, and national land-use orientations. On the other hand, the national level develops the orientation of national technical infrastructure industry to attract investment and create solutions and resources for implementing plans.

Regional Plans in Spatial Planning

Regional planning determines the direction of development, spatial arrangements, and the allocation of resources for socio-economic, national defence, security and environmental protection activities with interdisciplinary and inter-regional characteristics and intercity.

Regional plans cover the following principal contents: analyses and assessments of the situation of natural factors and conditions specific to regions; directions for construction, including the determination of urban and rural systems; the economic sector; industrial parks, export processing zones and hi-tech parks; tourist areas; research and training areas; conservation areas, renovated and restored historical-cultural relics; orientation for infrastructure development and for environmental protection, exploitation and protection of water resources, natural disaster prevention, and combating and responding to climate change in the region.

Provincial Plans in Spatial Planning

Provincial plans of Vietnam follow the national projects identified in national planning; regional projects identified in regional planning are related to the development of provinces. They also have a development orientation, including spatial arrangements and the allocation of resources for socio-economic activities, and national defence, etc., at provincial and inter-district levels and orientation for management at the district level.

Land use and rural systems are involved in provincial plans. Plans also include transportation networks, including highways, national highways, railways and maritime routes; seaports, and international and national airports that are identified in national and regional planning in the provinces. In addition, provincial plans cover planning for the development of irrigation and water supply networks, social infrastructure development plans, and the allocation and zoning of land according to functional areas and land types to each district-level administrative unit.

Urban and Rural Plans in Spatial Planning

Urban and Rural Plana are based on the Law on Urban Planning, 2009. According to law, there are three types of urban planning, as follows: General Planning, Zone Planning, and Detail Planning.

General planning is the organisation of space and the system of technical and social infrastructure facilities and houses for urban centres suitable for socioeconomic development, ensuring defence, security, and sustainable development. They are made for centrally controlled cities, prefecture-level cities, towns, township and new urban centres. The main objectives of this type of plan are analyses and evaluations of existing situations; creating development frameworks (demographic and socio-economic frameworks for the next 5, 10 and 20 years); directing urban development (land use, urban cores, development control areas, etc.) and large-scale infrastructure plans.

Detailed Planning involves the division and determination of norms concerning the use of planned urban land, and requirements for the management of architecture and landscape for each lot of land. This includes the arrangement of technical and social infrastructure facilities in order to concretise a zoning plan or general plan.

Zoning Planning, which is made for areas within cities, towns and new urban centres, has some of the following content: analysis and evaluation of existing situations, attributes and functions of planned areas; land use plans and planning criteria such as height restrictions; infrastructure plans (transportation, water supply, drainage, electricity, solid waste management, etc.); environmental impact assessment and urban design.

Rural Planning is an activity that is rural-area characteristic and covers rural residential areas, agricultural activity concerning natural management, governance activity, social service activity, and economy activity. The goal of the planning is to continuously improve human living standards and ensure sustainable development in rural areas.

3.5.5 Visualisation of Specific Planning Types in Vietnam

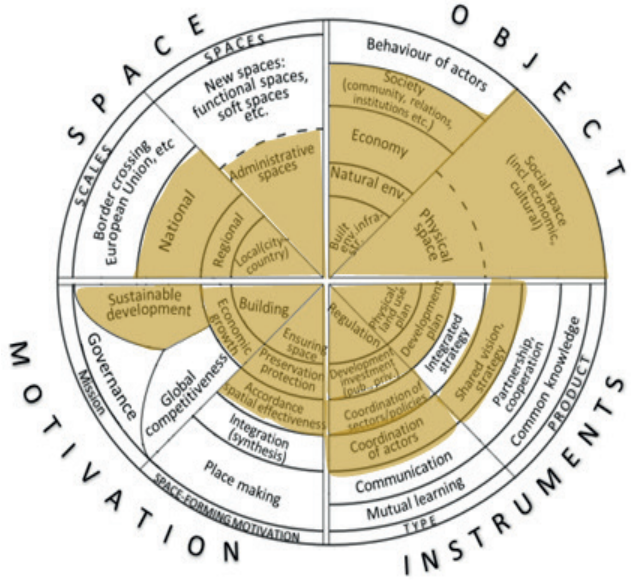
This figure below illustrates national, regional, provincial and urban and rural planning in Vietnam. With the orientation of socialism in Vietnam, the government has central control of national plans with power in terms of regulation and acts as a coordinator of lower levels of the administrative system.

Generally, at a national level socioeconomic planning and spatial planning focus on the goals of improving Vietnam and achieving a situation of sustainable development in the near future, including promoting a strategic breakthrough in the economy and society, restructuring the economy to make it compatible with a modern mode of growth, and enhancing productivity, effectiveness, and competitiveness. National plans are considered a holistic approach due to the aspects mentioned therein.

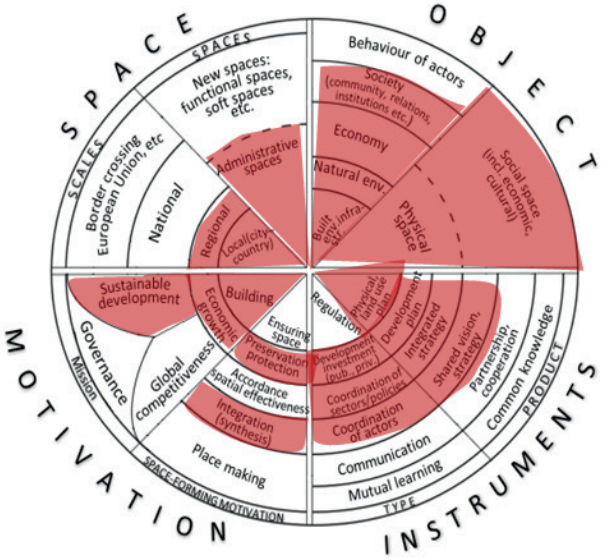
In all plans, the main objectives are building infrastructure, the economy, society, the natural environment, and physical spaces. The instruments for reaching these objectives are regulation, development investment, including public investment and private investment, and the coordination of sectors, policies and main actors. The

motivation for all plans is achieving sustainable development, growing economically, and building space.

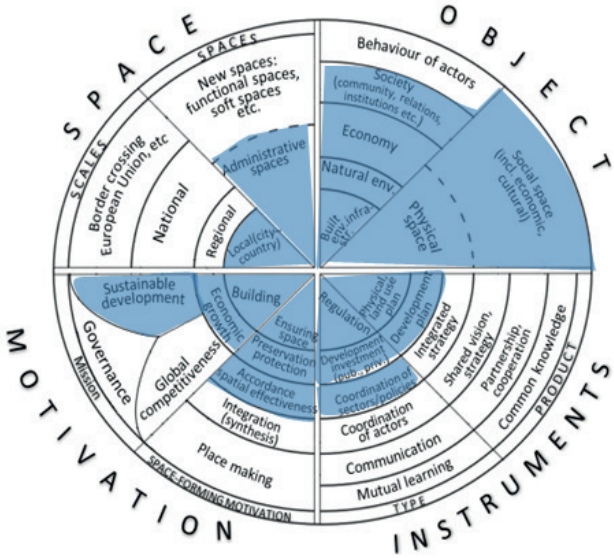
However, at each level plans are more flexible because they depend on the goals and objectives and the development level. 'National-level planning' is considered the main form of planning for determining the objects, goals, space, and instruments in all sectors, including society, economic growth, building infrastructure, the natural environment, etc. In regional plans, the motivation is integration between the regions, equal development and avoidance of lagging regions; they also concentrate on administrative space all their objectives. In provincial plans, besides adhering to higher level plans, the local government also creates their own plans for meeting the distinct goal of developing an economy and society which are suitable for each province. The uniqueness in provincial plans only serves to serve to support locality and/or county administrative space. In terms of urban and rural plans, besides the common objectives, motivation and instruments, the distinct character of urban and rural plans involves ensuring space as motivation and focusing on land use as an 'instrument'/ means of achieving objectives.



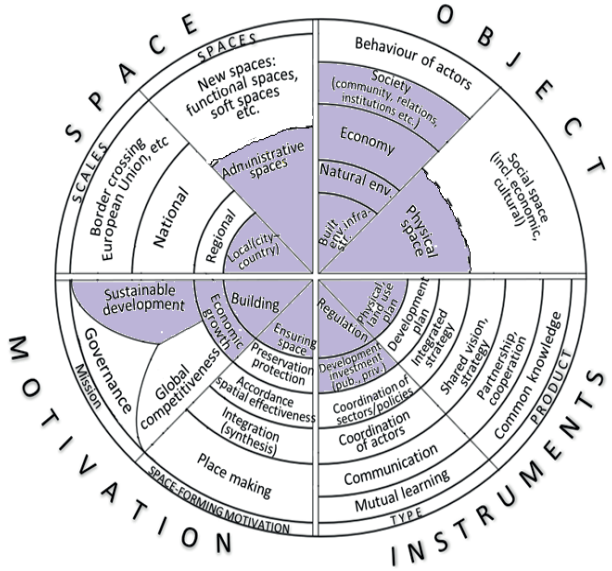
3.27. Figure: National-level plan
Source: Edited by the author based on Salamin - Péti (2019)



3.28. Figure: Regional Plan
Source:Edited by th e author based on Salamin - Péti (2019)



3.29. Figure: Provincial Plans
Source: Edited by the author based on Salamin – Péti (2019)



3.30. Figure: Urban and Rural Plans
Source: Edited by the author based on Salamin - Péti (2019)

3.5.6 Summary of Vietnam's planning system

Since the Reforms of 1986, market liberalisation and privatisation with a socialist orientation has been adopted. Economic reform attempts have helped Vietnam become a lower-middle-income economy for over two decades. Vietnam is going through an urbanisation process, with the rate of urbanisation increasing every year. Therefore, it is necessary to make plans for socio-economic development.

Vietnam has a three-tiered system of local government. The first layer consists of 58 provinces and five centrally controlled cities existing at the same level as provinces: Hanoi, Ho Chi Minh City, Can Tho, Da Nang, and Hai Phong. There are prefectures, prefecture-level cities, and the town under the province system, while centrally controlled consists of districts, prefectures, and town as the second layer. A prefecture consists of townships and counties; a prefecture-level city or a town consists of wards and counties; and a district consists of wards. Vietnam planning system is simultaneously under control of various types of planning including overall planning of socio-economic development at all levels with the management levels operating under the Ministry of Planning and Investment; physical planning at all levels under control of Ministry of Construction; land use planning follows the Ministry of Natural Resources and Environment; planning specialised fields of the

specialised Ministries. The harmony between these planning is a key success on the path to purse stainable development in Vietnam.

The Socio-economic Plan is created for the national, provincial, and local level. At the national level, the two components of the centrally planned Vietnam Socio-Economic Development are the 10-year 'Socio-economic Development Strategy' and the corresponding consecutive with two '5-year Socio-Economic Plans' which fall under the jurisdiction of the Ministry of Planning and Investment. The MPI corporates with the relevant agencies involved in drafting the plans and producing the final documents. At this phase, a bottom-up mechanism is employed whereby local government (counties, districts, and provinces) issue proposals to the higher levels of government, which are then ultimately and eventually send to the Ministry of Planning and Investment, where they are incorporated into the country's overall development policies. After socioeconomic development plans are formulated and issue at the national level, local governments also follow the central government's guidelines to make five-year plans and 10-year strategies with the administrative area. Socio-economic development plans are created in each of three administrative levels of the national, provincial, and district levels.

There are four types of planning in terms of Spatial Planning, namely national-level planning, regional planning, provincial planning, urban and rural planning. The period for national planning is ten years, and the vision is from 30 years to 50 years, which the Ministry of Construction took over. The government also applies the Planning Law as a means of help manage the national plan and implement the plans for under levels. They make their plans at each level of spatial planning, but they must be followed the higher-level plans. The Ministry of Construction makes national plans with general goals to develop the country; the next plans such as regional, provincial and urban, and rural planning have to follow the national plans to make their own plan in the framework of national-level planning.

3.6 Comparative summary

In order to identify and analyse the similarities and differences among China, Indonesia, and Vietnam with regard to their planning systems, we use the same methodology as in the cases studies of each country for the discussion by focusing on four areas:

1. General geographical characteristics
2. Regional-local administrative structure
3. Legislative and institutional framework of planning
4. Planning instruments
5. Visualisation of specific planning types

General Geographic Characteristics

China, Indonesia, and Vietnam are all located in the eastern Asian continent, with China located in East Asia, and Indonesia as well as Vietnam in South-East Asia. Both China and Indonesia are among the largest countries in the world in terms of surface area. The majority of Chinese and Vietnamese territory is located on the mainland of the continent, while Indonesia is an archipelagic country composed of groups of islands. All three countries are dynamically developing ones, having experienced more than five per cent GDP growth in recent years (China: 6.8%, Indonesia: 5.1%; Vietnam: 7.1% in 2018).[24] China and Vietnam are among the most dynamic emerging countries in the East Asian region.

Another feature that distinguishes these three countries is population size. China, Indonesia, and Vietnam share the same characteristics in terms of population: they are top ranking countries in terms of population (China: 1st; Indonesia: 4th; Vietnam: 15th in the world). In addition to the large populations, all three countries have incredibly high population density, particularly in core cities. Shanghai, China, has a population density of 3,810 people/km^2; in Ho Chi Minh City, Vietnam, there are 4,363 people/km^2; and in Jakarta, Indonesia, there are as many as 16,700 people/km^2.[25] Urbanisation is a common phenomenon in China, Indonesia, and Vietnam. All three countries share a history of rapid urban growth and unequal population distribution in the hinterland areas.

Regional-Local Administrative Structure

In terms of administrative structure, all three countries share similar models – from central government, provincial governments, to lower-level governments. However, there are still differences between the political systems: while China and Vietnam follow a socialist system, Indonesia is a democratic country.

With the strong power of China's central government in terms of leadership of the government of all levels, China is a centralised country. Although governments below the provincial, district, and country level do not have legislative power, they can formulate and regulate applicable rules in their administrative areas. The structure of regional-local administration in China involves five levels of regional development: provincial level, prefectural level, country level, township level, and basic level autonomy.

Vietnam and Indonesia are decentralised countries: besides following higher-level plans, local governments also make their own laws in accordance with higher-level plans. Regional development in Indonesia is now classified into four sub-national tiers of government; namely, provinces, regencies and municipalities (districts),

[24] World Bank (2021) in https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=ID-CN-VN
[25] Our World in Data (2020)

sub-districts, and urban community and village. In Vietnam, there are three-tier systems of local government – namely, the provincial level, prefectures, districts, towns as the second level, and wards, townships, and counties as the third one. Local government (counties, districts, and provinces) issues proposals by listening to the opinions of countries, wards, or townships local government and citizens, of which some are forwarded to the Ministry of Planning and Investment that makes overall development policies. For spatial planning, the local government makes plans for each lower level, but these must follow the guidelines of higher-levels plan.

Legislative and Institutional Frameworks of Planning

China, Indonesia, and Vietnam share similar planning systems consisting of socioeconomic development plans and spatial plans, all implemented and reviewed regularly after a certain period. In Vietnam and Indonesia, rural and local planning is integrated into spatial planning, while in China, it is operated separately.

Both committed to the development of a socialist market economy, China and Vietnam have commonalities in their planning systems. For example, various plans led by different ministries are not completely independent but coordinated and promoted together: in both countries, five-year-plans initiated by the central government are implemented at all levels of government, and low-level plans must not exceed the framework of higher-level planning.

The difference is that when Vietnam implements a Socio-economic Plan, the Ministry of Planning and Investment and related institutions serve as a 'reflective' agency, playing the role of a mediator or linking platform, transmitting local information to high-level decision makers and central regulations and policies to local operators. Yet such a coordination mechanism is absent in China, where it is more common that the central government instructs research teams to listen to the opinions of various provincial governments before a plan is made, such up-bottom mechanisms prevent local opinions from being effectively communicated to high-level authorities most of the time.

As opposed to in China and Vietnam, the regional and local development of Indonesia is run by its sub-national tiers of government. This is due to the decentralised system implemented in the country, and the application of socio-economic development plans and related planning instruments. For development plans, sub-national governments have the authority to make and run their own plans in accordance with national ones. However, as for spatial planning, it is conducted through a hierarchical, top-down approach, wherein spatial plans of a lower hierarchy must confirm higher-level spatial plans (managed by the regional and/or national government) – similar to in China and Vietnam.

Planning Instruments

Besides all the similarities mentioned above, each country has its own characteristics in terms of the adoption of planning instruments. China is implementing Urban Agglomerations Plans, aimed at coordinating prosperous development between regions, which is absent from the Indonesian and Vietnamese cases. It is worth mentioning that the Yangtze River Delta urban agglomeration is the largest one in Asia that is under implementation.

In the case of Indonesia, its seven Island-specific Spatial Plans are unique. By acting as the operational tools for national spatial planning arrangements, the plans target the coordination and synchronisation of island development programs.

When it comes to Vietnam, the method of classification of urban centres into six grades is used by the government – namely, Special Grade and Grades I, II, III, IV and V based on the position, function, role, structure and level of urban socio-economic development; population size; population density; percentage of non-agricultural labor and infrastructure development level. By this unique planning tool, suitable policies are created for each stage of socio-economic development.

In terms of administrative management, it is only in Indonesia that a specific ministry called the Ministry of Agrarian Affairs and Spatial Planning is tasked with coordinating spatial planning. This case, however, is not reflected in the other two countries, where the job of spatial planning is taken over by non-specific ministries, including the Ministry of Construction in Vietnam, and Ministry of Natural Resources and Ministry of Housing and Urban-Rural Development in China.

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4. GENTRIFICATION OF SUBURBS

Chen SHIJE – Meri TINIKASHVILI – Uche NORBERT
Zülfü FERECLI – János B. KOCSIS

4.1 Introduction

Suburbanisation is a global trend that can be seen all over the world. The United Nations estimates that by 2050 approximately six billion people (as much as 80% of today's population) will be living in urban areas (including suburbs). It is expected that in 2030 urbanised land on the planet will cover 1.2 million square kilometres double the amount in 2000. The process of suburbanisation is generally studied as part of urbanisation, but they are not the same. Ekers defines the suburbanisation process as follows: 'Suburbanisation is a combination of non-central population and economic growth with urban spatial expansion.' In addition, Keil referred to suburbanisation as a 'new era of urban age' and describes it as a complex process and not just a form of urbanisation. Also, the book addresses problems associated with suburbanisation such as long commute times, a lack of public services, unemployment, educational policy, environmental, and cultural issues, etc.

Gentrification is defined by Ruth Glass (1963) as a complex process involving the emergence of a new 'urban gentry,' physical improvement of the housing stock, housing tenure change from renting to owning, price rises, and the displacement or replacement of the existing working-class population by the middle classes. The idea of rural gentrification is now well established, as the middle classes have moved into attractive rural villages or small towns, permanently or as second homeowners (Cloke et al., 1995).

Suburbanisation and gentrification are a pair of notable changes in developed countries. Many scholars believe those phenomena are the spatial representation of economic development and a changing social structure. Suburbanisation since the early twentieth century has reflected the rising 'middle-class' – those who can afford a house in a suburban area and a personal automobile for commuting. 'Gentrification' in the late twentieth century was facilitated by emergence of the 'new middle-class'; those 'with high levels of education, high levels of aesthetic judgment and rediscovered the value of the city.' While the rising middle class indicates that an economy is no longer based on the 'unemployment labor reserve' – as Marx described it –, the 'new middle-class' shows that the economy is increasingly knowledge-based.

It may seem surprising but there are also some examples of suburbanisation and gentrification in developing or post-socialist countries. For example, there are several gentrification projects facilitated by the government in Ibadan, Nanjing,

Tbilisi, and Khardalan. The suburbanisation process started as soon as the Soviet regime was abandoned in Azerbaijan and Georgia.

In contrast to in developed countries with a long development history and remarkable structural, transformation, many developing and post-socialist countries have just started on the very early stage of suburbanisation and development. After gaining independence in 1960, urbanisation rates increased in Nigeria. Georgia, after independence in 1991 after the collapse of the Soviet Union, entered a period of stagnation, although stability was reestablished in a few years by internal migration. It is not hard to conclude there are different social bases for the suburbanisation and gentrification in developing and post-socialist countries.

In recent times, the gentrification of suburbs has become a global issue and is manifested in urban planning and management. It has transformed both the socio-economic and demographic developments of global urban landforms in many cities. Gentrification, according to Perez (2004), is 'a social and economic process involving renters, private developers and individual homeowners invest in seemingly abandoned neighbourhoods to revive them socio-economically.' In this essay, we use Baku, Nanjing, Ibadan and Tbilisi as examples to show the characteristics of suburbanisation and gentrification with governmental and private sector intervention.

4.2 Methodology

The research paper has a descriptive and analytical character, evaluating the process of gentrification in suburban areas of four different cities on different continents. At first, exploratory research was carried out in the form of identifying the main theoretical background for the different case studies. Afterwards, content analysis followed, and then in-depth study of the cases. In general, related literature and articles were differentiated by their concentration on political, economic, or social aspects in each case. The study demonstrates the variability of pace, structure, and typology of gentrification by location and type of governance of the countries.

The paper is structured as it follows: first is an introduction of the materials and presentation of the main ideas of the research topic. Then four case studies are presented – as clear examples of the different origins of suburbanisation and gentrification, and the main factors affecting the wide spread of urban sprawl.

Statistical methods are applied to extract information from the data. Analysing quantitative data helps in the overall categorisation and identification of that main patterns that are helpful for generalising the information. In the framework of the paper, the relevant secondary data has been collected using secondary data research provided by various online scientific publishers and state organisations, such as Tbilisi city hall, the Oyo State Government website, Nanjing Annual Government Report, and Azerbaijan State Statistics website.

4.3 Suburban Gentrification

Gentrification has been one of the fundamentally important urban phenomena since the last quarter of the twentieth century, the causes and factors of which have been widely discussed in scientific literature (Hamnett, 2003). Analyses predominantly focus on the transformation of impoverished inner areas and the socio-economic metamorphosis of fringes using different frameworks, predominantly within suburbanisation. New tendencies, however, had become apparent by the early 1990s, when important studies discerned the new patterns of the fringes from socio-economic (Garreau, 1991; Fishman 1987), geographical (Clark, 2003), and architectural (Murrain, 1996) points of view, and terms like post-Fordist spatial structure and polycentric urban space became accepted. The emergence of urban-like nuclei in the suburban and peri-urban space was observed, and in many cases the construction of the latter was a central intent of developers and planners (Duany et al., 2001).

The term 'suburban gentrification' appears more extensively from the early 2010s in scientific literature, especially in North American and European context, to describe a variety of related phenomena in the urban fringes, often together with the term 'new urbanism.' Most studies have focused on instances in developed countries, although the phenomenon may well be traced in other areas as well.

4.4 Gentrification of Suburbs in International Case Studies

4.4.1 Nanjing City, Jiangsu Province, China

4.4.1.1 Setting the Scene: Nanjing and the 'Beautiful Countryside' Program

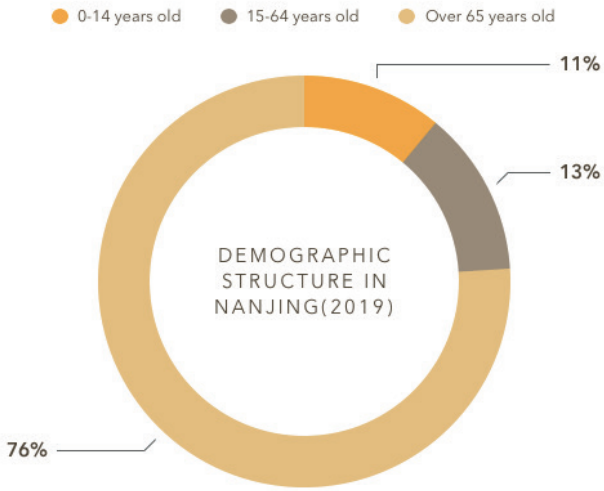
I went to Nanjing city several years ago for social research and was quite shocked by a spatial planning program called Beautiful Countryside, into which the Nanjing government invested 2.5 million euros to gentrify a small suburban village with only 4,950 residents. Is this a rational project? Why would the government be willing to finance it?

Nanjing is a provincial capital city located in flourishing eastern China. It is 270 km west-northwest of Shanghai, with a total land area of 6,598 km^2 including the core city, while the area surrounding the suburb covers 4200 km^2. Nanjing is also enormous in terms of population. There were 8.2 million residents in 2019, of which 76% are 15-64 years old and 11% are 1-14 years old. Meanwhile, an aging society is an increasing problem in Nanjing because 13% of the population are over 65 years old.

Nanjing is one of the first cities to benefit from the 'Open and Reform Policy' and the market economy. In 2018, total nominal GDP reached $191.1 billion and nominal GDP per capita reached $23,104 (Meanwhile China's national GDP per

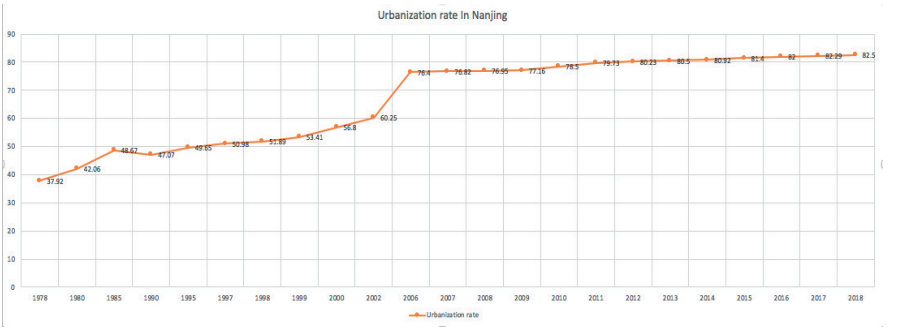
capita was $9,509 in 2018). This economic development is accompanied by the urbanisation process. As we can see in the graph below, the urbanisation rate has risen from 37.92% in 1978 when the Open and Reform Policy was implemented to a staggering 82.5% in 2018, with 6.9 million residents living in the core city (Nanjing Municipal Planning Bureau, 2019).

4.1. Figure: Position of Nanjing on the map of China;
Source: wikipedia.org



4.2. Figure: Demographic structure in Nanjing,

Source: Nanjing Governmental Annual Report.
Source: http://221.226.86.104/file/2019/quxian/index.html



4.3. Figure: Urbanisation rate in Nanjing between 1978-2018;
Source: Nanjing Governmental Annual Report. http://221.226.86.104/file/2019/quxian/index.htm

The surrounding suburban area in Nanjing is a multi-level concept which contains 11 counties, 129 towns, and numerous villages. It is associated with 11 county governments, 129 town governments, and numerous village-level governments (also named village committees), apart from Nanjing Government.

4.1. picture: JT village;
Source: Picture taken by the author in 2018

JT village is one of the villages in Nanjing. It is about 15 km², and includes around a thousand cottages scattered throughout. There are 4,590 residents living in this village, while 20% of them are engaged in small business, and 30% work in the city, 30% of them are craftsman, carpenters or builders, and the rest of them are retired people or children. However, only about 1000 are 'real' residents (mainly retired people), because most young people work and live in the city or a nearby town, and only return to the village on the weekends.

Socio-economic disparity, as we can see in the pictures above, is the main force that pulls young people away. However, the lagging condition of the village began to change since 2016 when the Nanjing government implemented a project named *Beautiful Countryside* to gentrify this area. From 2016 to 2018, the Nanjing government invested approximately 20 million CNY (€2.5 million) in this single village for infrastructure renovations, such as renewing the road and dam, constructing the village history museum and parking lot, and even building a metro station 4km from there. What 'benefits' the villagers most is the housing retrofitting plan, through which the Nanjing government will replace cottages with modern apartments.

4.2. picture: Gentrified Road;
Source: Picture taken by the author in 2018

4.4.1.2 Information Resource

The information used in the Nanjing case is mainly first-hand and qualitative, collected personally, and with six other teammates through field research. This research was organised by the Sociology Department of Huazhong University of Science and Technology. Our team went to JT village in Nanjing city during July 6 and July 24, 2018 and interviewed village cadres (including the village head, village accountant, party secretary and another four employees), as well as three employees of the township government and several villagers.

4.4.1.3 Is There Urban Planning Decentralisation in China?

The planning system in the developed world is undergoing change from being in the hands of national government to those of regional governance. Centralised planning power is gradually being delegated to various participants, which is also happening in China.

China has undergone a different path of urban planning from western countries. Under state socialism from1940s to 1970s, regions in China were dependent on the central state, while horizontal linkages among jurisdictions were considered unimportant. After the Open and Reform in the 1980s, the central government felt it necessary to explore the linkages of central cities by establishing economic coordination regions. This process results in 'localism,' whereby local governments begin to adopt new competitive strategies to adjust to fiscal constraints and to attract external capital.

The recent decades have seen a dramatic urbanisation process and the emergence of megacity regions in China after the 1980s. Projections show that by 2050, there are likely to be fifty ultra-large cities with populations of more than 2 million, and over 150 big cities with populations of 1 to 2 million in China. But whether there will be a similar trend of 'government to governance in regional planning' is attracting serious debate. Many believe that it is decentralisation that contributes most to the recent urbanisation process. However, Jiang Xu and Anthony G.O. Yeh argue that there is interplay between decentralisation and recentralisation. Regional development in China has a long legacy of strong government intervention and depends on the government-led strategic intervention of supra-units such as the National Development and Reform Commission (NDRC), Ministry of Housing and Urban-Rural Development (MHURD), and Ministry of Land and Resources (MLR) (Jiang Xu and Anthony G.O. Yeh, 2010). How can we determine the nature of urban planning system in China? This question is well worth further discussion.

4.4.1.4 The Role of Stakeholders

4.4.1.4.1 Central Government and The Nanjing Government

As a socialist country, the Chinese government is usually stereotyped as a homogeneous entity that manages everything. However, the image is not true.

To innovate the 'planned economy,' the Chinese Central Government implemented a set of reforms in 1978 to decentralise government power. The 'delineation of fiscal responsibilities system' is one of the reforms, which is aimed at promoting local governments' financial independence. Based on this fiscal system, local governments have their budgets and revenue resources, and no longer rely on transactions from the central government.

Despite the intra-governmental financial independence, the leadership of the central government can still nominate and appraise the leadership of local governments due to their bureaucratic power and Party power. To pass a performance appraisal and get a personal promotion, the leadership of the local governments must fulfill tasks such as increasing GDP growth and promoting city infrastructure. This means the local government must apply every possible means to cover expenditure and avoid deficits, just like a company does. Some scholars call this 'the corporatism of Local State' (Jean, 1992). In short, the 'delineation of fiscal responsibilities' system has not only decentralised government power, but also made the local governments alienated entities that only focus on its benefits. We must distinguish the different roles the central government and the local government play during the planning process, as sometimes they may be opposing parties.

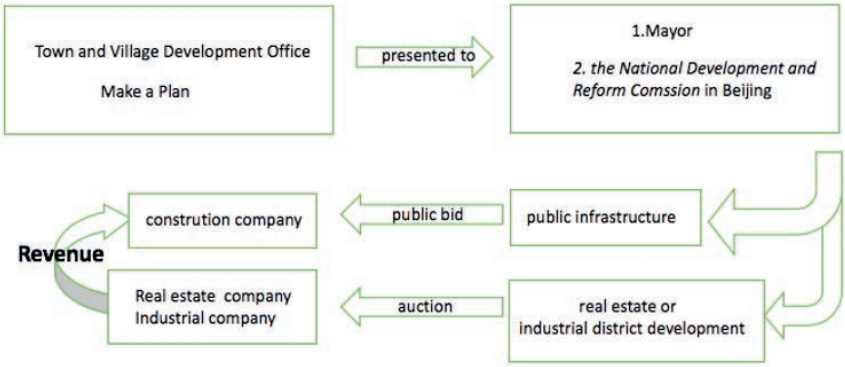
The central government can influence local governments and the regional planning process through land-use regulation.

First, *The Ministry of Natural Resources of China* documented all the regional land in China, and divided it into different types, such as farming land and construction land. It will be illegal to construct on farming land without permission from the ministry.

Second, *Master Land Use Planning* involves making a long-term land use plan (10 to 20-year plan) for all regional land in advance, and each level of government must comply with it (Wei, 2016).

Third, out of food security and sustainable development concerns, the central government implemented an arable land protection policy in 2006. *Annual Land Use Planning policies* are published annually to give detailed instructions to local governments about the maximum amount of urban construction land and minimum amount of farmland, as well as the maximum amount of rural land that may be converted into new urban construction land (Tian, 2009).

Specific spatial planning such as the *Beautiful Countryside project* is mainly designed and financed by the Nanjing government. First, there is a department in the Nanjing government called the 'Town and Village Development Office' whose main job is to draw up proposals according to the regulations defined by the central government. Second, those proposals will then be presented to the Mayor, and further to the National Development and Reform Commission in Beijing for approval. There are then two scenarios. When it comes to public infrastructure, the office will employ engineers from construction companies to offer detailed plans and then submit a public bid. When it comes to real estate and industrial district development, the government will sell the rights to use the land to private companies through an auction. Hence, we can conclude that the local government plays a privileged role in urban planning, and the private sector takes part in only after planning has already been done.



4.4. Figure: Spatial planning system of Nanjing;
Source: The author

4.4.1.4.2 The Nanjing Government and Village Committee: Tendencies Towards Recentralisation

In this section, I will describe the role of Village Committees in project planning. According to the Organic Law of Village Committees, the Village Committee is the mass organisation for self-government, through which villagers manage their affairs. (Organic Law of the Village Committee of the People's Republic of China, 1987). The power of the Village Committees reflects the degree of villagers' participation.

Governance theory suggests that there is a trend towards expanded involvement, in which citizens will also be important in the decision-making process. However,

there is a reverse trend in China, as village committees are gradually being absorbed into local governments and becoming agents of the government.

Theoretically speaking, the political structure in China can be characterised as having parallel tracks. Each level of government consists of two independent leaders: A Secretary of the Party Committee, and public representatives (mayor and village leader). One the one hand, the Secretary of Party committee represents the top-down power, because each secretary is appointed by his superior who represents bureaucratic power. On the other hand, the secretaries are selected by the mayor and village head, who represent bottom-up power. While the mayor is elected by citizens through the People's Congress, the village head is elected by villagers directly.

The power balance in JT village was broken almost overnight when the Beautiful Countryside project was implemented in 2016, as the top-down power took the predominant position while the bottom-up power diminished – and that change consisted of two dimensions; namely, penetration and assimilation.

4.4.1.4.3 Penetration

Penetration refers to the fact that the Nanjing government expanded its power to the village level. The tasks in JT village committees have doubled since the Beautiful Countryside project started. Employees here have had to deal with several new challenges such as assisting the provincial government to expropriate land from peasants, demolishing illegal constructions, and supervising renovation projects. The overwhelmed village committee justifies the intervention from the Nanjing Government, which appointed an employee as 'Major Secretary' to assist the village committee. This Major Secretary has dominated every issue in the village since 2016.

It is worth noting that the Major Secretary remains an employee from the Nanjing government. For example, the Major Secretary receives a full-time salary as well as regular tasks from his superior, and has the tasks assigned him evaluated by the Nanjing Government. Therefore, the Major Secretary is a representative of the bureaucratic system, rather than that of the public will.

4.4.1.4.4 Assimilation

According to *the Organic Law of Village Committees*, any other level of government should avoid intervening in the Village Committee. Members of the committees shall be directly elected by villagers to ensure independence (Organic Law of the Village Committee of the People's Republic of China, 1987). However, the Nanjing Government is maneuvering to assimilate the village committee through an informal system of promotions.

There seems to be a paradox. On the one hand, the Village Committee is

overloaded because of the *Beautiful Countryside Project*. Not only has the quantity of work increased many-fold, but there is some new work that requires certain technical skills, such as operating computers. The village committee has to employ six young people with at least a high-school education. On the other hand, the salary of JT village committee employees is 3600 CNY (€450) (without pension or insurance), while the average salary in Nanjing is 5000 CNY (€625). It thus seems rather economically irrational to work on the Village Committee. Why would the six people do this?

Because there is an informal promotion system between the Nanjing government and the village committee. First, the city government promises to absorb village employees every year in the name of 'the Talent Reserve Plan.' And as to the village head, the Nanjing government simply appoints the village head who was elected by the villagers as the village secretary, so this individual also gets the opportunity to be promoted in the Party. In this situation, it is rational for village employees to cooperate with the city government and to finish their assigned tasks. Therefore, village committees are assimilated into the top-down power track.

4.3. picture: Interview with the former Village Head;
Source: Picture taken by the author in 2018

In short, the village committee used to be a formal way for villagers to express their voices because committee members are directly elected by villagers. However,

the recent change means that direct democracy has been violated by bureaucratic power, and the public are losing their voice in the spatial decision process.

4.4.1.5 What's the Main Driver?

Is it rational to invest 2.5 million euros into a single village? We cannot understand this without referring to the institutional and political context of China.

First, as has been mentioned in the previous section, the Nanjing Government has been 'corporatised' (Oi, 1992) since 1978, and the local government will find any way to increase revenue, just like a company.

Second, there is no land in private ownership in China, and the local government can lease land to the private sector. As a socialist state, all the land in China is 'socialist public-owned.' Rural residents have the right to live or farm on collectively owned land, but the Chinese government has the legal right to retract this right. According to Interim Regulations Concerning the conveyance and Transfer of the Right to the Use of the State-Owned land in the Urban Areas enacted by the State Council in 1990, local governments have the legal right to lease the use right of land to private companies and charge 'land conveyance fees' or 'land grant premiums' on behalf of the 'socialist public' (Committee of the National People's Congress of the People's Republic of China, 1994). Consequently, the 1990s initiated the 'era of land finance' when local governments 'sold' land to all kinds of developers, ranging from industry investors to real estate companies. And 'Land Finance' soon became the most important source of government revenue, 'increasing noticeably from 51.43 billion yuan in 1999 to 1591.02 billion yuan in 2009 in China, with an annual growth rate of 40.94%' (Wu et al., 2015). During this process, urbanisation soared between 1996 and 2016, and 'nearly 1,340 square kilometres of agricultural land were converted into urban construction land every year' (Ministry of housing and Urban-Rural Development, 2016).

Out of food security and sustainable development concerns, the central government invented the 'land quota system' in 2015 before the situation became irreversible. In this system, every city-level government is allocated a certain 'construction land quota,' and only that amount of rural land can become city land (Zhang et al., 2014).

However, local governments soon found a way to cheat the game. The cottages in the village are counted as construction land according to the land administration law. Theoretically, local governments can get a construction quota by transforming the same amount of cottages back to farmland. Thus, we can understand the reason why the Nanjing government is willing to finance the Beautiful Countryside: the reason is that it is a maneuver to increase construction land. Within this project, the Nanjing government plans to build modern apartments for peasants, which can accommodate them on a smaller area, and by transforming the cottages expropriated

from the peasants to farmland, the government will get extra construction land to 'sell' and earn a massive amount of revenue. For example, in 2018 the Nanjing government leased some land to a real estate company at the price of 0.75million CNY/100m^2. There are about 1000 cottages, which equal approximately 60000 m^2 of construction land in JT village. Even if only half of the land is leased, the government will receive twice as much revenue as it invests.

In a word, the massive profits explain why the Nanjing Government is willing to spend such a huge amount of money on a single village. It not only an investment of infrastructure, but also an investment with returns to their budget.

4.4.1.6 Conclusion

The Nanjing case study represents a type of strong government dominance and weak market mechanisms. It is the political system, rather than the private sectors, that determine spatial planning patterns. Due to the socialist regime, the land in China is owned by the state in the legal sense. The residents can live on the land, but they do not have the right to transfer ownership to a third party such as investors. Therefore, rural residents and other private sectors play more or less passive roles in the process, while the government dominates decisions about urban planning issues, including suburbanisation.

Second, there is both decentralisation and centralisation in terms of urban planning in China. The concept of 'government' is rather fragmented in the context of China. On the one hand, the power of central government is weakening, as decision power is delegated to the local level. On the other hand, there is also a trend to centralisation – the power of local governments is penetrating to lower levels. The village committee, which was once a representative of residents, has been absorbed into the bureaucratic system.

In relation to drivers, suburbanisation programs such as *Beautiful Countryside* in JT village result from the 'corporatised' orientation of the local government. After the tax system reform, the local government no longer relies on transactions from the central government but has to cover their own revenue. In that circumstance, if governments want to provide enough public services to show they are performing, they have to find a way to maximise income, like companies do. When it comes to urban planning, the government can maximise the construction land quota by replacing cottages with modern apartments, and then selling the construction land to a third party. Therefore, recent suburbanisation processes are actually a way to reap revenue.

4.4.2 Digomi, Tbilisi, Georgia

4.4.2.1 Introduction

In this chapter, we will try to overview the past and present situation of suburban gentrification in Tbilisi, describing some explicit features. As a case study, one of the first enclaves of Tbilisian suburbia, Digomi, will be displayed and the driving forces of suburban development shown.

The capital of Georgia is an ancient centre of Caucasus. The history of Tbilisi dates back to the sixteenth century. From the fourth century onwards, the city has been a hub of contrasting, rich and diverse cultures. Different ethnic and religious groups have coexisted together in a confined space and found their niche (History of Tbilisi, n.d.). Tbilisi is located in the eastern part of the country. The total area of the city is 502 km^2, of which urbanised areas make up 158 km^2 and green spaces 145.5 km^2 and the perimeter 150.5 km^2. The total population (2014) of the city is 1,108,700, making Tbilisi the most populous city in the country, with 30% of the entire population of the country. Compared to the second biggest city, Batumi, with 166 thousand inhabitants, the difference will be obvious. The population density is 2,217 people per km^2. Tbilisi is the most densely populated area of the country. Ninety percent of the capital's population is Georgian, while 10% consists of Azerbaijanis, Armenians, Russians, Ossetians, Yezidi, Kists, Ukrainians, Greeks, Assyrians, and others.

In terms of economic activities in the capital, the share of labour force in whole population is 40%; of whom which 78% are employed; 22% unemployed. The average monthly salary in the business sector is $450.[26] Most of the housing stock is outdated and was built during 1961-1999, while only 22% of Tbilisi's existing apartment stock was built since 1991. There are more than 500 Khrushchyovkas, with approximately 30 households living in each of them. They are mainly located in the Saburtalo (incl. Digomi) and Samgori (incl. Varketili) districts. They are highly outdated and need to be replaced (Bochorishvili, 2019).

The government of the country is promoting urban development projects to create a modern globalising metropolis from Tbilisi. This decision has created controversy among residents, who are fighting to avoid the depreciation of the city's main heritage sights. The city has become overcrowded with traffic jams and newly built residential and business buildings. The government has implemented infrastructural projects and made commercial investments in suburbs to attract more development (Sulukhia, 2009).

Tbilisi is a self-governing city, which is ruled by the Mayor, the highest-ranking official and the head of the Tbilisi Government. The mayor is elected by direct election for a term of four years. The rules for electing the mayor are established by the organic law Election Code of Georgia. The city is divided into 10 districts. The

[26] Tbilisi in figures (2018)

head of the district board is the district governor, who is appointed to the position by the Tbilisi Mayor with the consent of Tbilisi City Council (№19-58, 2014). After gaining independence, the capital started to enlarge its boundaries and suburban areas were attached in which to locate summer residential houses for wealthier families in Soviet times or were owned by the state. Non-agricultural land was not privatised until November 1997. In rural areas, housing privatisation started with land ownership of areas on which properties stood, while urban land was generally state-owned. The Civil Code came into force in 1997, which declared that individual houses and apartment buildings could be under private ownership. Almost 100% of housing assets were transferred into private ownership (Ebanoidze, n.d.). The first provision of the Law of Georgia on the Fundamentals of Spatial Planning and Urban Development appeared in 2005 (Anon., 2005).

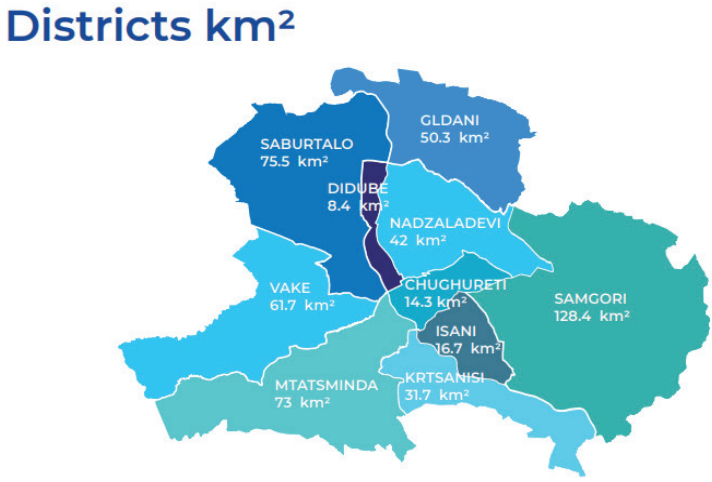
During the development of Tbilisi, the city was characterised by a concentration of high-income families in the central part of the city. Today the trend has changed, and well-off people have homes in the city centres as well as bigger houses with yards in new suburbs. Moreover, newly married couples who are not economically sustainable choose to live in recently built blocks of flats that are very common in nearby suburbs, with relatively small living areas. One of the emerging suburban territories is along the E-60 highway, Digomi, whose development is driven by individual landowners and nowadays developers as well. Suburban Digomi is a territorial unit of Saburtalo district (see Figure 1.5) at the entrance of the city from the west of Georgia.

The city institute of Georgia worked on the general Land Use Master Plan of Tbilisi, which was released in 2018. In the last few decades, significant and often unsuitable urban spaces have been alienated from the territory of Tbilisi. A particularly large number of plots unsuitable for development outside the built-up area are located on the slopes and valleys west of Didi Digomi. On the one hand, the development for construction of these plots threatens the urban planning structure of Tbilisi, and, on the other hand, it is dangerous for owners as well as for the surrounding environment – most of the former are located in forested areas or landscape-, geodynamic- and other high-risk areas. Analysis of the dislocation of architectural-planning tasks, construction permits, and already built residential houses, it is clear that the construction in such areas is chaotic and lacks harmonisation.

The polycentric development of the city is the most important element of the concept of the land use master plan. Providing design solutions for two of the polycentric areas designated in the city land use plan (Didi Dighomi – Polycentre A and Samgori – Polycentre E) is the first requirement for the development of the city structure.

These spaces have significant territorial resources, both in the form of brownfield and greenfield areas, and both are characterised by large residential resources nearby (40-50 thousand people). It is important to develop spaces based on unified design

solutions and to avoid point-and-shoot, chaotic developments that could jeopardise the provision of urban and district structures. Design solutions should be developed considering the relevant data in the General Land Use Plan and the conditions of Tbilisi polycentric development outlined within it (Council, 2019).



4.5. Figure: Map of districts of administrative units of Tbilisi Municipality; Source: Tbilisi in Figures (2018) (Tbilisi city hall)

4.4.2.2 Historical Stages of Urban Development

4.4.2.2.1 During the Soviet Era

As part of the USSR (1921-1991), Georgia had a highly centralised spatial planning system. It was thought that Moscow controlled the planning and design of Soviet cities, but in reality, cities only appeared to be planned but actually they were not: they had many faults and were designed to house as many people as possible. Common Soviet building standards were adopted. Moreover, education and building practice were remarkably similar throughout the USSR (R. A. French, 1979). Soviet Tbilisi was rapidly and significantly industrialised and expanded on. The present spatial structure is a product of a long process and expansion – especially during Soviet times, when Tbilisi expanded six times in terms of population and ten times in terms of territory (Salukvadze, 2016). The main source of migration was rural areas, from where people fled to industrialised centres to work in factories.

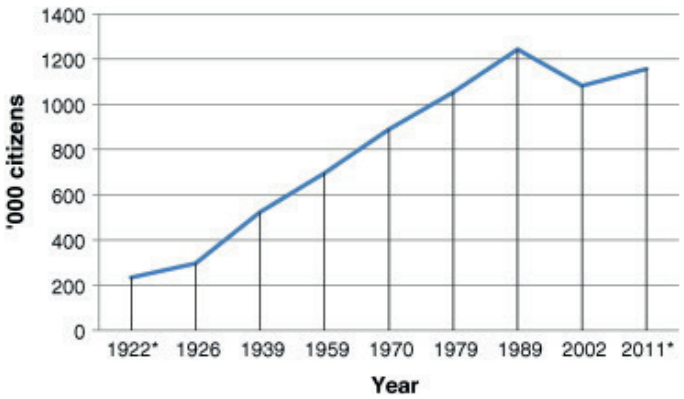
4.4.2.2.2 Post-Socialism Transition

The city started to grow spontaneously due to the forces of emerging land and real estate markets, whereas it had involved planned development beforehand. The process of special change is divided into three parts: 1. *Decline of urban structures (1991-1996);* 2. *New construction approaches in limited central areas (1997-2003);* 3. *Large scale structural changes since 2004* (Salukvadze, 2009).

4.4.2.2.3 Land Reforms, A New Type of Governance & Real Property Market Development

After abandoning socialism, the country introduced reforms aimed at political and economic system liberalisation. The foundation of the reforms was destatisation, meaning privatisation of all state-owned land and real estate. It started with the residential privatisation of flats and agricultural land, followed by urban land. The Soviet period was not bright, and it brought a desire for better living conditions and improving social circumstances. At the beginning of the process, there were no legal documents or master plans to define the conditions of selling, nor regulations for building or land-use.

These reforms and the overall hard economic situation in the country created the impetus for people to migrate to more urbanised areas. The urbanisation rate increased from 56.8% in 2010 to 58.3% in 2018 in Georgia, but it is still below the EU average of 75.7%. It is estimated that the rate of urbanisation will grow further, and the population will occupy lightly urbanised suburban areas.



4.6. Figure: Population of Tbilisi, 1922–2011.
Source: City as a geopolitics: Tbilisi, Georgia — A globalising metropolis in a turbulent region; General Population Censuses; * Estimates.

The Ministry of Management of State Property started the privatisation

of state-owned real estate with auctions and direct sales to their employees (Salukvadze, 2009). In 1992, the process of land reform began and the government issued Decree No. 48, the Land Privatisation Decree, allowing people to privatise their agricultural land free of charge (Ebanoidze, n.d.), meaning Georgian citizens could have residential places located on their land at almost no cost. The land of the former Agricultural Institute of Tbilisi was given to its employees, resold afterwards, and became the basis of the creation of Patara (Small) Digomi, a prestigious district, in the late 1990s (Van Assche, 2009). Nowadays, on that territory is located the Agricultural University of Georgia, which is presently private. The above-mentioned land is also private property and is used for residential and other purposes.

4.4.2.3 Suburbanisation Trends in Digomi

Suburbanisation became trendy in times when capitalism prevailed, when it became possible to flee from the urbanised centre to suburbs and to own a bigger piece of land with private housing instead of living in blocks of flats. In Tbilisi, the first income-level segregated neighbourhood was the territory of so-called 'Patara Digomi.' The majority of this neighbourhood belonged to high-income groups and the area is called prestigious. It was created on both of the sides of the E-60 highway from Tbilisi to the historical capital of Georgia - Mtskheta. First, residents of the suburb were relatively wealthy families who built residences there, and this process is ongoing. The suburban enclave of Digomi is a part of the Saburtalo district. There are three independent settlements: Didi (Big) Digomi, Patara (Small) Digomi, and Village Digomi. Those settlements are different in styles of accommodation. At present, the territory of Didi Digomi includes IV micro-districts (Figure 1.5), which are represented by blocks of flats while the nearby territory is also being purchased by foreign and local developers.

Settlements are typically provided with general infrastructure (roads, sidewalks, district parks, bus stops, stadiums, etc.), and as the population grows, it requires public service facilities (a public service hall, kindergarten, school, university, post office, police station, public hospital, etc.), as well as water, electricity, and waste infrastructure. Meanwhile, the private sector is involved in big residential construction work, which represents business activity for them and creates additional living space for a greater population. Those changes attract more business owners to open various private business such as supermarkets, banks, big shopping malls, cafes, restaurants, flower shops, etc.

As there were no planning regulations for a long time, investors could buy places and space was not limited, leading to an abundance of high-rise buildings. The development of Didi Digomi was one of the large-scale urban planning projects aimed at solving the housing problem of the capital in the 1970s and 1980s. However,

due to the crisis in the Soviet system, and ultimately the collapse of the Soviet Union, the project failed to materialise.

Digomi suburb is characterised by the new development typical of urban areas. As the population has increased, meeting their needs became essential. There have appeared diverse educational institutions, from the lowest level upwards. In specialised catalogues of educational institutions in Saburtalo district, mainly in Digomi, nine private and public kindergardens are listed.[27] Five public (No.17; No.186; No.192; No.198; No210) and ten private schools.[28] Also, there are located campuses of eight different private and state-owned universities.[29] These numbers show the presence of the active development of the given area in the current period.

The main factors in suburbanisation can be broadly discussed. First, the development of a market economy and a land market after the 1990s. This led to spatial democracy and freedom of choice in terms of place of residence. Individuals could choose where they wanted to live and what they could afford to get. The second factor was the lack of policy regarding urban development. This factor led to a lack of mechanisms, vision, and strategy for regulating urban development. The third factor accelerating the development of Digomi district is the increase in various facilities that are characterised as more urban and prestigious by nature. For instance, one of the biggest shopping spaces 'Tbilisi Mall,' which includes popular chain stores, as well as a Carrefour, plus a food court and a movie theatre, as well as the construction of the US Embassy; a hypermarket 'Goodwill,' and others. In other words, the area near Digomi highway is loaded with new urban functions, which generates the need for and attracts diverse services. The last but very important factor for the boom in suburbanisation is the increase in ownership of private cars. Information from the Ministry of Internal Affairs shows that the number of private cars increased by 5.1% in 2018. From 2006 to 2018, the amount of registered cars in Georgia increased by one million (Affairs, 2018). As people can move around freely using their own transportation, it also has become convenient to buy appartments in suburb, which may cost less because of the distance from city centre, but this does not cause a problem any more. Nevertheless, as the enclave is spreading rapidly, the government can barely supply it with public transport. The main means of transportation are busses and minibusses ('Marshutka'), which operate from 7 a.m until 12 p.m, but in the evning transport is overcrowded and runs infrequently. Unfortunately, the area is not connected to the main metro line, which might have ameliorated the problem.

Besides this, the southern area of the Didi Digomi III-IV micro districts were

[27] Source: http://kids.org.ge/ge/baghebi?district_id=1
[28] Source: Catalog of Educational institutions in Tbilisi; http://catalog.edu.ge/index.php?module=school_info&page=region_list
[29] Source: Catalog of High Education institutions in Georgia: https://www.mes.gov.ge/content.php?id=1855&lang=geo

spontaneously developed in the 1990s and after the systematic registration and privatisation of plots. There is no road network, engineering, or social infrastructure in the area. In 2009, the relevant services of the municipality developed a so-called *Frame Plan*, with regulation lines and a road network; however, due to the complexity of the task, it cannot provide for the rational and effective use of the area. Insufficient population density means less priority for the municipality to provide engineering, roads, and social infrastructure for these areas.

It should be noted that the area is bordered by one of the largest cemeteries in the city – Mukhatgverdi Cemetery, which does not have precise boundaries for sanitary security, which is very important for planning the further development of residential areas (Council, 2019). Studies show that growing urban land development reduces the space available for cemeteries, but those two should definitely be segragated, as cemetery soil involves many risks to the environment and population. Cemeteries have the potential to accumulate and release large amounts of contaminants generated by the decomposition of corpses, which can be very harmful to human health (Neckela, 2017).

Meanwhile, as an example of foreign investment in Digomi, there is a real estate brokerage company *Best Tbilisi Apartments,* which has built a diplomatic village with 45 houses that are sold to foreign expatriates who have relocated to Tbilisi. The company emphasises the natural characteristics of the territory that enables villagers to live in an ecologically clean and quiet environment (Anon., n.d.). These kinds of settlements are becoming very popular nowadays, and are named gated communities. These special neighbourhoods are spread all over the city, mainly in undisturbed suburban areas, and resided in by high-income families. They are provided with supermarkets, a security service, etc. For example: Hualing Tbilisi Sea New City; Dirsi Residence Tbilisi; LISI Development: Greentown; DreamTown Tbilisi, etc. All of them were built by foreign investors.

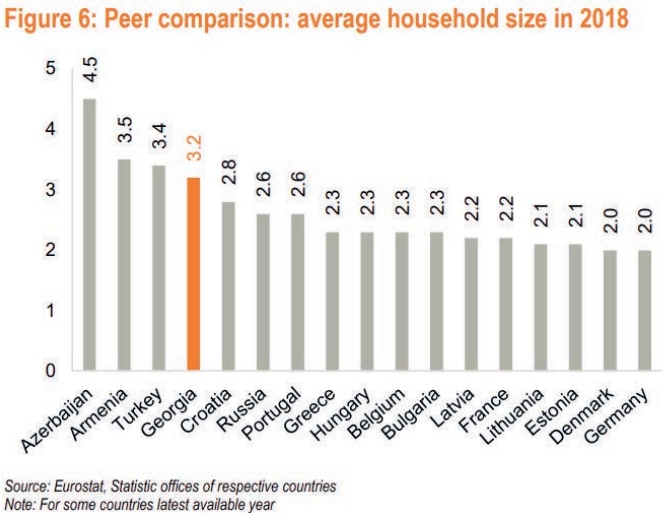
4.4.2.4 The Role of Stakeholders

Over the decades, Georgia has transformed economically. The country has opened its doors widely to *foreign investors*. In 2018, real estate became the third largest sector of the Georgian economy, accounting for 11.4% of all GDP. Foreign Direct Investment (FDI) inflows for real estate operations reached $1.1bn during 2010-2018, accounting for 8.6% of total FDI.

Georgian private developers are not fully profiting through these capital market opportunities, as only some developers have owned bonds on the local market since 2014 until the present times. The first bond was issued in 2014 according to M^2.

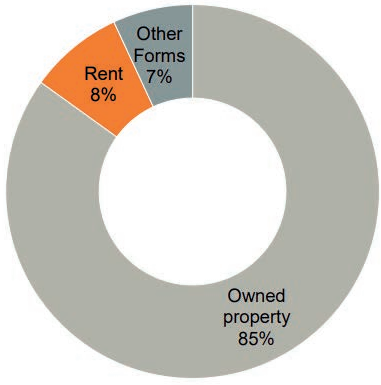
While discussing the details of *residents*, it is important to mention that family sizes are decreasing as young people are increasingly seeking to live separately. The average household size has decreased from 3.8 (2002) to 3.2 (2018). The trend to a

decreasing family size is estimated to continue, meaning an additional four to five thousand houses will be searched for on an annual basis in Tbilisi. The best option for newly built families remains the same as before: move to suburban areas with cheaper rent or real estate.



4.7. Figure: Average household sise in 2018

An interesting phenomenon characterises Georgians regarding owning real estate: they prefer to possess real estate rather than renting it. Home ownership rates in 2018 stood at 92% in Georgia, while for the EU the rate was 69%. Almost the same situation may be detected in the capital, as 85% of all residents live in their own apartments, and 8% are rented.



4.8. Figure: Population by type of Ownership in Tbilisi in 2018

4.4.2.5 Conclusion

Suburbanisation in Tbilisi has become a common phenomenon, but it cannot be characterised as typical gentrification for now. However, in terms of non-classical suburban gentrification, portrayed as the development of previously non-developed areas, and transformation of the function of an area from non-residential to residential, as well as the provision of all the necessary facilities for a well-functioning society, Digomi is being gentrified as well.

Moving to a free-market economy and changes in the housing preferences of individual investors has played an important role in relation to urban sprawl in Tbilisi. The role of the government consists of developing a legislative framework for the urban development of the city with infrastructural maintenance, whereas private investors have an important role in residential housing development and creating all the necessary services, hence making both governmental and private sectors equally involved in the suburban gentrification of the Digomi district.

4.4.3 City of Ibadan, Oyo State, Nigeria

4.4.3.1 Introduction

The city of Ibadan is the capital of Oyo state, Nigeria. It is located in the south-western part of Nigeria, and about 119 kilometres northeast of Lagos. The growth of the city of Ibadan dates to the pre-colonial era when the city was the centre of administration of the then old Western Region. Due to the strategic administrative location of Ibadan, it led to the introduction of railways to the city for better accessibility. This factor contributed to increases in rural incomes, population, and commercial activity in the city, hence the rapid growth of the city.

After Nigeria's independence in 1960, Ibadan was the largest and most populous city in the country, and the second most populous in Africa behind Cairo. Ibadan, the capital city of Oyo State, grew from a modest population in 1898 to the present population of 3,649,023 at an annual growth rate of 2.73% (World Population Review, 2021). The rapid urbanisation in the city led to better economic opportunities, a rapid increase in population, and the general development of the city.

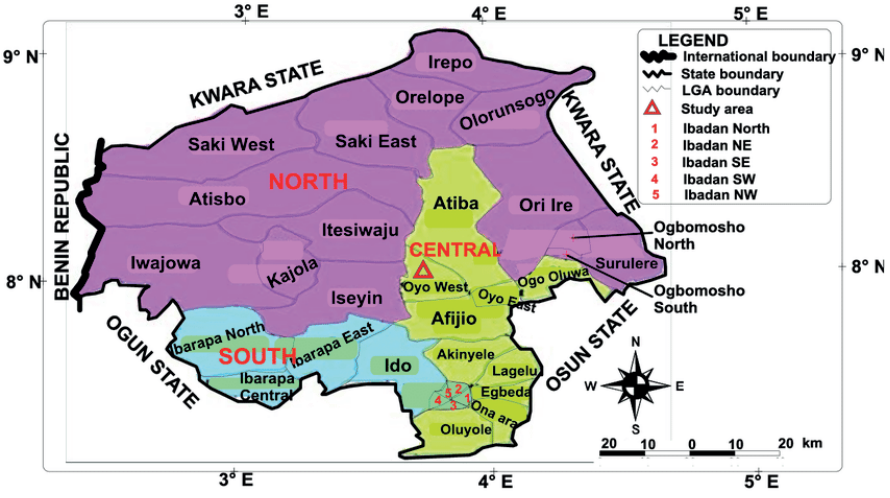
The city became an important economic and cultural centre as a result of the benefits of innovation from the fields of science and technology, which also led to the expansion of the city. For instance, the city of Ibadan houses the first television station in Africa. Also, Nigeria's first university, the University of Ibadan (formerly known as the College of London) was in Ibadan. Other innovations in the city

include Nigeria's first skyscraper (Cocoa House) and the construction of the Ibadan – Lagos expressway in the 1980s that connects other parts of the country. All these contributed to the growth and expansion of the city of Ibadan. Records indicate that the urban extent land in Ibadan had increased to 49,121 hectares in 2013 from 33,429 hectares in 2000, which is an average annual increase of 2.8% (Atlas of Urban Expansion – Ibadan, n.d).

The extension of the built-up neighbourhood to peripheral areas, the population increase, and net immigration are three major factors that characterise urban growth (J. Clarke, 1975). Clarke further explained that this growth is centrifugal in nature, as it expands to the peripheral areas of the city. Following the urbanisation process of Ibadan, city growth was from the core towards places such as Oluyole, Moniya, Alakia, and so on. This growth was driven by a combination of factors such as changes in economic, demographic, political, cultural, environmental, social, and technological issues. Also, local factors such as topography, which cause changes in patterns of land use, social ecology, and the nature of urbanism in the built environment, have played a role. The city growth of Ibadan, Oyo State, Nigeria led to the demand for and acquisition of peripheral land space for development by stakeholders in the city, and this has led to the gentrification of the suburbs. This study was carried out to compare the role of stakeholders in the process of gentrification of suburbs vis-à-vis what happens in other climes.

The gentrification of recent times has become a global issue, and a huge issue in urban planning and management as it is a process that transforms urban landforms in cities.

The study area for this research is the Oluyole Local Government area of Ibadan, Oyo State, Nigeria.



4.9. Figure: Map of Oyo State, Nigeria Showing the 33 Local Government;
Source: ResearchGate, 2021.

According to Oyo state government, the Oluyole Local Government created in 1976 is one of the oldest local government councils in Oyo State, with its headquarters in Idi-Ayunre on the Old Lagos/Ibadan express road (*'Oluyole LGA – Official Website', no date*). The area size of the council jurisdiction is 660km² (*Oluyole (Local Government Area, Nigeria) - Population Statistics, Charts, Map and Location, no date)*. Oluyole Local Government is an area of mixed use of residential and commercial activity, including big companies such as British America Tobacco (BAT), ROM Oil, Black-Horse plastic company, Jubaili Agro-Limited, Oriental foods, Quarry companies and many others. The popular Lagos/Ibadan Express road that passes through the area has ensured the rapid gentrification and development of the local government.

4.4.3.2 Methodology

This chapter uses descriptive and analytical means to evaluate the process of gentrification in the suburban area of the Oluyole Local Government area of Ibadan, Oyo state. A desk study approach was used for the study.

Analysing quantitative data helps with the overall categorisation and identification of main patterns that are useful for generalising the information. Relevant secondary data has been collected using secondary data research, as provided by various online scientific publishers and state organisations such as the Oyo State Government website.

For the city of Ibadan, literature by different scholars such as Ajayi et al. (2019), Perez, (2004) and Hanlon (2010) has been used. Also, information from the website of Oyo State government, just to mention a few sources, have been analysed and reviewed in relation to Ibadan City in Nigeria.

4.4.3.3 The Gentrification of Ibadan Suburbs

The process of the gentrification of suburbs is no-longer a small-scale process of urban transformation, but now globally more practiced as large-scale urban redevelopment and it is most often state-led, as seen in most countries. Although researchers are yet to agree on the general causes of gentrification, they generally agree that the symptoms and effects are identical. For instance, one of the negative effects is the displacement of low-income groups in favor of wealthier in-movers.

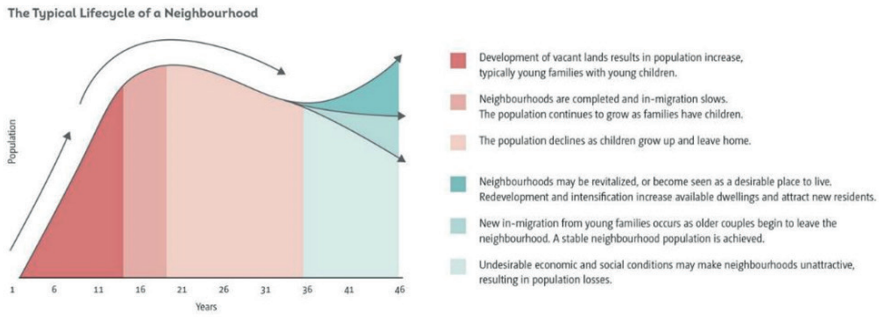
The trend to the gentrification of the suburbs in most cities in Nigeria is increasing. As stated by Nwanna (2012) in his research, the 'rate at which the core-areas of most Nigerian cities are being gentrified particularly in the past two decades is alarming….' Residential properties in the study area of Oluyole municipality and

the adjoining neighbourhoods have all experienced an increase in rental value and a change in demography caused by gentrification. Buildings have been altered from their original uses (typically residential) to reflect existing demand, including changes to physical appearance that totally change the landscape and form of neighbourhoods.

Researchers have identified three distinct characteristics synonymous with gentrification which include a. Displacement of the original residents; b. Physical upgrading of the neighbourhood, particularly of housing stock; and c. Character change in gentrified neighbourhoods, especially residential buildings.

There are some positive and negative effects of the process of gentrification of the suburbs. A positive effect of gentrification is the successful quality improvement of the physical environment and increases in the tax revenue of the government due to the influx of rich new dwellers (Paul et al., 2017). One of the negatives of gentrification that is identified is the displacement of the original owners/occupiers of inner-city housing, which leads to the subsequent loss of social diversity, loss of affordable housing for low-income earners, and the inevitable commercialisation of housing within the gentrified neighbourhood and its environs (Granger, 2010).

4.4.3.4 Gentrification Indicators



4.10. Figure: The typical lifecycle of a neighbourhood;
Source: https://www.edmonton.ca/city_government/documents/Neighbourhood_Lifecycle

When neighbourhoods reach a maturation point, they experience decline, stabilise, or begin to enjoy revitalisation and re-population. As one neighbourhood gentrifies, the artists and small businesses that began the rejuvenation move to another lower-priced neighbourhood and begin the cycle there, bringing renewed interest and rebirth to the new location.

The attributes of the gentrification process include inner-city revitalisation, increased property values and tax revenues from goods and services, social and economic costs, as well as an influx of high-income, higher-educated individuals

and businesses, the displacement of low-income and working-class groups, and the restructuring of the physical, social, and economic structures of the neighbourhood.

4.4.3.5 Study Area

This study focuses on Oluyole Local Government Council in the city of Ibadan. The Local Government is responsible for the Oluyole Residential area and Oluyole Industrial Area. Information gathered from the Oyo State government website indicates that the Oluyole Local Government shares boundaries with four Local Government Areas: Ibadan South-West, Ibadan South-East, Ona-Ara, and Ido – all within the Ibadan Metropolis. It also shares a border with Ogun State through the Egbeda-Obafemi, Odeda, and Ijebu-North Local Government Areas.

Apart from industries such as British America Tobacco (BAT), ROM Oil, Agrited Company, RCC Quarry at Ekefa Village and Ratcon Quarry, the local government also have some educational institutions (public and private primary schools, a private university (Lead City University) and the Oyo-State-Government-owned Technical University, now under construction). There is also a public health institution, the State General Hospital, and many other registered private clinics. The tourist centres located in Oluyole local government include the Twins Shrine at Aba Ibeji, Ogun (God of Iron) at Ogundipe Village, and the Mokore River at Mokore Village, just to mention a few.

This local government council has the most popular mixed-land-use activities in Ibadan with the residential zone at the front, and the industrial zone at its tail end. For example, the Oluyole Residential estate located at the heart of the city is just a few minutes' drive from the Liberty Stadium. Oluyole estate was gentrified due to its location and proximity to many industries. The estate is currently a well-laid out middle- and upper-class residential estate, and has endeared itself to a lot of people because of its central location and good road network. This estate is an example of a gentrified area.

4.4.3.6 The Role of Different Stakeholders

The role of different stakeholders within the community in the gentrification process of the suburbs is as follows.

4.4.3.6.1 State Government Roles

The government function ranges from supervisory roles, proper land documentation of titles, provision of basic infrastructure and the legal framework necessary for development. Land documentation is done through the Oyo State Ministry of Lands, Housing and Survey, and the Oyo State Housing corporation agency, which enforces and supervises ongoing development projects to ensure quality standards within the

state. The government's important role of improving the transportation systems and other infrastructure within the city makes it possible for wealthy families to live on the outskirts of the city, where they can develop types of single-unit housing of their choice, and shuttle in and out of the city to work.

Also, the government has developed some new town settlements such as Ajoda new town as a solution for relieving the overcrowded city centre which was the cause of a scarcity of housing, unemployment, traffic problems, congestion in schools, hospitals, and other social facilities. Just as was done in China, new towns were created as a means of dispersing overcrowded residents to surrounding new towns; beginning in 1957, China established 50 new towns/satellite towns (Tan, 2010).

4.4.3.6.2 Local Government Authority

The Local Government Authority plays an important role and function in the success of the state government effort in terms of ensuring the development of all parts of the city. It ensures that the development needs and the state government understands desires of people, as the former is closer to residents. For effective understanding of the needs of residents, the populace and investors are encouraged to channel their ideas and suggestions for the development of their locality though the Local Government office.

Usually, as Local Government areas are created, a chairman is appointed to help the State government provide and ensure effective development and well-being to citizens at the grass roots level.

4.4.3.6.3 Other stakeholders

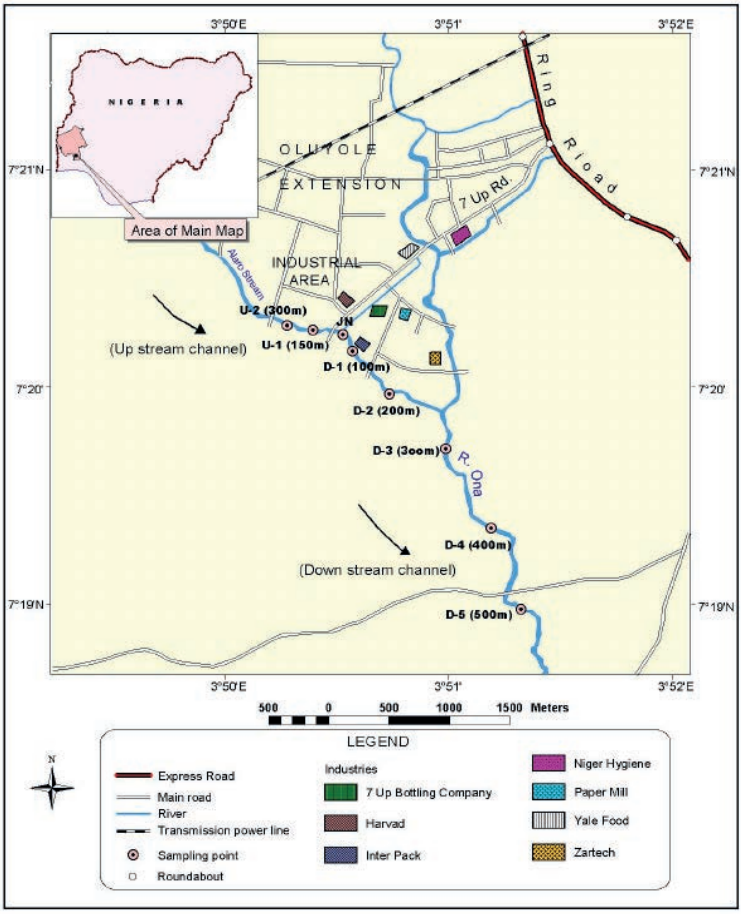
- Private investors
- Corporate Companies

The government has developed some measures 'on the ground' to encourage private investors to invest into real estate. This has increased the activity of private individuals and companies, increasing land values and social activity in such locations. Residents have been paid up and forced to move further to the outskirts. We now have more gated estates within communities.

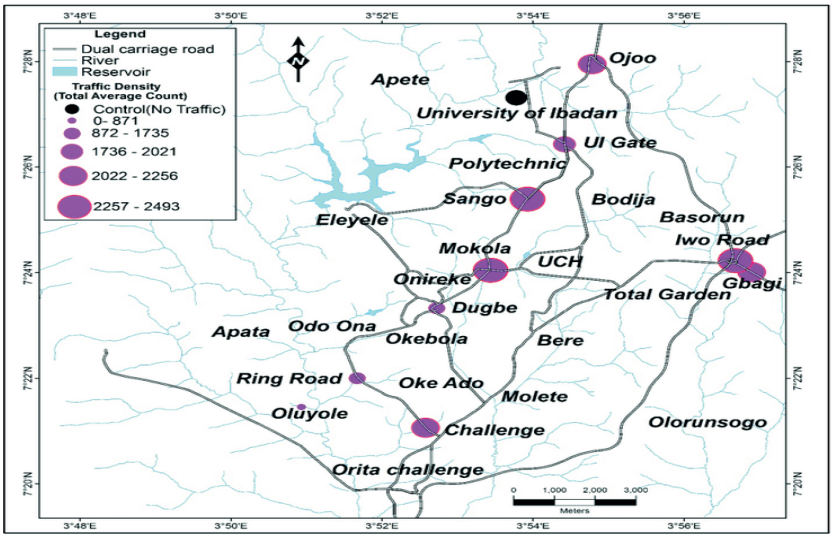
4.4.3.7 Recent Trends Against Gentrification

It is worth noting here that, presently, some of the local residents have not moved off their land but have made agreements with investors in a sort of joint venture agreement that involves the developers building and constructing blocks of flats and receiving the rent for a certain number of years before the property reverts back to

the original owners. This practice benefits all the parties involved, especially the local owners, as they are no longer forced out of the neighbourhood, but instead their social status is improved through the joint venture agreement they have with the private



4.11. Figure: Map of Oluyole, Ibadan;
Source: Wikipedia.org



4.12. Figure: Road Connectivity Map of Ibadan;
Source: Wikipedia.org

4.4.3.8 Recommendations and Conclusions

Nigeria operates a mixed market economic system. The government controls key sectors of the economy, while the private sector runs the other part of the economy. The economy is planned in such a way as to guarantee stability and growth without unduly frustrating free enterprise. This system is completely different from the socialist kind of system in China and other case studies, where there is strict control over development. In Nigeria, stakeholders (elite and multi-national companies) typically influence development in their area of choice, as occurred in the United States. These stakeholders tend to use all their resources, including political connections within the state and the community, to make great fortunes out of locations. The mixed-economy system of the country thereby gives stakeholders some control of the playing ground.

From the above, we confidently conclude that the gentrification of the suburbs in Ibadan City in Oyo State confirms the hypothesis that the characteristics of suburbanisation are influenced by the degree of economic development, and the rate of suburbanisation and gentrification are determined by the approach of the government. The rate of development and gentrification has been made possible by the soft policies in place that make it easy for investors to enter the real estate sector, thereby making the government focus on providing other infrastructure that is needed within the town.

For there to be an effective gentrified suburb, the government should have an effective housing policy in place, good road networks, and the necessary infrastructure. Lewis Mumford (1925) and his planner friends, while trying to solve the problems faced with the '5th Migration' in the USA, created and implemented policies that would make cities self-sustaining, diverse, and vibrant. Furthermore, an effective housing policy can help reduce land speculation, control haphazard development, and encourage house ownership in the city.

In formulating policy, the following should be considered: vulnerable groups (low-income groups), the need for the equal development of all neighbourhoods, and the proper identification of challenges faced by individuals transiting from a rural/traditional economy to urban living.

4.4.4 Khirdalan, Absheron, Azerbaijan

4.4.4.1 Introduction

There are three major cities in Azerbaijan – Baku, Sumgayit, and Ganja. Baku, being the capital, is the most populated of them, with more than two million people, as well as the largest city of not just Azerbaijan but also the Caucasus. According to official statistics, one-quarter of the entire population live in the Baku metropolitan area. Located in the hub of the industrialised area, especially the oil and gas industries, the city and its surrounding has long been attractive to people. Throughout history it has had a diverse population – as an example, before the 1990s it had a significant share of Russian, Armenian, and other ethnic minorities. However, after the collapse of the USSR and the conflict of Karabakh, most Russians and almost all Armenians left the country. Being such a big city, Baku has experienced ongoing urbanisation due to the concentration of main economic interests that has led to the expansion of its agglomeration. The huge influx to the city resulted in the proliferation and differentiation of suburbs around the city. In this paper, one distinct but exemplary suburb called Khirdalan (*Xırdalan* in the Azerbaijani language) will be examined.

4.4.4.2 Methodology

The main methodology of the present analysis is based on the secondary research approach. In order to understand the various urbanisation processes of Baku, including how suburban areas gentrified, a vast scope of scientific literature has been examined. In the evaluation of the gentrification of the suburban area of Khirdalan, Absheron district official statistics provided online by the state committee of statistics, as well as the website of Absheron Executive Power, have been used.

Combining these qualitative and quantitative data allow us to see main patterns and indicators of the gentrification process in the capital and its surroundings.

4.4.4.3 Literature Review

To understand the gentrification of the suburbs in Azerbaijan, various scientific studies have been investigated. The urban development of Baku city has been connected with the boom in the oil and other highly profitable industries. In a paper, Nazaket Azimli argues that the main drivers of development have indeed been the elites of these industries, and local population did not integrate much. She also mentions how urban policy focused on making Baku 'beautiful' and attractive by events held by political discourse. Badalov looks at the historical stages of the urban and suburban development of Baku starting from the 1900s to our day, and the main factors behind it (Badalov, 2019). He sheds light on the main factors behind the rapid urban boom in the country. In their work, Anar Valiyev and Lucy Wallwork looked into how Baku has been transformed by the government through enforced gentrification, especially in the central parts (Valiyev et al., 2019). The former looked at how demolishing the area in the middle of Baku for the establishment of a new park and other modern infrastructure is reflected in civil society. They also investigated how the greater involvement of the government (through the lens of various policies such as making the capital attractive) increases urban development and the gentrification process.

Some authors such as Guliyev investigated major problems with planning the capital city (Guliyev, 2018). The latter looked at how large oil revenues shaped Baku's construction boom and how elites and the private sector work together to maximise their profits and influence, thus leaving the rest of society behind. In an article, Turkhan Sadigov investigates how migration has changed the urban population of major cities in Azerbaijan (Sadigov, 2018) and caused urban clashes. Another article compares two similarly patterned gentrified cities – Baku and Tehran (Aliyev et al., 2018). These studies mostly focus on general aspects of urbanisation and the gentrification process, while the suburban areas of Baku are rarely investigated.

4.4.4.4 History of (Sub)Urbanisation in the World and Azerbaijan

Before going deeper into details of gentrification of the research area (Khirdalan), it is important to understand the historical stages of urbanisation in Azerbaijan. They may be divided into four major stages:

1) The start of urbanisation is associated with the start of the oil industry at the end of the nineteenth and beginning of the twentieth century. Until this oil boom, the main trade centre of the Caucasus was Tblisi in Georgia. The urban population of

Azerbaijan reached 24% of the total population (before that period it was estimated to be around 10%). As the main oil fields were located in the Absheron district, the view of Baku changed quickly due to the population increase. The time is associated with the establishment of French-style large buildings, so Baku got its nickname of 'the Paris of the Caucasus.'

2) The second phase covers the period of 1930-1960 and is associated with industrialisation. Thirty-eight cities were stablished in this period (Badalov, 2019). Thus, around half of the country's population lived in urban settlements in this period. As the country was ruled by the Soviet Union, the appearance of urban areas, including Baku, shifted to include the typical socialist era-style buildings. In this period, the main development focused on central parts of the city and suburban areas were neglected as they were rural in nature (the only exceptions were where oil fields or other industries are located).

3) The last stage covers the period of the 1970s and 1980s. During this stage, the scale of urbanisation lessened, and the urban population just increased by 4.2%. However, settlements near Baku have become the main growth poles of industrialisation, as the main oil and gas reserves were located in this region. The Khirdalan area started to function as the centre of this mentioned oil rich Absheron region surrounding Baku. In terms of the number of such satellite settlements, which rose due to industrialisation, Baku had the second most in the USSR in 1959 (Badalov, 2019). This is linked with the oil boom and the clusters primarily formed around oil fields. The increase in the area covered by suburbs at the start of this period was as high as 93%. Due to such a rapid boom, legislative measures were taken to restrain the growth, as in other socialist republics. As a result, both population growth and urbanisation slowed. For example, during the second stage the suburbs of Baku increased by more than 90%, whereas during this stage the growth of the suburbs was 'only' just over 50% (Badalov, 2019). Even though the socio-economic system at that time involved projects aimed at improving other parts of the country such as Dashkesen, Mingechevir, Shirvan, etc. Baku remained the 'motor' of all the activities and agglomeration.

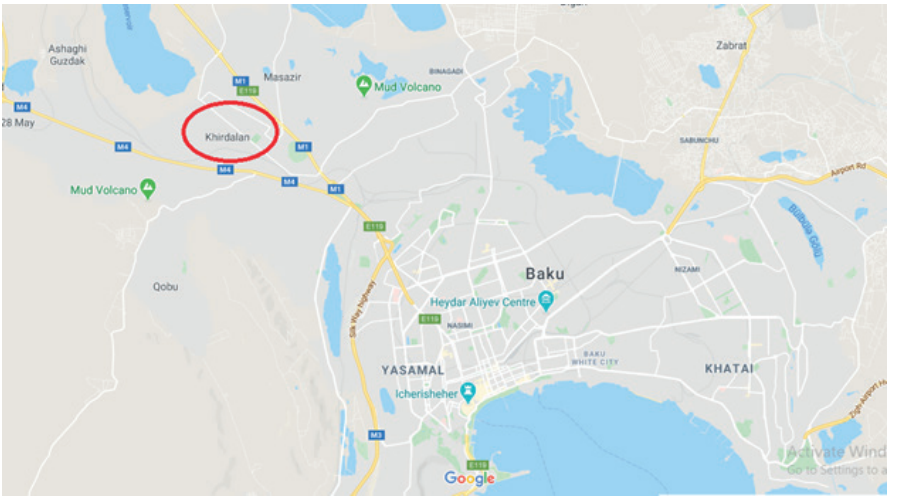
4) The last stage came with the collapse of the USSR in 1991. The conflict with Armenia even during Soviet times led to the occupation of as much as 15% of Azeri land (including 12 cities and over 30 towns). As a result, more than one million people become refugees. After losing their houses and means of living most of them spread across the country to turn over a new page and find a new livelihood. However, Baku being the centre of industrial activities, a major share of these refugees sought opportunities in Baku and thus created another boom in the suburbanisation of the capital. As the housing prices are higher in the city itself, they started to move to the surroundings of the city with the help of government-led projects. New houses were built for them in almost all the suburbs of Baku. As a result, nine new cities were established and the total number of cities in Azerbaijan reached 78.

After gaining independence as the economy slowed down, so did urbanisation. Until the mid-2000s the country witnessed a slow increase or even no increase in urbanisation at times, before starting to grow faster again. Nowadays, Baku continues to be known for its intensive development and high level of suburbanisation. As the differences between the capital and rural regions are still prominent, many people, especially youth, look for opportunities in Baku, thus contributing to the trend. The latter is also stimulated by the government which has constructed new techno-parks close to Baku, such as in Sumgait. With the increase of agglomeration and 'chaotic' individual forms of construction, many satellite cities become part of this agglomeration, and that rapid boom creates different problems. One of them is the case I investigate further.

However, this chaotic style of development started to change in 2005. With the new governmental development programs, changes continued in a more controlled manner: public and green spaces (e.g., the largest park in the city centre; namely, the Winter Park) and new skyscrapers started to be built, giving a modern and positive look to the capital. As a result, urbanisation and suburbanisation processes have increased in pace. Some megaprojects were implemented, such as government-held international sports events and the like in order to boost the image of the country, and increase the number of tourists visiting the country, especially in the capital. Other initiatives such as making the visa process easier (e-visa) were also implemented. The number of rooms in hotels almost doubled as new hotels were built within the period 2010-2013. In her research, Jones argues that Baku is becoming unnecessarily 'over-hotelled' as demand is not that high in reality (Jones, 2012). Further, most luxury hotels either belong to government officials or people who have close ties to them.

4.4.4.5 One of Baku's Suburbs – Khirdalan and its Characteristics

Khirdalan is located approximately 10 kilometres north of Baku, within the Absheron region. It was first established as a small village at the start of the twentieth century, and as with Baku, grew from a small settlement. With the different stages of urbanisation, as mentioned above, its population rose to more than 95,000 inhabitants and it gained city status in 2005. The main buildings are high-rise blocks of apartments partly built by the government (especially for the mentioned refugees, accounting for as many as 40 thousand people in the whole Absheron region) and the private sector. As the population grows, the main approach from the government side is improving accessibility and essential services, which creates a feedback effect, thus more and more people see Khirdalan as a desirable place to live.



4.13. Figure: Location of Khirdalan;
Source: Google Maps

The main economy of the country is based on the oil and gas industry, thus the challenges (rapidly decreasing oil prices) and the unpredictable future of this industry make the government understand that the non-oil sector should be improved. It can be seen in Azerbaijan's policy that two non-oil sectors can be leading ones: tourism, and the real estate market. The idea behind large-scale projects (such as ports, railways, and roads) is to make Azerbaijan part of the 'new Silk Road' project. Also, the intensive building of sports arenas, shopping malls, and high-rise buildings is aimed at attracting more FDI and, as a result, making Baku look like a more business-friendly city. According to the estimates, Baku's population will reach 3.8 million by 2030 from its current 2.6 million inhabitants. The government's plan to tackle this problem is to stimulate the building of real estate between Baku and satellite cities such as Sumgait and Khirdalan. This approach is reflected in government development programs as well.

The development of Baku is not driven by the simple economic theory of demand and supply – it rather relies on elites who benefit from the growth of the population. Beneficiaries of the growth machine (politicians and entrepreneurs) chose economic development over satisfying other stakeholders, who are usually vulnerable. Wealthy elite entrepreneurs, government officials, and professionals are the main decision-making factor for Baku. This hierarchy fits with some post-Soviet cities and is usually referred to as the growth-machine mechanism. There are three main players of the growth machine in Baku – small businesspeople, large entrepreneurs, and local administrative bodies.

In Azerbaijan, the administration system works in a way that the president appoints the mayor of Baku and heads of districts of Baku. Even though the mayor of Baku functions at a higher hierarchical level than the administrative districts, the former cannot replace the mayors of these districts, only the president. This is the way it was in Soviet times, and it persists nowadays. There is also no council to bring them together, so each district must solve its own problems. The municipalities, on the other hand, are selected by elections every five years. The building of the Executive Power of Absheron district is located in Khirdalan to symbolise the importance of this suburban city. In terms of the management system, Khirdalan is controlled by Absheron District Executive Power (ADEP). The main local administrative organs in the Absheron district are fifteen municipalities which are referred to as third-tier governments. One of the first municipalities established in the country was Khirdalan Municipality (*Xırdalan bələdiyyəs*), which started to work in 1999. After 20 years, at the last election 19 members of the town council were elected. The main work of this municipality includes creating parks, improving inner roads, providing essential utilities and social activities such as recently opening youth clubs, and many others. In Azerbaijan, municipalities are financially independent as they have their own budgets, but most of them also receive subsidies from the government budget, but the amount received by municipalities from the state budget is small. In Azerbaijan, the proportion of subsidies from the budget compared to GDP is less than 1%. One explanation for this could be that services like kindergartens, schools, libraries, healthcare facilities, and other cultural and support activities are handled by ministries such as the Ministry of Education, Ministry of Health, Ministry of Culture and Tourism, etc. rather than the municipalities themselves. The government wants to have direct control and maintenance of these activities, leading municipalities to a situation in which there is no 'major work' left to do. Municipalities carry out instructions from the Executive Power of that region rather than being fully independent. This factor creates issues with the allocation of subsidies from the state budget, as municipalities do not have full control. The other main source of income for municipalities is collected taxes from different sources. However, in Azerbaijan municipalities cannot collect income taxes directly. This task is also handled by a ministry (Ministry of Taxation) and their local departments. The municipalities mainly collect what is called a 'land-use' tax. The amount depends on the location and what that land is used for – housing, agricultural use, construction, etc. In some cases, municipalities can issue local bonds to sell if they need financial support for an urgent project.

The main problem of all growth machine models in different countries is that they lack an essential capitalist class (Kulcsar – Domokos, 2005). Instead, the amount of fair competition in the market is low. For example, for the construction of megaprojects, even though there is an open tender for the private sector, it is

mostly companies that have tight relations with government officials that are elected winners. By doing this, government officials increase their ties and help some private sector members to maximise their profits, and thus their own, even though by law they are not allowed to engage in business activities directly.

The second major sector is construction. There are around a thousand registered construction agencies for real estate in the country, but the real number is probably way higher than that. Despite the fact that the construction sector is that popular, people struggle to find dwellings at a reasonable price. The reason is that real estate agencies keep prices high, even if this does not reflect the real purchasing power of local inhabitants. Such investments are usually bought by higher income elites and used for renting. Also, high interest rates in the banking sector and a poorly developed mortgage system add to the problem. As a result, some inhabitants find that living in illegal dwellings is the only option left to them. These illegal buildings which were built quickly are usually referred to as '*geceqondu*' (meaning put up during the night), as in Turkey. If inhabitants start to live in these buildings, police can only remove them following the decision of the court, which could take years, so people use this opportunity and contribute to the sprawl of Baku and its suburbs. Some estimates claim that up to half of Absheron's population live in illegal houses. However, in the last couple of years, there has been movement from the government side towards legalising these settlements. As a result, the privatisation of households rose significantly in 2000s. The biggest threat is that some of the houses are located close to gas pipes, oil fields, electricity pylons, and other strategic objects. This puts the inhabitants in a dangerous situation – not just the health risks these areas pose to them, but the fact that the government can destroy their settlements as they are illegal and built close to mentioned important areas. SOCAR (the State Oil Company of Azerbaijan Republic) reports that in one of their oilfields (namely, Balaxani-Sabunchu) there are up to 5000 illegal houses and other buildings.

Going deeper into the demographic issues concerning Khirdalan and other suburbs, we can categorise the relevant individuals into different groups. One of the most important of these is rural migrants. By rural migrants, I refer to people who moved to the megapolis for better living standards and job opportunities. Data show that average earnings in villages are three to five times lower than those that people earn in Baku, so moving to Baku, or in this case, its suburb – Khirdalan, is a reasonable decision, as the cost of rent and housing are lower than in central parts of the city. As a result, more and more people continue to move there; in fact, statistics show that in recent years only Baku and Absheron have experienced positive net migration, while for other parts of the country it is negative. These rural migrants find themselves in a very competitive market, as people come there from all over the country. Also, due to the fact that rural migrants are mostly male, with lower education levels and skills, they usually only contribute to the blue-collar labor

force (waiters, taxi drivers, cashiers, carriers, handymen etc.). Added to the fact that nepotism (preferring close relatives in the workplace) is still quite common in Azerbaijan, they face further problems finding 'their place' in the big picture. Interestingly, such rural migrants may also engage in nepotistic behaviour as they turn to their relatives or fellow villagers who moved to the city before them for help finding jobs or places. Their fellow villagers who have already secured their places in the job market help these newcomers to find jobs and places, etc. This creates a feedback effect, and more and more people have to deal with these social bonds when they decide to move into the city. All these localised bonds among relatives and according to the origin of place may be beneficial for individuals, but they deepen the segregation problem and threaten standard norms and rules. Such behaviours are usually investigated in social research related to migration. This rapid movement to Baku has created other challenges as well. According to calculations, around 50% of the population were living in urban settlements after the collapse of the Soviet Union (in 1991), as the country introduced a free-market economy, associated with an oil boom (Valiyev, 2011). The related urban development caused illegal housing problems which still persist.

The second significant group of people who moved to Baku and its suburbs are internally displaced persons (IDPs), who relocated after the conflict with Armenia over the territory of Nagorno Karabakh and surrounding districts. As a result, Azerbaijan became one of the countries with the highest amount of IDPs per capita, distributed across all 76 districts of Azerbaijan. The State Committee of the Republic of Azerbaijan for Refugees and IDPs was established in order to deal with the problem. They first lived in tents, but the government started to build special housing for them and as a result in 2007 all tent residences were abolished. Overall, the total number of IDPs is more than half a million within the country, and there are more than 36 thousand IDPs and 3327 refugees in the proximity of Absheron district alone. Baku and its surrounding suburbs have the biggest proportion of them, with more than 17000 people. It seems that by creating smaller housing units a few storeys high for IDPs in Baku and its surroundings, the government is speeding up the process of sprawl. This also boosts the speed of suburbanisation of Baku, because government houses for IDPs and refugees have mainly been built on the outskirts of the capital. As they are war victims, the rest of the population, generally speaking, has accepted them without a problem, but sometimes conflicts occur as these IDPs get extra benefits from the government, such as discounted utility prices. Some unofficial estimates say that around two million people decided to move into Baku after 1995, and most of them are rural migrants and IDPs. As they could not afford the cost of housing in Baku nor the permits required to legally construct on land, they illegally built houses in the 'free lands' of suburbs, as mentioned earlier.

Another group of people who have had to move to the suburbs of Baku, including Khirdalan, arrive as result of the gentrification of the inner city. Gentrification in Baku is happening at different rates in various parts of the city, but most of it is visible in the centre. The central parts of the capital city are densely built, so there is not enough space for new constructions. One of the solutions used to overcome this problem is adding extra storeys to Soviet buildings that only have a few storeys (3-5 usually). However, even though this method worked for a while, as the population grows further, the pressure for more housing increases. Another method used to tackle the space issue is bringing down poorly designed old (sometimes even pre-Soviet era) buildings, and building new, high-storey ones. One such case caused a lot of public disturbance – destroying houses in the so-called 'Sovetski' part of the city. The city administration planned to build high-story buildings with modern parks in the area as a means of relocating people from an older ten thousand or so houses. In return, it is increasing the prices. The reason for this is that the land is not privatised, but belongs to the government, as in Soviet times. As a result, old inhabitants could not ask for fairer compensation for their destroyed houses. As a result, these relatively poor inhabitants have to move out of the inner parts of the city to the suburbs. Another problem they face is their main income was derived from the local area, and by moving outside of the city they lost their income sources. However, all these actions benefited the private sector, especially realtors, as newcomers meant an increase in the sales of buildings in the suburbs. Similarly, the dwellings they left behind are sold at higher prices to newcomers (gentrifiers) after reconstruction.

A different group of people that move to Khirdalan and other suburbs are so-called YUPPs (Young Urban Professional Parents). As mentioned earlier, the location of Khirdalan and the distance from Baku means relatively cheaper housing, which is favorable for newlyweds who are trying to 'open a new page' in their lives. These families usually have cars as they need to commute to Baku on a daily basis for work or other reasons. However, young families still choose to buy houses here too as there are government subsidies for new families. This uptick in newcomers increases the gentrification and development of Khirdalan. As is usually stated, the main indicator of gentrification is the improvement in services provided. In the case of Khirdalan, as the number of young families increases, the total number of schoolchildren also rises. According to official statistics, in Khirdalan alone, there are ten schools; in Absheron the total number of schools is forty-one (half of them built in the last decade alone). The rapid growth in the number of schools indicates the speed of population growth and gentrification of Khirdalan and other suburbs. Similarly, other necessary services are growing too. There are nineteen registered hospitals in the Absheron district, of which four hospitals are located in Khirdalan. Additional to these services, the number of parks, modern cafes, and 'wedding palaces' has increased, and other recreational structures such as gyms and football

stadiums have been built. Such influences and improvements to the city itself and its infrastructure create a modern image of the district.

4.4. picture: Photo of Khirdalan Music School depicting national musical instruments at the entrance
Source: Official website of EP of Absheron.

Also close to the Khirdalan is one of the biggest universities in the country – Baku Engineering University (formerly Qafqaz University). This was established in 1993 as the first foreign private university. It was the most popular private university of students according to the Student Admission Committee. The influx of students from all over the country changed the demographics of Khirdalan even further. Even though the university has dorms, some students seek to rent houses in proximity. As a result, the youth population of Khirdalan increased significantly, further expanding sprawl. These students from other parts of the country prefer to stay in Khirdalan or other surrounding districts of Baku as the cost of rent is relatively lower.

When it comes to the private sector, in Khirdalan the main sectors include construction by private companies and the furniture sector. The reason for the boom in these sectors is variable. First, land prices are cheaper compared to in other parts of Baku, especially in areas close to the downtown. Accordingly, private companies seek the opportunity to buy land and build high-rise buildings in order to sell flats. As a result, in the early stages of development of Khirdalan there was competition among private construction companies. However, of the most companies 'won'

the right to work in the city are bigger ones with ties to government officials. Even though there was a decree in 1997 that eliminated the monopoly of the construction sector, the major actors in this private sector still consist of government officials or people who have connections to them.

The second sector – furniture assembly and sales – is also favorable, as the location has two direct highways to Baku, making the transportation of goods as well as daily committing easier. However, some sources argue that the suburban growth of Khirdalan is so great that there is a need for another highway connecting it to Baku. The boom in the private sector is reflected in an increase in tax revenues, land, and other operational costs, and in general the overall activities of the region, which can be seen as other indicators of the gentrification process.

4.4.4.6 Conclusion

Towns around the agglomeration belt of Baku, especially Khirdalan, are very interesting examples of the suburbanisation process. As the country went through various stages of history, it changed based on how it was managed. The features of suburbanisation are influenced by the degree of economic development. The growth machine model of Baku started after 1991 when the country became independent after the collapse of the USSR and implemented a market economy. Earlier, it had been in the interest of the government elite to speed up growth as a whole and thus the urbanisation process in particular. The reason is simply the old Soviet habit – the former are the ones who gain most from growth, so they invested a lot. Close ties between the private sector and government were formed, which in return shapes the city according to the latter's desires. The government, on the other hand, wants to make a 'Las Vegas of the Caspian' from Baku and its suburbs, but local people feel differently as they are mainly excluded from the planning process. One major issue, as mentioned for the overall Absheron region, including the present case – Khirdalan, is the lack of elections for different mayors. As appointed workers rarely know about local problems and seek their own benefits, including cultivating close relationships with the private sector, the living standards of locals do not improve. Also, the absence of grassroots or other groups such as citizens groups and NGOs make it impossible for locals to get involved in the government-induced suburbanisation and gentrification process. My recommendation is to find ways to create a strong civil society and participation, as civilians are those affected by the gentrification process.

To conclude, the gentrifiers of the Khirdalan (and other suburbs of Baku) consist of mainly rural migrants who are looking for better living opportunities, Internally Displaced People emerged after the Karabakh conflict, as well as people from inner Baku (also forced to leave because of gentrification), and young families or youth in general. The main sectors that grew in Khirdalan are those in the private sector,

especially construction, furniture production, the service sector, etc., and the 'main actors' of these sectors maintain good relationships with government officials as well as with the municipality of Khirdalan for their own benefit.

To sum up, we can say that our hypothesis that the gentrification of suburban areas is determined by the factors of the free market and governmental influence is proved for the case of Khirdalan, as the private sector and government are the two main actors. The government is involved in the process in two ways – directly or indirectly (subsidisation of young families, businesses, etc.). Accordingly, the central government plays a very strong role in the suburbanisation process. This is because the country went through different phases of history after its independence from Russia. However, after independence, the role of the private sector in the growth and urbanisation process increased as the country established a market economy. The government's desire to make a better-looking city unfortunately is not aligned with people's actual desires, as they are usually excluded from such planning processes.

4.4.5 Conclusion and Recommendations

4.4.5.1 Conclusion

From the above case studies, we identified the fact that the central government of any country starts the gentrification process and dictates the rate and drivers of gentrification. However, in some countries at some points the central government allows for some level of flexibility and level of participation from private stakeholders and investors. This level of flexibility varies according to location, as Table shows.

	Strong Private Sector Influence	Weak Private Sector Influence
Strong Government Influence	Khirdalan, Azerbaijan	Nanjing, China
Weak Government Influence	Ibadan, Oyo State, Nigeria Digomi, Tblisi, Georgia	/

4.1. Table: Influence of the government/private sector in the case studies;
Source: The authors

For instance, in the Nanjing case study we found a situation of strong government dominance and weak private sector involvement. It is the political class rather than the private sector that determines the spatial planning pattern. This is because there

is no private land ownership in China and rural residents play a passive role in the process.

In the Nigerian case, the country operates a system known as the mixed market economic system. Though the Federal Government controls key parts of the economy, the system encourages participation from other players. These stakeholders attract development to their area of choice with their resources and political connections within the state and the community. The mixed economic system of the country thereby gives stakeholders some level of control of the playing ground.

For Azerbaijan, we see that the central government plays a very strong role in the suburbanisation process. This is because the country has gone through different phases of history since its independence from Russia. However, after independence, the role of the private sector in the growth and urbanisation process increased as the country established a market economy. The government's desire to make 'Las Vegas of the Caspian' from Baku and its suburbs has led to the exclusion of people from the planning process. Ultimately, we can say that our hypothesis that the gentrification of suburban areas is determined by the factors of the free market and governmental influence is proved for the case of Khirdalan, as the private sector and government are two main actors. The government is involved in the process in two ways – directly or indirectly (subsidisation of young families, businesses, etc.)

In the Georgian case, the country, just like Nigeria, also developed a liberal market economy after the demolishing of the Soviet system. Urban areas were dramatically influenced by the transition period. The country has a more managed sustainable and planned form of urban development. As new suburban areas are attracting an increasing number of inhabitants, the related infrastructure and transportation are being widely provided by the government, greatly promoting gentrification. Otherwise, all kinds of buildings (incl. the service sector and educational institutions, etc.) and construction work are owned by the private sector.

In general, the conclusion is that the government plays an active role in all the cases studied above, as they control the stakeholders through policy making and the legal framework.

4.4.5.2 Recommendations

In conclusion, we would like to share our recommendations that are common to all the case studies mentioned above:

- More local involvement of the community, members of which are the main parties affected by the gentrification processes.
- The improvement of public infrastructure is also important in most countries.

- Better housing policies are needed to protect locals and the vulnerable (the old, sick, and kids) from the negative effects of the gentrification process.
- Better mortgage facilities would ensure that locals are not displaced and can also improve their properties to meet standards.
- Research and investigation: constant monitoring of the urbanisation process by the government would help with giving better directions for future development.

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5. RURAL GENTRIFICATION IN EMERGING ECONOMIES

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5.1 Introduction

Rural gentrification is a growing trend around the world. As cities get bigger and less liveable, there is more interest in countryside living, either in the form of temporary residences, or a more permanent type of life. This research focuses on four emerging market economies, China, Estonia, Mongolia, and Turkey, and asks the question: what are the drivers of rural gentrification in emerging economies?

Gentrification is agreed by scholars to be the influx of capital and the resultant social, economic, cultural, and physical transformation and displacement. (Japonica, 2010, p. 13) It is generally seen to have negative effects on the community that resided there pre-gentrification; however, some more recent scholarship (Cortright, 2015) brings up positive factors such as improved incomes and educational opportunities for the less wealthy, and a safer living environment.

Who are the gentrifiers? In Phillips' (2002) review of Smith's work (1979), there are four kinds: (i) 'professional developers,' who 'purchase property, develop it and then resell it for profit,' (ii) 'landlord developers,' who rent properties after they have been refurbished; (iii) 'sweat-equity owner-occupier developers,' whereby '[p] rospective owner-occupiers buy a house, finance its rehabilitation privately or with a construction mortgage or loan, and carry out the work with their own labour'; and, (iv) 'unmediated owner-occupier developers,' whereby 'a new occupier buys a property and then employs a developer to rehabilitate it'.

According to Phillips *(2004: 7)*, 'Many of the [gentrification] arguments advanced in urban studies have quite clear rural parallels.' Rural gentrification can be framed according to the general concept coined by Ruth Glass: as an urban process that includes the renovation of old buildings, the transformation of their status from rented into owned houses, the growth of property prices, and the dislocation of the resident working classes in favour of the middle class (Gervasi, 2014). The main urban ingredients are present: construction industry involvement, real estate market, land use change, and social-spatial mobility.

In his study of rural gentrification, Phillips (1993) takes the investment of material resources into existing housing stock as the starting point. He finds that, unlike in the case of urban gentrification, rural gentrification is not a clear-cut replacement of the working class with the middle class as the gentrifiers come from different backgrounds and mostly use their own 'sweat equity' as owners-

occupiers to renovate their new rural homes. Additionally, while urbangentrification usually occurs in depreciated neighbourhoods, this is not necessarily true of rural gentrification (Guimond and Simard, 2010)

According to Phillips (2002), gentrification has often been associated with socially selective in-migration, often also referred to as service class colonisation. He finds that gentrified rural space is to some degree 'constructed and occupied by people wishing to escape some aspects of contemporary capitalist development' (p. 301). He adds two further dimensions besides material ones to the study of rural gentrification: 1) symbolic creation enacted in the discourses of popular and specialised media, and 2) 'cultural texture' enacted and performed within gentrified spaces.

Related to the dimensions suggested by Phillips, Sharon Zukin (2011) discusses the preconditions for a modern settlement to develop a distinct culture: 1) individuals must be free to choose where to live; 2) local history should create an attractive material or symbolic landscape; and 3) local entrepreneurs should market elements of this landscape while suppressing others (pp. 161-162). There is a 'marriage of convenience between profit-oriented place entrepreneurs, [...] and culturally dominant newcomers' that, if successful, can affect the development of the region (p. 162). Lang and colleagues (2013) find that the influence of regulative institutions on local entrepreneurship is tempered, if not superseded, by specific place-dependent normative and cognitive institutions, and that the fit between the different institutions is decisive for the emergence of entrepreneurial practices in a specific location.

As gentrification is associated with the influx of capital, it is hardly the poor who cause it; however, it is not the wealthiest contingent either. Identified as the 'service class' by Phillips (2002), this group of people who belong to the gentrified city are described by Marcuse (2000) as 'those who may be doing well themselves, yet work for and are ultimately at the mercy of others.' The next level, defined by a desire for physical security against intrusion and political conservatism (Marcuse, 2000), is the suburban lower-middle class family, whose description aligns with Phillips' (1993) description of young families moving to rural areas primarily to provide a better living environment for their children, and the prevalence of traditional gender roles. The term 'middle class,' defined by Eisenhauer (2008) as demarked by the poverty line on the bottom end, and by the 'leisure class' (those who can maintain a middle-class-equivalent lifestyle without having to work) on the top end, seems to fit the range of existing descriptions of the wealth of rural gentrifiers. Also in line are the findings of Amoranto, Chun, and Deolalikar (2010) that the middle-class have values that are more likely to contribute to economic growth than the lower class; on the other hand, they have generally less liberal values and attitudes than the upper class in terms of market competition, gender equality, upward mobility, and trust.

Orhan and Yücel (2019) analysed rural gentrification as the result of gentrifiers' attempts to move their urban habits to a village scale. They reviewed the different

concepts of 'rural' as discussed by Stauber (2001, cited by Orhan and Yücel, 2019) – ranging from urban periphery and sparsely populated hinterlands to areas of rural poverty and scenic regions – and argue that both the motivations of gentrifiers as well as their capital accumulation processes should be considered in rural gentrification analysis. They point to the finding of Scott and colleagues (2011, cited by Orhan and Yücel, 2019) that the intersection of production and consumption that functions in the same geographical space has led to tensions and conflicts in rural localities.

American sociologist E. G. Ravenstein proposed 'push-pull' theory to explain the reasons for population migration. He believes that population migration is mainly composed of 'push' factors, which involve the unfavourable factor of the location of migration, and 'pull' ones, which is the attraction of the place of migration. Neil Smith states that the gap between the potential land rent level and actual ground rent capitalised (the rent gap) is the main reason for gentrification. The continuous expansion of the city has increased the potential value of the inner city, and the depreciation of capital has reduced its actual value. When the rent gap is large enough, it will cause new investment and development in the inner city, thereby bringing about gentrification. Martin Phillips extended Neil Smith's concept of rent gap to explain rural gentrification. He believes that rural agricultural productivity is declining, the environment and landscape are not attractive to capital, and that potential value is difficult to convert into actual value. Therefore, in the process of gentrification, diversified investment into rural space should be made to fill the rural capital gap. In addition, globalisation is also the cause of rural gentrification. Globalisation has added a source of immigrants to the process of rural gentrification, and has created a consumption-oriented approach to the countryside.

Over the years, the sources of motivation for migration of those with means have been searched for in the literature. Cortazzi (2001) stated that there is a common story in the literature that migrants' lives are made more meaningful because of their search for a different lifestyle and a better quality of life. In the study of Helset, migration was described using language like 'getting out of the trap,' 'making a fresh start,' and 'a new beginning.' O'Reilly and Sunil (2007) explained that migrants' relocation preferences are for a slow pace of life, relatively cheaper cost of living, better climate and health, and a feeling of community. Similarly, Phillips (1993) found motivation in the affordability of rural real estate, the attractions of a rural locality, such as a safe and less competitive environment for raising children, and a stronger sense of community. As Madden (1999) argues, the search for a better lifestyle is the main priority of migration for these people, and that this is even more important than business opportunities, Stone and Stubbs support the idea that migrants desire to be their own boss and take up self-employment and argue that 'working for others (…) was not part of the new life that they had envisaged.'

Lifestyle has been defined by Veal (1993) as 'the distinctive pattern of personal and social behaviour characteristic of an individual or a group.' In this definition, 'behaviour' includes 'activities involved in relationships with partners, family, relatives, friends, neighbours and colleagues, consumption behaviour, leisure, work (paid or unpaid) and civic and religious activity. Patterns of behaviour are linked to values and socio-demographic characteristics, may involve varying degrees of social interaction, coherence, and recognisability, and are formed through a process of wide or limited choice.'

O'Reilly and Benson (2009) in their study searched for and examined the common motivation of migrants as the search for a better life and idyllic places, and concluded that it may vary depending on where they live. Phillips (1993) found that apart from the affordability of rural real estate, the rural locality has other attractions as well, such as a safe and less competitive environment for raising children, and a stronger sense of community. Also, they explained that migrants have a huge influence on the receiving local communities in terms of culture, economy and environment. From a different perspective, Tremblay, O'Reilly and Benson (2007) argue that these gentrifiers may ironically destroy the places they move to by developing the areas in which they seek a better way of life.

Another important source of motivation for migration or owning a second houses may be the search for authenticity. There are plenty of definitions and interpretations of authenticity in the literature. Heitmann (2011) stated that the word authenticity indicates a sense of the true, genuine, and 'real thing.' The search for authenticity as a driver of rural gentrification has been discussed by many scholars. Hines (2010) argues that 'the choice by middle-class newcomers to migrate to the rural US is simultaneously the product of: 1) the continued efficacy of the modern ideals of authenticity and progress; and 2) their aspirations to distinguish themselves as members of an emerging class faction — the post-industrial middle class (PIMC) — through their emphasis upon the production and consumption of experiences.' In the study of Kolar and Zabkar (2010), the authors stress the importance of 'authentic destination experience' as the main motivation for touristic activities, as well as the urge to escape from day-to-day boredom and explore destinations which have an image of 'being unexplored and unspoiled.' According to the study of Jyotsna and Maurya (2019), village tourism and the rural lifestyle deliver the experience of real life, observing the day-to-day activities of residents, and becoming involved in local peoples' lives through the activities of gardening, fishing and attending different communities.

In terms of economic development, the four countries represented in this study – China, Estonia, Mongolia, and Turkey – can all be classified as emerging market economies or belong to a region described as 'emerging.' This state of economic development can be described as a 'process of economic and institutional transformation of middle-income countries that entails an acceleration of their

economic growth and an increased participation in international trade and capital flows' (Vercueil, 2016). As these countries get wealthier, there is an opportunity to observe the changes in lifestyle that take place as people in these countries obtain more means. These changes can be expected to vary; Lopez-Calva and colleagues (2012) note that country effects overrule income and education characteristics, suggesting that middle-class values may not be as globally uniform as previously thought. Therefore, even though we may assume that rural gentrification in different countries is driven by people of similar income or education levels, we can expect variability in its expression, especially as scholarship on rural gentrification has traditionally focused on Western Europe and North America.

Considering the above, we propose the following hypothesis: While the faces of rural gentrification vary between countries due to historical and cultural differences, its drivers around the world include the search by the middle class for a different, authentic lifestyle and idyllic, remote places.

Sub-hypothesis 1: The desire of middle-class people to live in an authentic place and 'make a fresh start' motivates them to move to rural areas.

Sub-hypothesis 2: The expression of rural gentrification is shaped by the history and the value system of the country in which it takes place.

Sub-hypothesis 3: many of these in-migrants become place entrepreneurs and help develop the 'local character' that reflects the symbolic value of the place.

5.2 Methodology

In this study, locations with characteristics of rural gentrification were chosen. Qualitative methods such as content analysis of secondary sources were used to evaluate the drivers of gentrification. In the content analysis part, the following questions were addressed:

1. The background of rural in-migrants/tourists
   - Do they (the tourists or rural in-migrants) formerly live in a city?
   - What kind of profession do/did they occupy in their urban life?
   - Did they previously have any connection with rurality? What was it?
   - (in-migrants) At what point in their lives did they move to the rural area?
   - What is the family status of the rural in-migrants?
2. The rural lifestyle of rural in-migrants/The rural activities of tourists
   - (in-migrants) What type of property do they own?
   - (in-migrants) How did they arrive at the current state of the property? (Bought from developer, built by themselves, restored and re-purposed)
   - (in-migrants) How do they make a living in their new rural life?
   - (in-migrants) What kind of connections do they still maintain with the city? (e.g., workplace)

- (tourists) What type of activities do they engage in while in the countryside?
- (tourists) How long do they usually stay in the countryside?

3. The motivation of the rural in-migrants/tourists
   - What do they list as their motivation for moving to/visiting the countryside?
   - What do they appreciate about living/staying in the countryside?
   - Any other motivations (e.g., push factors involving the city?)
4. The impact of in-migrants/tourists
   - To what extent do they participate in the local community?
   - What is their contribution? Do they bring something unique to the area?

5.3 Turkey

Turkey, officially the Republic of Turkey, is located at the intersection of Southeast Europe and Western Asia. It is surrounded by the Aegean Sea in the west, the Black Sea in the north, and Mediterranean Sea in the south. It shares borders with Georgia to the northeast, Armenia, Azerbaijan and Iran to the east, Iraq to the southeast, and Syria to the south. In total, the country has a territory of 783,356 square kilometres. By December 2020, the country's population was over 83 million (Turkish Statistical Institute, 2020). Istanbul is the largest city and the financial centre of the country, whereas Ankara is the capital city. Turkey is a newly industrialised, and a developing country with an upper-middle income economy. Dating back to ancient civilisations, Turkey is world's one of the earliest settled regions and was home to from Hattians to the Byzantine era, and Seljuk Turks to the Empire. During the Ottoman period, the Turkification of Anatolia was accelerated the most. After the Ottomans and other central powers lost World War I, the empire was partitioned. The Turkish War of Independence resulted in end of the Sultanate, and the proclamation of the Republic on 29 October 1923. Mustafa Kemal Atatürk, the leader of the Independence War and country's first president, then initiated reforms in the country, leading Turkey to become one of the most secular, parliamentary-republic majority-Muslim nations (Köprülü & Leiser, 1991). Diverse and heterogeneous sets of elements from different cultures, including the Middle East, Eastern Europe, Western Asia and Eastern Mediterranean, have had a significant impact on the culture and the way people live within the country.

5.3.1 Overview of Changes in Values

In 1923, with the declaration of the Republic of Turkey, the new formation of the state and a plan for 'Westernisation' reforms emerged both politically and culturally. The government invested resources into various areas such as fine arts, architecture, and tourism as an approach to modernising and creating a cultural identity.

Moreover, as a developing economy, Turkey has been experiencing structural transformations since 1980s. The country has experienced rapid urbanisation in coastal rural areas with tourism activities since around the 1950s, similar to other Mediterranean countries (Okumuş, 2018). Tourism investment started with public-private partnerships and construction activities related to summer house ownership in Aegean and Mediterranean coastal regions in the late 1970s and early 1980s. This development created the spatial dichotomy of 'a privileged space along the coat and an underprivileged space in the interior of the country' (Göymen, 2000). Herewith, the number of tourism facilities has drastically increased, and on the other hand summer houses have been built *en masse* by purchasing and developing government land to host new residents, and as a reflection of middle-class lifestyle (Okumuş, 2018). Different types of residential places have been built. The first type of residences was '*site*,' – groups of gated apartment blocks, and the second type were *villas*, located further away from the city, in rural places. Therefore, the number of second houses in coastal towns in Turkey increased after the 1980s (Zekiroğlu, 2020).

From the early years of the republic, modernity was seen as the keystone of class identification. According to Bourdieu (1984), the upper middle class in Turkey used their practices to 'classify and differentiate,' and one of the ways of doing that was using aesthetic devices, such as having a luxury house in the countryside. Similarly, King (2004) stated in his work that the incorporation of western lifestyles was represented through property ownership, especially '*villafication*' in Turkey. Thus, new forms of migration to rural places within the country are mostly motivated by the desired personal lifestyles of people (King, 2000); the phenomenon is visible particularly in Southern Mediterranean and Western coastal towns. The characteristics of these places accord with O'Reilly's (2007) term 'lifestyle migration,' which describes voluntary (permanent or temporary) moves to places where the cost of living is relatively low.

5.3.2 Summary of Research on Rural Gentrification in the Country

Gentrification is a process that has been used since the 1970s in relation to both the rural and urban space. The majority of the studies examine urban gentrification cases in metropolitan areas such as Istanbul and Ankara. After a while, rural gentrification studies focused on coastal areas of the Aegean and Mediterranean Sea, where economic development was based on tourism investments and second houses after the 1980s. However, research on rural gentrification or 'lifestyle migration' in Turkey is rather limited compared to urban gentrification studies (Zekiroğlu, 2020). Furthermore, the practice of rural gentrification differs from its occurrence in urban spaces. The majority of rural gentrification in Turkey focuses on Western Aegean and Mediterranean villages, which show interesting social patterns. The reinvention

of Aegean villages can indicate new lifestyles and habitus in search of meaning. Also, they may represent an alternative for those who are unsatisfied with mass tourism and consumption-related tourism activities. Moreover, these villages are imbued with a historical background from ancient times. Some of the best examples in the literature are *Şirince*, a small village in Selçuk, *Adatepe*, on the coast of the North Aegean Sea, *Urla and Alaçatı*, both of which used to be small villages close to Izmir city. In most of these studies, gentrifiers are referred as well-educated, middle class intellectuals, writers and artists seeking to build and live in a 'utopia' and achieve the lifestyle they desire. Another perspective on this process is related to the prestige of the migration of gentrifiers, which also has lots of social benefits (Okumuş, 2018). Moreover, with the increase in hotels, coffeehouses, and other enterprises in rural areas, the commodification of the rural and gentrification have been studied in hand in hand in the literature.

There are some international standpoints in the literature as well. Nudrali and O'Reilly (2016) explore the motivations and daily activities of British retirees moving or owning second houses in Didim. In the research, they found the motivation of lifestyle migrants is not only related to their political point of view and cultural dissatisfaction with the UK, but also the opportunities that Turkey gives them. Additionally, Kılınç and King (2017) investigated the motivations for Turkish-German migrants' migration to Antalya, and concluded that it is mostly related to a search for authenticity, work-life balance, and a better life (Zekiroğlu, 2020). Also, Young's case study of two villages of Izmir focused on 'new' rural localities, claiming that upper-middle class people are seeking healthier and 'authentic' family lives and a 'hip village' lifestyle (Yücel Young 2007).

5.3.3 Datça, Muğla

Datça is a peninsula and a district of Muğla on the Aegean coast of Turkey. It is 121 km away from the centre of Muğla, a city which is well-known for its tourist districts such as Bodrum, Dalaman and Marmaris. Muğla has two airports, close to Bodrum and Dalaman, and the nearest airport to Datça is Dalaman Airport, which was put into service in the 1981. Compared by size and population, Datça is one of the smallest and least crowded districts. Datça experienced its first attempt at transformation into a tourist town with the construction of a gated community, named *Datça Aktur Tatil Sitesi,* in the early 1970s (Zekiroğlu, 2020). This led urbanites to own summer houses on the Aegean cost and the seasonal population increase in Datça. During the 1980s to early 2000s, the only connecting road to Datça was from Marmaris, and it was narrow, unsafe and bumpy, which made reaching Datça more challenging and Datça remained 'behind the curtains' compared to other districts in that area. This authenticity and the uniqueness of the place is indicated in this comment 'Given

its seaside location, it's surprisingly workaday but that lends it a certain laid-back authenticity' (Lonely Planet).

In 2012, a new law known as 'the metropolis law' was enforced and changed the administrative status of some cities in Turkey from 'city' into 'metropolis.' As a result, Muğla became a metropolitan municipality, and its villages became neighbourhoods. Datça had 12 villages at that time, yet now all of them are recognised as neighbourhoods (Zekiroğlu, 2020). It can be concluded that, in general, the law has contributed the change in rural areas. Although there is no study that focuses on that change for Datça, there are some signs of an increase in urbanisation and gentrification. One may be population change. It is reported that the population of Datça grew by 6.8% to 22,261 in 2020 compared to the previous year. Another sign of the change was the construction of new roads connecting the centre to its neighbourhoods, which have increased the attractiveness and accessibility of Datça (Zekiroğlu, 2020). The satellite images below clearly describe the expansion of settled land towards its surroundings through the years.

5.3.3.1 Case Studies of In-Migrants to Datça

In the last three years, examples of those who moved to Datça as permanent residents have increased dramatically. Although the preferences of the individuals differ in each case, they have these things in common: the search for an authentic and idyllic lifestyle, as well as the urge to reflect their authentic selves with some economic or entrepreneurial activities.

Özlem Tuzcu settled in Datça eleven years ago and established the 'Oda Sanat Art/Boutique' clothing and jewelry shop ten years ago. She defines her business strategy as 'Life is art' and says products in Oda Sanat reflects naturalness and aesthetic beauty. It may be seen from the products, especially from the traditional loincloth towels that are sold, that Oda Sanat gets its inspiration from local culture in Datça. Today, another young gentrifier, Ezgi Kurt, accompanies Özlem to manage the boutique. In one interview, Özlem explained why she preferred Datça for living in, by saying it is the most 'livable' place with its nature, nice people, clean air, and 'unique' sea. She also added that it is calm and not overcrowded during summer holidays. In her words: 'Datça is a place where those who come with dreams such as escaping from the city, opening a cafe, making and selling natural products will have a hard time. Their enthusiasm may soon fade. Datça is a place where you should come with a very solid plan.' Although she mentioned this, she answered the question how she had established her business Oda Sanat and if it was planned like this: 'On the contrary, I never thought about it. I had not made such a plan either. Everything started with a workshop that I set up here so that I could work very well. It developed step by step. After I started to work, I realised that the experiences and work discipline

I had obtained in previous years were very important.' Also, both expressed that social connections and making new friends was the best part of their job. Datça is not a real hotspot for tourists and visitors are usually 'different' and 'cultured,' in their words. The last comments of these two women were recommendations to people who want to settle in Datça. Özlem said in a direct way: 'Let them come, but not bring the spirit and life of the city here. Let them embrace the soul of Datça… Here you can catch the real rhythm of life.' Similarly, Ezgi recommended them to come, but to be ready to address the negative aspects as well. She compared life in Datça with city life and concluded by saying Datça is better that life in the city, because you don't need to run or stress. She finished by showing her hospitality: 'It wouldn't be bad if the number of 'our' (young gentrifiers) increased' (*Bir Sahil Kasabasına Yerleşsem, Kendi Işimi Yapsam Hayali Kuranlar Için Datça'dan Dünyaya*, 2019).

Çağlar and his wife Zeliha are a couple who decided to move in to Datça around April/May 2013. They were living in Ankara before they migrated, where Zeliha used to work in an institution as archaeologist and Çağlar was working in music production for short films and documentaries. Çağlar thought about moving to Istanbul to establish a social network to make more money of what he does, but their interest in permaculture shifted their direction. First, they traveled around Turkey, then went to Syria and Indonesia to voluntarily work in gardens in exchange for accommodation. After a year and half, they decided to return to Turkey and ended their journey in Datça, where Zeliha's grandmother had a summer house. Then they moved to Datça permanently. Çağlar expressed their migration to Datça as a decision to 'give a chance' to Datça. Apart from their interest and search for lifestyle opportunities, Çağlar indicated that people living in Ankara or Istanbul are 'miserable, hopeless, and pessimistic.'

This not only indicates their intention to live in a remote, idyllic place, but also to push back against the effect of the city life on their lifestyle search. They also agreed that the Gezi protests in Turkey had increased migration to Datça among the middle class and they see this occurrence as their 'trigger' to move as well, because the suppression was a disappointment to them.

Çağlar and Zeliha have a small piece of land in Datça where they grow plants such as olives and chamomile. They have partnered with a small distributor in Istanbul to sell their products and also use online selling channels. They prefer to keep their target customers limited, and want to reach people of a 'certain scale.' Zeliha has expanded her knowledge of alternative medicine by learning how to produce balm and extract oil from plants. When they purchased the small-scale plot of land, by using their social network from their city life they converted their knowledge into economic capital in Datça. In their own words, they aim to increase their 'social capital' by introducing these products to those who have a similar accumulation of capital.

Zehra, who in her mid-30s, is another young gentrifier. She and her partner have been living there since 2018. She was born in Istanbul. She is a musicologist and worked as a music critic for different magazines and newspapers before she left Istanbul. She expressed that her migration was a result of living in Istanbul: 'If the change in me had not begun in Istanbul, I would not be in Datça now.' She also mentioned safety, the good quality environment and air, and also the opportunity to meet people from different backgrounds in Datça, especially for her daughter, Güneş. One thing she said explains how commonalities regarding background and culture create a familiar environment for in-migrants: '…When we arrived, we were able to come together with people from our own class and culture who were more urban.'

5.3.4 Conclusions

It was observed that in all examples of rural migration in Turkey, in-migrants had the desire to have a 'fresh start' to their lives and also to express themselves, or in Gidden's term, engage in a 'reflexive project of the self' via the authenticity of the place they had moved to, Datça. Also, in these examples the gentrifiers are educated and skilled intellectuals who represent the middle class. In the mentioned case studies, gentrifiers were introduced who are artists, archeologists, musicologists, and photographers. They wanted to settle in Datça because of the desire to make a 'fresh start.' These examples from Datça also indicate in-migrants' willingness to escape from city as another trigger for moving to a rural area. This may be specific to the Turkish cases, because people in their discourses referred to their risk assessments of enforced political and social transformation in Turkey along with their notion of self-reflexivity.

From another perspective, some of the gentrifiers also share commonalities regarding their desire to experience the tradition of rural life as their families had experienced. The desire to experience the rural life that their ancestors had in the past can be seen in the example of Zeliha and her partner Çağlar's journey to Datça as their first destination after returning back to the country, because Zeliha's grandmother had a summer house there. They wanted to feel familiar with the place they had moved to. Nearly all interviewees mentioned that they had built strong connections with people 'similar' to them in Datça, most of them defined as 'cultured,' 'different,' or 'people like us.' This is a sign that 'these people' or gentrifiers of Datça share some common values and forms of capital, which classify them as middle class. With the example of Zehra, she explained this idea very well in her own words when she mentioned she wanted to '…come together with people from our own class and culture who were more urban.'

Gentrifiers of Datça had by some means turned their knowledge capital into business, with which they could make their living in Datça. However, these

are not ordinary jobs they prefer to do to make a living only, but the gentrifiers' entrepreneurships reflect identities and experiences that they had had in their urban lives. Mostly, these businesses were not planned before moving into Datça, but represent and reflect the local character of Datça. Oda Sanat sells loincloths, dresses and jewelry with local fabrics and patterns designed in a modern and artistic way. Çağlar and Zeliha grows plants specific to Datça, and Zeliha extracts the oil and water from these plants using similar techniques to those that local people do. They want to sell their products without any concerns, and do not even consider expanding their range of target customers.

In conclusion, in the case of Turkey, although Datça is a newly gentrified place compared to the better-known examples of rural gentrification along the coast in the country, in recent years its popularity has significantly increased, and enough signs were found to support the main hypothesis of this study. Gentrifiers of Datça, share a common desire to make a fresh start and experience a rural lifestyle that expresses the history and value system in that coastal district. They generally reflect the local value or character of Datça through their businesses. Moreover, it is important to mention in relation to the case of Turkish gentrifiers that it is also common for them to refer to this 'escape' to a rural 'lifestyle' as an important result of the social and political transformations in the country, but this can be considered a different research topic.

5.1. Figure The port of Datça in 2020;
Source: https://marinaviya.com/datca-limani (2020)

5.2. Figure: The port of Datça in 1968;
Source: https://www.otelfora.com/datca (2020)

5.4 Estonia

Estonia is a small country, situated in the north-east of Europe, in the Baltic region. Its neighbours include Russia to the east, Latvia to the south, Finland across the Gulf of Finland in the north, and Sweden across the Baltic Sea in the west. The territory of Estonia is 45,339 km², roughly the same size as the German federal state of Lower Saxony, or the largest Turkish province, Konya. The population of Estonia in 2020 was 1.33 million (Statistics Estonia, 2021), similar to the US states of Maine or New Hampshire. From the year 1227 to the year 1918, the territory of Estonia was governed and fought over by Germany, Denmark, Sweden, Poland, and Russia. The 19th-century European national awakening movement also spread here, bringing with it the birth of Estonian-language cultural institutions and the strengthening of national identity. After a short interwar period in the 1920-30s, during which Estonia was a self-governing republic, it was forcefully incorporated into the Soviet Union in 1944 and re-gained its independence after the Union's collapse in 1991. Due to this history, Estonia has cultural connections with both Western and Eastern Europe, while also preserving its own unique cultural heritage. After the re-establishment of the Republic in 1991, Estonia underwent a neoliberal economic transition labelled 'shock therapy,' a process that was administered in several post-Socialist countries at the time. In Estonia, the transition was considered to be relatively successful (Hoag & Kasoff, 1999); however, socioeconomically, Estonia is still dealing with its post-Socialist legacy. For example, in terms of life satisfaction, Estonia's indicators are

much more similar to those of its post-Socialist neighbour Latvia than to Sweden or Finland (Realo & Dobewall, 2011). In terms of income inequality, Estonia is positioned among its neighbours in Eastern Europe with the rate of highest inequality in the EU, and its Nordic neighbours, with lower-than-average inequality (Eurostat, 2020).

5.4.1 Materialist Values Dominate the Value System

A value analysis of the editorials from the years 1990 to 2014 of Estonia's two largest daily news outlets (Rebane, 2015) finds that a shift to post-modernist values has not occurred in Estonia, although there has been progress in that direction. Dominant values, as per Inglehart's system, are secular-rational and materialist and, as per Schwartz' system, include security and power. This matches the findings of the European Social Survey that Estonians' individual values are similar to their Eastern and Southern European counterparts, scoring low on self-direction and high on achievement and power (The European Social Survey, 2021). In terms of individual values, money continued to increase in importance over the time period, demonstrating the societal importance placed on material security. The agreed-upon positive individual values encountered in the editorials represent a Calvinist set of values, reflecting the importance of work as a virtue (the so-called 'Protestant work ethic'). The representation of post-modernist values such as capacity, social justice, physical wellbeing, clarity, honesty, openness, and competence increased after the turn of the millennium; however, they waned again during the political and economic unrest of the late 00s. Rebane questions whether a small nation such as Estonia can ever reach a postmodern state of wellbeing similar to that of the Nordic countries, due to continued existential threats. The author also points out the results from a national survey from 2008 in which family emerges as the most important aspect of life (Rebane, 2015).

While societal values in Estonia as a whole are generally found to be materialist, a look into consumer behaviours in a study focused on Estonian handicraft consumption shows the hedonistic, process-oriented tendencies of Estonian consumers. Consumers value support for the preservation of Estonian handicraft traditions, the evolution of handicraft entrepreneurship and environment-friendly consumption (Võikar, 2018).

5.4.2 Rural Gentrification in Estonia

In Estonia, gentrification is seen as a process of housing stock revival driven by the private sector. Only a few studies of gentrification in Estonia exist. These focus mainly on urban gentrification. Due to the high levels of private property ownership and the existence of vacant industrial infrastructure, the Estonian form of gentrification has not led to the widespread displacement of the less wealthy (Pastak, 2019).

Rural gentrification in Estonia has been studied in a very limited scope and will be elaborated further in the case study section. A milestone case study about the extent and impact of rural gentrification in Estonia (Vollmer, 2007) focuses on Lahemaa National Park, located within an hour's drive from the capital, Tallinn, on the coast of the Gulf of Finland. The main findings of this study are that Lahemaa is perceived as a valuable residential area; however, due to long [commuting] distances and poor road conditions, the population in Lahemaa is not growing. At the same time, real estate prices are high as demand exceeds supply, and newcomers to Lahemaa are generally wealthier than the Estonian average and also wealthier than the locals, leading to inequality in the market. It is suggested that people moving to Lahemaa have higher environmental awareness and they value living in a protected area. The renewal of the old housing stock has improved the appearance of the villages, as old agricultural and public buildings have been converted into residential use. The use of houses as summer houses and second homes has negative impacts on the quality of life of the local communities due to the seasonality of business, the exclusionary effect of the increase in real estate prices, an increase in crime, and waste management challenges related to seasonal living.

Besides second home and summer house gentrification, there is also evidence of high levels of commuter migration, especially to the outskirts of the major urban centres. Most people who move out of the city prefer to stay close to it in order to be able to commute comfortably to their urban jobs.

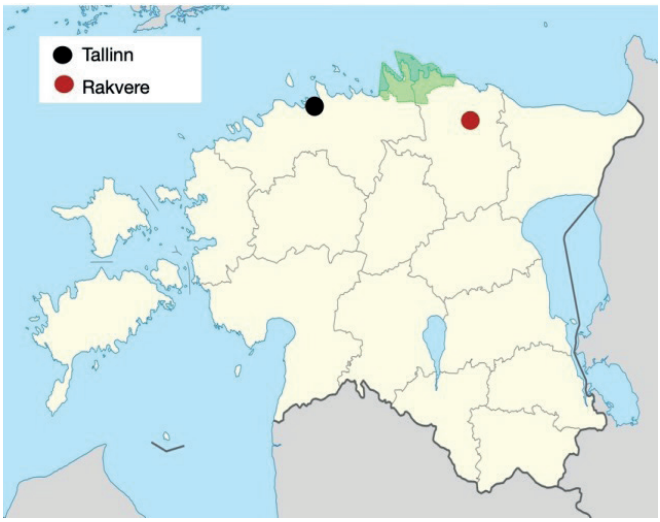
Alongside these two groups, a new group is emerging: those who have decided to uproot their urban life completely and commit to a rural community. A discussion on Estonian national TV in 2019 (ERR, 2019) brought together perspectives from the government, academia, and civic society to discuss the topic of permanent urban-to-rural migration. Those wishing to move to the countryside are most often young, highly educated couples with children who want a better living environment for their children; the other main group is middle-aged people who have been dreaming about living in the country. G. Raagmaa, an assistant professor of Regional Planning at the University of Tartu, said that Estonians, especially families with children, value living in their own houses. Riina Solman, the Regional Minister of Estonia, said, 'People are looking for a high-quality living environment. You have achieved a certain [income] level, you need a smart job, the option to work remotely, you want a healthy lifestyle – rural living offers all that. More and more people who have the option, want to use it. The trend exists' (ERR, 2019). In line with these statements is an article published on the website of Lahe Kinnisvara, an Estonian real estate company, entitled *Farmhouse Restoration, Financial Support, and Five Reasons to Live in a Rural Area* (Nogu, 2020). In it, the main reasons listed by former city dwellers who have purchased real estate on the countryside include: a safe living environment and clean air; a community that knows one another; many outdoor activities, growing

one's own food; the fact that rural kindergartens are smaller and teachers can pay more attention to each child; that teenagers will not spend all their time in shopping centres; the state is funding dwelling renovation through different means.

5.4.3 Lahemaa National Park

The chosen location for the Estonian case study is Lahemaa National Park (Lahemaa), Estonia's oldest and largest national park, founded in 1971, with an area of 74,784 ha, of which 47,910 ha is terrestrial and the rest marine (The Environmental Board of Estonia, 2016a). Its purpose is to preserve the unique landscape of north Estonian coast, with its characteristic low human impact forests and well-maintained heritage biocoenoses[30] and where cultural monuments are preserved and restored. It is called Lahemaa – 'bayland' – due to the multitude of bays in the area. Lahemaa belongs to the EU Natura 2000 network as a bird and nature area. It is divided into three levels of protection: natural reservation (0.1%, people not allowed), special protection zone (23.8%, people can visit, except during birds' nesting periods), and restricted zone (76.1%). It stretches across two counties, Harju and Lääne-Viru, and across three parishes, Kuusalu (Harju), Vihula, and Kadrina (both in Lääne-Viru). There are 68 settlements and around 10,000 buildings. The permanent population is around 3,600 people, but during the summer this figure multiplies due to tourism (The Environmental Board of Estonia, 2016b). The distance to Tallinn (the biggest city in Estonia) is 46 kilometres; the distance to Rakvere (the eighth biggest city) is 60 kilometres (Google Maps).

[30] biocoenosis (noun, ecology) – an association of different organisms forming a closely integrated community (Oxford Languages).



5.3. Figure: A map of Estonia with Lahemaa (green) and the two nearest large urban centres marked
source: wikipedia.com

As discussed in the above sections, Lahemaa National Park has been identified as experiencing rural gentrification, with both its positive (housing stock renewal) and negative (inequalities, crime) aspects. The reasons behind the recent popularity of Lahemaa are listed as the increasing options for cultural activity and tourism; Lahemaa is also depicted by mass media as a place rich in recreational, cultural, and natural heritage (Vollmer, 2007). However, the distance of Lahemaa from Tallinn prevents the formation of mass commuter settlements. Building on the findings of the 2007 study through the content analysis of media focusing on inmigrants to Lahemaa, this section will attempt to investigate the motivations of the in-migrants.

5.4.3.1 Example 1. Craft beer maker, fisherman, and community activist in Leesi Village

Ulvar Veldi, former Tallinn resident and former investigator at a Tallinn criminal police unit, lives in Lahemaa with his wife and three daughters and runs his own craft beer business. He moved to Leesi village in 2004. Leesi was neither of the couple's ancestral village; the reasons for moving were Ulvar's wife's desire to live by the sea and Ulvar's family traditions: he is a third-generation fisherman. Their house is located within one minute's walk from the sea. Veldi's wife describes the advantages of living in the area as the fact it is mostly completely isolated, with seasonal crowding that she seems to appreciate,

From fall to spring one can get peace and quiet. When you get tired of that in the spring and want to interact more, people come. Every year, more tourists come here.

Within a few years, while continuing his police job (there is evidence of his retirement in mid-2010s[31]) and supplementing his income with fishing, Veldi developed several recipes for craft beer, which attracted recognition from the local community. He then converted the old garage and sauna on his property into a brewery. In 2015, Veldi officially registered his craft beer company as Veldi ja Tütred (*Veldi and Daughters* – author's translation) and began selling his beers in the local community store. By 2017, his beers were on sale at 135 establishments around the country and also on the Tallinn-Helsinki ferries. The names, flavors and label designs of his craft beers are inspired by the local nature and heritage. Veldi describes the craft beer drinker as an 'intelligent beer savourer looking for a flavor experience.' However, he admits that the ingredients are not cheap, and while experimenting with flavors is exciting, he is not an expert beermaker yet. He hopes to increase his production to 6-7 tons per month and to start making a profit from his business.

Veldi says that he has been sober for 15 years, only tasting his own craft beers for flavors. This behaviour can be seen as somewhat anomalous in a country where annual pure alcohol consumption per citizen 15 years old or older was 10.4 liters in 2019, increasing 4% from the previous year (Statistics Estonia, 2019). He is also a community activist, participating in the local voluntary law enforcement society and sea rescue society. His daughters are youth members in the latter organisation as well. Veldi also stated his plan to fix the local boat launcher so that the local community members could use it to dock and launch their boats.

5.4.3.1 Example 2. Two sisters who renovated a collapsing former schoolhouse in Uuri Village

Ingrid Randlaht, a harness maker and horse trainer, and her sister Terje Vanahans, a vet, grew up in Pirita garden city near Tallinn; they then started their adult lives separately in the slightly more remote commuter towns of Viimsi and Saue. However, their dream had always been to live near each other and their parents somewhere in the countryside. In 2011, they purchased the partially collapsed Uuri school building right outside Lahemaa National Park and sold all their other real estate, including their childhood home in Pirita. They have a childhood connection with the Uuri area as their grandfather used to work as a doctor there during the

[31] An article from 2016 describes a court case concerning Veldi's assault of a colleague while on duty (https://www.postimees.ee/3722941/kohus-arutab-kolleegiga-raadiojaama-parast-ruselema-lainud-politseiniku-suuasja) while an article from 2017 introduces Veldi as a 'former drug police officer.' https://maaleht.delfi.ee/artikkel/77986162/maamessil-sai-kanepit-proovida

Soviet era. The sisters describe this move as 'turning a completely new page in their lives' (Sõnumitooja, 2013).

5.4. Figure: Uuri schoolhouse in 2010;
Source: Sulev Valdmaa, 2010

Uuri schoolhouse opened its doors in 1864. The current limestone building was completed in 1899, replacing the previous wooden building. There were frequently over 100 students attending school at the relatively small building. In 1996, the building ceased being used (Mõttus, 2017).

The sisters showed an interest in local culture and heritage, stating their intentions to install an information board about the history of the building. They said that due to the age of the building (more than 100 years), they aim to maintain as much of its original look as possible – for example, keeping some of the original stairs and using imitation material that resembles the original chipboard roof. Ingrid, who was educated in handicraft and home economics, described the traditional methods they used when restoring the building, such as making their own *rootsipunane* (Swedish red) paint and casein paint. By 2013, they had restored the building to the point where the three households (the families of the two sisters and their parents) each had their own residence; the building also housed a pet store and a vet's office. The name of their combined business venture is Lahemaa Loomade Koda (*Lahemaa Animal Area*), to represent the all-encompassing nature of their animal-related activities (Sõnumitooja, 2013).

5.5. Figure: Imbi Jäetma among her native sheep cattle, holding a spindle;
Source: T. Blaat, 2017

Besides showing appreciation for the history and culture embedded in the old schoolhouse, their way of life – several households under the same roof – is also more representative of a rural Estonian family a hundred years ago and quite unusual in modern society. Finally, Ingrid also states her interest in the native Estonian horse breed. She is a member of the Estonian Native Horse Conservation Society and has taken part (alongside her sister) in the international research project analysing the genetics of the Estonian native horse (Treikelder, 2020).

By 2016, they had completed the construction of the harness maker's workshop and an animal clinic with inpatient care. The clinic was still missing some equipment, such as an ultrasound machine and a microscope, for which a charity collection was started. Ingrid said in 2017 that their goal was to start earning more money to sustain their living and ongoing renovation of the building. Terje the vet said that while she was focused on pets and hunting dogs, and the other three vets in Kuusalu Parish were mainly focused on large farm animals, she is also invited to check horses as there are many in the area. Ingrid, a horseback rider since the age of 13 and a recent national medalist in dressage, supports her on those visits. In addition to those services, Terje also runs a puppy training program and has plans to open a pet hotel where dog owners can bring their pets when they are preparing to go on a holiday (Tamm, 2017).

Besides providing the local community with their trade skills, they are also active in the enrichment of the local community. Ingrid is a children's sailing coach in the nearby Hara sailing club. Her sister Terje is a singer in the local chamber choir (Mõttus, 2017). The sisters, in an early interview, also indicated their interest in making the school's auditorium a semi-public space for community use (Sõnumitooja, 2013).

5.4.3.3 Example 3. A family continuing indigenous traditions on a centuries-old farmstead

Taavi and Imbi Jäetma run the Sae native sheep farm in Uuri village. The official name of their enterprise is Lahemaalammas.[32] The couple have lived in the village since the 1990s and tried different agricultural activities such as beekeeping and cattle raising before settling on sheep in the early 2000s (Tamm, 2015).

At the time of the interviews (from the time period 2006 to 2015), Imbi was the director of the academic coordination centre of the Rescue College at the Estonian Academy of Security Sciences, located in Väike-Maarja. She taught crisis psychology and had also been trained as an English and German philologist. Taavi ran (and still runs) his own business related to electrical work. His mode of working includes frequent business trips around the country and home office at all other times (Uussalu, 2006).

Imbi was born in the small town of Suure-Jaani 150 kilometres south of Uuri village but grew up in the capital, Tallinn. Taavi grew up less than 15 kilometres away from Sae farm in the same parish. In the 1970s when they got married, they were placed (through the Soviet work placement system) in a collective farm in Oru village, around 70 kilometres from where they live now. Imbi was a teacher, Taavi an electrician. They would often visit Taavi's parents and also his great-aunt who lived in Sae farm at the time. Since the great-aunt did not have children, Taavi and Imbi ended up inheriting the farm (Tamm, 2015). The couple have four children, three of whom were already grown-ups and the youngest was 18 at the time of an interview during which he was introduced (in 2009). One of the grandmothers also lived with the family at the time (VIDEO: Sae talu…, 2016).

The couple moved to Lahemaa fifteen years into their marriage (they were approximately in their late 30s at the time) in the early 1990s after Estonia's re-independence.

We had this feeling that we were on our ancestors' land, and that if it had fed them, it would also feed us. But […] after a few years of cultivating and uprooting and cutting the undergrowth, we realised that without fertiliser, this land would not give us anything. Then we took up jobs in the city. For me, this was the saddest future prospect: that the farm would just become our bedroom. Then we started looking around: what animal would eat this undergrowth? This is how we stumbled across the native sheep.

Imbi Jäetma (VIDEO: Sae talu…, 2016)

The history of the farmstead goes back to the year 1598; it has belonged to Taavi's family since 1897. The farmstead is located on the banks of Pärlijõgi (Pearl

[32] A play on words: 'Lahemaa lammas' means literally 'Lahemaa sheep', but moving the space to another loca-tion in the word, 'lahe maalammas' can mean 'cool native sheep.'

river). It functioned as the sawmill for the local manor since the 16th century, making it the oldest watermill in Lahemaa (Tamm, 2015). Currently, the watermill is no longer functional. However, some logs from the structure have been re-purposed as the fireplace mantel in the Jäetma residence. Another aspect of the property is its large meadows – the reason for getting the sheep in the first place. When the Jäetmas first moved to Sae farm, the meadows were covered in bushes and young trees. The sheep graze the meadows, helping improve the ecological conditions there.

In their rural life, Taavi and Imbi appreciate being surrounded by nature and being able to connect with and carry on Estonian cultural heritage through the work they do. As implied by Imbi's biggest fear of turning the farm simply into a 'bedroom' for urban professionals, the couple had a clear vision of a more rural lifestyle, not simply living in a beautiful nature reserve. Imbi states their purpose in a 2015 interview (Tamm, 2015),

Our lifestyle is about peace of mind – to do what is enjoyable, and to live in the middle of a forest in the countryside. The mission of the farm is our lifestyle, [to] preserve a piece of what would otherwise be lost. Aside from farm chores, both of us also have salaried jobs.

While sheep require daily outdoor labor, they are not as time-consuming as other types of cattle. Therefore, Imbi is able to keep her white-collar job and Taavi has time for his own one-man company. This fits their lifestyle: they are not attempting to be fully financially dependent on the sheep farm, so that they can keep it more authentically without the need to turn it into a modern mass-production facility. In a 2006 interview (a year after buying the first sheep), Taavi described his feelings towards raising sheep for meat,

We haven't eaten any mutton yet, but I guess we need to get used to the idea.

(Uussalu, 2006)

Their motivations show also in their method of sheep acquisition: often this involved sheep that would have otherwise been sent to be slaughtered. For Imbi, the colourful variety of wool of the native sheep was important as well. She describes the purchase of the last two sheep:

I told the seller that I cannot fit a single sheep in my barn, but I will take these two. Because of their gray wool. Completely gray wool is rare.

(Sarjas, 2009)

Their motivation to 'preserve a piece of what would otherwise be lost' is also reflected in their choice of traditional native breeds (they also have native chickens) rather than modern ones. Before taking sheep, they had briefly considered ostriches, but eventually decided that it would not be suitable to have such a breed on a traditional Lahemaa farmstead (Uussalu, 2006).

Imbi and Taavi are active community members in the Lahemaa area. They both participate in the Working Group for Lahemaa Traditional Lifestyle. The January 2017 meeting notes reveal that Imbi has made several suggestions for activities related to sheep farming for the following year's educational programs (Working Group for Lahemaa Traditional Lifestyle, 2017). In 2011, when their house caught fire due to a lightning bolt and a group of local voluntary firefighters helped put it out, Imbi and Taavi invited them to a gathering and gave each member a pair of socks made from the wool of their native sheep. Imbi also shared some knowledge about crisis psychology with the group (Sarjas, 2011). In 2019, they were winners of the 'Lifestyle Business' award for Kuusalu parish (*Lahemaalammas on Kuusalu…,* 2019). Finally, they contribute to the maintenance of Lahemaa Nature Reserve by maintaining the semi-natural meadows on their property.

5.4.4 Conclusions

The three examples in this case study – the so-called 'faces of gentrification' – all represent the middle class. The individuals are in highly skilled or specialised jobs, or in responsible positions in knowledge-oriented fields such as education, public safety, or veterinary science. In terms of housing stock renovation, a varied level of detail was available. In the case of example 1, the beer brewer has refurbished parts of the buildings to be used as production facilities. Example 2 is a case of 'sweat equity gentrifiers,' with the two families combining their forces to renovate the collapsing school building, while Example 3 can be seen as a broader example of landscape improvement through sheep grazing while also maintaining a historic farmstead. Overall, the activities of these in-migrants can hardly be seen as having negative effects on the overall community; rather, they all seem to be productive members of their community. In the case of Example 2, the local government had been interested in turning the old school building into an old people's home with the help of a private developer. It could be argued that by purchasing this property and turning it into their private home and two private businesses, the family took away the opportunity from the government to use the building for a social purpose. However, given that the building had been on sale for years and at the time of purchase had already partially collapsed, the idea seems unlikely to have ever come to fruition.

The desire of middle-class people to live in an authentic place and 'make a fresh start' motivated them to move to rural areas.

In all examples, rural in-migrants stated their desire to live in the countryside; in two cases, the motivation was to carry on ancestral traditions (ex. 1 & 3) of rural living. In the case of Example 2, the move to the countryside was described by one of the interviewees as 'a fresh start' while a general desire to live together with family in a rural space was stated as the motivation. There are varying degrees of 'commitment'

to rural living: in one of the cases (ex. 2), the rural in-migrants completely cut ties with their previous urban living; in another example (ex. 1), this aspect was not clearly stated. In Example 3, both partners in the family had jobs outside the farm, allowing them to pursue their desired rural 'lifestyle' rather than simply running a rural business. A thorough change of lifestyle that the urban-to-rural move brought about for all the research subjects, and their satisfaction with the rural lives they had designed implies that the change was expected and desired.

The expression of rural gentrification is shaped by the history and the value system of the country it takes place in.

There is quite a bit of evidence to support this hypothesis. The legal and political framework of the Estonian state enables its citizens to choose their education and preferred location of residence; to purchase property, take loans for that purpose, start a business, and generally decide the direction of their own lives in many aspects. This case study introduces three examples of families who have done many of these things. They originally had worked well-paid jobs in the city, but then decided to buy rural property instead and to pick up a new trade altogether. Another influence shaping rural gentrification is the prevailing values. All business owners, these three examples represent the 'Protestant work ethic' while also combining what they do with what they really enjoy or find meaningful: craft beer and fishing, pet and domestic animal care, and native sheep farming and promotion. In all three examples, the people are in some way 'returning to their roots,' be they direct connections with the property (ex. 3) or the area (ex. 2) or having ancestral connections to the type of environment and lifestyle (ex. 1). These families being representatives of the well-educated, socially mobile middle class, their search for meaning related to more traditional ways of life while deprioritising monetary wealth is evidence of postmodern values in their life preferences.

Many of these in-migrants become place entrepreneurs and help develop the 'local character' that reflects the symbolic value of the place. ▸ place entrepreneurship

An analysis of the three businesses in the case study shows that each of them qualifies as 'place entrepreneurship' in a few ways. The craft beers made by Ulvar Veldi use local themes in several aspects of product design including naming, labels, and flavors. In the case of Example 2, it is unclear whether the renovation and repurposing of a historic building by sisters Ingrid and Terje counts as 'place entrepreneurship' as multi-family households, renovation of old housing stock, and provision of animal care services are not specifically identified as unique to the Lahemaa region. However, their choice of a name for their business that includes 'Lahemaa' in it shows their desire to identify their activities with the positive associations of the nature reserve. In the case of Example 3, the re-establishment of agricultural activities in the historic Sae farmstead by the Jäetmas and their choice of native breeds to maintain the meadow ecosystems of the property are both strongly

linked to the traditional identity of the area. The frequent media appearances of all three (especially Imbi Jäetma) show that their actions are also aligned not just with local traditions but also with the wider values and interests of the Estonian public.

In conclusion, it can be said in the case of Estonia, sufficient evidence can be found to support the main hypotheses. Selection bias is evident in the choice of the examples: all three are business owners. This may also speak to the effect of the media when it comes to reporting on the activities of in-migrants to Lahemaa, or to the methodology used to collect data for this case study.

5.5 China

Since Reform and Openingup in 1978, China has gone through a process of rapid urbanisation. The urbanisation rate rose from 17.9% in 1978 to 60.60% in 2019, with the urban permanent resident population increasing by 678 million people. The rapid growth of cities has attracted young and middle-aged people from rural areas to cities for employment. As more and more people enter cities, this has also led to a decline in the rural population and vacant houses in traditional rural areas. To change the status quo, the Party Central Committee issued a series of policies in 2015, such as 'Opinions on Supporting Migrant Workers and Other People to Return to Hometown to Start Business' and 'Rural Revitalisation Strategic Plan (2018-2022).' These policies encourage and support migrants to return and make contributions to their hometown that are beneficial to the modernisation of rural agriculture to some extent.

The rapid development of cities has brought convenience to lives. However, it has also brought about 'urban diseases' as well, such as environmental pollution, traffic congestion, and housing shortages. Take Shanghai as an example. The population density of Shanghai in 2018 was 3,823 persons per square kilometre, and the average commute time is more than 50 minutes. What is more, the average prices of estate in Shanghai exceeded 60,000 RMB per square meter, leading to tremendous pressure on people. This is why there is the phenomenon of 'escape from Beijing, Shanghai, and Guangzhou.'[33]

5.5.1 Asynchronous Material and Spiritual Satisfaction

Since Reform and Opening-Up, China has undergone drastic social transformation from a planned economy to a market economy, from a traditional society to modernisation, and from a closed economy to an open economy. The transformation

[33] https://baike.so.com/doc/5720928-5933657.html

has created opportunities and improved efficiency; however, it is also causing significant competitive pressure. In addition, urbanisation has brought about pressure on housing. In the process of conversion, material satisfaction and spiritual satisfaction are not synchronised. The material need is greatly satisfied, but it results in the 'fragmentation' and 'meaninglessness'[34] of the mind. In this circumstance, the middle class begins to 'awaken themselves' and set their sights on the countryside, especially the area adjacent to the big cities. With the support of the 'village revitalisation' strategy, leisure tourism, second homes, country painting, and leases of land are becoming the new direction of development of rural agriculture, attracting more and more tourists and immigration, which is bringing about changes in the economic and population structure. However, China is still in the primary stage of socialism with fast urbanisation, and gentrification is not so widespread and mostly occurs in China's coastal areas and on the periphery of large cities.

5.5.2 Rural Gentrification in China

The study of gentrification by Chinese scholars started relatively late compared to that of Western countries. In 1997, Xue Desheng introduced 'gentrification' to China for the first time. After that, the development of gentrification continued to deepen. Existing research focuses more on the characteristics and reasons for urban gentrification, tourism gentrification, the protection of traditional villages, and so forth. As rural tourism grows, the phenomenon of rural gentrification has also attracted scholars' attention. He Shenjing(2011) discussed the process of evolution and characteristics of rural gentrification and determined the difference between gentrification in the West and gentrification in China, , playing a navigating role in the study of rural gentrification in China. Subsequently, Juan Zhang and Wang Maojun (2016) took Cuandixia Village in Beijing as an example for the study of the characteristics of spatial remodeling of villages; Jin Hooi Chan (2016) studied the self-gentrification of Hani people in Honghe Prefecture, Yunnan; Gao Yongji (2020) explored the manifestations, influence, and causes of rural gentrification in Dali, and summarised the important role of individual talent in rural development. Li Songbai discussed the seasonal idleness of rural leisure tourism and the feasibility of the seasonal migration of the urban elderly in relation to the background of aging in China.

According to research, rural gentrification can be classified into three main types, the first of which is the residential type – the elderly or middle class who

[34] Guan Jing, Zhang Chaozhi. The characteristics and driving mechanism of rural gentrification under the back-ground of the homestay industry: a case study of Moganshan Town [J]. Tourism Forum, 2020, 13(02): 81-93

love the rural life purchase traditional buildings (the right to use) through private agreements; the second one involves leisure tourism – a tourism development company invests in a village and implements unified management; the third one is cultural and creative industrial gentrification – when inheritors of native intangible cultural heritage protect cultural heritage. There are many reasons for attracting gentrifiers to settle in, such as policy, economic, and social factors. Specifically, such movement mainly includes (1) the 'pastoral complex' of tourists; (2) the market demand of new industries (such as homestays) that triggers large-scale capital entry; (3) the improvement of infrastructure and the rural environment that attract foreign groups; (4) the effective supply of the production environment and the improvement of rural production capacity, which meet the urban middle class's demand for a high-quality rural living environment and material conditions; (5) favorable policies such as the construction and planning of traditional villages, and the strategy of rural revitalisation that promote capital and attract talent to the countryside; (6) the media promotion of the development of tourism.

Compared with rural gentrification in Western countries, Chinese rural gentrification has its own particularities. In terms of land, China is implementing dual urban-rural land policy, in which rural land is collectively owned. It is difficult for land for trading to enter the market circulation channel, which severely restricts the return of urban elements to the countryside. From the perspective of rural governance, the township government is the direct leader of rural areas. The government often needs to assume the role of fund provider and resource importer, thus becoming the actual leader of development, thus rural gentrification is naturally inseparable from the government. Organised rural gentrification in Nanjing Bulao Village is a typical example. The government has led the gentrification process from top to bottom with the multiple roles of instigator, coordinator, and participant in the renewal of the village space (Liu Lei, 2019). Due to the particularity of rural gentrification in China, residential land is troublesome to trade. Rural gentrification will not replace local villagers, and what is more, local villagers are also active promoters of gentrification; the process of rural gentrification is mainly based on the utilisation and development of rural buildings that accompany urban expansion rather than a process of counter-urbanisation.

5.5.3 Old town of Dali

The chosen location for the Chinese case study is old town of Dali, which is located in Dali City, northwestern Yunnan Province, China. It has a total area of three square kilometres and an elevation of 2,000 meters. The ancient city of Dali is the political, economic, and cultural centre of Yunnan in history. The architecture there is quite distinctive, integrating the architectural skills of the Han, Tibetan, and Bai

nationalities, including wooden buildings and blue tiles, many bridges, flowing water, and ancient streets. The old town is located under the Cangshan Mountain and on the shore of the Erhai Lake. The beautiful scenery and specialty, such as marble handicrafts, Bai batik, and wood carvings attract many tourists.According to the statistics of the Dali People's Government in 2020, the total permanent population is 218,300, of which 155,000 are registered permanent residents, and the floating population is 65,000. Tourism is the leading industry of the town. In 2018, the number of tourists in Dali City exceeded 46 million, generating tourism-related revenue of nearly 100 billion yuan.

5.5.4 Evidence of Gentrification in Old Town of Dali

In the compilation of literature on the development of the old town of Dali, rural gentrification is divided into the following stages:

5.5.4.1 The Initial Stage (1982-1995)

The initial stage of gentrification began in Foreigner Street in the ancient city of Dali. In 1982, Dali was approved by the State Council as a historical and cultural city, being one of the cities open to other countries, attracting foreign backpackers. Due to the control of foreign tourists by the government, the second guest hotel in the old town of Dali was the only one that serviced foreigners. With the growth of foreign tourists, the deserted streets began to rejuvenate, and coffee shops and Western-style restaurants appear near the hotel. Beth E. Notar, an American scholar in Anthropology, came to Dali for the first time in 1988. He mentioned in his book that there was already a 'Coca-Cola Cafe' and a combination of Chinese and Western food in Dali, like yak steak with potatoes, Dali milk cake with toast, and so on. Taibai is the earliest Western restaurant, located at the entrance of the hotel, providing travellers with a Dali tea culture experience. It is still a specialty restaurant in Foreigner Street. In order to increase income, local residents have transformed their houses into hotels and shops to serve tourists, thus Foreigner Street has gradually formed as residents moved to new areas, and the population structure began to change.

5.5.4.2 The Development Stage (1995-2004)

In 1995, gentrification reached a stage of rapid development.Dali attracted many film stars and artists to purphase property and set up studios here. After 2000, a large number of hippies and yuppies appeared, as well as a large number of white-collar workers came quitting their job in metropolitan cities. During this period, tourism

developed rapidly, and the number of tourists rose significantly. Tourism projects and infrastructure were continuously improved. In addition, inns, hotels, supermarkets, and financial institutions appeared in the town and surrounding areas. As for locals, the majority moved to new houses and rented their houses to businessmen, while the young people in the old town yearned for life in the metropolis, migrating to the big cities. Gentrification was more prominent during this period, and the population structure underwent vast changes. As of 1999, 32.73% of the locals (5001 people) had moved out, and 4051 non-locals had moved in. In this way, the town mainly served the non-local population and tourists.Artists played a critical role in this stage. The beautiful scenery of Cangshan Mountain and Erhai Lake in Dali has attracted many artists. Ye Yongqing was one of the early artists who came to Dali. He paid attention to the artistic inspiration rural culture brought to him. Many of his students also came to Dali for studying. Han Xiangning, a Chinese-Taiwanese painter, moved his studio to Dali after living in the United States for decades and established an art museum in Da'li; painter Rong Jie established Bird Bar as a base for young people; dance artist Yang Liping established a theatre and performed there; Shanghai artist Shen Jianhua taught the locals to paint 'farmer' paintings, established a farmer painting club, and published the first rural pictorial in China. The arrival of the artist has brought many changes to the local culture and architecture. The inn is another important manifestation of gentrification. In 1996, the first inn, MCA, appeared in the town, which was the beginning of Chinese inn culture. A gallery was opened in the inn, which was the artist's base in Dali. Since then, the number of inns has continued to increase. In 1999, the number reached 27. By 2001, there were 66 inns, which can accommodate 1565 people.

5.6. Figure: Inns in Dali;
Source: Baidu Encyclopedia

With the rapid increase in tourists, the inns could not meet their needs, and some new large-scale tourist accommodation and reception facilities began to appear. In 1998, the construction of the four-star Yulong Garden Hotel began. At the same time, the establishment of the four-star hotel called Jiannanchun Wenyuan also started in the centre of the town. With the continuous upgrading of the quality of tourism resources, the number of tourists has continued to increase, the crowd created an investment boom, and many real estate investment projects have appeared around the town. In 2002, there were six tourist real estate projects under construction in the Old Town of Dali, and as of August 2004, there were nine tourist real estate projects.

5.5.4.3 The stable stage (2008-2016)

During this period, the phenomenon of gentrification in the Old Town of Dali gradually stabilised, and the rate of population replacement decreased. The construction of the town was gradually standardised. Damaging the layout was forbidden, restricting the development of new houses in the town. While the price of land in the surrounding areas continued to rise as the number of newly added items of real estate every year tended to stabilise. The town was mainly based on infrastructure construction, and improving infrastructure such as sanitation, communications, the power supply, and transportation, involving demolishing lots of uncoordinated buildings and restoring the historical style of buildings.

5.5.4.4 The final stage (2017-present)

Since 2017, the over-commercialisation of Dali has led to a new phenomenon of gentrification. On the one hand, a host of businessmen have entered the town, some of whom sold fake and inferior craft products to tourists at high prices for huge profits. There is also lots of noise, which destroys the original tranquility and simplicity. The peaceful and quiet traditional lifestyle has been severely impacted, and the original residents who have not moved out for profit do not want to live in the town. On the other hand, the tourism industry has brought environmental pollution problems. Erhai Lake near the town had three outbreaks of blue algae because of the sewage discharge from lakeside hotels and restaurants. In 2017, the government required all relevant enterprises to suspend business and protect the environment there. Many inn operators were forced to leave Dali.

5.5.5 Evidence of Motivation

5.5.5.1 Example 1. The film director who recorded the sound of Dali

Zhang Yang, a native of Beijing and a film director, came to Dali for the first time in 1998 and lived there for 22 years. He has witnessed the changes in Dali. In 1998, he went to Dali to write a script and lived in the MCA Inn where a lot of interested people gathered. He was fascinated by the big swimming pool, white houses, palm trees, and relaxing atmosphere there, thus he lived in Dali for one month every year after that time, and even rented a house next to the inn to write scripts. He said that he felt at home in Dali. In 2009, due to the influx of people from outside the town, he bought land in Shuanglang Town near the old town and built his own house where sunsets and the endless sea could be seen, which is very spectacular. He has shot many movies about Dali. 'The Sound of Dali' records the natural and human changes in Dali throughout the year; 'CAT Exam Diary' is about the gentrifiers who came here to solve education problems.

In 2014, the inn around the lake closed because of environmental regulation, and he returned to the old town because there were more interesting and familiar people. He said that Dali was a place that gave him a sense of belonging, with a lot of interesting people there who formed a small community with a charming atmosphere. You can see the sun and the ever-changing clouds every day. Being shirtless in the sun at noon is the best time for him.

There are many immigrants like Zhang Yang who came to Dali from Beijing. Compared with Beijing, Dali's house prices are very low, which makes the latter's lives relaxing and comfortably. In their spare time, it is wonderful to bask in the sun and watch the beautiful mountain and the romantic lake. The immigrants in Dali come from all over the country and have various occupations, which are very interesting. They spontaneously set up many interest groups – for instance, a motorcycle group, a mountaineering group, a bird-watching group, etc. Life is very exciting. Some people describe Dali as a Dali Community, where people are familiar with each other. When you walk in the street, all kinds of people greet you and chat with you. This is also one of the most important things for immigrants. However, in recent years, the development of tourism in Dali has greatly increased housing prices, especially in the old town of Dali. Many immigrants have become more stressed with their lives, so they have moved out of the old town.

5.5.5.2 Example 2. Couples who started a new education base in Dali

Chen Gang and Sansan are couple who have lived in Dali for 15 years. In 2000, Chen Gang was bored working in the city and quit his job, then started to travel to make a living by making documentaries. Because of the good climate as well as hippies in

Dali, he settled in Dali. Sansan, a consultant, wanted to find a new kind of lifestyle, so he came to Dali and met and got married to Chen Gang there. They said that Dali does not need to require a sense of responsibility and is a very suitable place to live. They didn't do anything for two years but went to the market to buy vegetables and cook. Friends around them often came to eat together. After that, they opened an inn with three rules: no deposits; a single price during off-peak and peak seasons; and if there is a dispute, guests are first. A screening mechanism was defined – rooms are available only when a guest looks friendly. If not, the manager will say there are no rooms available there. When a guest goes through such an identification system, they will be kindly treated. Many guests and the innkeeper have become friends.

In the first year, we lost 20 or 30 keys that were accidentally taken away by customers, but every key was finally returned by EMS express.

Most of these immigrants are not willing to accept the local education situation. So, in 2012, the couple set up a special kindergarten where the children are not grouped according to their grades but based on their interests. There are no fixed classrooms and courses. The group activities in the kindergarten are based on the activities of parents. Parents open interest groups according to their own strengths and hobbies, and posters are presented in advance. Children can choose freely according to their interests. The school advocates the unity of family, school, and society. In addition to teaching activities, the family committee composed of parents is responsible for everything else.

This kindergarten operates very differently from traditional Chinese education. For instance, in the autumn vacation they take the fifth grade students to Bali. For the whole course of the previous semester, they all prepare for this trip, learning various skills, and finally apply them in Bali. In the fourth-grade art and expression course, the children played the game of 'King of Car Destruction.' Seventeen children over the age of 10 dismantled a scrapped Mitsubishi Pajero Jeep. Except for the dangerous tires, it was completely dismantled. All the parts of this car were then rearranged and combined in an artistic way,. Operating this way is a big challenge in China, where the pressure to enter higher education is very high. However, as Sansan said, the proportion of people who come to Dali for kindergarten is still quite high.

5.5.6 Conclusions

The examples in this case study all represent the middle class. They have specialised skills, such as filmmaking, education skills, and planting. They also have a decent salary and some savings before moving. It can be seen from the various stages of Dali's gentrification that the middle class moved into and out of the old town of Dali, and how their behaviour was. The subsequent two examples specifically describe the motivation for middle-class immigration, the latter's jobs, and the impact on

them after immigration. Example 1 is a film director who moved there because of the beautiful scenery and filmed authentic life in Dali. Example 2 involved a couple who started a new education model for gentrifiers.

The main reasons for early immigration are nature and community, but for later gentrifiers, it is profit.

It can be seen from the gentrification stage of immigrants from the old town of Dali that in the early days, backpackers came here because of the scenery. Later, artists settled in the old town because of the romance of Cangshan Mountain and Erhai Lake and the atmosphere of the community. Early immigrants made a living by opening inns or selling handicrafts but making money was not their prime purpose (like in the second example, when the couple set up a screening mechanism for the inn, only receiving 'friendly' guests). Early immigrants were familiar with each other, shared common values, and formed a special Dali community. In the interview with film director Zhang Yang, it can also be seen that the human factor is a critical reason for his immigration. With the development of tourism, artists left to pursue authenticity. Later gentrifiers provide services for tourists for more money. They destroy the tranquillity and environment, and even sell counterfeit products, leading to excessive commercialisation.

The expression of rural gentrification is shaped by the values and the land system of the country.

China implements a dual urban-rural land policy, in which rural land is collectively owned, and the development of gentrification does not force local residents to leave, On the contrary, the residents are the promoters of gentrification. They take the initiative to renovate their houses and lease them to merchants. The early gentrifiers mainly live in rented houses from which way they could easily leave, which was conducive to the formation and continuation of the Dali community after the tourist boom. Due to the ownership of the land, the government can also effectively govern the town. Due to the special ownership of the land, the government can easily renovate and plan the entire ancient city, restrict new houses and regulate the environment.

China has undergone drastic social transformation, and citizens' material and spiritual satisfaction is out of sync. Gentrifiers seek to be in nature and escape the pressure of metropolises, but their values are different from those of locals. For instance, in Example 2, gentrifiers generally do not accept local education and have broken with the traditional education model to start a new education base. The emergence of theatres, galleries, and art museums is another embodiment of their values. In contrast, later gentrifiers opened shops all over the Old Town of Dali, and sold fakes, which is manifestation of another value. Gentrifiers become place entrepreneurs and help develop 'local character'. The early arrival of artists gave Dali a strong artistic atmosphere. Han Xiangning established an art museum in Dali; dance

artist Yang Liping established a theatre; Shanghai artist Shen Jianhua taught the locals to paint 'farmer' paintings and established a farmer painting club. In Example 2, the couple established a new education base. More people are engaged in tourism-related industries, such as opening inns or handicraft shops. These have brought new characteristics to the local area. On the one hand, artist gentrifiers brought Dali the label of artistic and romantic, and convenient and fascinating services attracted more tourists, but on the other hand, gentrifiers' excessive participation has also caused local environmental degradation.

5.6 Mongolia

Mongolia is a landlocked country in Asia, bordered by Russia to the north and China to the south, east, and west. The territory of modern-day Mongolia has been ruled by various nomadic empires, including the Xiongnu, the Xianbei, the Rouran, the First Turkic Khaganate, and others. In 1206, Genghis Khan founded the Mongol Empire, which became the largest contiguous land empire in history.

In the 16th century, Tibetan Buddhism spread to Mongolia, being further led by the Manchu-founded Qing dynasty, which absorbed the country in the 17th century. By the early 20th century, almost one-third of the adult male population were Buddhist monks. After the collapse of the Qing dynasty in 1911, Mongolia declared independence, and achieved actual independence from the Republic of China in 1921.

In 1924, the Mongolian People's Republic was founded as a socialist state. After the anti-Communist revolutions of 1989, Mongolia conducted its own peaceful democratic revolution in early 1990. This led to a multi-party system, a new constitution of 1992, and transition to a market economy. The capital city has been called Urguu, Ikh Khuree, and Niislel Khuree and has always been the state, social, economic, cultural, and religious centre of Mongolia. In 1924, when the first constitution was adopted and the republic was proclaimed, the capital of Mongolia was renamed Ulaanbaatar.

Approximately 30% of the population is nomadic or semi-nomadic; horse culture remains integral. Buddhism is the majority religion, with the nonreligious being the second-largest group. Mongolia is a member of the United Nations, Asia Cooperation Dialogue, G77, Asian Infrastructure Investment Bank, Non-Aligned Movement and a NATO global partner. It joined the World Trade Organisation in 1997 and seeks to expand its participation in regional economic and trade groups.

Mongolia has witnessed rapid urbanisation owing to the phenomenal transition to democracy and market-oriented economy since the 1990s. Right now, the urban population represents 70% of the country's population of three million. Due to the privatisation of livestock, along with privatisation and bankruptcy of inefficiently run state-owned enterprises and economic entities, urban-rural migration has swelled,

resulting in an increase in the rural population in 1990-1998. However, since 1999 urbanisation has been rapid again due to reverse migration from rural to urban areas.

The rapid urbanisation process in Mongolia has been influenced by the following factors: the disparity in urban and rural development; the over-centralisation of political, economic and social service centres in Ulaanbaatar city; the failure of policy related to the development of rural town infrastructure and industrialisation; disparity in the quality and adequacy of public services in culture, education and health; and the failure of appropriate demographic market centralisation for rural small and medium-sized business and services, leading to a shortage of workspaces, hence migration has started, aiming at sustainable employment opportunities with decent earnings.

5.6.1 Overview of Changes in Values/Beliefs

A nomadic lifestyle encompassing an oral culture and a religious belief that involves worship of the Eternal Blue Sky give shape to the Mongolian mentality (Badarch, 2013). Mongolia has a long history of nomadic and pastoral life. Until the 1930s, livestock herding was the most common way of living for Mongolians, and even at the present time, 40% of the population still adhere to this traditional way of living. For these herders, the main means of production and livelihood is grazing land and cattle.

This nomadic lifestyle is very sensitive to climate and grassland conditions. Herders migrate at least twice a year looking for better grazing lands during winter, spring, summer, or autumn. Extreme weather conditions in Mongolia, with -40°C in the winter and 35°C in the summer, make it even more difficult for herders. Badarch (2013) argues that this need for survival and a self-supporting migrating life makes people in a nomadic society relatively autonomous, self-reliant, assertive, cheerful, and resilient and strong. Nomads are independent, self-contained individuals (Kim, 1994) who value freedom, personal control, and independence (Badarch, 2013)

Mongolian society has radically changed since the democratic revolution in 1990. Socialist concepts such as equality, economic security, and equality of income and living conditions have been destroyed, and consequently the security and certainty associated with life in the former regime have been eliminated (Badarch, 2013). New sets of democratic values and principles have developed. This transition to a new democratic system has meant changing lifestyles, worldviews, and beliefs, and posed many challenges for Mongolian society. For the last three decades, Mongolians have experienced dramatic changes in the economy, privatization, social structure, and urbanisation, as well as in individuals' values, beliefs, and attitudes. Damdinjav (2010) argues that this social transition has shifted a significant segment of the population's ideal orientations based on traditional love, faith, and family into a new and expanded orientation that includes cheating, misappropriating, bribing, and in some cases completely withdrawing from life.

Capital-centreed urbanisation has also been causing many environmental and social problems in the country. Over the years, income inequality and the poverty gap have risen and has become more visible in the city of Ulaanbaatar. Approximately, 70% of the new migrant families live in the suburban area in GER (traditional tent) districts in Ulaanbaatar, and most of the middle income and middle-class families reside in the central or western part of the city. This segregation between suburban and urban areas could result in different efforts, values, and worldviews among the youth.

On top of these internal cultural and social changes within Mongolia, this generation is exposed to a wide range of alternative worldviews, values, and lifestyles due to globalisation and the internet era.

5.6.2 Summary of Research on Rural/Tourism Gentrification

Gentrification in the capital city has occurred in areas such as Zaisan hill and Nukht Mountain, which are on the outskirts of the capital with scenic views and a beautiful landscape, and where one can find some international private schools and luxury amenities. Generally, gentrification and rural gentrification is not a familiar topic in Mongolian literature, and it is not studied in urban scholarship yet.

Seasonal gentrification can be seen in the suburb of Ulaanbaatar, Mongolia because of the domestic and international summer tourists and seasonal gentrifiers who escape from the coal smoke of cold winter to their remote houses in the forest. Mongolia's abundance of land means that every Mongolian has a chance to own their land in their desired location, and people build their second houses in rural areas. However, more affluent people who have more connections have a chance to use the most scenic sites for their business, which are near the National Park of Mongolia. Having a tourism business in the scenic landscape motivates seasonal gentrification in rural areas in villages such as Terelj village, which is located around 50-60 kilometres from the city. In recent years, camps, and lodges around the Terelj area have gentrified and become a more popular destination for international and domestic tourists because of the closeness to the city, where visitors can find both cultural local hospitality and luxury hospitality.

Gansukh (2003) reports that Mongolian history, culture, and nomadic traditions are increasingly attracting domestic tourists to rural areas to enjoy indigenous cuisine and hospitality. Attractions include relatively unspoiled natural resources such as the Gobi Desert, scenic lakes such as Khuvsgul Lake, and the mountain of the Altai. These are popular destinations for tourists, but are too remote and isolated to reside in.

5.6.3 Gorkhi-Terelj National Park

Gorkhi-Terelj National Park is located 65 km northeast of Ulaanbaatar by paved road. The average altitude of the national park is 1600 m above sea level, it is 293,168 ha. in area, and the highest point is the 2664m Avkhan mountain. The park is one of the most visited national parks due to its close location. Attractions include Khagiin Khar Lake, a 20m deep glacial lake 80 km upstream from the tourist camps, and Hot Water Springs, a natural hot spring. The park also has a Buddhist monastery that is open to visitors. Park wildlife includes brown bears and over 250 species of birds. The Tuul River flows through the park. Currently, tourism is concentrated in three points – in the Gorkhi-Terelj region around Turtle Rock, Aryaabal Monastery, Moilt elbow, and 'Terelj' bridge. In the future, these three points are expected to become more developed.

The Terelj touristic zone has around 330 hotels, tourist camps, and lodges. It is connected with Ulaanbaatar by a paved road 37 km from Ulaanbaatar city centre that turns to the branch of the road which crosses the Tuul River bridge where the National Park territory begins. The road comes to the Gorkhiin Davaa (Mongolian: Горхийн даваа) pass. Most of the tourist camps and tourist attractions are before this pass and around Terelj bridge, where the national park starts. The road then ends at the settlement of Terelj.

The rest of the protection zones start after the Terelj River and become less touristy, more inhabited with pristine nature. The depths of the mountain forest are rich in wild animals, including boar, red deer, roe deer, foxes, wolves, etc. while birds of prey fly everywhere. Except for its natural beauty, Terelj was a mining area of smoky stone, amethyst, and pure crystal until 1960.

Gorkhi-Terelj national park has two major centres, at the start and the end of the Gorkhi Terelj national park, and the Mongolian government accepted the privatisation of land ownership in 2015, in the mentioned locations. Terelj settlement and the small part around the park and the entrance area to the park around Terelj bridge have been developed for tourists, with restaurants, souvenir shops, horses and camels for rent, and tourist ger camps around the river area since 1954. However, most of the park is undeveloped and difficult to access.

5.6.4 Evidence of Gentrification

5.6.4.1 Terelj settlement

The Terelj settlement has four sections, each with 100-240 households, and by the end of 2020, 665 households amounted to a population of 1,653, of which about 15 percent live in private housing and 85 percent live in traditional yurts. There are 379 households located 5-25 km from the village centre including six government

organisations, one bank, more than 100 recreation and tourism camps, nine grocery stores, minimarkets, and four hotels. Although sparsely populated, the park is also home to nomadic Mongolians, which offers a chance to interact with authentic local people who are hospitable and welcoming.

The number of residences in the settlement is not increasing because most business owners are commuters from Ulaanbaatar or nearby villages. However, the existence of a bank, grocery store, mini-market, and Korean franchise coffee shop that exists along the road, which you can otherwise find only in the downtown area of in Ulaanbaatar, is a clear sign of rural gentrification since entrepreneurs have opened their businesses to provide the comfort level that people around there expect. Land privatisation started legally for local people in 2015.

Local residents of Terelj village have been living in this area since 1954. By law, however, locals are not allowed to own land in a restricted zone of the National Park of Mongolia. The village was established officially in February 2001 as the sixth khoroo of Nalaikh district of the capital city. In 2012, households around Gorkhi and Terelj were registered as residents of the sixth khoroo of Nalaikh district in 2000, and became residents officially. Moreover, on 33.5 hectares of the restricted zone of Bogd Khan Uul (the sixth khoroo of Nalaikh district in the Gorkhi-Terelj National Park of the Khan-Khentii Special Protected Area) parliament permitted the privatisation of 262.5 hectares of land located in the settlement of Terelj and gave the right to own land to the villagers for the first time. Citizens who own the land said that they will put their real estate, such as apartments, into economic circulation and improve their quality of life, and on the other hand, there will be more proposals, initiatives, and creative cooperation aimed at protecting the environment.

The Terelj area will also be used for tourism and recreation, with a population of no more than 4,500. Only the Moilt Elbow and the area where the current settlement is located will be turned into a settlement zone.

5.6.4.2 The First Master Plan on Rural Development Is the Terelj Development Master Plan 2030

The Terelj master plan includes two central residential areas, which are the Terelj village and Terelj Bridge, as mentioned in the previous section. Residential areas are planned with renewable sustainable infrastructure and social infrastructure such as residential houses, local administration, schools, and a kindergarten.

This Master plan is the first master plan for that area, and residential areas are chosen based on the location of pre-existing local residents. The plan is to redevelop the existing village and cooperate with locals to promote the village for tourists, making it the first eco- friendly village in Mongolia in the Gorkhi-Terelj national park.

Terelj village is included in the master plan of Ulaanbaatar city development and is defined as a tourism and recreational zone. In 2020, the development plan for the Terelj village was approved by parliament. The following are the priority areas for development: Terelj settlement will be developed by concentrating more on tourism, with a recreation and health resort, small and medium-scale gift production, and an environmentally friendly village, according to the 2030 Master development plan. The population of Terelj village is expected to rise to 1,820 people in 2020, 3,450 people in 2025, and 4,500 people in 2030.

The priority of the master plan is focusing on increasing the quality of preexisting tourism products and services, increasing the number of domestic and international visitors by making existing resorts durable for four seasons (i.e. making them available throughout the year), establishing small and medium-sized enterprise factories for touristic products which are run by local people, and, as Terelj village is a part of the National park, they are planning to build renewable sustainable residential zones with environmentally friendly engineering infrastructure to support the working and living conditions of the people who will live there in the future.

5.6.5 Evidence of motivation

5.6.5.1 Example 1: Founder of the 'Mongolian husky sled' Tuvshinjargal

In support of Mongolia's objective of developing winter tourism, the 'Terelj-Jargal' company is offering both foreign and domestic tourists the experience of dogsledding over ice and through snow. A team of reporters from the MONTSAME News Agency produced coverage of the extreme travel services of the Terelj-Jargal company that operates in the Terelj national park, located 68km from Ulaanbaatar. Young entrepreneur Kh. Tuvshinjargal, along with his spouse and children, started this new business here where he was born and grew up. The 27-year-old young artist Tuvshinjargal graduated from the Institute of Fine Arts, and now welcomes guests with great hospitality, along with 80 husky dogs who can run for over 160 km at a speed of 18 km per hour. The young man and his friends offer an overwhelming and breathtaking tour through picturesque sites on dog sleighs that he has made. Snow quadricycles which are also made by him are a good alternative for an adrenaline rush.

Tuvshinjargal was raised around Gorkhi-Terelj national park area. When he was 18 years old, he moved to Ulaanbaatar to study painting and carpentry. After this, he realised that he liked animals, so he opened a dog shop business in Ulaanbaatar. He first bought a husky from his friend more than 10 years ago and became more interested in the husky breed. He then decided to sell all his other dogs from his dog shop. After that, he started to raise more huskies. However, his husky business started to fail, and he moved to his parent's village to Terelj with his four huskies

around 11 years ago. One day he watched a documentary about husky sledding on television. That night he could not sleep because he had an idea to use his husky dogs for sledding. At first, as he had studied as a carpenter, he made a sled with waste materials.

Currently, he lives in the area with his two kids and his wife, Enkhmaa. He runs the business with his wife and their 130 huskies in their camp next to the Terelj settlement; the family has now run the business for around nine years. His wife manages the trip schedule and visitors, and the husband breed and trains the dogs. He employs 20 people.

Once the camp was closed due to a lot of complaints from local people as the dogs are noisy and they have many visitors. Thus, they stopped the business back then because of conflict with local people and administrative issues. But travel agencies and their visitors keep connecting to them and helped the business to reopen.

Currently, Mongolian husky sledding is popular among residents of Ulaanbaatar. In 2018, the Ministry of Tourism and Environment gave them an award for being a sustainable business developer. They now hold events during the weekend, including husky sledding and ice mountain climbing. Tuvshinjargal with his dogs works with the Gorkhi-Terelj local government to help people who are lost in the mountains, and once saved around 20 people from a water accident.

Experiencing full day's dog sledding at Terelj National Park is the most proactive way to enjoy nature and sled next to the amazing mountains and climb up ice rock formations during winter in Mongolia. A maximum of 15 people can travel for 5 km or a short distance, and a maximum of 10 people can travel 55 km or a longer distance. There are 5-7 dogs in one sled, one male, and two female sleds. Sledding with dogs begins in mid-November because now not enough snow falls. In terms of price, the shorter or 5 km trip costs 40 USD for foreigners, and 40 thousand MNT for Mongolians, while the longest or 55 km trip costs 250 USD for foreigners, and 250 thousand MNT for Mongolians.

Peter Rimmer shared his experience and wrote the following: g'Dog sledding over rough terrain was quite physical and hard work at times as you tried to keep in touch with the dog team and propel yourself over the ground in their wake. Over the smooth ice it was a piece of cake and there was time to take in the breath-taking scenery and the natural world all around but when the going got tough it took everything to stay in contact. But what a fantastic experience! A lifelong ambition fulfilled.' Panoramic Journeys. (2019, October 22). Dog sledding in Mongolia

During summer, Tuvshinjargal's camp runs different activities such as horse riding, trek riding, and kayak sailing tours. He mentioned that he never thought that he would open such a business, as he had studied painting.

5.6.5.2 Example 2: 'Red rock resort'

Innovation in relation to traditional yurts, as well as property value and investments have increased. In 2002, only around 30 entrepreneurs were operating related businesses. In 2020, the number increased 10-fold and a total of 330 business owners are now recorded. Out of 330, about 20 are four-season hotels and lodges, while 140 are seasonal businesses including resorts, tourist camps, and children's summer camps. Most lodges and tourist camps work in the warmer seasons. In the master plan of Terelj 2030, lans are included to raise the standards of camps for the winter season.

5.7. Figure: Terelj mountain lodge
Source: tripadvisor.com

Winter gers can accommodate a total of 1,279,690 people throughout the year. The summer-only gers have a total capacity of 676,950 people, and the Gorkhi-Terelj resorts and tourist camps have a capacity of 1,956,640 people per year.

As the data shows, the property investment trend here is to invest in four-season recreational centres for more affluent domestic customers or international business tours. These include the Red rock resort Mongolia, Terelj Luxury Hotel, and Ayanchin four-seasons Lodge, instead of building tourist summer lodges with a few traditional yurts, which are seasonal.

'Red rock resort' owner A.Batkhuu

The Mongolian yurt is one of the pieces of cultural heritage of the Mongolians. As domestic and international tourists travel to the area to obtain a sense of authenticity with city levels of comfort, entrepreneurs have started to seek to design Mongolian traditional yurts more efficiently, in a way that is more useful for the modern world. For instance, the CEO of Red rock resort, P.Batkhuu, stated that they had erected a modern ger with a door, a window, and a roof-ring, but without pillars. They designed and changed the traditional Mongolian ger because the felt ger has some problems, including instability in wind, a felt smell, and leaks along the pipe and from the roof when it rains. The entrepreneur has solved these problems positively,

and the ger they designed provides a pleasurable view of the Chinggis mountain, while sitting in an honored place and enjoying tea, thus the newly designed Mongol ger attracts the interest of holidaymakers very much – she reported.

She continued that tourism is a comparatively new sector in Mongolia. The country attracts tourists due to its picturesque natural formations and ravishing wild natural beauty. For the last few years, tourism and related services have expanded, and now include the 'Red Rock' complex located in the scenic nature of Gorkhi Terelj. Judging from international experience, it is common to arrange conferences, business meetings, discussions, and tourist exhibitions in scenic areas of nature. The 'Red Rock' complex is the most perfect place to arrange MICE (Meetings, incentives, conferencing, exhibitions), since it is fully furnished with the latest equipment and modern minimalist interior solution, which reaches world standards – Mr. P. Batkhuu, CEO of the 'Red Rock' complex says.

5.6.5.3 Example 3: Terelj eco-boarding high school

Terelj boarding school is a high school that has a special program from the Mongolian Intellectual Academy which mixed with Cambridge Assessment International Education (informally known as Cambridge International or simply Cambridge and formerly known as CIE, Cambridge International Examinations). Students are from Mongolia, Inner Mongolia, Korea, and include Mongolian kids who were raised abroad. The classes are held in English with Native English speakers. The school has a dormitory and school block where teachers take care of the students. The school program runs from 8 am to 10 pm. The school divides the children into four groups named Slytherin, Gryffindor, Hufflepuff, and Ravenclaw, based on the Harry Potter movie.

The school is defined as eco because they only use organic Mongolian vegetables and groceries in their menu. The school does not allow students to bring food or snacks from home. They limit time that can be spent on smartphones, and students usually meet with their parents once a week, on the weekends.

5.6.6 Conclusion

The desire of middle-class people to live in an authentic place and 'make a fresh start' motivates them to move to rural areas

There are no true gentrifiers in the Gorkhi-Terelj region, but it is a most beautiful and developed rural area where the majority of the Ulaanbaatar population and international tourists go to escape from a bustling noisy city to rest their minds and bodies and feel the fresh air and authentic nature in Nomadic yurts, with a most scenic view. Even though there are no permanent true gentrifiers in the area, there are some business owners whose motivation is to earn a living from their businesses.

The main motivation of the people who move to the Terelj area is to run their businesses for domestic and international travellers, who are strongly interested in extreme or cultural travel activities including zipline tours, horse riding, visiting traditional Mongolian local herders, or husky sledding in beautiful nature. This can be explained with the first example of Tuvshinjargal, who moved to Terelj settlement because his dog shop in Ulaanbaatar city was not working well, and he accidentally found out he could use his dog for sledding tours.

As mentioned above, most businesses there are only seasonal. Because of this, the majority of entrepreneurs there are not gentrifiers, but are most likely seasonal commuters from Ulaanbaatar or from the nearest village to the Terelj area. Even though tourist business and traveller numbers have increased dramatically there, the population of the Terelj settlement has not clearly increased over the last 10 years.

The expression of rural gentrification is shaped by the history, development stage and the value system of the country it takes place in.

Culturally, Mongolians are nomadic, with a sparse population in abundant land, ranking 18th largest in the world. Mongolian society has radically changed since the democratic revolution in 1990. Socialist concepts such as equality, economic security, and equality in income and living conditions have been destroyed. New sets of democratic values and principles have been developed.

For the last three decades, Mongolians have experienced dramatic changes in the economy, privatisation, social structure, and urbanisation, as well as in individual values, beliefs and attitudes. Segregation between suburban and urban areas may result in different forms of effort, values, and worldviews among the youth. The over-centralisation of political, economic, and social service centres in Ulaanbaatar city, policy failure in relation to the development of rural town infrastructure and industrialisation, the disparity in the quality of public services, and inadequate cultural, educational, and health services, and the failure of appropriate demographic market centralisation efforts for rural small and medium businesses discourage people from moving to rural areas.

However, the Ministry of Urban Development and Parliament has approved the Master Plan 2030 of the Gorkhi-Terelj area to make it a recreational tourist zone with a cultural eco-friendly village for domestic and international tourists, thus there is a possibility that gentrifiers who seek authenticity will be attracted to the village in future.

Many of these inmigrants become place entrepreneurs, and help develop the 'local character' that reflects the symbolic value of the place.

There is a clear sign that entrepreneurs are helping to develop local character, as the unique culture and local characteristics of the area are used to promote their business in the Terelj area. More than half of the names of organisations are based on the name 'Terelj' – such as Terelj resort, Terelj eco-tour, Terelj extreme tour, and Terelj mountain lodge, and so on.

The traditional nomadic yurt is a main element of the local character that represents the traditional culture of Mongolia to domestic and international visitors. In all places of hospitality that receive upper and middle-class visitors, yurts can be seen in all forms, from traditional to modern designs. One thing which can be seen around most hotels is gers. The modernised ger is seen more in more exclusive hotels, such as the second example, and is more durable through four seasons to match people's need for city comfort in rural areas. The gers in mid-range camps are more traditional and cheaper.

The final thing which entrepreneurs are selling to both middle and upper-class visitors is an eco-friendly character, which is more commercial than the eco standard. As shown in the third example, entrepreneurs in the Terelj area are attracting customers using 'eco' features, such as the 'Terelj eco boarding high school' and 'Gorkhi eco family resort,' while there is no clear sign of eco-standards there. Symbolic value exists in the name of the businesses with words such as Terelj and Eco, as these are repeated everywhere, while nomadic yurts exist in all places of hospitality in every shape and design.

5.7 Final Remarks

The examples from the four different emerging countries clearly demonstrate that socio-economic processes that can be put under the umbrella of 'rural gentrification' appear ubiquitously but the actual form they take vary significantly. There are many factors that shape rural gentrification in emerging economies. It is evident that the motivations of rural in-migrants are, to a high degree, dependent on the level of economic development in the country, but the importance of local characteristics heavily alter the processes and phenomena. Local regulations, historical givens, economic structure, territorial organisational system, types of ownership, usage patterns all shape the actual occurrence. In Turkey and Estonia, the middle-class representatives that had made the urban-to-rural transition showed the intention to 'return to their roots' – several of the interviewees had family connections with the area they had moved to, which was not true of individuals in China. Another similarity that emerged was the existence of urban push factors in the cases of China and Turkey: as the countries experienced rapid political and social transformation, their large cities became densely populated, highly competitive, and materially oriented. This has inspired young creative class representatives to move to rural areas where material pressure is lower, and the natural environment can be a source of inspiration. A similarity between China and Mongolia is the lack of land ownership by private individuals, leaving rural development largely in the hands of the government. In China, we see the clearest evidence of the cyclical nature of gentrification, while in Mongolia this process may only be starting. Mongolia is the

only case where very little middle-class urban-to-rural migration can be observed due to the modern-day values of the formerly nomadic Mongolian people, the somewhat earlier stage of economic and urban development of the country, and the concentration of economic opportunities in urban areas, especially in the capital, Ulaanbaatar.

In terms of impacts on the local community, we see a variety of effects. Economically, many gentrifiers have become 'place entrepreneurs,' using local symbolism in the creation of their services or products. Socially, we see strong engagement with the local community in the case of Estonia, while in Turkey and China, in-migrants tend to mix better with 'their own kind' and participate in the creation of institutions that represent urban values and interests. This is likely to be due to the starker differences between urban and rural attitudes and ways of living in these countries.

Rural gentrification has been a sweeping event in the West in the last twenty some years and it has been exhaustively examined in scientific and professional circles. Gentrification of select rural areas seems to be an omnipresent development in the less rich countries, parallel to the processes in the West, the analysis of which may give valuable insights into, and considerations about, the urbanisation processes of today.

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6. CHANGING GEOGRAPHICAL PATTERNS OF INTERNATIONAL LABOUR MOBILITY IN AFRICAN AND ASIAN COUNTRIES

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6.1 Introduction

News suggests that one of the most spectacular contemporary global socio-economic phenomena is the outstanding growth of international migration. As to the sending continents, Afro-Asian migration has been rising considerably (both immigration and emigration) over the last four decades. Several regional and international organisations, such as AU1and UN2, have been developing policy frameworks and systems, while state governments have been enacting and facilitating legal frameworks to smooth the process of this migration. This is in line with the goal of enhancing and tapping the benefits of such labour mobility and leveraging skill endowments across different geographical areas.

This study basically seeks to answer the question whether the geographical pattern of international labour mobility has changed in Afro-Asia. The research therefore provides an updated analysis of the state of inter-country migration between Africa and Asia, so that policy makers can have solid ground on which to make decisions supported by evidence. It provides brief details about critical characteristics of the current environment of Afro-Asian migration.

The study is anchored on time-series data from a United Nations database. It is worth noting that international migration in some cases occurs irregularly across porous country borders, and that there may exist significant data gaps, thus attention is drawn to the need to avoid making unbiased conclusions.

First and foremost, a broad analysis of the theoretical concepts about international migration is given, not only in relation to Afro-Asia, but from a global point of view. Pre-existing theories and models are highlighted and appraised to see whether they fit the current Afro-Asian context.

Second, a geographical analysis of major demographic features related to international migrants will be presented. Afro-Asia may be divided into six different cultural regions and a 'big picture' analysis of three demographic features can be concluded.

Third, patterns of international migrations at the country level will be analysed. Economic parameters such as income inequality, per capital GDP, and GINI indexes are calculated and compared among individual countries in the examined area.

Fourth, the research digs into specific factors that influence international labour mobility and are major causes of international migration across the area.

The relationship between these factors and the extent they influence each other is measured by carrying out regression analysis.

In addition, a classification of the examined countries is provided to help define the nature and characteristic country-level types of international migration in the studied area with the help of a cluster analysis. Each country group is analysed independently based on the averages of the assigned indicators.

Besides the professional literature, in different chapters the analyses are based on different quantitative methodologies. These statistical analytical tools utilise secondary data. Applied statistical data is derived from harmonised international databases. The bulk of these data sources are international organisations, such as the United Nations and the World Bank.

6.2 Concepts and Main Theoretical Questions Related To International Labour Mobility

Labour migration is defined as 'the movement of persons from their home State to another State for the purpose of employment' by the International Organisation for Migration (IOM). It is quite essential to mention the historical perspective of migration as the movement of people for the purpose of work when giving a broad description of international labour mobility.

6.2.1 General Definitions of International Labour Mobility

In the literature of migration studies, the modern history of international migration can be considered as having four historical periods (Massey, D. S. 1999):

- The first of these historical periods is called in the literature the 'mercantile period.' This spans the years 1500–1800 during the time of the domination of Europeans, as could also be seen in other periods of international migration. International migration was concentrated in this period due to colonisation-related activities and economic growth.
- The second period is mostly concentrated around the emigration activities caused by the industrial innovation that occurred from the beginning of the 1800s until 1925, as Massey mentions in his chapter. The movement of people was caused by the exploration of new lands as a potential source of wealth.
- The third wave of international migration is after the disruption cause by the World Wars and is named the 'period of limited migration.' In this period, the most notable country connected to migration was the United States of America.
- The last described period of international labour migration is the period which is named the 'post-industrial period'. As may be easily

understood, after the 1960s, the phenomenon of 'migration' started to take on a global flavour rather than when connected with colonisation, the pursuit of economic wealth, or displacement/forced migration. The effect of globalisation is still used to explain the movement of workers, although there have been countless reasons for international labour migration in recent times. Even the last period of international labour migration can be divided at least into ten-year periods, while the migration patterns of recent times can be considered under the umbrella of 'globalisation.'

research field	main focus	description
economists	pull and push factors	Migration is motivated and sustained by three major types of influence: demand–pull factors in the destination area; supply–push factors in the origin area; network factors that link origin and destination areas
sociologists	chain migration process	Migration causes additional migration. Those to first emigrate from an area send information to those in the home country about jobs, housing, and schools in the new setting
anthropologists	changes in the standard of living and culture	First-hand accounts from new immigrants as well as media accounts of the country's standard of living entice people to immigrate to the new country for a better life.
psychologists	personality factors	Personality factors are very crucial aspect in emigration. Those who want to migrate to another country tend to be more work-oriented and to have higher motivation, but less affiliation for motivation and family centrality than those who do not want to leave their home country.
political scientists	ethno–political reasons	Countries may encourage emigration to ease ethnic conflict, or to establish a presence in another country by resettling particular ethnic groups voluntarily or involuntarily

6.1. Table: Scientific perspectives about international migration
Source: Ramune, C. – Vilmante, K. 2011

After global international migration started, social scientists from every discipline started to look for a theoretical approach to explain the phenomenon of the 'movement of people'. At this point, it is important to highlight the framework of these scientists regarding international labour migration. The table explains the focal areas of these scientists and related theories about international labour migration *(Table 4.1).*

6.2.2 Main Theoretical Frameworks About International Labour Mobility

The perspectives of scientists from different disciplines created the main theories of international migration. Like prior efforts, these theories sought to explain why international immigration began, and how it persisted across space and time. The following is a list of theories about international migration (Massey, D. S. 1999). The theories are more complex than is summarised in the table, thus explanations related to labour mobility will be given in the next chapter. In the following table, you can see migration theories with their description (*Table 4.2*).

theory	description
neo-classical economic theory	Migration is caused by the supply and demand of labour ('push' and 'pull' forces) and causes wage differentiation based on a country's economic situation. At the micro level, migration depends on individual decisions. Individuals migrate after evaluating the costs and benefits. Migration is a form of investment in human capital.
dual labour market theory	There are two labour markets exist in a country. The first one is the market for highly educated and well-paid local individuals; the second one is for a low wage rate and insecure jobs market. These places are mainly filled by immigrants.
migration network theory	Flows of migration are a self-generating occurrence: migrants accumulate and disseminate information about the situation in a labour market, the possibilities of employment, wages rates, and other information. Growth in migration stimulates a decline in migration costs.
migration systems theory	Migration is a result of the interrelation of micro and macro structures between two territories. Macro structures are considered as institutional factors, and micro structures are considered to be the beliefs and experiences of migrants.
world system theory	Migration is caused by the movement of workforce from the periphery to core areas. A periphery is considered to be an area where the market economy is not developing. Core areas are capitalist, post-industrial countries.
behavioural theory	Describes how human psychology influences the economy and creates several economic problems which cannot be fully solved by markets. One of the main problems of the economy is involuntary unemployment, which has a huge impact on labour markets and the migration of labour forces (Ramune, C. – Vilmante, K. 2011).

6.2. Table: Main theories about international migration
Source: Massey, D. S. et al. 1993; Castles, S. – Miller, M. 2003; Akerlof, G. A. – Shiller, R. 2009

The theories mentioned in the table are mostly related to international migration. Moreover, although international labour migration is a type of migration, it has different dynamics, reasons, and frameworks behind it.

There are other perspectives that explain labour mobility and its main effects. Labour mobility affects workers mainly in two ways.

- Personal level: Increased labour mobility creates more opportunity for workers to improve their lives and financial situations. If they have broader opportunities to train for new jobs or move to a better location, they tend more to be willing to work, which positively affects their productivity. However, if they are provided with less opportunity, they keep seeking better options.
- Aggregate level: This refers to the whole economy. The extent to which labour forces are mobile can impact how quickly an economy can adapt to technological changes, how quickly competitive advantages can be exploited, and how innovative industries develop. Restrictions on how workers move around, either geographically or occupationally, can slow growth by making it more difficult for businesses to hire productive workers (Brent, R. 2020). At the same time, unrestricted labour can depress wages in certain industries and create unemployment.

6.2.3 Comparison of Different Definitions and Theories Related to International Labour Mobility

Neo-classical economic theory is a quite old approach related to international labour migration. The theory focuses on the labour supply and labour demand gap between countries that is caused by geographical differences. The theory defends international labour migration caused by the wage differences between countries. Especially in the economic literature, it is assumed that the labour movement between countries is liberalised. Moreover, most of the calculations in the economic literature depend on this assumption. Hence, the theory treats international labour migration as related to the individual-level decisions of individuals instead of treating migration as deriving from communal decisions. The experience of migration may also alter the original intentions of the migrant and their family, but few migrants ever make choices only as isolated individuals (McKeown, A. 2004). As regard this point, neo-classical economic theory is similar to migration network theory, which also says that the decision makers are the individuals, but growth of migration is created through the accumulation decisions of migrants in their networks. Actually, the best summary of these two theories is migration systems theory. This separating two structures related to international labour migration: macro-structures, which refer to the institutional factors, and micro-structures, meaning the beliefs and experiences of migrants. The main proponent of the micro-structural element of migration systems theory is behavioural theory, which is related to the studies of psychologists.

Neo-classical economic theory is one of the most important theories in the literature regarding international labour migration, whereas there is another theory which is also similar to neo-classical economic theory in the economic and social dimension. Dual labour market theory depends on two main conditions being present in the labour market. The first is the existence of two distinct labour markets with different wage-setting mechanisms, and the second is the existence of barriers to mobility between labour markets (Dickens, W. T. – Lang, K. 1984). Without going further into dual labour theory, it can be easily understood that both the frameworks of these theories are economic. The difference between the two theories is that neo-classical economic theory assumes that supply and demand is a push and pull factor, whereas dual labour market assumes that the main factor is the different wages in labour markets.

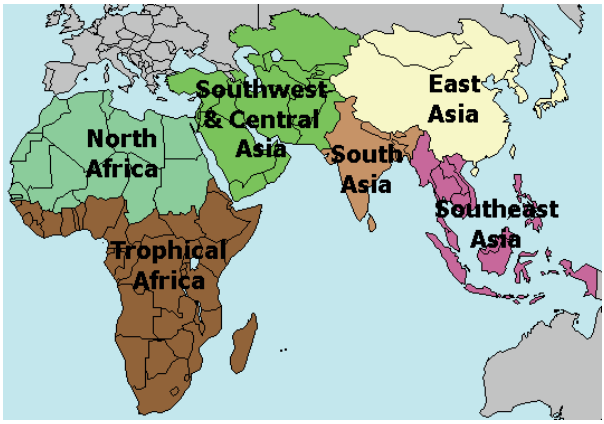
Whether the decision makers are migrants or not, and whether the determinants of international labour migration are market or wages, one theory describes the geographical pattern of international migration instead of describing the motivation behind it. World system theory explains international labour migration as a valid choice in most parts of the world. Peripheries which could be described as not developed (i.e., 'developing') areas are generally the sending areas, while the core (receiving) areas are typically developed capitalist economies.

6.3 Geographical Differences in Major Demographic Features That Characterise Migration in Afro-Asia

This chapter classifies the countries under study into six cultural[30] regions: namely, East Asia, North Africa, Southeast Asia, South Asia, Southwest and Central Asia, and Tropical Africa (*Figure 4.1*). The aim is to identify the regional averages and total number of migrants in terms of age, gender, and income (remittances[31]), and draw conclusions that help answer the research questions.

[30] A cultural region is a geographical territory occupied by people who share similar cultural features, such as food, religion, customs, and participation in economic networks.

[31] To remit means to 'send home' literally – in this context, remittances are defined as cash transferred to the home country by migrants living abroad.



6.1. Figure: Map of Afro-Asian cultural regions based on migrant gender
Source: Authors' edition using QGIS software based on UN data

The main research question it seeks to answer is whether there are any region-specific demographic[32] characteristics of migration in Afro-Asia.

The subtopics address the following questions:

- Which age group forms the largest proportion of migrants across the geographical region under study?
- What are the gender ratios of migrants in the regions under study?
- How does income from migrants (remittances) compare amongst the regions under study?

6.3.1 Age Distribution of Migrants from the Cultural Regions under Study

At a global level, international migrants are dominated by males in the age category of 15–34 years (FAO IFAD IOM WFP 2018). In Afro-Asia, the situation is more or less the same. The population of the host countries notwithstanding, the age distribution of international migrants from Afro-Asia differs substantially across different cultural regions.

Employment is the dominant reason for migration from the region, with labourers moving from one country to another for decent jobs, serving to meet relative and absolute labour shortages. This shifts the gender demographic curve in favour of men who are typically better suited to taking advantage of labour opportunities in other countries.

[32] i.e., the broad characteristics of a group of people, including qualities such as sex, education level, income, and occupation level, among others.

On average, there were 1.2 million migrants aged less than 10 years old from each region until 2020, accounting for 11 percent of all migrants. It's important to pinpoint that these individuals are infants whose parents made a decision to move with them based on the conditions prevailing at home – for instance, the conflicts and violence in some countries in Tropical Africa, which contribute to the largest proportion of migrants under 10 years in that area, and also Southwest and Central Asia, which area accounts for the second most migrants under 10, as identified in the following research (Flahaux, M. L. – De Haas, H. 2016). Another example is that of Palestine and Yemen, which have seen tremendous civil wars and unrest, resulting in many emigrant children of under ten years old, and Tropical African countries like the Democratic Republic of Congo, which has faced civil unrest for decades.

On the other hand, significant interregional migration of adults and their children to neighbouring countries with perceived better social and economic prospects – for instance, within Western Africa (Tropical Africa), has been facilitated by visa-free movement among regional trading groups such as ECOWAS.[33]

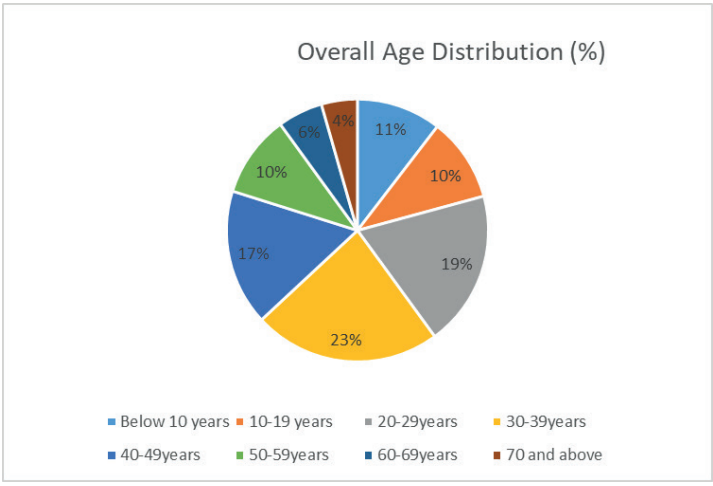
The largest number of migrants from the region are aged between 30–39 years old. In 2020, for example, 24,792,769 migrants aged between 30–39 moved, representing 23 percent of all migrants from Afro-Asia. This age bracket is the most active group of those aged 16-64 years old, according to Oliver Bakewell and Gunvor Jónsson, and their migration has a significant impact on labour markets of host regions/countries (Bakewell, O. – Jónsson, G. 2011). In addition, they bridge the gap in labour shortages and satisfy local demands for labour in specific industries that is not met by natives. This phenomenon is consistent across all examined regions with little deviation since 2000.

Further analysis of the time-series data revealed that, among the examined regions, Southwest and Central Asia recorded the largest proportion of migrants in this age group (30–39 years), at 14,391,927 out of a total of 57,921,692 migrants from the same region in 2020, amounting to 25 percent. On the other hand, South Asia recorded the smallest number of international migrants in this age category, with 1,363,466 migrants of the total migrant stock of 7,645,621 (i.e., 18 percent).

We observed that the elderly age bracket (above 70) are the least likely to engage in migration, and only account for 4 percent of all migrants in 2020, but proportions vary across the cultural regions. For instance, Africa (both Northern Africa and Tropical Africa) have fewest elderly migrants amongst their respective migrant population, at 3 percent. On the other hand, South Asia has the highest proportion of elderly migrants at 780,280 out of 7,645,621, which is a representation of 10 percent. Mathias Czaika and Hein de Haas found that the desire to migrate

[33] Economic cooperation of West African States.

declines with age, as also does labour demand for older persons (Czaika, M. – Haas, de H. 2012).



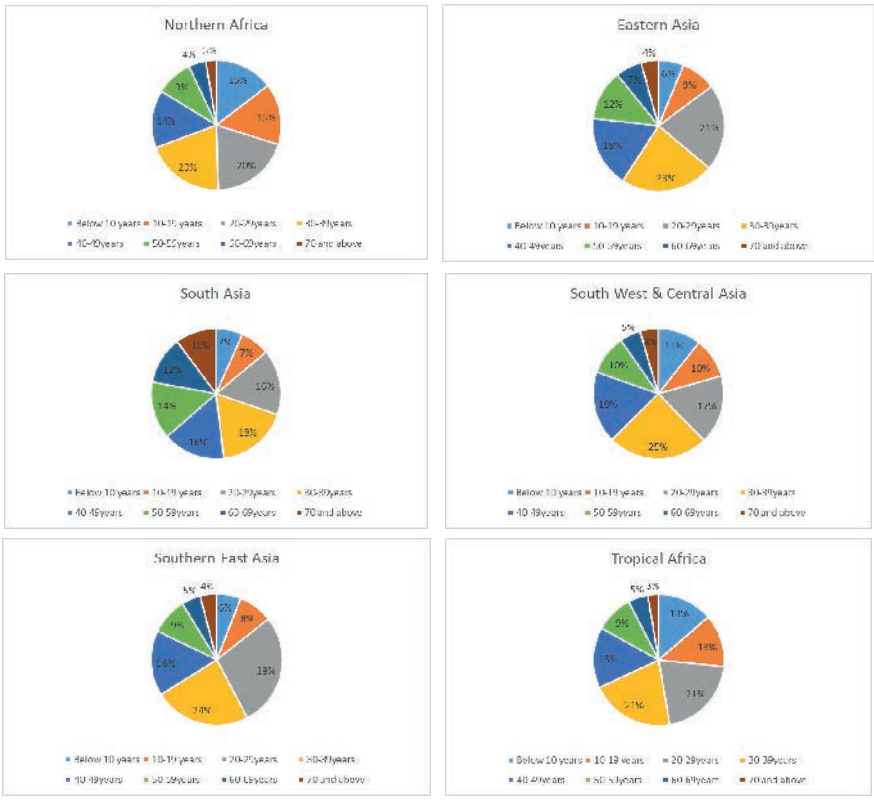
6.2. Figure: Overall age distribution of migrants in Afro-Asia
Source of data: UN database

Evidence from Michael Clemens suggests that policy frameworks that create particularly good health and retirement provisions for the elderly may promote the migration of the elderly to countries/regions with these provisions (Clemens, M. A. 2014). Also, the same paper argues that migration is an investment in human capital,[34] thus the returns are smaller for the elderly due to their expected lifetimes.

6.3.1.1 Northern Africa

In Northern Africa, the distribution of migrants per age group is as illustrated below. The largest proportion consists of individuals aged 30–39 (20 percent, which is a 3 percent less than the total regional average of 23 percent) while the lowest migrants are those over 70 percent which is just one percent less than the overall average.

[34] Personal strengths, skills, and knowledge that give humans the ability to create economic value.



6.3. Figure: Age distribution of migrants from the cultural regions of Afro-Asia
Source of data: UN database.

This region has the largest proportion of migrants aged between 10–19 years, at 15 percent, which is a 5 percent more than the Afro–Asian average.

6.3.1.2 Eastern Asia

Most of the regions' migrants also fall into the category 30-39 years old (at 23 percent, similar to the average Afro–Asian proportion). Together with Southwest and Central Asia, there is the highest number of migrants in the 40–49 age category.

Those aged over 70 years old are least likely to participate in migration (4%).

6.3.1.3 South Asia

From Afro-Asia, the data that were analysed demonstrated that the oldest migrants come from South Asia, with migrants over 70 years accounting for 10 percent of all migrants, 6 percent more than the total area average.

Also, South Asia has the least migrants of active age (30–39 years old) at 18 percent, which is 5 percent less than the total area average.

6.3.1.4 Southwest and Central Asia

Southwest and Central Asia have the highest proportion of migrants in the most active labour force migrant group (30–39 years) at 25 percent, as well as migrants of 40–49 years old (tying with East Asia).

The oldest migrants (70 years and above) account for 4 percent, which is the average proportion for the whole region.

6.3.1.5 Southeast Asia

The major age factor significance of this cultural region is that it has highest proportion of those migrants between 20–29 years old, at 28 percent. This is 9 percent higher than the total Afro-Asian average of 19 percent. This age category also forms the majority of those migrating, unlike in all the other regions where the majority of migrants come from the 30–39 age group category.

However, the smallest proportion of migrants come from the oldest age group as well, equal to the Afro–Asian average of 4 percent.

6.3.1.6 Tropical Africa

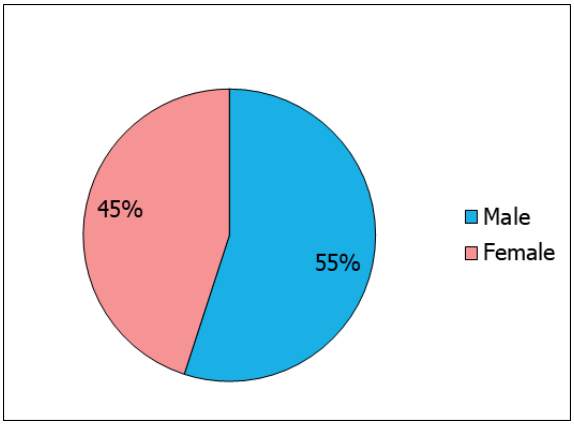
Tropical Africa has the most migrants in the youngest age groups (below 10 years and 10–19 years) among all examined cultural regions, with both age groups accounting for 13 percent of migrants from Africa.

The majority of migrants from Africa are in the age group 20–29 years, as well as 30–39 years, both contributing 21 percent of migrants. It is also interesting to note that the cultural region has the lowest proportion of migrants over 70 years (3 percent) in comparison to other cultural regions.

6.3.2 Gender-Related Characteristics of Migrants in Afro-Asia

Migrant stock data for both genders between 2000 and 2020 was collected and analysed. There is a trend to increasing migrant numbers for both genders between 2000 and 2020 for all regions.

Some 55.2 percent of migrants in Afro-Asia in 2020 were male and the rest female. The trend to a proportionately greater number of males than female has been consistent since 2000. The years 2000, 2005, 2010, 2015 as well as 2020 recorded a consistently higher proportion of males to females at 53.4, 53.8, 54.8, 54.7, and 55.2 percent (males) respectively. These findings are consistent with study outcomes of the Department of Economic and Social Affairs of United Nations Secretariat (2011), which indicated that male-dominated immigration in developing countries is motivated by labour-related reasons, particularly in relation to occupations which are dominantly undertaken by men and related to which there are cross-country imbalances in labour – for example, the building and construction industry.



6.4. Figure: Proportion of different genders in relation to total migrants
Source of data: UN database

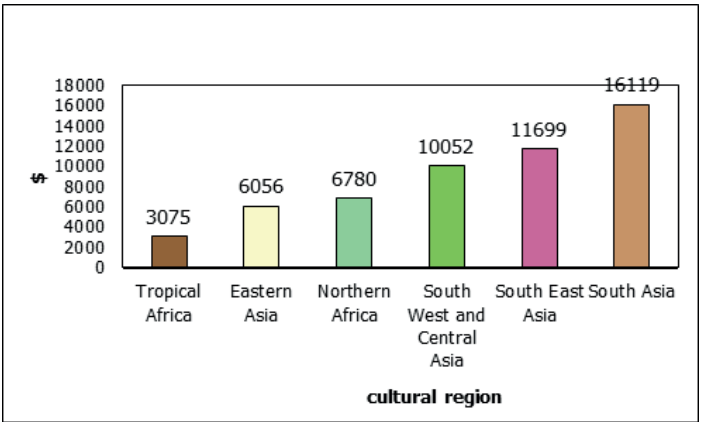
Among the migrants in the working group category, this study found that the male gender is the dominant one at 61 percent of all migrants. This further confirms the theories and earlier research findings that migrants in Afro-Asia are typically driven by employment-related factors in sectors that strongly favour males (Clemens, M. A. 2014). In third-world countries, men more than women are obligated to leave their families and migrate to find employment and support their families from a socio-economic perspective.

In Tropical Africa, gender differences in migration have long been explained by scholars as being climate motivated (climate-related migration). Due to climate change, some economic activities in rural areas have been rendered unsustainable. Examples include crop cultivation, and a rising sea level in Namibia that is submerging coastal fishing villages, rendering marine-related economic activities unsustainable. In these circumstances, research has reported that women are more resilient than

men and can quickly adapt to alternative livelihoods such as weaving, processing, and trading in nuts and poultry farming. On the other hand, men possess more of the technical skills required in other regions/countries, and hence are more likely to migrate.

6.3.3 Comparisons of Income (Remittances) From Immigrants in The Area Under Study

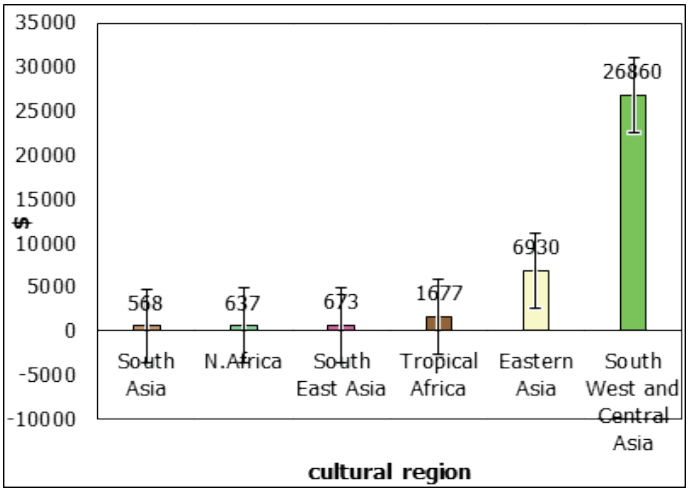
Cersten Sander and Samuel Munzele Maimbo defined remittances as the share of income earned in the host country of the migrant and sent back to the country of origin (Sander, C. – Maimbo, S. M. 2003). Remittances are critical to the economic development of Afro-Asia because they boost the economies of the home country, particularly the income of the dependents of migrants, thus pulling them out of poverty and benefitting their immediate society through greater investment in socio–economic systems such as education, sanitation, and health infrastructure.



6.5. Figure: Migrant remittance inflow in 2000
Source of data: United Nations

Remittance-related data for 2000, 2010, and 2020 were obtained and analysed. The results showed a progressive increase in both inflows[35] and outflows[36] of remittances, with a slight decline in 2020. Tropical and North Africa have the lowest volume of remittances (both inflow and outflow) in absolute terms and relative to the proportion of migrants.

[35] Remittances incoming to the cultural region from abroad.
[36] Remittances transferred out of the cultural region to other regions elsewhere.



6.6. Figure: Migrant remittance outflow in 2000
Source of data: United Nations

With the exception of Southwest and Central Asia, all other examined regions have migrant remittance inflows that are larger than outflows in all examined years. For instance, in North Africa, with the largest gap, remittance inflow is 45 times greater than outflow.

6.4 Country-Level Patterns of International Migration

In this chapter, all 103 Afro–Asian countries are analysed and compared in terms of international migration and inequality. However, because of data availability at the world level, a different number of countries is examined for each aspect.

Before examining the international migration pattern of each country, inequalities among economies are discussed because Afro–Asian countries show big differences in terms of their economies and demographic status. Moreover, by analysing income inequalities among countries, not only is the extent of differences observable, but it is possible to find out the relation or impact of the latter on international migration.

6.4.1 Income Inequalities at the Country Level as a Driver of the International Migration of Labour

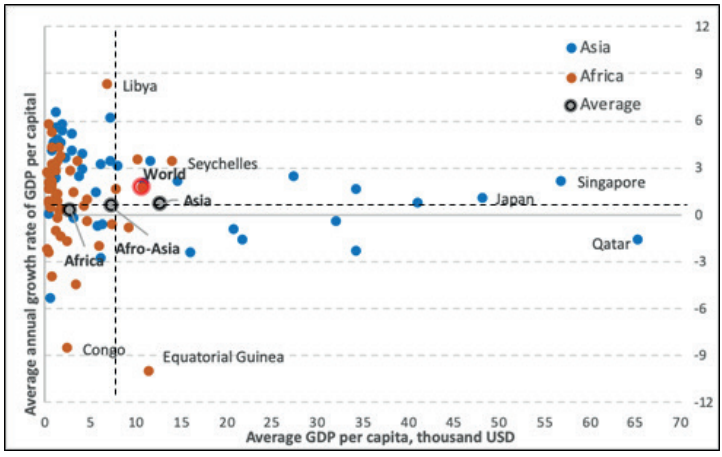
This subsection presents how the level of inequality, specifically the Gini index and per capita GDP, varies between different countries. It provides a convenient summary measure of the degree of inequality.

At the country level, inequality has two effects on the rate of migration. First, there is a mechanical effect, by which higher income inequality results in more poor people, which can lessen migration rates if the poor cannot migrate. Second, to the extent that inequality reflects differences in the returns to skills in the country, more unequal countries with higher returns to skill will see relatively lower levels of migration of wealthy, skilled people, and relatively more of poor and intermediately wealthy people (David, M. 2017). Otherwise, the income inequalities of countries affect the individual desire to migrate.

6.4.2 Greater Income Inequality in Asia than Africa

We examined 90 countries' GDP per capita data out of 103 countries based on availability. According to the World Bank, the real per capita GDP of the world was 11,057 American dollars in 2019, while the classification of high-, middle-, and low-income countries was 43,651 dollars, 5,270 dollars, and 809 dollars, respectively.

An average annual growth rate of GDP per capita and average GDP per capita from 2015 to 2019 was measured for 41 Asian (blue dots) and 49 African countries (orange dots) as well as for Afro–Asia, Asia, Africa, and the World (*Figure 4.7*). Almost all African countries' per capita GDP except for that of Equatorial Guinea (11,410 dollars) and the Seychelles (14,058 dollars) is lower than the world average (10,709 dollars) while that of Asian countries varies, but most of them have a GDP below the latter level. Average GDP per capita in Afro–Asia, Asia, and Africa are 7,363, 12,843 and 2,778 dollars respectively. The average annual growth rates of GDP per capita are 0.2 percent for Africa and 0.6 percent for both Afro-Asia and Asia.



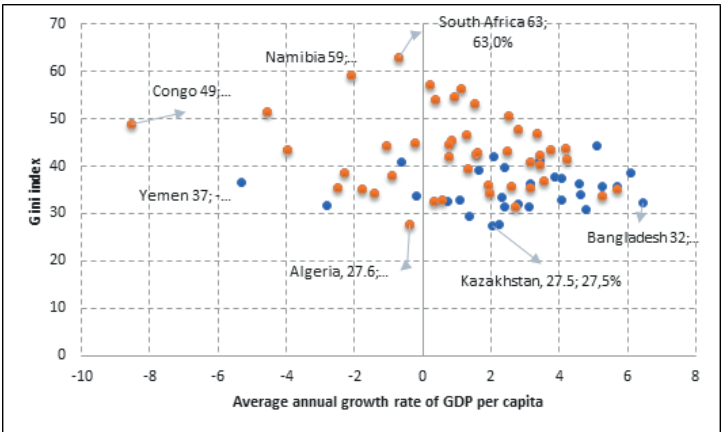
6.7. Figure: Afro-Asia countries' average per capita GDP and annual growth rate 2015–2019
Source of data: World Bank

The highest and lowest per capita GDP countries are Qatar with 65,264 dollars and Burundi with 216 dollars, respectively. However, both countries' per-capita GDP decreased by an average of 1.6 and 2.3 percent in real terms, respectively, between 2015 and 2019. Twenty-five out of 90 Afro-Asian countries faced a reduction in economic output per person in that period (*Appendix 1)*.

Moreover, Asian countries' average GDP per capita is around 4.6 times higher, at 12,843 dollars, than that of African countries, at 2,778 dollars.

There are arguments that inequality is good and bad for economic growth. From a theoretical point of view, there are arguments in both directions. One example is that inequality leads to less economic growth via political instability and social unrest. But it is also possible that it leads to more economic growth via greater incentives for people to make productive investments (Max, R. – Esteban, O. 2016). This paper examines which argument is valid for Afro-Asian countries, which are seen overall as less developed on a global basis.

Available Afro-Asian data (74 countries) shows that there is a negative, weak correlation of approximately – 0.26. *Figure 4.8* presents the Gini index and average annual growth rate of GDP per capita of a selected 74 countries, measured as described above.



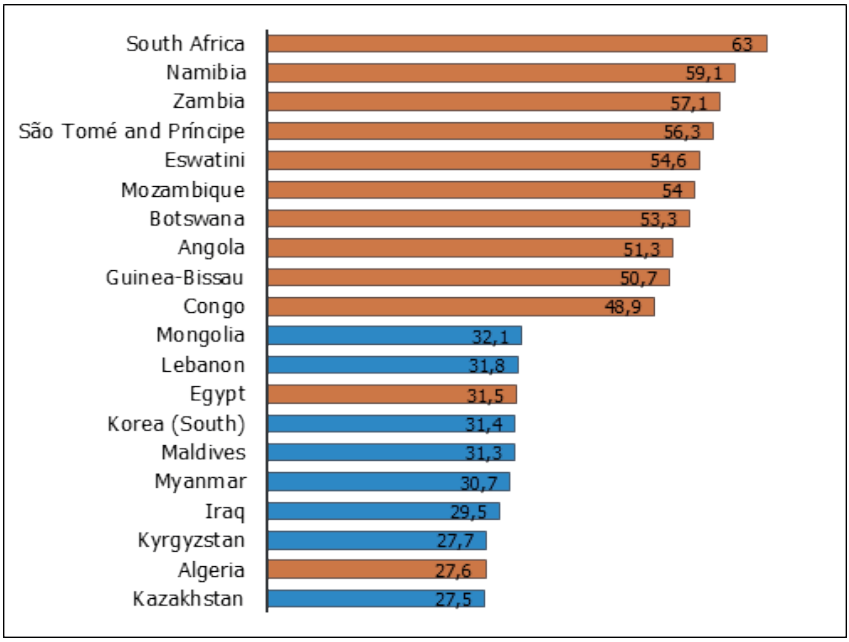
6.8. Figure: Income inequality and growth in Afro-Asian countries
Source of data: World Bank

More detailed analyses of the correlation between the economy, employment, and international migration, etc. and the reasons for this will be discussed in the next chapter.

Predominance of African Countries in the Field of Inner Imbalances by Gini Index.

Based on data availability, we considered 77 countries' latest Gini indexes[37] between 2010 and 2018. Generally, these countries' Gini indices range between 63.0 and 27.5, with an average of 39.7 and a median of 38.5. African countries tend to be more unequal than Asian ones. For instance, the top 10 countries with the highest degree of income (or consumption) inequality in Afro-Asia are all African countries, while Asian countries have the least inequality from the selected countries (*Figure 4.9*).

Furthermore, the top six countries, namely South Africa, Namibia, Zambia, Sao Tome and Principle, Eswatini, and Mozambique, are ranked most unequal not only in Afro-Asia, but in the World.



6.9. Figure: Highest and lowest 10 countries according to Gini index
Source of data: Poverty and Equity indicators from World Bank

South Africa is the most unequal country, with a Gini index of 63, whereas Kazakhstan, Kyrgyzstan, and Algeria are relatively equal countries in Afro–Asia, with a Gini index of around 28.

37 As described by the WorldBank, 'the Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution'. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.

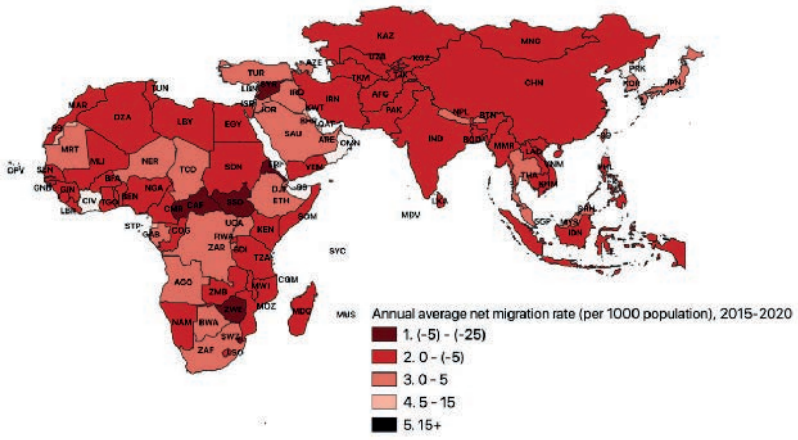
6.4.3 Demographic Patterns of International Mobility at The Country Level

In this subsection, demographic differences are examined especially in terms of gender, age, and profession among migrants in Afro-Asian 102 countries.

6.4.3.1 Negative Net Migration Rates of Afro-Asian Countries

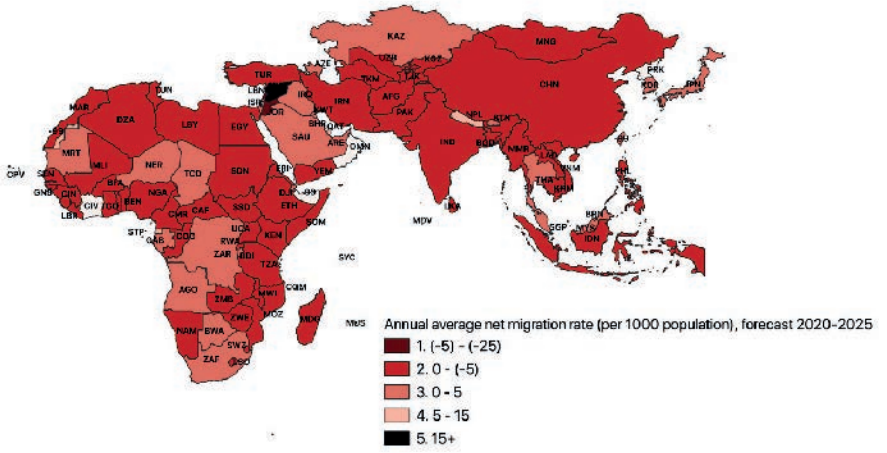
According to the UN, around 280 million people (3.6 percent of the world's population) had migrated by mid-year 2020, of which about 107 million or 38.2 percent 'inflowed' to the Afro-Asian continent, and about 152 million (or 54.3 percent) were emigrants of Afro-Asian origin. This means that around 1.8 percent and 2.5 percent of the total population of Afro-Asia e migrated to and from Afro-Asia, respectively.

During the last five years, Afro-Asian 102 countries annual average net number of migrants per 1000 head of population ranged approximately between –24 and 31. Bahrain had the highest rate of migration, with 31.1, and the Syrian Arab Republic the lowest, with a –24 net migration rate. Most countries' net migration rate varied from –5 to 0 (*Figure 4.10)*. Migration in South Sudan and Eritrea was estimated at –15.9 and –11.6 (dark red colour) respectively, followed by the Central African Republic (–8.6), Zimbabwe (–8.2), Sao Tome and Principle (–8), and Eswatini (–7.4). In contrast, the Maldives (22.8), Oman (18.6), Qatar (14.7), and Equatorial Guinea (12.4) were the countries with a net migration rate of more than 10, thus a high number of immigrants in the period 2015–2020.



6.10. Figure: Net migration rate (per 1000 population), annual average of 2015–2020
Source: Authors' construction based on data from the United Nations

The Population Division of the UN has estimated countries' net migration rate until the year 2100 based on a medium-fertility assumption. *Figure 4.11* shows the forecasted net number of migrants per 1000 population in the next five years. Compared with the country trend concerning the number of migrants in the last five years, the trend in next five years will be relatively the same – according to the UN forecast.

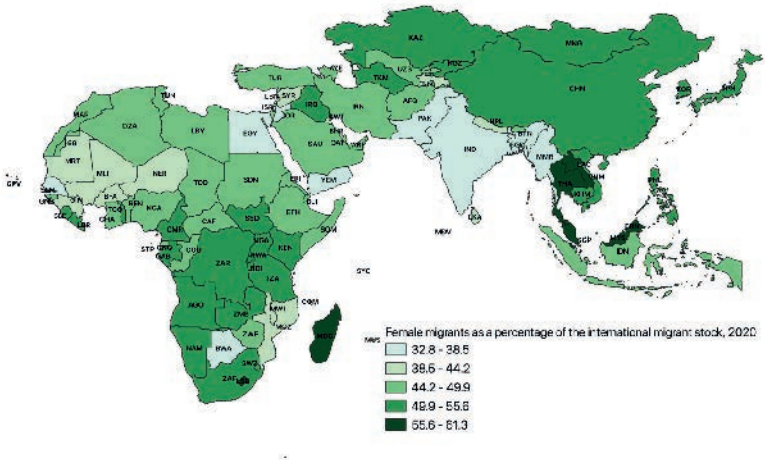


6.11. Figure: Net migration rate (per 1000 population), annual average of 2020–2025
Source: Authors' construction based on data from the United Nations

However, there are few countries where the tendency has changed drastically. One of them is the Syrian Arab Republic, where the annual average number of migrants per 1000 population estimates range from –24 in 2015-2020 to 38 in 2020-2025. In contrast, more inhabitants are likely to migrate from Lebanon (–5 to –25), Jordan (1 to –14), and the Maldives (23 to –16) to other countries in 2020–2025.

6.4.3.2 A Relatively Constant Attribute: Migration by Gender

As mentioned, around 45 percent of all emigrants of Afro-Asian countries were female in 2020. Generally, the proportion of female migrants from Bangladesh, Gambia, India, Pakistan, Yemen, Egypt, Jordan, Myanmar, Botswana, Senegal, Mauritania, Kuwait and Mozambique was between 30–40 percent, whereas 45 countries had proportions in the range of 40–50 percent, and there were 44 countries with a share of 50–62 percent.

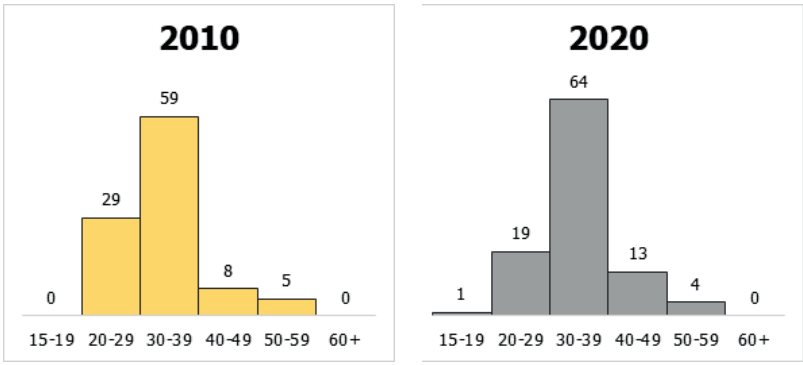


6.12. Figure: Female migrants as a proportion of international migrant stock by origin, 2020
Source: Authors' edition based on data from the United Nations

Furthermore, there were five countries (Bahrain, Saint Helena, Thailand, Reunion and Madagascar) where the share of female migrants was highest, at around 60 percent. The following figure illustrates the wide range of gender-related migration in Afro-Asia.

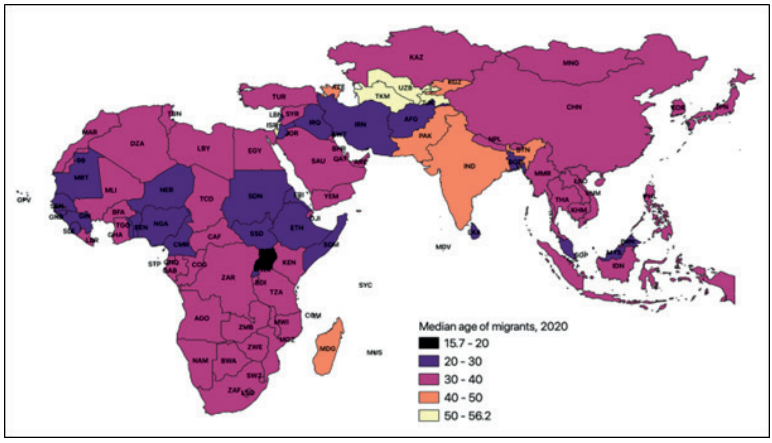
6.4.3.3 Age Distribution of Migrants at a Country Level

The global median age of migrant stock reached around 39.1 in 2020 from 38.3 in 2010. The majority of Afro–Asian countries receive migrants with a median age of 30–39. However, there was a slight shift in the number of countries between 2010 and 2020 (*Figure 4.13)*. Otherwise, more adult migrants or aged migrants travelled to Afro-Asian countries in recent years.



6.13. Figure: Histogram of median age of migrant stock at mid-year of 2020 vs. 2010 (country of destination) Source of data: United Nations

The median ages of migrants in each Afro-Asian country are shown in *Figure 4.14*.



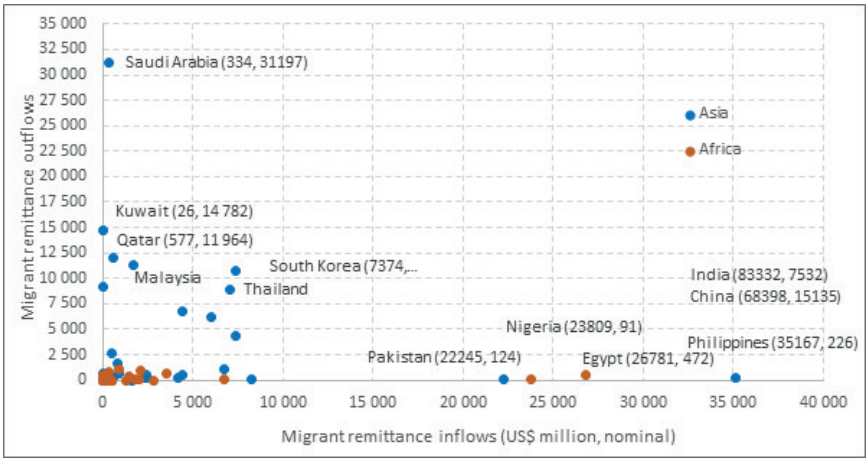
6.14. Figure: Median age of migrant stock at mid-year of 2020 (country of destination) Source: Authors' construction based on data from the United Nations

There is some difference between the African and Asian continent, but, as mentioned before, the median age of migrants is similar in the most countries.

6.4.3.4 Comparisons of Remittances from Migrants in Afro-Asian Countries

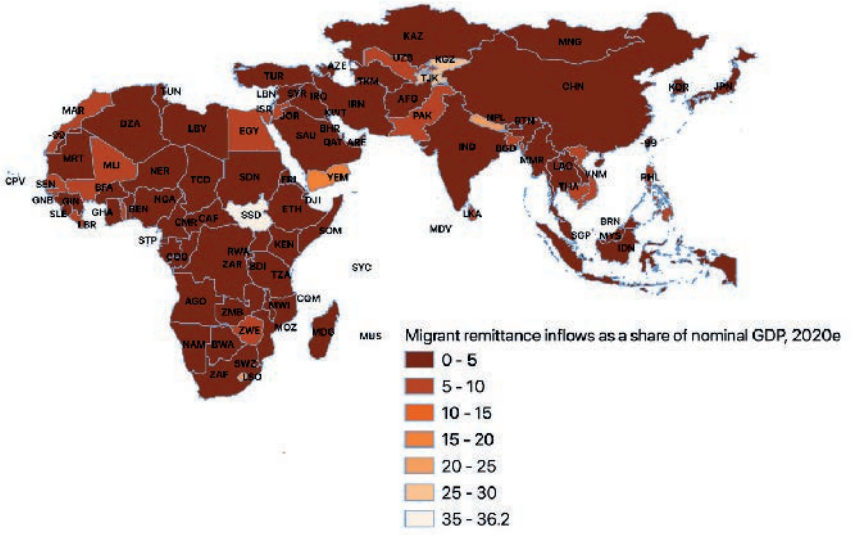
A total of 716,674 million dollars of migrant remittance flowed around the world in 2019, of which 421,069 million dollars or around 59 percent was remittance inflow to 87 Afro–Asian countries (Asia 48 and Africa 39). Comparing Asia to Africa,

four times as much credit, personal transfers, and employee compensation were transferred to Asia. Because of the high number of emigrants in India, China, Egypt and Pakistan, most money was transferred to these countries. For instance, in 2019, international emigrant stocks were approximately 17 million in India, 10 million in China, 3.5 million in Egypt, and 6 million in Pakistan. However, Nigeria also received the largest amount of money although the emigrant stock is relatively small, at 1.6 million. In contrast, a higher number of remittances flowed out from Saudi Arabia, Kuwait, Qatar, Malaysia, South Korea, Thailand, and so on (*Figure 4.15*).



6.15. Figure: Migrant remittance inflows and outflows (million dollars, nominal), 2019
Source of data: United Nations Department of Economic and Social Affairs

In *Figure 4.16,* countries' remittances as a share of GDP are presented. In most countries, remittances equal 0–5 percent of GDP according to the UN estimation. However, there are extreme cases in which remittances as a share of GDP exceeded 19 percent. These countries include Lebanon (36), South Sudan (35.5), Tajikistan (26), Kyrgyzstan (25), Nepal (23), Lesotho (21) and Yemen (20 percent).



6.16. Figure: Migrant remittance inflows as a share of nominal GDP, 2020 estimated
Source: Authors' construction based on data from the United Nations

To summarise, there is a big difference in the population in Afro–Asian countries. Because of this, absolute factors such as an international migrant stock and migrants' remittances vary considerably, too. From an economic perspective, Afro–Asian countries are heterogeneous. The relative range of per capita GDP is around 9, which means inequality in Afro–Asian countries is high (*Table 4.3*). However, if the countries are observed on a continent basis, the African situation tends to be more homogenous than the Asian.

INDICATOR	RELATIVE RANGE	MAXIMUM	MINIMUM	AVERAGE	MEDIAN
TOTAL POPULATION AT MID-YEAR (THOUSAND), 2020	24.9	1,439,324	6	57,903	14,863
MIGRANT REMITTANCE INFLOWS (US$ MILLION), 2019	17.4	83,332	1	4,785	546
INTERNATIONAL MIGRANT STOCK (EMIGRANTS), 2020	12.0	17,869,492	3,064	1,493,075	654,113
PER CAPITA GDP (CONSTANT 2010 US$), 2019	8.7	63,282 US$	208 US$	7,231 US$	2,152 US$
MIGRANT REMITTANCE OUTFLOWS (US$ MILLION), 2019	8.2	44,959	2.6	3,358	274
MEDIAN AGE OF MIGRANT STOCK AT MID-YEAR, 2020	1.2	56	16	34	33
GINI INDEX	0.9	63	27.5	39.7	38.5

6.3. Table: Relative ranges and other brief statistics of inequality and migration indicators
Source of data: World Bank and United Nations

African countries have a relatively big income gap: most countries' Gini index is over 40. From a demographic perspective, there is a homogenous pattern of migrants by sex and age.

6.5 Factors and Relationships in International Labour Mobility

There are hundreds of reasons for migrating to other countries. In this chapter, the causes, factors, and effects of international labour mobility are explored in Asian and African countries, along with the correlation between the main factors and reasons for labour mobility.

6.5.1 Main Factors and Effects of International Labour Mobility in African and Asian Countries

Labour migration in Afro–Asian countries has been steadily increasing for both men and women. For instance, international migration in Africa accelerated over the decade, increasing from 13.3 million migrants in 2008 to 25.4 million in 2017, which is a massive increase of 91.2 percent, equivalent to an average annual growth rate of 7.5 percent.

6.5.2 Similarities in the Features of Labour Migration in Afro-Asian Countries

Labour migration in Asia is dominated by low-skilled and semi-skilled migrant workers, such as those in construction, domestic service, entertainment and manufacturing. For African countries, the majority of employed migrant workers in such countries have basic skills and tend to work in elementary occupations, including agricultural workers, independent traders in the informal sector, and labourers on construction sites. The agricultural sector (fisheries, livestock, forestry and other agriculture-related activities) was by far the largest employer of migrant workers in the respective countries of Africa in 2016, accounting for 24.9 percent of such workers.

Unfortunately, most data are incomplete because of the large-scale incidence of irregular migration, suggesting that migrant workers face more risks and unequal rights. For example, data about migration from Indonesia will be a major underestimate because only a few migrants use regular channels of emigration, especially to Malaysia.

Demand–pull factors	Supply–push factors Various social, political, and economic forces in the place of destination that impel people to migrate
• Higher income • Lower taxes • Better availability of employment • Political stability • Better education facilities • Family reasons • Better life	• War or other conflict • Famine or drought, natural disasters • Poverty • Political corruption • Disagreement with politics. The large inflow of migrants from Myanmar to Thailand and from Afghanistan to Pakistan are examples of dislocations caused by armed conflict and the suppression of ethnic groups. • Lack of employment opportunities • Lack of various rights

6.4. Table: Push and pull factors affecting international labour migration
Source: Authors' compilation

The reasons motivating migration can be divided into demand–pull and supply–push factors, which are both economic and non-economic factors (*Table 4.4*).

6.5.3 Contrast in the Features of Labour Migration in Afro-Asian Countries

Labour migration in Asian regions is mostly based on fixed-term contracts. It is common to have a one-to-two-year contract prepared by private intermediaries and recruitment agencies. In terms of African countries, information on the current

wave of migrants is difficult to capture because a large number of undocumented workers aim to avoid identification. Only the highly organised and well-documented contract system of the mining industry is unique.

In Africa, labour migration is largely intra-regional (80 percent) and mainly characterised by the consolidation of South–South migration corridors to neighbouring labour markets, whereas some Asian countries have changed from labour-sending countries to labour receiving countries. For example, South Korea and Thailand also show a migration transition in that it they have become labour-receiving countries since the early 1990s – a result of fast growth.

There are four main significant employment sectors for African migrants, including the agricultural sector (fisheries, livestock, forestry, and other agriculture-related activities): trading (including wholesale and retail and related services) at 17.7 percent; public administration (including education, health and social services) at 17.1 percent; and the construction sector at 10.4 percent. Altogether, these four sectors accounted for over 74 percent of employed migrant workers in the responding countries. For Asian countries, migrant workers work mostly in construction and factories, and do domestic work.

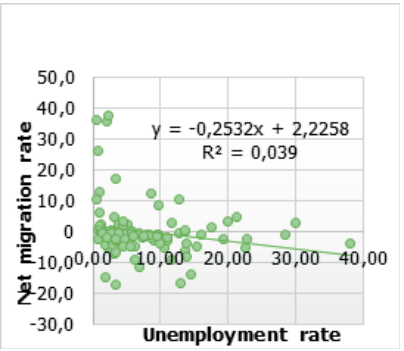
Moreover, Africa has the largest concentration of young people in the world. According to UNICEF (2017), Africa is expected to double its population from 1.2 billion in 2016 to nearly 2.5 billion in 2050, half of whom will be under 25 years of age. Unfortunately, the number of jobs created every year in Africa is not sufficient to absorb the growing working-age population. Many people will decide to migrate to find employment opportunities elsewhere.

6.5.4 Relationship between the Main Factors and Reasons for Labour Mobility in African and Asian Countries

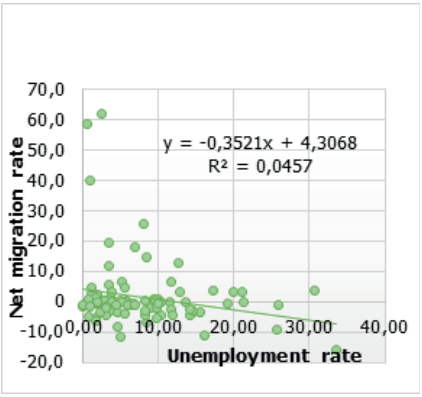
Below we can see the regression analyses of the net migration rate and unemployment rate in Afro-Asian countries. The trend line implies that when the unemployment rate increases, the net migration rate decreases. In other words, outflow for labour migration increases when the unemployment rate increases in the former countries.

In terms of regression between net migration and GDP per capita in Afro-Asian countries, the trend line is positive and rising. The net migration rate is increasing while GDP per capita increases as well. R^2, which shows the strength of the correlation between these two indicators, is increasing year by year. It reached 0.5539, which indicates a strong correlation between GDP per capita and the net migration rate in Afro-Asian countries. However, it is declining and dropped to a weaker position. Regressions show the same results as well.

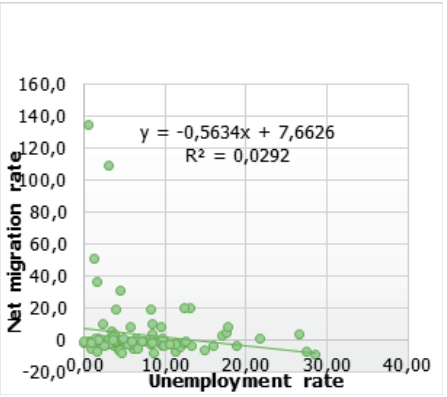
1990–2005



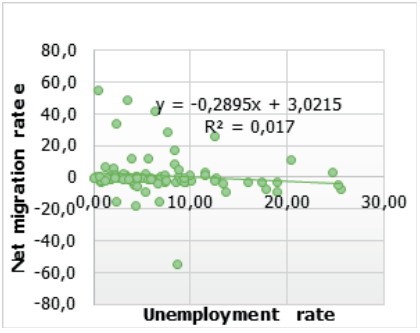
1995–2020



2000–2005



2005–2010



2010–2015

2015–2020

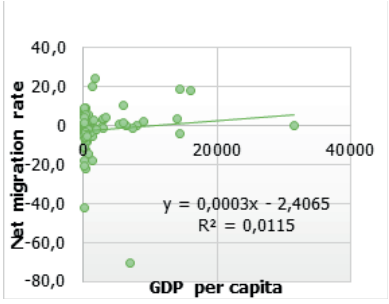
6.17. Figure: Regression between net migration rate and unemployment rate in Afro-Asian countries
Source of data: World Bank, United Nations Department of Economic and Social Affairs, Population Division 2020, International Migrant Stock 2020

The R^2 shows how closely the indicators are related. R^2 can be between 0 and 100 percent. Zero percent indicates that none of the variability of the response data is around its mean. 100 percent indicates that the model explains all the variability of the response data around its mean. If the R^2 is higher than 0.5, it means there is a strong relationship between indicators (*Appendix 2*).

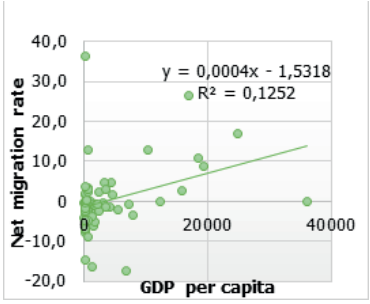
Regression between the net migration rate and unemployment rate in Asian countries shows a negative trend line. In other words, the net migration rate is decreasing while the unemployment rate is increasing.

Regression between unemployment rate and net migration rate in Asia, R^2 tends to increase (*Appendix 3*). For instance, it was 0.01 during 1990–1995, but increased gradually to 0.54 in 2005–2010. However, since 2010 R^2 is declining and dropped to 0.13 during 2015–2020.

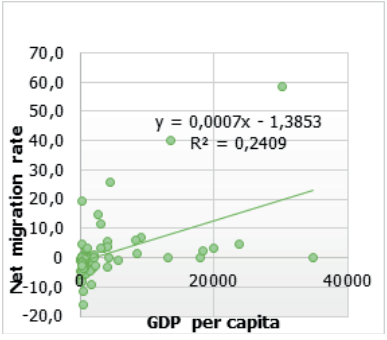
The correlation between net migration rate and GDP per capital in Asian countries shows the positive tendency that when the GDP per capita increases the net migration rate increases as well (*Appendix 4*). In other words, outflow for labour migration gets lower than the incoming migration rate. People prefer to stay in their country and migration rate increases.



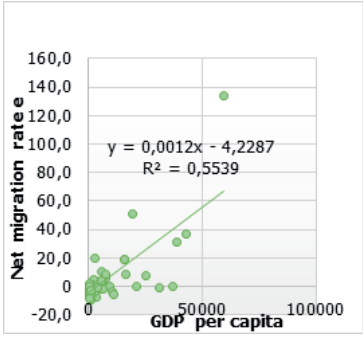
1990–1995



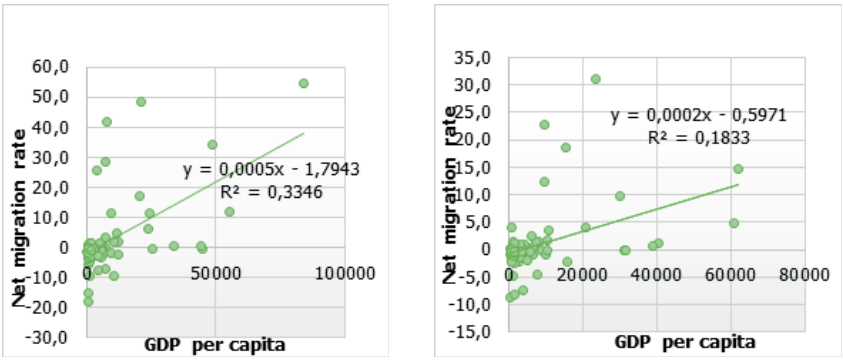
1995–2000



2000–2005



2005–2010



2010–2015 2015–2020

6.18. Figure: Regression between net migration rate and GDP per capita in Afro-Asian countries
Source of data: World Bank, United Nations Department of Economic and Social Affairs, Population Division 2020, International Migrant Stock 2020

In terms of the correlation between net migration rate and unemployment rate in African countries, it was positive between 1990–1995. To put it in other words, the net migration rate increased while the unemployment rate increased too. There are several potential explanations for the positive correlation between the unemployment rate and net migration rate in 1990–1995.

In the 1990s, the South African government took an increasingly restrictive approach to immigration. The total number of permanent residence permits issued between 1990 and 1996 was only 62,257. The annual total declined every year from 14,499 in 1990 to only 5,407 in 1996. There are two reasons for this. First, the old racial imperatives fell away. Second, the collapse of the homeland system. Blacks were given homelands, and that meant that whatever their culture was, they had to go to the given homeland. Additionally, black professionals from Africa were no longer recruited as they had been in the 1980s. Third, the perception that immigrants take jobs from South Africans became widespread.

The 1990s saw a marked rise in the flow of labour migrants to South Africa from Southern Africa due to the political liberalisation within South Africa. Political liberalisation opened new space for, and placed new demands on, policy-making processes in a region long deprived of peace, security, and democracy. For labour markets, this involved a marked change in national and regional levels of demand for labour. Official border crossing statistics show significant growth in cross-border movement in both directions. However, migration has also hurt local and national economies by diminishing the supply of locally available labour and inducing heavy dependence on wage remittances from South Africa. However, current migration data is considered incomplete

and inadequate because a large number of undocumented workers aim to avoid identification. Therefore, evidence of undocumented migration is qualitative rather than quantitative.

After 1995, the negative correlation appeared, which means that the unemployment rate increased but the net migration rate decreased. The regression results (R^2) prove the weak correlation between the unemployment rate and the net migration rate in African countries (*Appendix 5*).

African countries have a positive correlation between GDP per capita and net migration. That is to say, when GDP per capital increases, the net migration rate increases too (*Appendix 6*). Outflow for labour migration is lower than the incoming migration rate, as in Asian countries. People prefer to stay in their home country, and the migration rate increases as well.

In terms of regression results, the R^2 is mostly lower, at 0.5. This suggests there is a weak relationship between indicators. However, the multiple R^2 increased for last year, which means the linear relationship between the indicators strengthened. For example, the multiple R^2 output was 0.17 between 1990–1995 but increased to 0.48 during 2005–2010. Both multiple R^2 and R^2 outputs have dropped since 2010, but there is still a positive linear correlation between the two indicators.

6.6 Characteristic Country Types in The Field of International Labour Migration

In this chapter of the paper, the question whether there is any clustering between the Asian and African countries regarding international labour migration pattern and selected indicators is examined.

6.6.1 Accumulation of International Labour Mobility in Asia and Africa

Informational background of the research, methodological explanations, and the accumulation of countries in relation to indicators will be shown in this chapter.

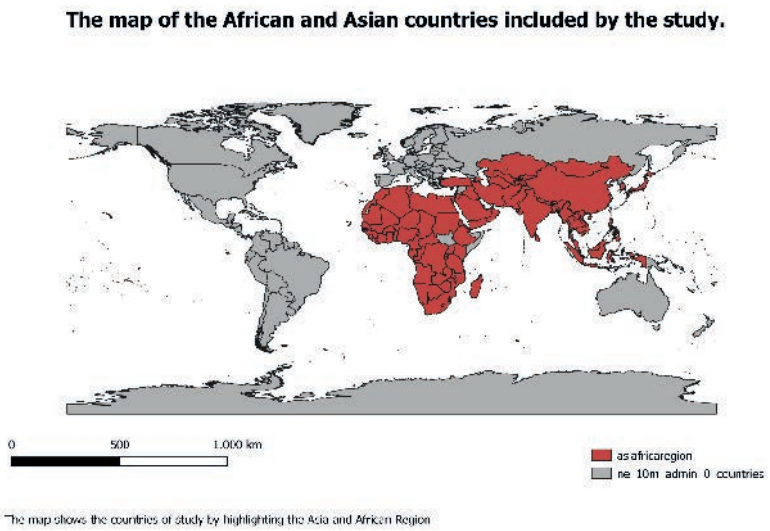
6.6.1.1 Informational Background of The Research

- In relation to international labour migration, there is a lack of choosing the countries which is mostly related as well as taking all variables while grouping these countries. It was hard to follow the regression analysis and to determine the clusters resulting from the correlation of variables because the whole chapters of this paper written simultaneously by the authors. Hence, while choosing the cluster indicators, well-known economic factors

that could drive international labour migration in Africa and Asia countries were selected. These indicators could be considered social, economic, and sociological aspects, such as:

- *GDP per capita*, at constant 2010 dollars (most recent year 2018/2019) from the data system of the World Bank. GDP may be an essential determinant of international migration, especially when taking into consideration the study area, which does not have a high rate of GDP per capita. Here, GDP per capita, taking the constant year as 2010 variables, was used in the cluster analysis.
- *Unemployment rate*, percent of total labour force (modelled ILO estimate) from the World Bank, IBRD IDA data system. The unemployment rate is one of the most important indicators for clustering the Asian and African countries, especially when considering the globalisation phenomenon of recent years. Organised and well-managed labour migration has enormous potential for governments, communities, migrants, employers and other stakeholders in countries of origin and destination (IOM, 2008). Moreover, the unemployment rate average for the 2015–2020 period was calculated to have broader and non-bias experiments on clustering.
- *Population density* (people per km^2 of land area) from the World Bank, IBRD IDA data system. Population density is also considered one of the most important indicators of international labour migration. It is taken into consideration that the lack of calculations about population density could create some issues, because population data depends on censuses. With this indicator, instead of taking the average of the five years, using the 2018 data that was available for the majority of the countries was more logical for the reasons listed above.
- *Net migration rate* estimates (per 1000 population) 2015–2020, International migrant stock: origin (emigrants) at mid-year by sex from United Nations Department of Economic and Social Affairs, Population Division (2015–2020). For this indicator, the average of the five-year periods was applied. Additionally, because of the necessity of using the ratio of female migrants to total migrants, this range was also indexed using data from the UN.

It is important to note the lack of access to the indicator variables for all countries that it was initially planned to include before starting the analysis. In the first phase of the study, it was planned to include all countries from Asia and Africa, implying 103 countries, whereas the number decreased to 92 countries after consideration of the issue mentioned above – and the scarcely accessible data of some regions and countries such as Syria, North Korea, the Seychelles, etc. Countries for which we lacked data were eliminated instead of creating estimations for them.



6.19. Figure: Afro-Asian countries examined in the cluster analysis
Source: Authors' construction based on data from United Nations and World Bank

Apart from these, inner core of the grouping the countries according to these variables includes also to drive the absolute data instead of using the data which includes the numeric codes for the countries, the whole data that we used as an indicator while clustering the countries applied for logarithmic scale. This was one of the most important processes before running the cluster analysis using the IBM SPSS program. Moreover, this process permitted putting the countries in order according to their indicators and clarifies the order of the countries.

6.6.1.2 Methodological Background of the Research

Cluster analysis is a cumulative method used to describe the grouping of profiles according to their specified variables. It attempts to identify homogenous groups of cases (observations, participants, and respondents) (Manafi, I. et al. 2017). There are three main methodological processes of cluster analysis. Namely: Two-step Clustering, K-means Clustering, and Hierarchical Clustering. In this group of cluster methods, Hierarchical Clustering methodology was chosen to determine the grouping of countries in the study. Hierarchical cluster analysis produces a unique set of nested categories or clusters by sequentially pairing variables, clusters, or variables and clusters (Bridges, C. C. 1966). In contrast to other types of cluster analysis in which a single set of mutually exclusive and exhaustive clusters is formed,

this technique proceeds sequentially from tighter, less inclusive clusters through larger more inclusive clusters and is continued until all variables are clustered in a single group.

With Hierarchical Cluster Analysis, there are seven methods for determining the clusters: between groups linkage, within groups linkage, nearest neighbour, furthest neighbour, centroid clustering, median clustering, and the Ward method. In this study, the Ward method is applied to examine the 92 countries from Asia and Africa. In the statistical literature, it highlighted that the hierarchical grouping technique can be applied to the typical cluster analysis problem if a simple within-groups clustering criterion is used (Bridges, C. C. 1966). Hence, with the Ward method it is logical to give a short summary of the function of this method. If one uses a simple criterion for grouping variables in clusters, such as the average intercorrelation of variables within a cluster, a unique hierarchical solution is possible using the grouping technique originally applied by Ward (1961) to profile clustering with an external criterion.

6.6.2 Clustering of Countries

Before presenting the results of the cluster analysis, it is important to present the countries that had the highest rates in terms of the indicators. This will also prove the accuracy of the cluster analysis.

The countries that had a lower net migration rate than the average rate for all countries (0.45) are Eswatini (Swaziland), São Tomé and Príncipe, Zimbabwe, the Central African Republic, and Eritrea, the average of which is –8.74; whereas the countries that has the highest rates are Bahrain, Maldives, Oman, Qatar, and Equatorial Guinea with an average of 19.95 (*Table 4.5*). According to the second indicator, which is GDP per capita, of which 7,146 USD is the group average, Madagascar, Sierra Leone, Congo (Democratic Republic), Central African Republic, Burundi had the lowest, with the group average being 400.9 USD, while Qatar, Singapore, Japan, the United Arab Emirates and Israel had the highest – an average of 49,599 USD. In terms of this indicator, Singapore is an outlier among the group members. According to unemployment figures, which refer to the total labour force according to the ILO, the average for all countries was 7.58, and countries which had a lower figure include Thailand, Laos, Burundi, Niger, and Cambodia with a group average of 0.75, while the countries with the highest are South Africa, Lesotho, Eswatini (Swaziland), Gabon, and Namibia, with an average of 23.52. According to the other indicator used in the analysis, population density (2018), which has a group average of 263,51, Mauritania, Botswana, Libya, Namibia, Mongolia had the lowest at an average of 3,41 whereas Singapore, Lebanon, Bahrain, Maldives, and Bangladesh had the highest population density with an average of 2718,63.

indicator	mean of indicators	countries with low scores	mean of low scoring countries	countries with high scores	mean of high scoring countries
net migration rate, estimates (per 1000 population) 2015–2020	0.45	Eswatini, São Tomé and Príncipe, Zimbabwe, Central African Republic, Eritrea	–8.74	Bahrain, Maldives, Oman, Qatar, Equatorial Guinea	19.95
GDP per capita (constant 2010 US$)	7146.37	Madagascar, Sierra Leone, Congo (Dem. Rep.), Central African Republic, Burundi	400.90	Qatar, Singapore, Japan, United Arab Emirates, Israel	49599.70
unemployment rate, total percentage of labour force (ILO)	7.58	Thailand, Laos, Burundi, Niger, Cambodia	0.75	South Africa, Lesotho, Eswatini, Gabon, Namibia	23.52
population density, 2018 – World Bank	263.51	Mauritania, Botswana, Libya, Namibia, Mongolia	3.41	Singapore, Lebanon, Bahrain, Maldives, Bangladesh	2718.63
rate immigration 2015–2020	1.39	South Africa, Eritrea, Guinea–Bissau, Liberia, Afghanistan	–6.30	Sudan, Uganda, Egypt, Bangladesh, Zambia	10.73
rate emigration 2015–2020	141893.40	Brunei, Maldives, Namibia, Uganda, Rwanda	–3653.60	India, Myanmar, Philippines, Bangladesh, Indonesia	911184.40

6.5. Table: Highest and the lowest indicators of countries according to simple ratios
Source: Authors' calculations based on the main indicators of research from World Bank and United Nations

The description types shown in the table give some information about the gap between the data of the indicators and the countries. This gap that is explained in the previous paragraph shows that these data do not allow us to manage the grouping of countries in a traditional way. Hence, hierarchical cluster methodology was chosen as the best way of grouping 92 countries from Asia and Africa. The cluster analysis was done using the Ward method for the data mentioned above. In *Appendix 7* you can see the average of the clusters in terms of indicators.

The averages of the cluster groups are not meaningful, whereas the proximity of these averages to the countries has much. The proximity of all countries among the indicators has been calculated. Results indicate that the least proximity to the average among the member on each cluster is named after these countries. As can be seen in the table, we have five clusters that represent these countries. As the number of the members of the clusters changes, this method was essential for seeing how these countries are grouped according to the determined indicators. In *Table 4.7* the members of each cluster are shown with the number of the members of the specified cluster.

name of cluster	number of members of cluster	countries included in the cluster
I.a Nigeria-type countries	35	Afghanistan, Algeria, Cape Verde, Congo, Djibouti, Egypt, Iran, Iraq, Mauritania, Morocco, São Tomé and Príncipe, Turkey, Yemen, Zambia, Equatorial Guinea, Gambia, Nigeria, Angola, Azerbaijan, Bahrain, Bangladesh, Comoros, Eritrea, India, Kazakhstan, Kyrgyzstan, Lebanon, Malaysia, Maldives, Mali, Mauritius, Oman, Saudi Arabia, Senegal, Tajikistan
I.b Ivory Coast-type countries	39	Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, China, Congo, Ivory Coast, Ethiopia, Ghana, Guinea, Guinea–Bissau, Indonesia, Kenya, Laos, Liberia, Madagascar, Malawi, Mongolia, Mozambique, Myanmar, Nepal, Niger, Pakistan, Philippines, Rwanda, Sierra Leone, Sri Lanka, Tanzania, Thailand, Togo, Turkmenistan, Uganda, Uzbekistan, Vietnam, Zimbabwe
I.c Namibia-type countries	10	Botswana, Eswatini, Gabon, Jordan, Lesotho, Libya, Namibia, South Africa, Sudan, Tunisia
II. United Arab Emirates-type countries	7	Brunei, Israel, Japan, Korea (South), Kuwait, United Arab Emirates, Qatar
III. Singapore-type	1	Singapore
Total	92	

6.6. Table: Members and numbers of each cluster
Source: Authors' calculations based on data from the United Nations and World Bank

I. cluster named Nigeria-type countries includes 35 members, which are Afghanistan, Algeria, Cape Verde, Congo, Djibouti, Egypt, Iran, Iraq, Mauritania, Morocco, São Tomé and Príncipe, Turkey, Yemen, Zambia, Equatorial Guinea, Gambia, Nigeria, Angola, Azerbaijan, Bahrain, Bangladesh, Comoros, Eritrea, India, Kazakhstan, Kyrgyzstan, Lebanon, Malaysia, Malaysia, Maldives, Mali, Mauritius,

Oman, Saudi Arabia, Senegal, and Tajikistan (*Table 4.7*). The proximity of these countries to the average of all indicators has been calculated, and according to this calculation, Nigeria is the closest country to the average of Cluster I.a. Looking at the labour migration situation in Nigeria, as a representative country of this cluster, the situation can be summarised as that Nigeria is facing demographic issues in relation to the labour market. While unemployment in Nigeria is quite high, the population of the country is also increasing at a higher rate, which indicates the possibility of greater problems on the labour market presently and for the future labour market. In 2018, Nigeria surpassed India as the country with the largest number of people living under 1.90 dollars/day (Adhikari, S. – Dempster, H. 2019). Despite a decade of strong economic growth before the recent recession, poverty and vulnerability levels remain notably high, largely due to a lack of productive, gainful employment opportunities for its increasingly large working-age population.

The second cluster I.b Ivory Coast-type countries included 39 countries. These countries are Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, China, Congo, Ivory Coast, Ethiopia, Ghana, Guinea, Guinea–Bissau, Indonesia, Kenya, Laos, Liberia, Madagascar, Malawi, Mongolia, Mozambique, Myanmar, Nepal, Niger, Pakistan, Philippines, Rwanda, Sierra Leone, Sri Lanka, Tanzania, Thailand, Togo, Turkmenistan, Uganda, Uzbekistan, Vietnam, and Zimbabwe. The proximity of these countries to the averages of the indicators has been calculated and Ivory Coast is found to be the closest to the average. Although the cluster includes both Asian and African countries, the majority of the countries are African ones, the same as Cluster I. This result may be because the number of members from Africa included in the dataset is greater than that of Asian countries. Regarding the Ivory Coast, the migration pattern is continuous and related to political instabilities resulting from the country's history of civil war. The country experienced two civil wars, and while some refugees from the Ivory Coast have returned to their country, another civil war has started. Apart from the outflow of the citizens of the country, there is a strong relationship with the net migration rate of Ivory Coast. Since its colonisation by France, the country has been highly dependent on a migrant workforce, particularly immigrants from Burkina Faso and other countries with an excess of labourers (MGSoG 2017). IOM states that the majority of international labourers are working in low-skilled and low-salary jobs within the agricultural sector.

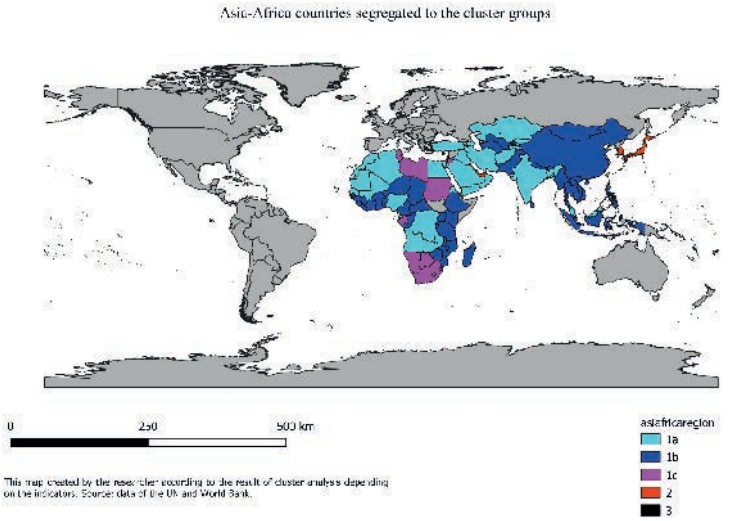
The I.c cluster of our study is named Namibia-type countries and this cluster include fewer members than the first two clusters, and is represented by 10 African countries: Namely, Botswana, Eswatini, Gabon, Jordan, Lesotho, Libya, Namibia, South Africa, Sudan, and Tunisia. The proximities of these countries to the indicators have been calculated and Namibia found to be the country closest to the average of the countries in this cluster. Namibia has specific laws and enforcement related to

border control because the area has many social problems such as a flourishing drug trade, human trafficking, and other criminal activities, whereas the fundamental that support the idea international labour migration has a positive effect on development, especially in South Africa. Hence, Namibia is trying to regulate the liberal excess to the countries for labour force.

The II. Cluster, (United-Arab-Emirates-Type-Cluster) has seven members from both Asia and Africa. These countries are Brunei, Israel, Japan, Korea (South), Kuwait, United Arab Emirates, and Qatar. These countries in this group have quite similar patterns according to their indicators. The Arab State region is one of the main destination areas globally for migrant workers, and numbers have increased substantially in recent years (ILO 2014). The reason that the proportion of migrant to local workers is amongst the highest in the world is considered to be related to the area's GDP per capita and the higher wages in these countries.

The III. Cluster, according to this study, has only one member, which is Singapore. Hence, Singapore is not grouped with any countries in Asia and Africa. The reason for this may be the outlying nature of the data related to Singapore.

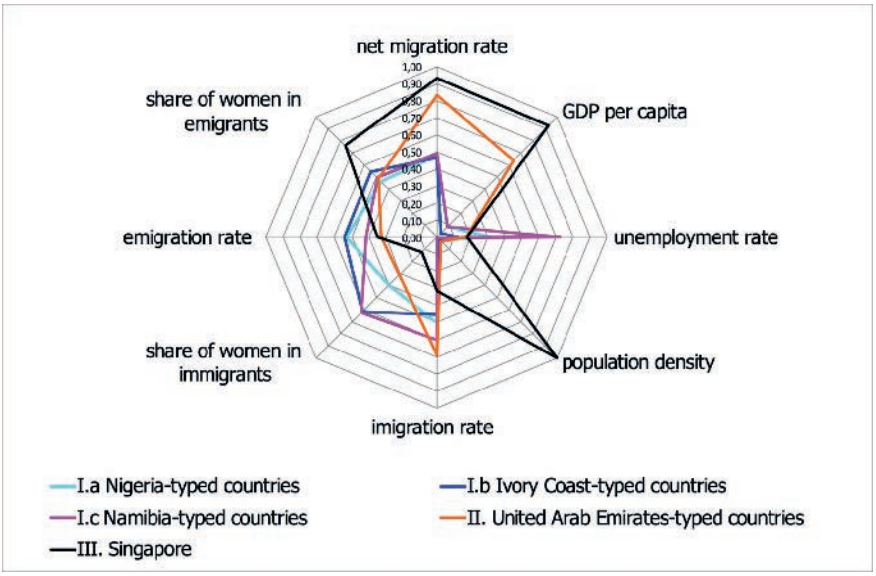
As a result, while the clusters have some specific characteristics related to the indicators, the importance of geographical factors cannot be denied when considering international labour migration. In some areas labour movement across borders is even promoted to support territorial development. The map of the clusters (*Figure 4.20)* shows the importance of the location of the 92 countries of Asia and Africa.



6.20. Figure: Clusters of countries in Asia and Africa.
Source: Authors' construction based on data from the United Nations and World Bank

This map is a good summary of the essential role of the territorial factors behind international labour migration, proving their geography-specific characteristics. The torques part which describes Cluster I.a, can be considered a connecting area between Asia and Africa and is represented by Nigeria in the cluster group. The blue part includes the southern part of Asia and Central–Eastern African countries. The representative of these countries is Ivory Coast due to its low-wage and low-skilled labour force issues. The purple part refers to Namibia-type countries and the locational factors do not appear to be relevant for this cluster. For the United Arab Emirates Cluster, shown in red, the indicators are a more relevant factor that affect international labour mobility more than locational factors. The last country, which is an outlier, is Singapore. There is correspondingly no 'type' related to the last group.

There is another method for displaying the clusters and indicators more clearly. A radar plot, when used as a method for displaying data, is much simpler than the outputs of statistical analyses, which can sometimes be complex because of the multidimensionality that is involved (Saary, M. J. 2007). In *Figure 4.21*, the radar chart of the cluster analysis can be found.



6.21. Figure: Radar plot showing indicators and clusters.
Source of data: United Nations and World Bank

Although shown by the m-apping of the countries and the tables, because of the multidimensional insights of the cluster analysis, it sometimes hard to understand the results of the grouping. In the radar chart, you can see the country types among

the indicators. The turquoise line shows Nigeria-type countries, the blue line shows Ivory Coast-type countries, the purple line shows Namibia-type countries, the orange line shows the United Arab Emirates-type countries, and black shows Singapore as a cluster in itself.

6.6.3 Beyond the Calculations

Country grouping is especially related to locational factors as well as economic, social, and cultural dimensions. It cannot be denied that the factors behind international labour migration in all sending and receiving countries differ according to several variables. In this chapter of the study, Asian and African countries were clustered in line with international labour migration.

While international labour migration is a long-term phenomenon, an increase in the population of migrants can observed, especially following WWII. Ongoing research is showing that the liberalisation of labour migration increases economic development and helps solve inequalities in areas of the world. Clearly, if most migrants were to come from the poorest sections of society, and they were to achieve net gains from migration, this would act to reduce economic inequality, all other things being equal (Black, R. et al. 2006). Moreover, the framework of the ILO works with governments, employers', and workers' organisations to improve labour migration policies that can achieve more equitable development with a focus on the needs of working men and women who generate benefits for development and who support their families and communities in countries of origin and destinations (ILO). Considering the rising population of labour migrants in recent years, the importance of making policies for employers and workers who moved from their country to other one is increasing. At this point, it is important to highlight the significance of policies for international labour migrants at the national and international level that involves cooperation among sending and receiving countries, not only for supporting regional development, but also human rights.

The political structure seems to be strong due to the creation of numerous forms of enforcement, from international organisations such as the United Nations and International Labor Organisation, for recognising human mobility as a key factor in sustainable development, although the practical implementation of related decisions is not well developed. Hence, although there have been some steps from international and national organisations, governments, and supporting agencies in relation to protecting human rights, there are still steps that should be achieved through the political framework. It is suggested to not only encourage countries, international organisations, and agencies to create better labour policies, but also to better implement these policies in practice, because 'the human desire to seek decent employment and livelihoods is at the core of the migration-development nexus' (Galotti, M. et al. 2020).

6.7 Conclusions

Summing up what has been written above, the overall migrant population – both inflow and outflow – have increased tremendously over the last two decades, along with the impact on the related economies of sending and receiving countries, as demonstrated by remittances figures. In answering the research questions raised in III chapter, concluding thoughts are as follows: First, the middle-aged population forms the bulk of migrants due to labour-related reasons, while the elderly are least likely to participate in migration. Second, there is gender imbalance in favour of men in international migration within Afro-Asia, partly due to the fact that most jobs that are available outside sending countries are dominantly undertaken by men. Third, remittances to Afro-Asia are a key macroeconomic component of the area's national income and have increased significantly over the last 20 years.

From an economic perspective, Afro-Asian countries are heterogeneous. Income inequality in Afro–Asian countries is relatively high. However, observing countries on the basis of individual continents, Africans tend to have a more homogenous pattern than Asian ones. African countries tend to have a relatively big income gap, with most countries' Gini index being over 40. From a demographic perspective, there is a homogeneity of migrants in terms of sex and age.

Labour migration in Afro-Asian countries has been steadily increasing for both men and woman and is mainly dominated by low-skilled and semi-skilled migrant workers. Unfortunately, many data are lacking because of the large-scale incidence of irregular migration, which means that migrant workers face more risks and unequal rights.

The reasons motivating individuals to migrate are can be divided into demand–pull (higher income, better education, a better life) and supply–push factors (war, conflicts, political instability), which are both economic and non-economic factors.

The correlation between the net migration rate and unemployment rate in Asian countries implies the tendency for the net migration rate to decrease when the unemployment rate increases. In other words, outflow for labour migration increases when the unemployment rate increases in these countries. The correlation between net migration rate and GDP per capital in Asian countries shows a positive tendency: i.e., when GDP per capita increases, net migration increases as well. In terms of the correlation between the net migration rate and the unemployment rate in African countries, it was positive from 1990 to 1995. The reasons for this may be political liberalisation and a restrictive approach to immigration during the 1990s. There is a positive correlation between GDPs per capita and net migration in African countries. That is to say, when GDP per capital increases, the net migration rate increases too. Outflow for labour migration is lower than the incoming migration rate, as in Asian countries. People prefer to stay in their own countries, and the migration rate increases as well.

To classify the Asian and African countries in relation to international labour migration, cluster analysis was applied to the 92 examined countries. The net migration rate, GDP per capita, unemployment rate, population density, and emigration and immigration rates of the countries were used as the indicators for this analysis. According to the results of the cluster analysis, which used data from the United Nations and World Bank, there are five groups. The first group is Nigeria-type countries, then Ivory Coast-type countries, Namibia-type countries, United Arab Emirates-type countries, and Singapore as a 'group' of its own. This classification shows the essential role of territorial factors in international labour migration, proving its geography-specific characteristics.

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6.9 Appendices

country	average GDP per capita, thousand $	average annual growth rate of GDP per capita	Gini index
Afghanistan	571	0.0	
Algeria	4770	–0.4	27.6
Angola	3407	–4.6	51.3
Azerbaijan	5864	–0.8	
Bahrain	21837	–1.7	
Bangladesh	1137	6.5	32.4
Benin	1180	2.8	47.8
Bhutan	3043	4.1	37.4
Botswana	7879	1.5	53.3
Brunei Darussalam	32015	–0.4	
Burkina Faso	774	3.1	35.3
Burundi	216	–2.3	38.6
Cambodia	1142	5.5	
Cameroon	1483	1.3	46.6
Cape Verde	3643	3.4	42.4
Central African Republic	368	2.6	
Chad	854	–4.0	43.3
China	7361	6.1	38.5
Comoros	1382	0.8	45.3
Congo	2560	–8.6	48.9
Congo, Dem. Rep.	414	0.8	42.1
Cote d'Ivoire	1598	4.2	41.5
Djibouti			41.6
Egypt, Arab Rep.	2841	2.7	31.5
Equatorial Guinea	11410	–10.0	
Eswatini	4714	0.9	54.6
Ethiopia	544	5.7	35
Gabon	9278	–0.9	38
Gambia, The	774	1.9	35.9
Ghana	1741	3.8	43.5
Guinea	849	5.3	33.7

country	average GDP per capita, thousand $	average annual growth rate of GDP per capita	Gini index
Guinea-Bissau	609	2.5	50.7
India	1970	5.3	35.7
Indonesia	4130	3.9	37.8
Iran, Islamic Rep.	6434	–0.6	40.8
Iraq	5585	1.4	29.5
Israel	34212	1.6	39
Japan	48194	1.1	32.9
Jordan	3321	–0.2	33.7
Kazakhstan	10950	2.1	27.5
Kenya	1164	3.1	40.8
Korea, Rep.	27423	2.4	31.4
Kuwait	34206	–2.4	
Kyrgyz Republic	1069	2.3	27.7
Lao PDR	1699	4.6	36.4
Lebanon	6255	–2.8	31.8
Lesotho	1381	–0.2	44.9
Liberia	545	–2.5	35.3
Libya	6963	8.3	
Madagascar	484	1.6	42.6
Malawi	513	0.8	44.7
Malaysia	11702	3.4	41
Maldives	7921	3.1	31.3
Mali	763	2.1	
Mauritania	1723	0.3	32.6
Mauritius	10196	3.5	36.8
Mongolia	4065	2.8	32.1
Morocco	3300	1.3	39.5
Mozambique	587	0.4	54
Myanmar	1480	4.8	30.7
Namibia	6028	–2.1	59.1
Nepal	784	4.1	32.8
Niger	540	2.0	34.3
Nigeria	2430	–1.8	35.1

country	average GDP per capita, thousand $	average annual growth rate of GDP per capita	Gini index
Oman	16057	–2.5	
Pakistan	1148	2.3	33.5
Palestine			33.5
Philippines	3039	5.1	44.4
Qatar	65264	–1.6	
Rwanda	820	4.2	43.7
Sao Tome and Principe	1272	1.1	56.3
Saudi Arabia	20945	–1.0	
Senegal	1489	3.4	40.3
Seychelles	14058	3.4	46.8
Sierra Leone	465	2.6	35.7
Singapore	56867	2.2	
South Africa	7457	–0.7	63
Sri Lanka	3847	2.4	39.8
Sudan	1826	–1.4	34.2
Tajikistan	1026	4.6	34
Tanzania			40.5
Thailand	6133	3.2	36.4
Togo	663	2.5	43.1
Tunisia	4355	0.6	32.8
Turkey	14674	2.1	41.9
Turkmenistan	7259	3.4	
Uganda	925	1.6	42.8
United Arab Emirates	41100	0.7	32.5
Uzbekistan	2298	3.6	
Vietnam	1864	5.7	35.7
Yemen, Rep.	677	–5.3	36.7
Zambia	1657	0.2	57.1
Zimbabwe	1242	–1.0	44.3

Appendix 1: Afro-Asia countries' average per capita GDP and annual growth rate (2015–2019) and Gini index
Source of data: United Nations and World Bank

SUMMARY OUTPUT /1990-1995/

Regression Statistics	
Multiple R	0.116538
R Square	0.013581
Adjusted R Square	0.001552
Standard Error	12.01491
Observations	84

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	162.9778683	162.9779	1.128983	0.29111161
Residual	82	11837.36627	144.3581		
Total	83	12000.34413			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-2.78985	1.476332101	-1.88972	0.062329	-5.7267472	0.14704248	-5.72674721	0.147042476
1990-1995 GDP	0.000296	0.000278311	1.062536	0.291112	-0.0002579	0.00084936	-0.00025793	0.000849365

SUMMARY OUTPUT /1995-2000/

Regression Statistics	
Multiple R	0.3566175
R Square	0.12717604
Adjusted R Square	0.11653185
Standard Error	6.87578778
Observations	84

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	564.8555748	564.8556	11.94793	0.00086948
Residual	82	3876.669526	47.27646		
Total	83	4441.5251			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.6800102	0.839116634	-2.00212	0.048578	-3.34928052	-0.01073994	-3.3492805	-0.010739941
1995-2000 GDP	0.00043187	0.000124942	3.456577	0.000869	0.00018332	0.000680419	0.00018332	0.000680419

SUMMARY OUTPUT /2000-2005/

Regression Statistics	
Multiple R	0.471767
R Square	0.222564
Adjusted R Square	0.213084
Standard Error	8.58168
Observations	84

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1728.820192	1728.82	23.47498	5.898E-06
Residual	82	6038.908892	73.64523		
Total	83	7767.729084			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.10672	1.051683149	-1.05233	0.29574	-3.1988481	0.98541749	-3.19884812	0.985417493
2000-2005 GDP	0.000693	0.000142933	4.845098	5.9E-06	0.00040818	0.00097686	0.000408185	0.000976863

SUMMARY OUTPUT /2005-2010/

Regression Statistics	
Multiple R	0.74494543
R Square	0.55494369
Adjusted R Square	0.54951617
Standard Error	11.5361699
Observations	84

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	13607.27291	13607.27	102.2463	4.4931E-16
Residual	82	10912.82377	133.0832		
Total	83	24520.09668			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-4.2536138	1.435524009	-2.96311	0.003985	-7.1093284	-1.3978993	-7.1093284	-1.397899299
2005-2010 GDP	0.00120038	0.000118712	10.11169	4.49E-16	0.00096422	0.001436538	0.00096422	0.001436538

SUMMARY OUTPUT /2015-2020/

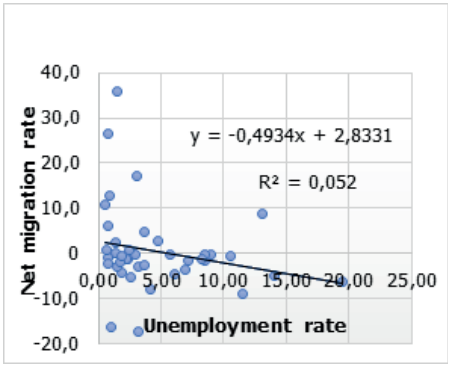
Regression Statistics	
Multiple R	0.428183966
R Square	0.183341509
Adjusted R	0.173259305
Standard E	5.143761888
Observatic	83

ANOVA

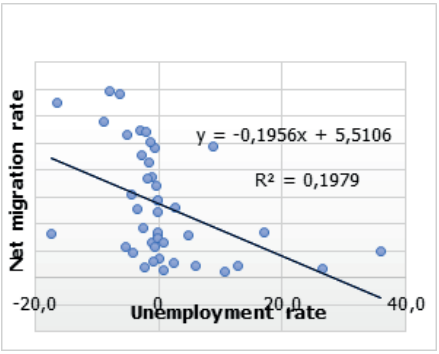
	df	*SS*	*MS*	*F*	*Significance F*
Regressior	1	481.1351	481.1351	18.1846664	5.3892E-05
Residual	81	2143.121	26.45829		
Total	82	2624.256			

	Coefficients	*andard Erı*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.59712365	0.656474	-0.90959	0.36573622	-1.90330082	0.709053528	-1.90330082	0.709054
2015-2020	0.000199389	4.68E-05	4.264348	5.3892E-05	0.00010636	0.000292421	0.000106357	0.000292

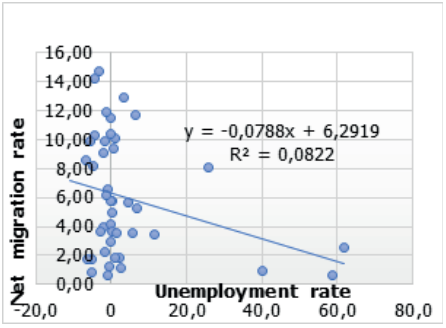
Appendix 2: Regression analyses of net migration and GDP per capita in Afro-Asian countries for 5-period
Source of data: United Nations and World Bank



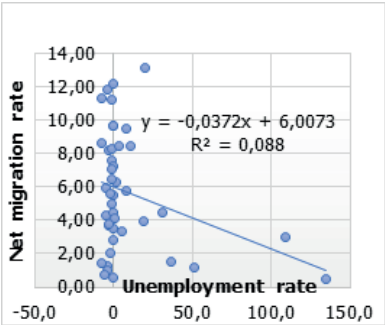
1990–1995



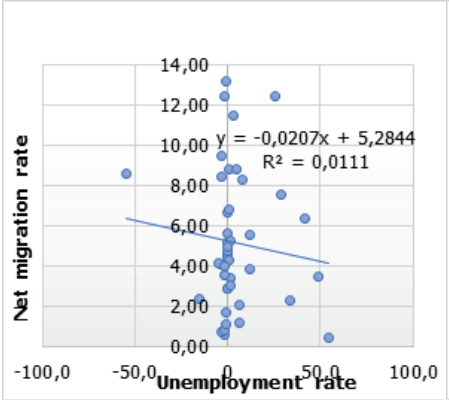
1995–2000



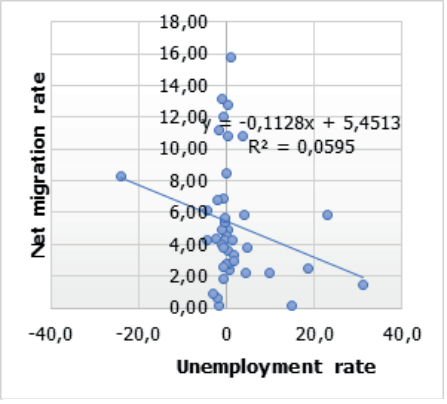
2000–2005



2005–2010



2010–2015



2015–2020

SUMMARY OUTPUT /1990-1995/

Regression Statistics	
Multiple R	0.10889887
R Square	0.01185896
Adjusted R S	-0.0180847
Standard Err	15.4805864
Observation	35

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	94.91099922	94.911	0.396042	0.533473052
Residual	33	7908.402321	239.6486		
Total	34	8003.31332			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-2.6594028	3.124039484	-0.85127	0.400754	-9.0153089	3.696503	-9.01531	3.696503
1990-1995 G	0.00024803	0.000394128	0.629319	0.533473	-0.00055383	0.00105	-0.00055	0.00105

SUMMARY OUTPUT /1995-2000/

Regression Statistics	
Multiple R	0.524355
R Square	0.274948
Adjusted R Square	0.252977
Standard Error	6.895031
Observations	35

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	594.9330188	594.933	12.51399	0.001223
Residual	33	1568.867739	47.54145		
Total	34	2163.800758			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-2.70895	1.405653427	-1.92718	0.062602	-5.56878	0.150871	-5.56878	0.150871
1995-2000 GDP	0.000489	0.0001382	3.537511	0.001223	0.000208	0.00077	0.000208	0.00077

SUMMARY OUTPUT /2000-2005/

Regression Statistics	
Multiple R	0.49060122
R Square	0.24068956
Adjusted R S	0.21768015
Standard Err	11.5160975
Observation	35

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1387.274748	1387.275	10.46048	0.002770278
Residual	33	4376.476579	132.6205		
Total	34	5763.751328			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-0.9991564	2.374547819	-0.42078	0.676645	-5.83021027	3.831897	-5.83021	3.831897
2000-2005 G	0.00068858	0.000212901	3.234267	0.00277	0.000255428	0.001122	0.000255	0.001122

SUMMARY OUTPUT /2005-2010/

Regression Statistics	
Multiple R	0.736148
R Square	0.541914
Adjusted R Square	0.528033
Standard Error	17.4202
Observations	35

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	11846.8896	11846.89	39.03894	4.66E-07
Residual	33	10014.29166	303.4634		
Total	34	21861.18127			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-5.44048	3.654421407	-1.48874	0.146051	-12.8755	1.994493	-12.8755	1.994493
2005-2010 GDP	0.001258	0.000201339	6.248115	4.66E-07	0.000848	0.001668	0.000848	0.001668

SUMMARY OUTPUT /2010-2015/

Regression Statistics	
Multiple R	0.52176423
R Square	0.27223791
Adjusted R S	0.25018451
Standard Err	13.886423
Observation	35

Plot Area | alue) Axis

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2380.421618	2380.422	12.34449	0.001306509
Residual	33	6363.480505	192.8327		
Total	34	8743.902123			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	0.35432975	2.961769563	0.119634	0.905498	-5.67143574	6.380095	-5.67144	6.380095
2010-2015 G	0.0004283	0.000121901	3.513472	0.001307	0.000180287	0.000676	0.00018	0.000676

SUMMARY OUTPUT /2015-2020/

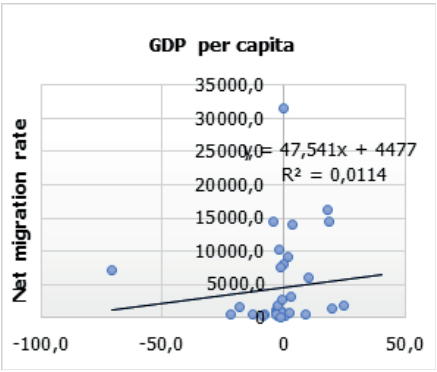
Regression Statistics	
Multiple R	0.366099
R Square	0.134028
Adjusted R Square	0.107787
Standard Error	7.213893
Observations	35

ANOVA

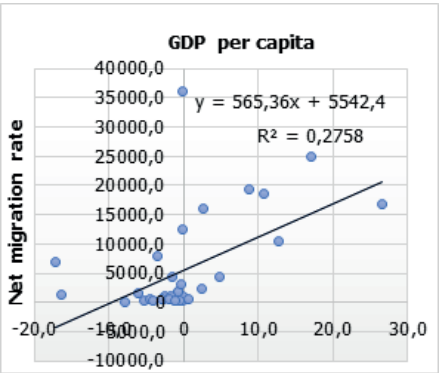
	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	265.7945425	265.7945	5.10748	0.030547
Residual	33	1717.328404	52.04025		
Total	34	1983.122947			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	0.489562	1.577663335	0.310308	0.758278	-2.72022	3.699342	-2.72022	3.699342
2015-2020 GDP	0.000169	7.48106E-05	2.259973	0.030547	1.69E-05	0.000321	1.69E-05	0.000321

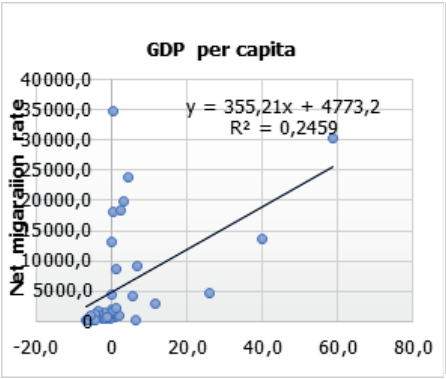
Appendix 3: Regression between net migration rate and unemployment rate in Asian countries for 5-year period
Source of data: World Bank, United Nations Department of Economic and Social Affairs, Population Division 2020, International Migrant Stock 2020



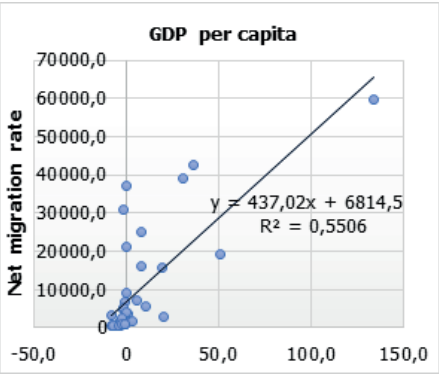
1990–1995



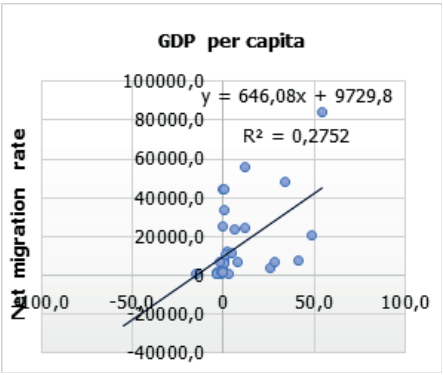
1995–2000



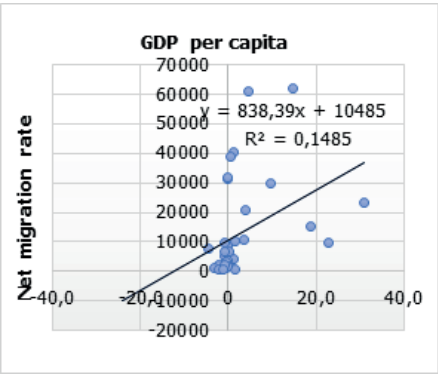
2000–2005



2005–2010

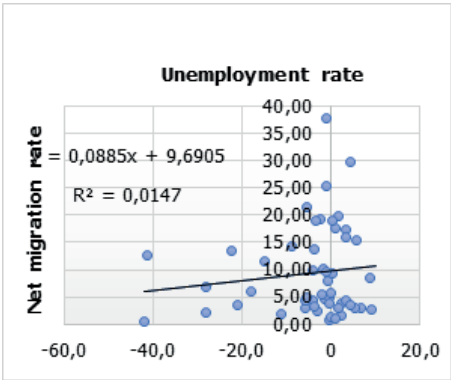


2010–2015

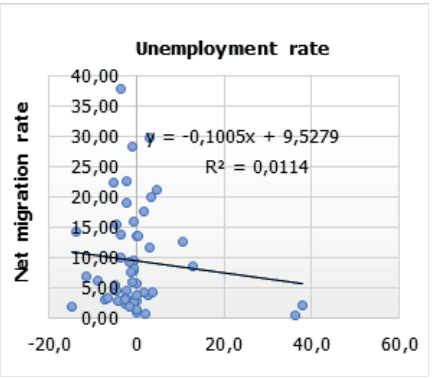


2015–2020

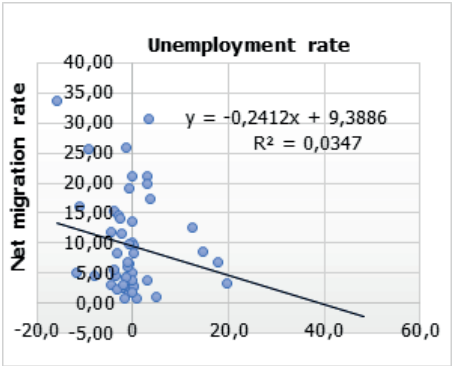
Appendix 4: Regression between net migration rate and GDP per capita in Asian countries for 5-year period
Source of data: World Bank, United Nations Department of Economic and Social Affairs, Population Division 2020, International Migrant Stock 2020



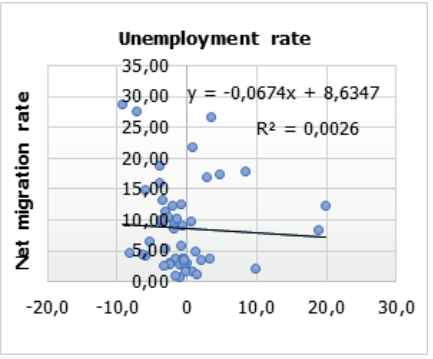
1990–1995



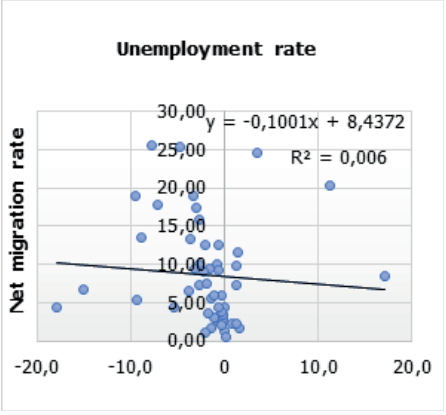
1995–2000



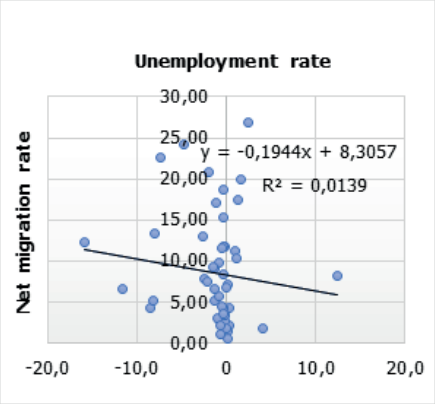
2000–2005



2005–2010



2010–2015



2015–2020

SUMMARY OUTPUT /1990-1995/								
Regression Statistics								
Multiple R	0.12111573							
R Square	0.01466902							
Adjusted R Square	-0.0054398							
Standard Error	11.2666847							
Observations	51							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	92.59921827	92.59922	0.729483	0.397207313			
Residual	49	6219.970978	126.9382					
Total	50	6312.570196						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-5.9757112	2.397176458	-2.49281	0.016102	-10.79301768	-1.1584048	-10.79301768	-1.158404786
1990-1995	0.16578752	0.194108398	0.854098	0.397207	-0.224287905	0.55586295	-0.224287905	0.555862953

SUMMARY OUTPUT /1995-2000/								
Regression Statistics								
Multiple R	0.10687087							
R Square	0.01142138							
Adjusted R Square	-0.0087537							
Standard Error	9.00900038							
Observations	51							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	45.94695486	45.94695	0.566114	0.455406879			
Residual	49	3976.942304	81.16209					
Total	50	4022.889259						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.05109089	1.914598932	0.548988	0.585507	-2.796439718	4.898621488	-2.796439718	4.898621488
1995-2000	-0.1136942	0.151107743	-0.75241	0.455407	-0.417356623	0.189968134	-0.417356623	0.189968134

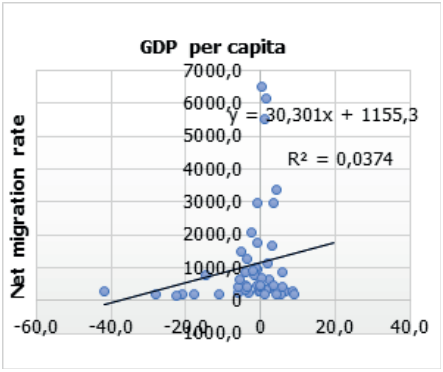
SUMMARY OUTPUT /2000-2005/								
Regression Statistics								
Multiple R	0.18633129							
R Square	0.03471935							
Adjusted R Square	0.01501974							
Standard Error	6.2112019							
Observations	51							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	67.99318084	67.99318	1.762439	0.190472641			
Residual	49	1890.37242	38.57903					
Total	50	1958.365601						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.94036137	1.347564235	0.697823	0.488586	-1.767670347	3.64839309	-1.767670347	3.648393086
2000-2005	-0.1439706	0.108446842	-1.32757	0.190473	-0.361902731	0.07396145	-0.361902731	0.073961446

SUMMARY OUTPUT /2005-2010/								
Regression Statistics								
Multiple R	0.05077818							
R Square	0.00257842							
Adjusted R Square	-0.0177771							
Standard Error	5.46212621							
Observations	51							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3.779157965	3.779158	0.126669	0.723438435			
Residual	49	1461.906316	29.83482					
Total	50	1465.685474						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.1319026	1.205663005	-0.1094	0.91333	-2.554773075	2.290967961	-2.554773075	2.290967961
2005-2010	-0.0382772	0.107548365	-0.35591	0.723438	-0.254403682	0.17784938	-0.254403682	0.17784938

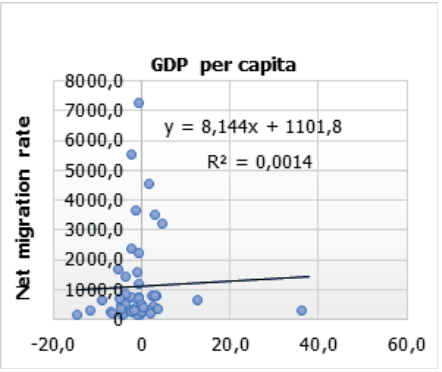
SUMMARY OUTPUT /2010-2015/								
Regression Statistics								
Multiple R	0.07765419							
R Square	0.00603017							
Adjusted R Square	-0.0142549							
Standard Error	5.21883516							
Observations	51							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	8.096545679	8.096546	0.297271	0.588071653			
Residual	49	1334.575778	27.23624					
Total	50	1342.672324						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.3171529	1.200898329	-1.09681	0.278087	-3.730448457	1.09614263	-3.730448457	1.09614263
2010-2015	-0.0602684	0.11053842	-0.54523	0.588072	-0.282403658	0.16186689	-0.282403658	0.161866887

SUMMARY OUTPUT /2015-2020/								
Regression Statistics								
Multiple R	0.11790975							
R Square	0.01390271							
Adjusted R Square	-0.0062217							
Standard Error	4.03197032							
Observations	51							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	11.23079223	11.23079	0.690837	0.40991174			
Residual	49	796.5824465	16.25678					
Total	50	807.8132387						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.647161	0.927236181	-0.69795	0.48851	-2.510511832	1.216189905	-2.510511832	1.216189905
2015-2020	-0.0714995	0.08602312	-0.83117	0.409912	-0.24436944	0.101370422	-0.24436944	0.101370422

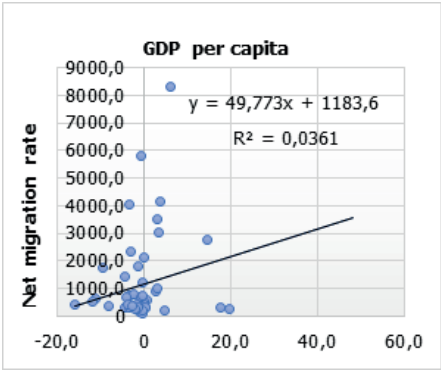
Appendix 5: Regression between net migration rate and unemployment rate in African countries for 5-year period
Source of data: World Bank, United Nations Department of Economic and Social Affairs, Population Division 2020, International Migrant Stock 2020



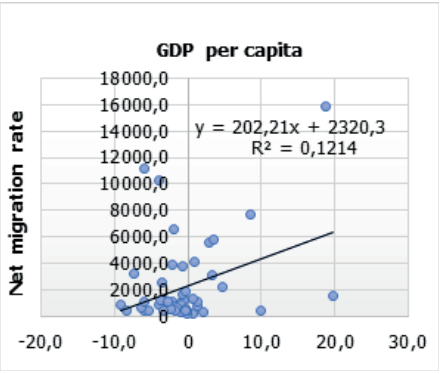
1990–1995



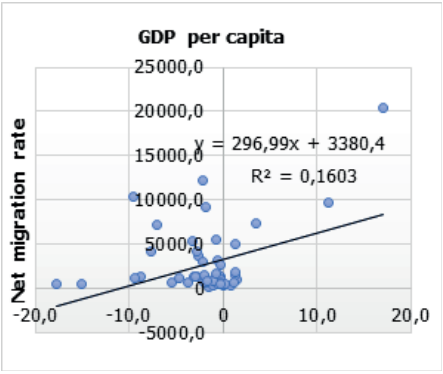
1995–2000



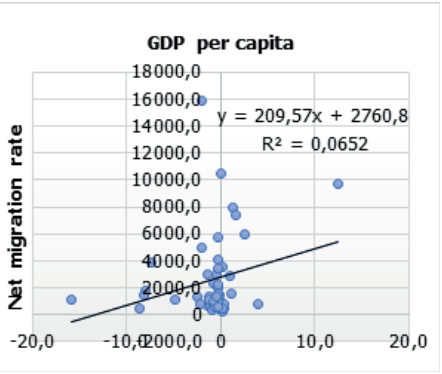
2000–2005



2005–2010



2010–2015



2015–2020

SUMMARY OUTPUT /1990-1995/

Regression Statistics	
Multiple R	0.174535
R Square	0.0304625
Adjusted R Square	0.009834
Standard Error	9.064426
Observations	49

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	121.3330117	121.333	1.476721	0.23035769
Residual	47	3861.699496	82.16382		
Total	48	3983.032508			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-3.575981	1.609979899	-2.22113	0.031197	-6.8148428	-0.3371192	-6.81484282	-0.337119237
1990-1995 GDP	0.0010673	0.000878248	1.215204	0.230358	-0.0006996	0.00283406	-0.00069956	0.002834056

SUMMARY OUTPUT /1995-2000/

Regression Statistics	
Multiple R	0.03710132
R Square	0.00137651
Adjusted R Squ	-0.0198708
Standard Error	6.9379747
Observations	49

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	3.118459812	3.11846	0.064785	0.800197238
Residual	47	2262.368168	48.13549		
Total	48	2265.486628			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.8885191	1.229671944	-0.72257	0.473527	-3.362299983	1.585262	-3.362299983	1.585261753
1995-2000 GDF	0.00016902	0.000664052	0.254529	0.800197	-0.00116688	0.001505	-0.00116688	0.001504921

SUMMARY OUTPUT /2000-2005/

Regression Statistics	
Multiple R	0.1797006
R Square	0.0322923
Adjusted R Square	0.0117028
Standard Error	5.9463638
Observations	49

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	55.45689716	55.4569	1.568385	0.21663777
Residual	47	1661.884415	35.35924		
Total	48	1717.341312			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.132966	1.055789509	-1.0731	0.288706	-3.2569403	0.99100875	-3.25694031	0.991008748
2000-2005 GDP	0.0006649	0.000530953	1.252352	0.216638	-0.0004032	0.00173308	-0.0004032	0.00173308

SUMMARY OUTPUT /2005-2010/								
Regression Statistics								
Multiple R	0.48719116							
R Square	0.23735523							
Adjusted R Squ	0.22112874							
Standard Error	3.89948366							
Observations	49							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	222.4275448	222.4275	14.62764	0.000385013			
Residual	47	714.6807236	15.20597					
Total	48	937.1082684						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-2.6335251	0.686258997	-3.83751	0.00037	-4.014100123	-1.25295	-4.014100123	-1.252950068
2005-2010 GDF	0.00066969	0.0001751	3.82461	0.000385	0.000317434	0.001022	0.000317434	0.001021945

SUMMARY OUTPUT /2010-2015/								
Regression Statistics								
Multiple R	0.4070365							
R Square	0.1656787							
Adjusted R Square	0.1479272							
Standard Error	4.7696615							
Observations	49							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	212.3275869	212.3276	9.333216	0.00370155			
Residual	47	1069.234509	22.74967					
Total	48	1281.562096						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-3.294197	0.858203038	-3.83848	0.000369	-5.0206789	-1.5677153	-5.02067892	-1.567715277
2010-2015 GDP	0.0005399	0.000176713	3.055031	0.003702	0.00018436	0.00089537	0.000184363	0.000895367

SUMMARY OUTPUT /2015-2020/								
Regression Statistics								
Multiple R	0.26831348							
R Square	0.07199212							
Adjusted R Squ	0.05181804							
Standard Error	2.90337649							
Observations	48							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	30.08138763	30.08139	3.568545	0.06519749			
Residual	46	387.761372	8.429595					
Total	47	417.8427597						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.239111	0.548903795	-2.25743	0.028772	-2.343997012	-0.13422	-2.343997012	-0.134224947
2015-2020 GDF	0.00025471	0.000134832	1.889059	0.065197	-1.66971E-05	0.000526	-1.66971E-05	0.000526107

Appendix 6: Regression between net migration rate and GDP in African countries for 5-year period
Source of data: World Bank, United Nations Department of Economic and Social Affairs, Population Division 2020, International Migrant Stock 2020

clusters/indicators	netmigrate	gdppop	unemp	popdens	imi5yrs	femimi5	emi5yrs	fememi5
I.a Nigeria-type countries	0,48	8,50	31,6	3,29	0,50	0,40	0,53	0,46
I.b Ivory Coast-type countries	0,47	2,98	11,7	1,53	0,45	0,62	0,54	0,54
I.c Namibia-type countries	0,49	8,55	72,2	0,52	0,60	0,62	0,41	0,49
II. United Arab Emirates-type countries	0,83	63,86	17,5	3,55	0,69	0,31	0,33	0,49
III. Singapore-type	0,93	92,96	18,1	100,00	0,32	0,12	0,35	0,76

Appendix 7: Clusters and their names with the average in terms of the indicators.
Source: Authors' calculations based on the main indicators according to the data of United Nations and World Bank

7. BRAZILIAN'S RESOURCES: ECONOMIC RELEVANCE AND TRADE PARTNERS

Jalice MIRANDA – Pyyanouth INPHAYALATH
Farshedi SHAMSIDIN – Nuno MORGADO

7.1 Introduction

The natural resources of a country or territory have always been associated with wealth but also with the valorisation of the territory or country. This continues to this day, especially when we talk about the impact of globalisation on the intensification of relations between countries, particularly regarding the matter of international trade.

After the industrial revolution, economies focused intensively on the production, consumption, and marketing of goods and services on a large scale. Therefore, those of the latter that stood out were the ones which succeeded in adapting their economies to promote the development of certain sectors (metal, chemicals, auto, and textiles, among others) – i.e., developed countries.

However, in the last few decades a new group of countries has emerged whose economies are growing and accelerating development based mainly on the presence and use of natural resources – the so-called emerging countries (Brazil, China, and India).

These countries have great advantages, such as natural resources that are highly desirable on the international market, a good climate for the cultivation of food products that are in strong demand throughout the world, and sources for the exploitation of raw materials. Through this, they establish trade relations with partner countries and, depending on the resource / product supplied, the country can determine a position of advantage in negotiations that may extend beyond trade relations.

In the specific case of Brazil, on which our research focuses, we will address the theme the 'Economic Relevance of Brazilian Resources and Business Partners.' The objective will be to present the context and information about Brazil and its most commonly traded goods/resources, main country partners, their relevance for the country (considering their value in the country's trade balance) and finally, the degree of dependence of the partner countries, thus clarifying Brazil's position in the context of international trade.

The research methodology used was basically the consultation and analysis of official periodic reports, reports from trade-related associations in the country, as well as international databases.

7.2 Contextualisation

7.2.1 Geographic Context

Brazil is located in South America. In terms of territory, it is the largest South American country and is located in the southern hemisphere with a total area of 8,515,770 sq. km, of which 8,358,140 sq. km is terrestrial (land) and 157,630 sq. km maritime. In world ranking, it is the sixth largest country. Apart from Chile and Ecuador, all South American countries border Brazil.

The climate is mostly tropical (a little more temperate in the south of the country), which means a hot and humid climate and frequent rains throughout the year, although there are records of recurrent droughts in the Northeast.

Among the natural resources that can be found in the country, there is alumina, bauxite, beryllium, gold, iron ore, manganese, nickel, niobium, phosphates, platinum, tantalum, tin, rare earth elements, uranium, petroleum, hydropower, timber, and forest resources, among others.

The country is home to the Amazon rainforest, where most of the exploitation of forest products is carried out (mainly wood).

The country contains 60% of the Amazon rainforest, which is widely exploited for its resources. This has been causing environmental problems such as deforestation, which leads to the destruction of natural habitat and threatens the extinction of numerous indigenous plants and animals. There are also the matters of illegal wildlife trade and illegal poaching. Other problems include air and water pollution in Rio de Janeiro, São Paulo, and several other large cities, as well as land degradation and water pollution caused by inadequately managed mining activities, wetland degradation, and severe oil spills.

7.1. Figure: 'Political Map of Brazil,' Brasilescola accessed May 22, 2021, Source: https://brasilescola.uol.com.br/brasil/estados-brasil.htm

7.2.2 Social-Political Context

The country works on the governance model 'Federative Presidential Republic,' which means the head of state is the president (currently Jair Bolsonaro), who is elected by the people, with federal entities that are autonomous in the governance of the states.

Regarding social and demographic characteristics, the country consists of a population that includes several races, 47.7% of whom are white, 43.1% are mulattos (mixed black and white), 7.6% are black, 11% are Asian. 0.4% Indigenous (according to the 2010 census). It has a population of 213 million. Despite the decline in fertility since 1960, the country still has a young population with 81% of the population aged 0-54 years. The population of the population is Roman Catholic (64.6%). However, the country is not a confessional state.

7.2.3 Economic Context

Brazil has the world's eighth-largest economy, but it is also emerging from the worst recession in the country's history, which occurred in 2015 and 2016. Brazil's GDP increased by 1% in 2017, inflation dropped to record lows of 2.9 percent, and the Central Bank cut interest rates from 13.75 percent in 2016 to 7% in 2017 (Cia.gov 2021).

To preserve the credibility of government finances, the former president Michel Temer's administration initiated a few fiscal and structural reforms. In December 2016, congress passed legislation to limit government spending. Government spending increased to 73.7% of GDP at the end of 2017, up from more than 50 percent in 2012. In order to increase revenue, the government boosted infrastructure projects such as oil and natural gas auctions.

Other 2016 economic reforms were aimed at lowering barriers to foreign investment and improving working standards. Local content standards, for example, have boosted jobs in Brazil's workforce and manufacturing sector.

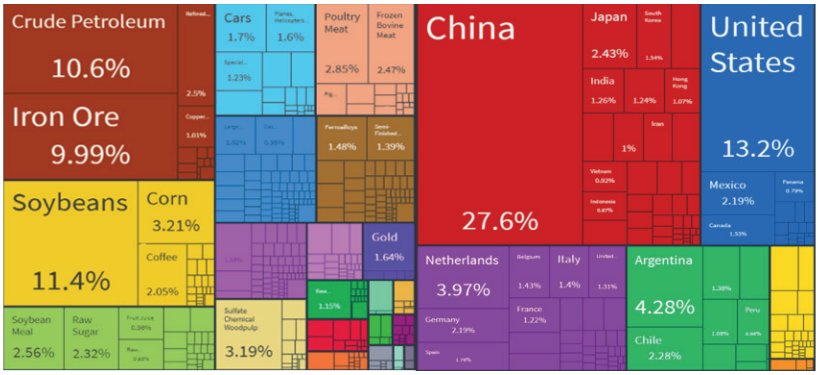
Brazil is a member of Mercosur, a trade bloc that also comprises Argentina, Paraguay, and Uruguay. Mercosur adopted a protectionist policy after the Asian and Russian financial crises to avoid exposure to volatile international markets and is currently negotiating Free Trade Agreements with the European Union and Canada.

It is also a member of BRICS, a group constituted of five large emerging economies: Brazil, Russia, India, China, and South Africa, which together account for around 42 percent of the world's population, 23% of GDP, 30% of territory, and 18% of global trade.

7.3 Analysis of Brazil's Trade Resources

According to the Economic Complexity Index (The Observatory of Economic Complexity, 2021) in 2019 Brazil ranked 9th in the world in terms of GDP (current US$), 25th in total exports, 27th in total imports, 79th in terms of GDP per capita (current US$), and 49th in terms of economic complexity.

The top exports of Brazil were soybeans ($26.1B), crude petroleum ($24.3B), iron ore ($23B), corn ($7.39B), and sulphate chemical wood pulp ($7.35B).



7.2. Figure: Exports and Destinations 2019, May 22, 2021
https://oec.world/en/profile/country/bra#yearly-exports
Source: www.oec.world

As can be seen, the main destination for Brazil's products is China (27.6% in 2019). However, as there are also other countries with whom Brazil also has intense commercial relations, in Tables 5.1 and 5.2 (presented below) these partners are shown with the products / resources most typically exported based on data from 2019 (The Observatory of Economic Complexity, 2021). The selection criteria were relevance from a global perspective (commodities) and share of value in the country's total exports.

Exported Good/Material (cluster in section)	Trade Value (USD)
Mineral Products	57.114.171.755
Vegetable Products	40.868.672.076
Foodstuffs	20.477.458.471
Transportation	17.292.412.201
Animal Products	17.075.508.400
Machines	16.441.524.145
Metals	16.012.581.065
Chemical Products	10.656.711.490
Paper Goods	10.018.840.860
Plastics and Rubbers	4.853.661.390
Precious Metals	4.442.088.713
Textiles	3.621.219.021
Wood Products	3.011.978.909
Stone And Glass	1.785.033.644
Animal Hides	1.277.260.887
Animal and Vegetable Bi-Products	1.120.885.369
Footwear and Headwear	1.116.253.047
Instruments	1.060.559.599
Miscellaneous	946.006.961
Weapons	437.615.901
Arts and Antiques	389.610.247
Total	**230.020.054.151**

7.1. Table: Exported Goods/Resources in 2019 Source: OEC (2021)

The following table shows, in more detail, exports of more significant value in the annual total of country exports (2019), accounting for 75% of the latter.

Exported Good/Material	Trade Value (USD)
Soybeans	26.115.208.506
Crude Petroleum	24.280.001.841
Iron Ore	22.974.607.343
Corn	7.394.673.149
Sulfate Chemical Woodpulp	7.346.679.002
Poultry Meat	6.546.097.644
Soybean Meal	5.899.413.711
Refined Petroleum	5.761.225.701
Frozen Bovine Meat	5.674.258.931
Raw Sugar	5.325.242.046
Coffee	4.716.962.034
Cars	3.907.062.072
Gold	3.762.456.942
Planes. Helicopters. and/or Spacecraft	3.688.294.651
Ferroalloys	3.413.855.003
Semi-Finished Iron	3.203.250.915
Special Purpose Ships	2.821.744.796
Aluminium Oxide	2.710.697.219
Raw Cotton	2.638.106.436
Large Construction Vehicles	2.338.070.224
Copper Ore	2.320.711.838
Fruit Juice	2.248.730.133
Gas Turbines	2.176.536.742
Raw Tobacco	2.134.019.131
Vehicle Parts	1.795.555.217
Delivery Trucks	1.515.986.256
Pig Meat	1.494.965.560
Engine Parts	1.303.561.183
Tractors	1.270.776.016
Rubber Tires	1.177.229.530
Tanned Equine and Bovine Hides	1.165.035.015
Packaged Medicaments	1.106.568.076

Exported Good/Material	Trade Value (USD)
Steel Ingots	1.012.857.091
Alcohol > 80% ABV	1.009.103.960
Pig Iron	1.003.843.524
	173.253.387.438

7.2. Table: Value of Exported Goods/Resources in 2019 Source: OEC (2021)

As for the destination of products, we present below the 10 countries with the highest value of imports from Brazil in 2019.

	Continent	Country	Trade Value
1	**Asia**	**China**	**63,467,395,478**
2	North America	United States	30,465,122,384
3	**South America**	**Argentina**	**9,846,702,502**
4	Europe	Netherlands	9,130,365,027
5	**Asia**	**Japan**	**5,580,926,267**
6	South America	Chile	5,240,416,963
7	**North America**	**Mexico**	**5,040,594,070**
8	Europe	Germany	5,029,658,587
9	**Europe**	**Spain**	**4,091,610,659**
10	Asia	South Korea	3,551,764,561

7.3. Table*:* Value of Exported Goods/Resources in 2019 by Destination
Source: OEC (2021)

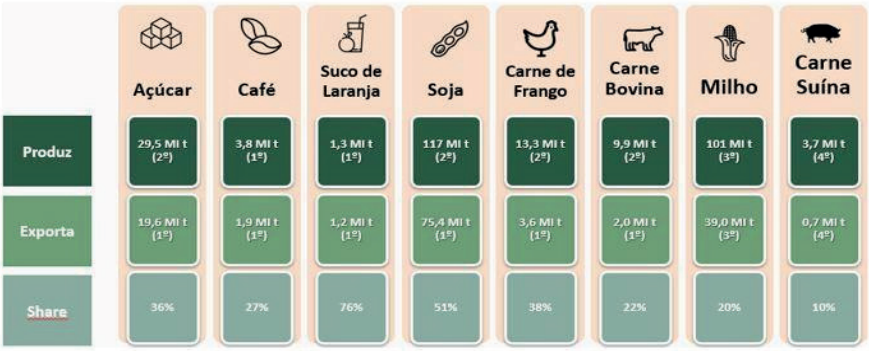
Exports mainly went to China ($63.5B), the United States ($30.5B), Argentina ($9.85B), the Netherlands ($9.13B) and Japan ($5.58B).

In February 2021, Brazil exported $16.2 billion and imported $15 billion, resulting in a $1.15 billion trade surplus. Brazil's exports increased by $600 million (3.85%), from $15.6 billion to $16.2 billion between February 2020 and February 2021.

In February 2021, the top exports of Brazil were iron ore ($2.88B), crude petroleum ($1.61B), soybeans ($1.13B), raw sugar ($608M) and poultry meat ($473M). Exports were mainly from São Paulo ($3.18 billion), Minas Gerais ($2.21 billion), Pará ($2.07 billion), Rio de Janeiro ($1.38 billion), and Mato Grosso ($1.32 billion), while imports were primarily from São Paulo ($4.41 billion), Rio de Janeiro ($2.65 billion), Santa Catarina ($1.88 billion), Paraná ($989 million) and Amazonas ($945 million). Exports went mainly to China ($4.84 billion), the United States ($1.7 billion), Argentina ($759 million), the Netherlands ($427 million), and Chile ($368 million) in February 2021.

In February 2021, an increase in exports to China ($265 million or 5.78 percent), Bahrain ($134 million or 449 percent), and Italy ($109 million or 53.4 percent) is mainly explainable by increases in commodity exports of iron ore ($1.4 billion or 94.4 percent), raw sugar ($224 million or 58.3 percent) and soybean meal ($212 million or 82.4 percent). In February 2021, an increase in imports from Brazil ($1.04 billion. or 181%), China ($944 million or 39.9%), and Russia ($183 million or 114%), as well as commodity imports of electricity ($193 million or 8.77 %), potassium fertilisers ($128 million or 126 %), and telephones ($108 million or 40.5 percent) explain the increase in Brazil's year-on-year imports.

The figure below (Figure 5.3) summarises Brazilian production, exports, and share of products (sugar, coffee, orange juice, soy, chicken meat, bovine meat, corn, and pork meat) in the World Ranking in 2019, giving a general idea of the country's position as an exporter worldwide.



Fonte: USDA, 2020. Elaboração CNA.

7.3. Figure: Brazilian Production and Exports in World Ranking in 2019
Source: USDA, 2020

7.3.1 Plant, Animal and Textile Products

7.3.1.1 Grains (Soybeans; Corn; Coffee)

Agribusiness is recognised as a major driver of Brazil's economy. In 2019, it was responsible for 20.5% of the national GDP, and in 2020 reached 26.6%, reflecting the evolution in the performance of the agricultural sector (an increase of 24.2%) and the livestock sector (24.56%), which are also the largest segments of agribusiness (CNA, 2020).

According to the Cepea report (Cepea, 2020) 2020 was a positive year for agrobusiness exports. Despite the expected effects of the world pandemic the volume of exports of nearly all agribusiness products grew, with the exception of oranges

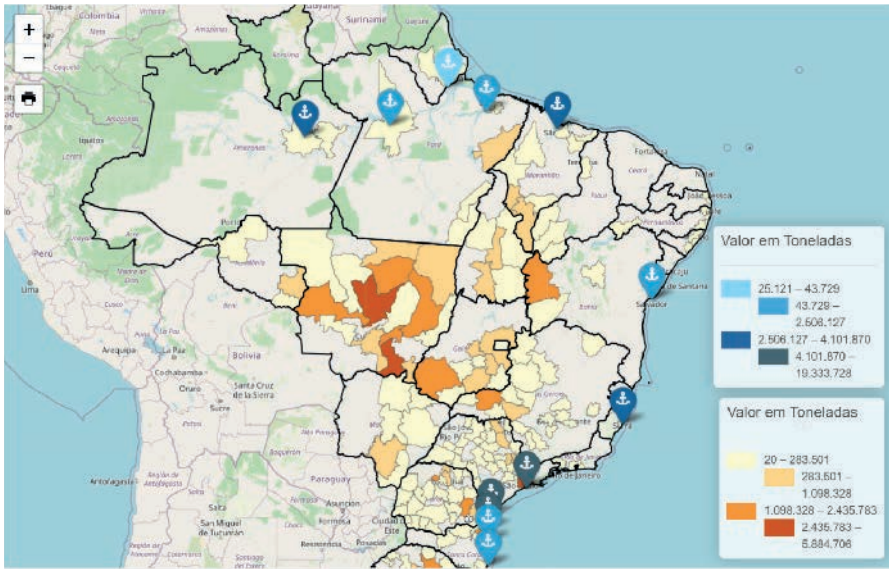
and cellulose, ending up representing 48% of total exports in the year and exceeding the share of the previous year (43%).

Regarding agricultural products, the country stands out for the production of soybean (and its derivatives), corn and coffee.

Worldwide, it qualifies as the:

Second largest exporter of soybeans, despite being the largest producer, behind the United States (Embrapa, n.d). The main importers are China, Spain, the Netherlands, and Thailand.

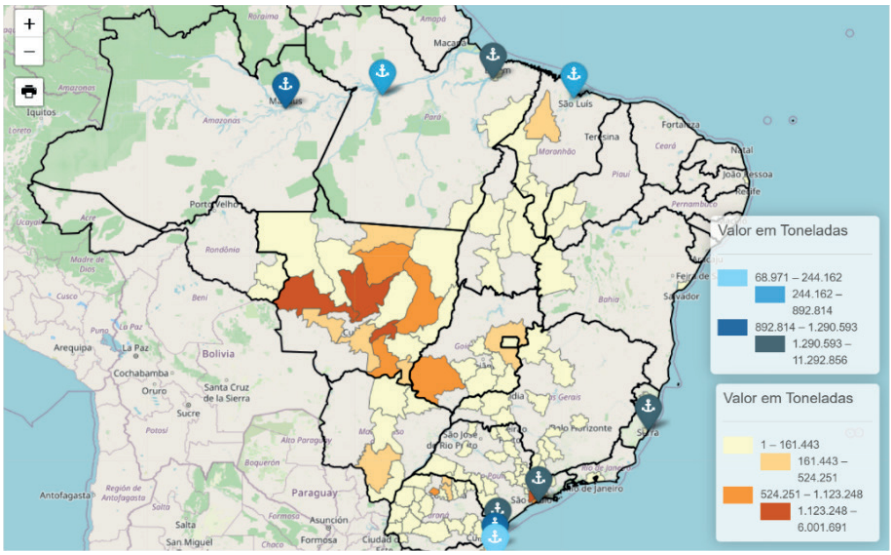
In the export of soybean meal, European countries are in first place, and in soybean oil the Asian countries (except China) are among the largest importers. The states that produce the most are Mato-Grosso, Paraná, and Rio Grande (Embrapa, 2017). The variety of products that can be produced with soy, together with the recognition of its nutritional value, have contributed to the increase in demand for this product.



7.4. Figure: Production and Exportation of Soy in States of Brazil
Source: Brazilian Agricultural Research Corporation (AMBRAPA) (2019)

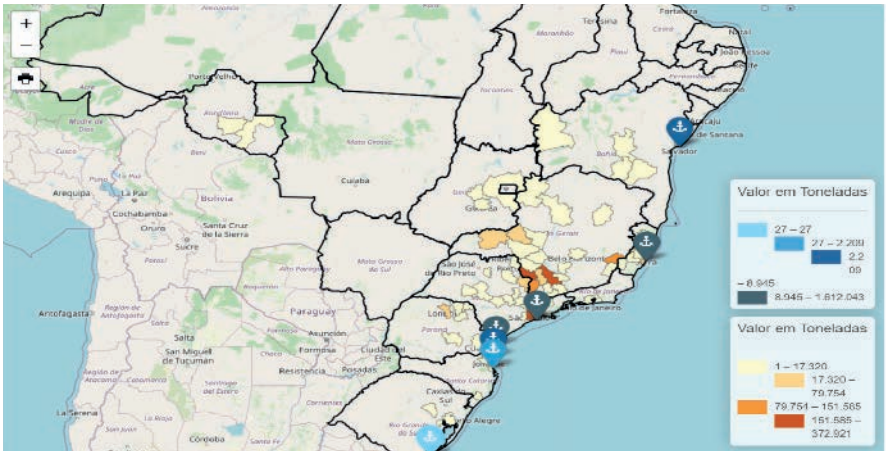
Brazil is the second largest exporter of corn in the world, behind the United States. Brazil exported $7.39 billion worth of corn in 2019, making it the world's second-largest corn exporter (OEC 2021). Corn was Brazil's fourth most valuable export commodity in the same year. Major corn export destinations are Japan ($ 1.11 billion), Iran ($ 972 million), Vietnam ($ 661 million), and South Korea ($ 588 million)

The largest producing states are Mato Grosso, Paraná, and Goiás (as shown in the figure below).



7.5. Figure: Production and Exportation of Corn in States of Brazil
Source: Brazilian Agricultural Research Corporation (AMBRAPA) (2019)

The country is the largest coffee exporter (and producer) in the world (Cecafe 2021), followed by Vietnam and Colombia. The main exporting countries are the United States, Germany, and Italy. The three largest producer states are Minas Gerais, Espírito Santo, and São Paulo.



7.6. Figure: Production and Exportation of Coffee in States of Brazil
Source: Brazilian Agricultural Research Corporation (AMBRAPA)

7.3.1.2 Analysis of Trade Relations (Dependence, Strategic Advantages)

According to the Brazilian agricultural research company (Embrapa), the country currently produces a quantity of food that serves about 800 million people worldwide and, based on historical data, should continue to expand to the point of becoming the largest grain exporter in the world (it is currently the second largest behind the United States). The study recalls that the Brazilian contribution to the food supply is expressed in a direct and indirect way, since part of the production of soy and corn is destined for use in cattle feed and, consequently, in the production of meat and milk (Contini and Aragão n.d.)

It is also important to mention the following:

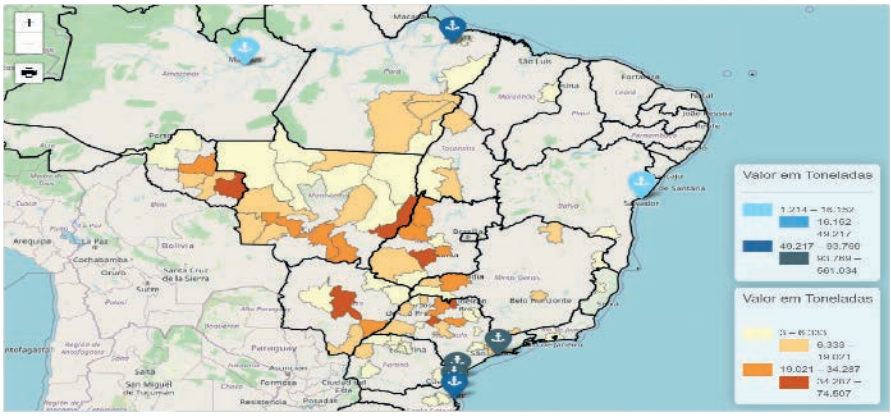
The participation of basic products in international trade is growing, driven mainly by Asian demand, while new markets for the use of agricultural products in addition to food are emerging. For example: the production of electrical energy, transport in the production of plastics and other chemical products.

Brazilian agribusiness, in addition to being very competitive and innovative, has a relative abundance of natural resources (water and land) that are increasingly scarce in other regions of the world. Thus, taking advantage of the export opportunities open to agribusiness and those available for the production of commodities is fundamental to development of the country.

7.3.1.3 Animal Products (Poultry Meat; Bovine Meat; Pork Meat)

Together with other agribusiness products, animal meat exports are one of the most valuable elements of the Brazilian trade balance. The country is established among the largest meat exporters in the world, and its exports have contributed a lot to the weight of livestock in the country's total exports.

Beef, in particular, is the most commonly exported of animal products, with a 38.56% share of related exports, including frozen meat and normal bovine meat (OEC 2019). The main importers are China, Hong Kong, and Egypt. The main producing states are Mato Grosso, São Paulo, and Goiás.

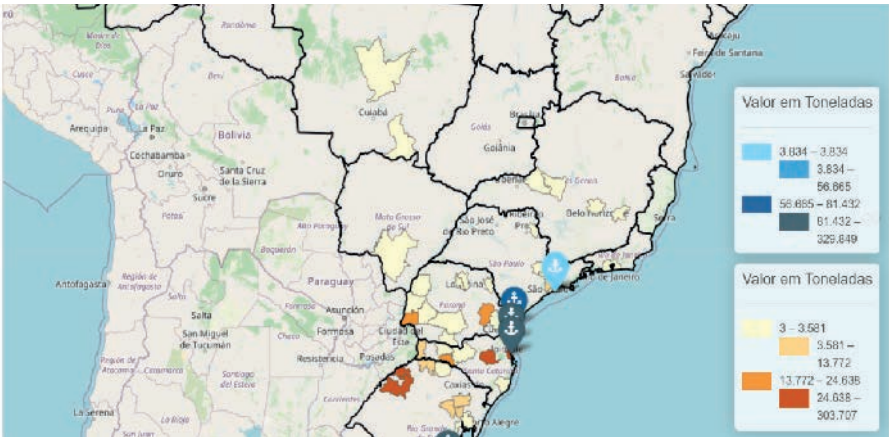


7.7. Figure: Production and Exportation of Bovine Meat in States of Brazil
Source: (Brazilian Agricultural Research Corporation (AMBRAPA) (2019)

As for pork meat, although it is less well represented than other meats in livestock exports, it is still significant, representing in 2019 a total of 8.75% of total livestock exports and 0.65% of the country's total exports.

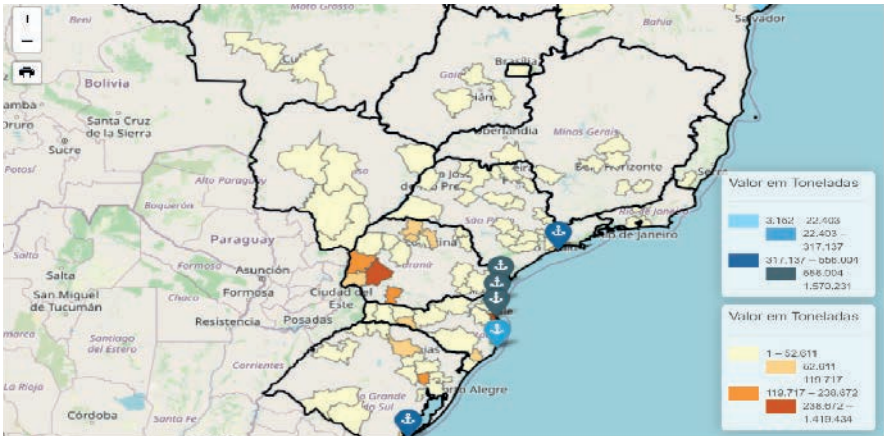
The main importers are to China, Hong Kong, and Chile, while the main producing states are Paraná, Santa Catarina, and Rio Grande do Sul.

The pork meat market was extremely busy in 2019 due to the incidence of African swine fever (PSA) in China, Southwest Asia, and European countries. This led to movement in the world market aimed at meeting China's demand for pork and other types of meat, which at first was extremely beneficial to Brazil.



7.8. Figure: Production and Exportation of Pork Meat in States of Brazil
Source: Brazilian Agricultural Research Corporation (AMBRAPA) (2019)

Finally, we can also talk about poultry meat – more specifically, chicken meat, which represented about 38.3% of the total exports of livestock and 2.85% of the total exports of the country (2019). The main export destinations are China, Japan, and Saudi Arabia. As with pork, the states that produce the most are Paraná, Rio Grande do Sul, and Santa Catarina.



7.9. Figure: Production and Exportation of Chicken in States of Brazil
Source: (Brazilian Agricultural Research Corporation (AMBRAPA) (2019)

7.3.1.4 Analysis of Trade Relations

Once again, China is positioned as the main export partner, while the trend is for export values to reach a new record in 2021, driven especially by expectations of firm Chinese demand for beef, pork, and poultry cuts.

Brazil has become a world power in terms of the export of meat, although it still imports a small amount of this product. Issues with production must be addressed for the country to increase productivity, since it has the largest herds that can be commercialised in the world. Brazil's second place in meat consumption by total equivalent per carcass reflects its productive and commercial capacity.

The country is very well set up in terms of production, so it must continue to prepare to supply the world and amplify its share of the market in the case that any other suppliers decrease their capacity. As an example, we can mention the swine fever that affected China in 2019, and consequentially the fluctuations in the world meat market dynamic, which contributed to the increase in production and export of protein from Brazil. The fires in Australia are also an example.

In the case of beef, the main destination has been China, together with Hong Kong. Higher revenue was also related to the high dollar exchange rate.

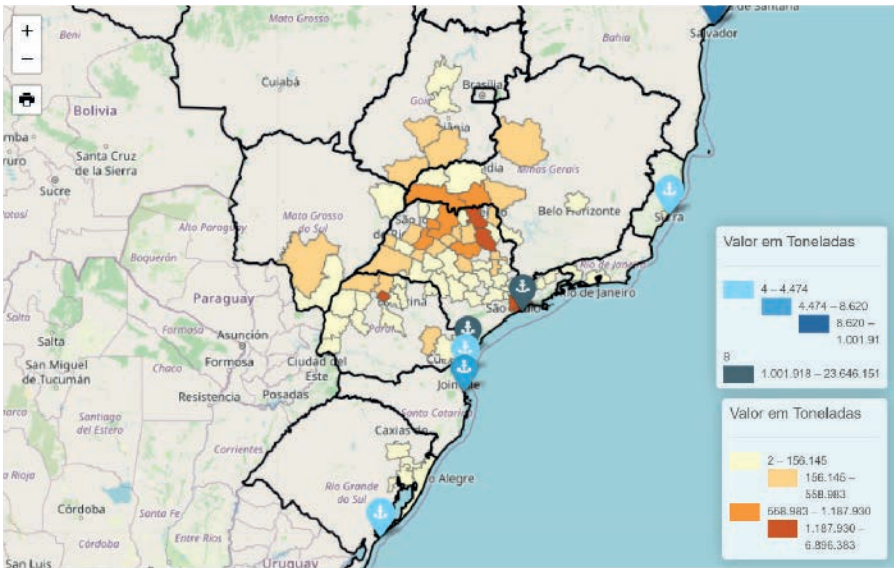
In 2020, Chinese demand increased as expected. However, agreements between China and the United States may interfere with prospects for Brazilian exports, as there is a commitment by the Asian country to massive purchases of North American agricultural products.

This increase in the volume and share of exports to China and Hong Kong suggests optimism in the beef production chain at a time of apprehension in relation to the economic impacts of the pandemic on the consumption capacity of the Brazilian population and main importing countries. However, the great dependence on only two buyers is worrying. Should any health, economic, or political problems occur, Brazil will suffer a drastic decrease in its beef exports, thus market diversification should be considered.

7.3.2 Foodstuffs (Sugar; Fruit Juice; Raw Tobacco; Alcohol > 80% ABV)

Other components of agribusiness are also food products. Cane sugar plays an important role in Brazilian exports, being one of the main commodities produced and exported. It is derived from sugar cane, which is planted in several states of the country due to the favorable soil and climate, along with the development of specialised technologies for the extraction of sugar and alcohol that further reduce the cost of production. These contribute to Brazil being the largest sugar producer and exporter in the world (Genena, Werneck and Viveiros n.d.).

Another sugar cane derivative – alcohol – is also exported. We present below a geographical map of the production of sugar cane that includes the derivative products.



7.10. Figure: Production and Exportation of Sugarcane in States of Brazil
Source: (Brazilian Agricultural Research Corporation (AMBRAPA), 2019)

The states that most produce sugarcane and their derivatives are São Paulo, Minas Gerais, and Gioás. Sugar is mostly exported to Algeria, Bangladesh, and Nigeria, while alcohol is exported to the United States, South Korea, and Japan.

7.3.2.1 Analysis of Trade Relations

Sugar accounted for about 26% of food product exports and 2.32% of overall exports in 2019. The country adjusts the production of alcohol and sugar to maintain its competitive position in the market.

According to a member of the Tereos Group executive committee and president of the Higher Agribusiness Council of the Federation of Industries of the State of São Paulo (Fiesp), the price of oil and gasoline fell in 2020 as a result of the pandemic and the price conflict between Saudi Arabia and Russia. Since ethanol is commonly used for this reason, Brazil changed its production mix to focus more on sugar (Carrieri 2020).

Most of the countries that import sugar from Brazil are also sugar producers, but their production does not meet internal demands.

However, Brazil has recorded an unprecedented increase in domestic demand for sugar, and the strong domestic consumption of the world's largest producer of the commodity is aggravating the potential of a global deficit – that is, any increase

in domestic demand threatens the availability of sugar exports, given the record volume of orders to deal with a global deficit.

7.3.2.2 Raw Tobacco

As for raw tobacco, in 2019 it represented 10.4% of foodstuff exports and 0.93% of total exports.

Brazil stands out as the largest exporter and second largest producer in the world, behind China (Sinditabaco, 2018).

Tobacco is highlighted here for one more reason: in addition to its contribution to the country's balance of trade, tobacco production in the country is still more familiar, despite the fact that procedures have been improved due to technological advances, and tobacco occupies less space for production, while creating a high yield in terms of relative value. Thus, it may be noted that the country still has room to expand its production if the international market increases demand. Since Brazil is currently in a good position, this reinforces the position of the country's power in the world in relation to the production and export of raw tobacco (Sinditabaco 2019).

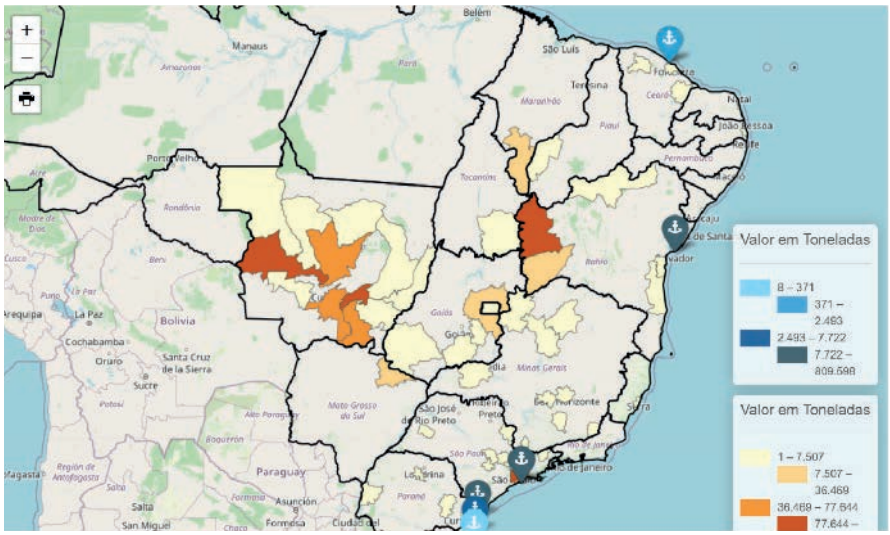
7.3.3 Textiles (Raw Cotton)

Cotton is one of the world's most important fibre cultures. Every year, an average of 35 million hectares of cotton are planted around the world.

Since the 1950s, global demand has risen steadily, with an average annual growth rate of 2%. The global cotton industry generates about $12 billion per year, and employs more than 350 million people (ABRAPA 2019)

In the Brazilian textile sector, raw cotton accounted for 72.9% of the sector's exports and 1.15% of total exports in 2019.

Among the countries that import the most are China, Vietnam, and Indonesia. The states of Mato Grosso and Bahia are among the largest producers.



7.11. Figure: Production and Exportation of Cotton in States of Brazil
Source: Brazilian Agricultural Research Corporation (AMBRAPA)

7.3.3.1 Analysis of Trade Relations

Global cotton demand is expected to recover in 2021 and 2022, according to market predications. The cotton industry saw supply and demand disruptions in 2020 as a result of the coronavirus pandemic. Lockdowns caused textile production to be disrupted, with factories closed and port operations hampered. Meanwhile, demand fell as a result of the slowing economy, as did customer spending habits because of stay-at-home ordering.

During the 2019/20 season, global cotton consumption decreased by nearly 15%. Cotton consumption is projected to rebound 15% in 2020/21 to 117.5 million bales (25.57 million metric tons and rise 4% in 2021/22 to 122 million bales (25.57 million metric tons to 26.56 MMT).

Brazil's cotton sector is primarily geared toward the export market, with more than 80% of output going overseas. As a result, it is expected that Brazilian farmers will increase the planted area in response to global demand.

7.3.4 Forestry Resources and Others

Brazil has the largest expanse of tropical forest in the world, and approximately 64 percent (about 544 million hectares) of its territory has some form of forest cover. The natural forest area with timber potential is estimated to be approximately 412

million hectares. Of this, some 124 million hectares are in the public domain and include national forests, reserves of indigenous populations, national parks, and other conservation areas. Most of the remaining 288 million hectares are under private ownership. An estimated 15 percent of the 12 million hectares of forest with timber potential are under permanent conservation orders – for example, as riverbanks or water springs, as prescribed by the Forest Code. That leaves an effective availability of natural forest of approximately 350 million hectares. Forest plantations cover approximately six million hectares, which places Brazil first in Latin America. Eucalyptus accounts for 59 percent of this area, pine for 37 percent, and other species for 4 percent. Plantation forests have a volume estimated at 775 million m3 and a sustainable production potential of 113 million m3 per year. The Amazon region supplies over 30 million m3 of roundwood, which corresponds to approximately 85 percent of annual natural forest production.

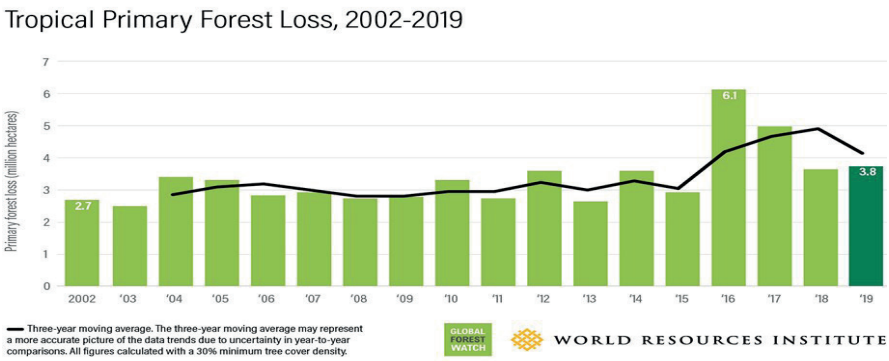
7.12. Figure: Forest Protected Areas of Brazil
Source: United Nation Environment Program (UNEP) https://www.unep.org

Virtually all of this is for the domestic market, making Brazil the world's largest consumer of tropical wood. Round wood processing is generally inefficient, and actual production equates to only 35 percent of the harvested volume, which implies

a very high level of waste. Brazil accounts for 4 percent of the world's tropical wood market. Although approximately one-third of the planet's tropical rainforests are in Brazil's Amazon region, which covers more than 300 million hectares and has an export potential of 15,000 million m^3 of timber, Brazil's share of this trade is in fact very limited as the exportation of roundwood logs has been banned since 1980. Non-wood forest products, such as the Brazil nut, rubber, and palm hearts, are very important and generate significant local employment and income.

The evolution of plantation forests can be divided into three periods. Until 1966 they covered a small surface area and were geared towards supplying the emerging steel industry and the railways. Then, from 1967 to 1987, there was a period of fiscal incentives and large afforestation programs, which led to some four million hectares being planted. This was followed by reduced planting from 1988, when incentives were withdrawn, but this did not prevent the sector from becoming an important component of the national economy, with the pulp and paper sector attaining international importance and Brazil featuring as the world's leader in fast-growth, high-yield plantation techniques, progressing from growth rates of 20m^3/ha/year to 40 m^3/ha/year. The economic contribution of Brazil's forestry sector is estimated at US$ 53,000 million, representing about 6.9 percent of total GDP. Brazil accounts for 2.4% of the global market for forest products. In 1998, forest exports accounted for 7.1 percent of total exports in terms of value and in 2001 amounted to approximately US$ 3,200 million. Consumption of natural forest roundwood for industrial processing, wood and charcoal is estimated at an annual 175 million m3.

The forest industry has had an important economic and social impact on the country's development. National production of sawn wood posted cumulative growth of more than 47 percent from 1986 to 1996. Another important aspect has been the contribution of conifer wood from plantations, which increased from one million m^3 in 1986 to four million m^3 in 1996. The largest consumer of sawn wood continues to be civil construction (38 percent) followed by the furniture and higher added-value sector (35 percent). The average annual production of board amounts to some 2.7 million m^3. The pulp and paper sector consumes 108 million m^3 of plantation wood each year, corresponding to some 400,000 ha of plantations. As regards external trade, Brazil accounts for 2 percent of the global market for pulp and paper, 3.5 percent for plywood, 8 percent for veneer, and 2 percent for chipboard.



7.13. Figure: Tropical Primary Forest Loss 2019
Source: Global Forest Watch (GFW) https://www.globalforestwatch.org

We often hear how Brazil's deforestation crisis threatens its major ecosystems and the people who live in them. This is an undeniable truth. However, even as the country lost 2.7 million hectares (6.6 million acres) of tree cover in 2019 alone, regenerating forests is also a big opportunity. Thousands of farmers, budding entrepreneurs, NGOs, and established companies are restoring lost forests and degraded farms through the Atlantic Forest Restoration Pact and the Alliance for the Restoration of the Amazon. Some landowners are helping biodiverse, carbon-rich forests grow back naturally. Others are sustainably producing timber and paper for the international market.

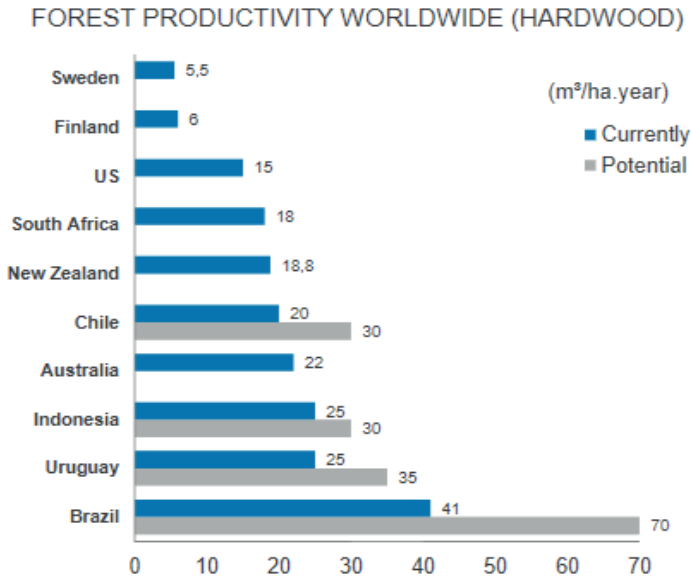
It is very significant to note that the approval of the National Plan of Planted Forests (PNDF) by the Ministry of Agriculture, Livestock and Supply of Brazil gave huge impetus to the development of that domain of domestic policy in Brazil. The PNDF aims to increase the area of planted forests to two million hectares (4.9 million acres) by 2030 and provide legal certainty for investors in the sector. According to the Ministry's publication, the planted forest sector is unique within the larger agricultural segment because it helps to protect natural resources.

7.3.4.1 Analysis of Trade Relations

Brazil, being the second most forested country in the world, with more than half a billion hectares of forest, has an outspoken and strong need for strategic information about its forestry resources in order to elaborate effective national policies and evaluate their outcomes. The forestry or timber industry is a major component of the financial success and stability of Brazil. By June 2012, Brazil had 7.74 million hectares of certified forest (according to FAO).

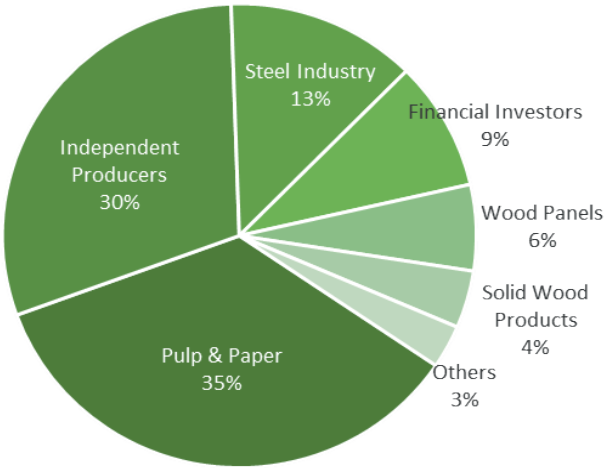
There is plenty of uncertified timber being produced and processed, which continues to plague the legitimate timber industries, who vie for clients.

According to the Brazilian Tree Industry (IBÁ), the sector helps to conserve 5.6 million hectares (13.8 million acres) of native forest in the form of legal reserves, including the Permanent Preservation Area and Private Natural Heritage Reserve designations. For every hectare planted, 0.7 hectares is conserved.



7.14. Figure: Forest Productivity Worldwide
Source: United Nation Environmental Program (UNEP) https://www.unep.org

Also, according to data from IBÁ, Brazil has 7.84 million hectares (19.4 million acres) of planted forests primarily comprised of two species: pine and eucalyptus. This area occupies less than 1 percent of Brazil's total territory but represents more than 90 percent of all wood harvested for industrial purposes and 6.1 percent of the country's industrial Gross Domestic Product (GDP). According to the new Timber Supply Analysis 360 tool developed by Forest2Market do Brasil, the total area of planted forests in Brazil is significantly greater than the official estimate disclosed by IBÁ. Of the stakeholders related to Brazil's planted forests, the pulp and paper segment leads the ranking of the country's primary timberland owners, with 35 percent of the total area, followed by independent producers and the charcoal steel industry.



7.15. Figure: Area Planted by Industrial Segment (2018)
Source: Brazilian Tree Industry (IBA) https://iba.org

7.3.5 Wood and Cellulose

Statistical data indicate that Brazilian exports of forest products have grown significantly, and it should be noted that Brazil is already active in international trade in tropical plywood, fibre sheets, eucalyptus pulp, and paper for printing and writing.

Brazil's competitiveness with regard to these products is mainly supported by internal factors, such as cost, the production system, product quality, and the exchange rate.

In 2019, the forest-based industry closed 2019 with a balance of US $ 10.3 billion in trade balance, the second-best result in the last 10 years. The forest products sector represents 4.3% of Brazilian exports. Brazil aims to implement projects aimed at increasing plantations and expanding factories, and prospective new units are valued in the order of R $ 35.5 billion by 2023. Of the main trees planted for the purposes of processing (eucalyptus, pine, and other species such as acacia, araucaria, paricá, and teak) and export, 36% are directed to the production of cellulose. 12% to charcoal, 6% wood panels and laminated floors, 4% solid wood products and the rest for other products.

Wood exports were strongly defended by the President of Brazil, especially at the beginning of 2019, and this ended up boosting exports of the product. There was an increase of almost 39% in exports of wood, which generated revenue of US $ 87.2 million in 2019, which is much more than in 2018 when revenue generated was US $ 62.8 million. Raw wood was ranked 160th in terms of the value of Brazilian exports.

7.3.6 Paper and Pulp

Brazil has a promising paper and pulp industry and is one of Brazil's most profitable agricultural exports. Brazil ranks highly on the list of producers of these types of goods.

Following the pace of other developing countries – again led by China – the Brazilian paper and pulp industry is experiencing steady growth. Spread across 540 municipalities, the 220 companies in this sector generate around 128,000 direct jobs – 77,000 working in the industry and 51,000 working in forests. It also accounts for almost 640,000 indirect jobs.

Reforestation is a key objective of the Brazilian paper and pulp industry, as this is the sector's main source of trees. These industries planted more than 2.2 million hectares of trees in 2012. In addition, it is worth mentioning that the success of the Brazilian paper and pulp industry – although it can be attributed to various factors – is also due to growth in productivity associated with reforested areas:

Eucalyptus had a productivity of 24m^3 per hectare in 1980. In 2013, productivity was 44m^3 per hectare, Pine trees had a productivity of 19m^3 per hectare in 1980. In 2013, productivity was 38 m^3 per hectare.

7.3.6.1 Production

On the other hand, the paper production industry reported growth of only 0.2% in June 2014 compared to June 2013. According to Ibá, it also reached 864 thousand tons in that same month. For the first six months of 2014, the total quantity of paper produced was 5.167 million tons, growth of only 0.2% when compared to the same period in 2013. Moreover, the apparent consumption of paper in Brazil – total production plus imports minus exports – was 9.852 million tons in 2013. Finally, the yearly production of paper grew only 1.8% from 2012 to 2013, reaching nearly 10.5 million tons of paper, paper, and pulp are the second most valuable of them, when taking into account the profits made according to each hectare planted. The Brazilian paper and pulp industry planted 2.2 million hectares of reforestation trees in 2012 and their exports totalled USD 6.7 billion. This is equivalent to USD 3.026 per hectare, more than three times the rate for planted soybean – the top Brazilian agricultural export – which is worth SD 965 per hectare.

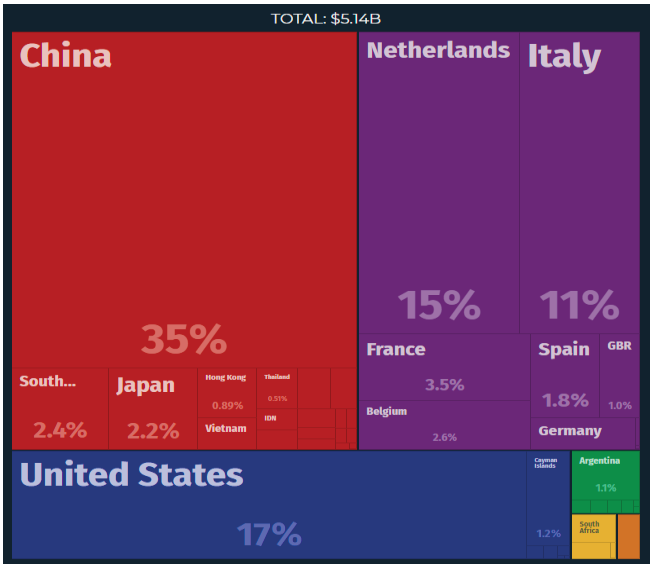
7.3.6.2 Analysis of Trade Relations

The trade balance of the paper and pulp industry in Brazil has always been favourable to Brazil. According to SECEX, Brazil's Secretariat of Foreign Trade, the years when the paper and pulp industry was less positive to Brazil were between 1996 and 1998, where the trade balance was just USD 1 billion. Since then, the Brazilian paper and

pulp industry trade balance has continued to grow, reaching its highest level in 2013, with a balance of USD 5.3 billion good to Brazil. This implies growth of 12.8% when compared to 2012.

One of the main factors in the success of this industry's trade balance is growth in the productivity of the sector's main source of trees – reforested areas. These led to growth in exports, while maintaining the imports levels at a relatively low rate. Exports of paper and pulp accounted for USD 7.1 billion in 2013 whereas imports were kept at USD 1.9 billion.

The outlook for this sector is rather optimistic: compared to June 2013, June 2014 exports grew by 23.6%, whilst the trade balance grew by 7.3% in 2014 compared to the same period in 2013.



7.16. Figure: The Export Market for the Brazilian Paper and Pulp Industry
Source: The Observatory of Economic Complexity (OEC) https://oec.world

7.3.6.3 Others

7.3.6.3.1 Transportation and Machines

As one of the world's major emerging economies, Brazil is also home to one of the most prominent transportation and machinery markets. Serving a population of 210 million people, the South American nation ranks as the sixth largest car market globally, based on new registrations. But Brazil does not only stand out for its high demand for vehicles. It is also amongst the ten leading passenger vehicle

manufacturers worldwide. However, the COVID-19 pandemic struck when the country's automotive industry was still on the road to recovery from previous crises.

The history of the Brazilian automotive industry began in 1925 with the establishment of a Chevrolet assembly line. The country subsequently attracted other manufacturers from Toyota, Volkswagen, Ford, Fiat, and Mercedes Benz. The 1990s brought more auto companies to Brazil, including Audi, Nissan, Honda, Peugeot, Hyundai, Renault, and Chrysler. Troller ranks as the most successful home-grown company and enjoys a market in Latin America and Africa. The company's models are the T4 and Pantanal. The country's automobile production outdid itself in 2007 when it grew 14% compared to the previous year. The industry recorded more than $100 billion in revenue in 2010, and it generated approximately 1.5 million jobs. The sector has been attracting more foreign companies including the Chinese JAC Motors.

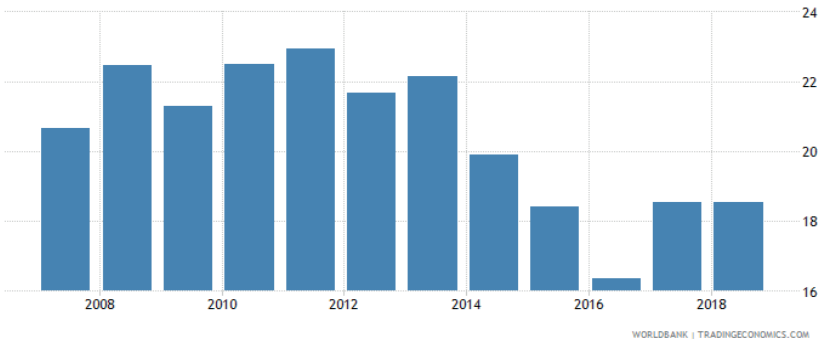
These companies dominated the Brazilian market for many years until the moment when the Brazilian market was finally opened to imports. In the 1990s, more auto companies settled and opened factories in Brazil, including Nissan, Renault, Peugeot, Citroën, Honda, Hyundai, Mitsubishi, Chrysler, and Audi.

Currently, the most successful genuine Brazilian auto company is Troller, with its T4 and Pantanal models. It sells to countries all over Latin America and Africa. In the last few years, the Brazilian auto industry has grown quickly, attracting investment from the main global automakers. In 2007, Brazilian production grew 14% compared to 2006 figures, reaching more than three million vehicles. Since 2008, Brazil has passed France to become the world's sixth largest producer but was beaten by India in 2011 and declined slightly to seventh place.

Year	Data	0–1 mn.	1–2 mn.	2–3 mn.	3–4 mn.
1960	133,000				
1970	416,089				
1980	1,165,174				
1990	914,466				
2000	1,681,517				
2005	2,530,840				
2006	2,611,034				
2007	2,970,818				
2008	3,220,475				
2009	3,182,617				
2010	3,648,358				
2011	3,406,150				

7.17. Figure: Historical production by year
Source: World Heritage Encyclopedia http://worldheritage.org

Machinery and transport equipment (% of value added in manufacturing) in Brazil was reported at 18.53 % in 2018, according to the World Bank collection of development indicators, compiled from officially recognised sources.



7.18. Figure: Brazil Transport and Machine Industries
Source: World Bank (https://www.worldbank.org)

Brazil conducts a great deal of ocean-going commerce with the rest of the world, partly because it is enjoying a boom in its status as a manufacturing giant, and because its nearly 5,000-mile-long eastern coastline provides numerous ports for that commerce. Obviously, this means the country itself is very large, so the choice of a Brazilian destination port will be very important for avoiding a long, arduous drive after arriving in the country.

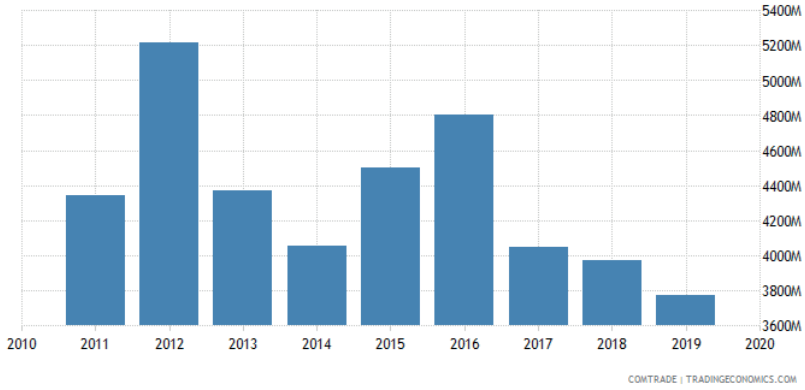
Most vehicles shipped into Brazil will be shipped via Roll-on/Roll-off ships, which are equipped with ramps so vehicles can be driven on and off under their own power. Older classic cars may not be fully functional and may require Lift-on/Lift-off transportation, whereby a crane lifts vehicle on and off the ship at port. A third alternative would be container shipping, which allows for a vehicle to be transported in an appropriately sized container that protects it during shipping, but this is considerably more expensive.

Something else to consider when shipping/exporting a car to Brazil is the U.S. port of origin from which the vehicle will be shipped. On the west coast, Oakland, Los Angeles, and Seattle are major port cities, and on the east coast, Norfolk, New York City, and Miami are very busy. On the Gulf of Mexico, Houston is a large commercial centre for international shipping. This is important because vehicles must somehow get to these ports of origin so that they can be shipped.

Air transportation is highly developed. In 2001, local and international airlines transported 34,285,600 passengers. In 2001, there were an estimated 3,365 airports, of which 665 had paved runways. Of the 48 principal airports, 21 are international;

of these, Rio de Janeiro's Galeao international airport and Sao Paulo's Guarulhos International Airport are by far the most active. The main international airline is Empresa de Viaçao Aérea Rio Grandense (VARIG). Other Brazilian airlines are Transbrasil Linhas Aéreas, Cruzeiro do Sul, (associated with VARIG since 1983), and Viaçao Aérea Sao Paulo (VASP), which handles only domestic traffic and is run by the state of Sao Paulo. All except VASP are privately owned.

Brazil exports of aircraft and spacecraft was US$3.77 billion during 2019, according to the United Nations COMTRADE database on international trade.



7.19. Figure: Transportation and Machinery industry in Brazil
Source: United Nations COMTRADE database (https://comtrade.un.org)

7.3.6.3.2 Ships

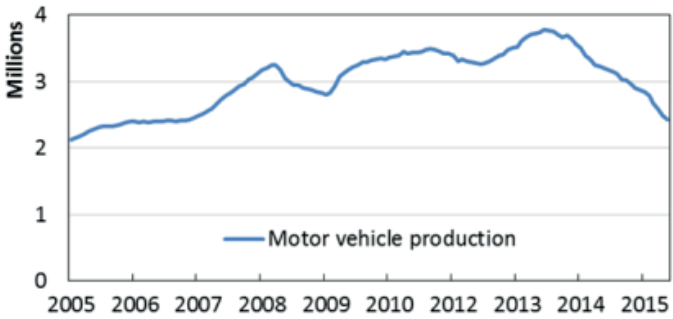
Brazil's railway system has been declining since 1945, when emphasis shifted to highway construction. The total span of railway track was 30,875 km (19,186 mi) in 2002, as compared with 31,848 km (19,789 mi) in 1970. Most of the railway system belongs to the Federal Railroad Corp., with a majority government interest; there are also seven lines which the government privatised in 1997.

Coastal shipping links widely separated parts of the country. Of the 36 deep-water ports, Santos and Rio de Janeiro are the most important, followed by Paranaguá, Recife, Vitória, Tubarao, Maceió, and Ilhéus. Bolivia and Paraguay have been given free ports at Santos. There are 50,000 km (31,070 mi) of navigable inland waterways. In 2002, the merchant shipping fleet, which included 165 vessels (1,000 GRT or over), had a total GRT of 3,662,570.

7.3.6.4 Analysis of Trade Relations

Brazil has a large and diversified industrial sector, but while parts of it are thriving, others are facing hard times, in part because they are weakly integrated into the world economy. The automotive and the aircraft sectors are two opposing examples of Brazilian industries – one inward-focused, and one fully integrated into global trade.

Brazil is the world's seventh largest automobile producer, but its automotive industry is currently facing severe challenges and production is declining (Figure 5.20). The industry is heavily protected from foreign competition and Brazil's car manufacturers have a strong focus on the domestic market and on local content. Only 15% of production is exported. Despite being the eighth largest producer of cars in the world, Brazil ranks only 24th in automotive exports. Brazilian vehicle exports have the third-lowest foreign value-added content among the 62 countries in the OECD-WTO Trade in Value Added database (OECD, 2015a).

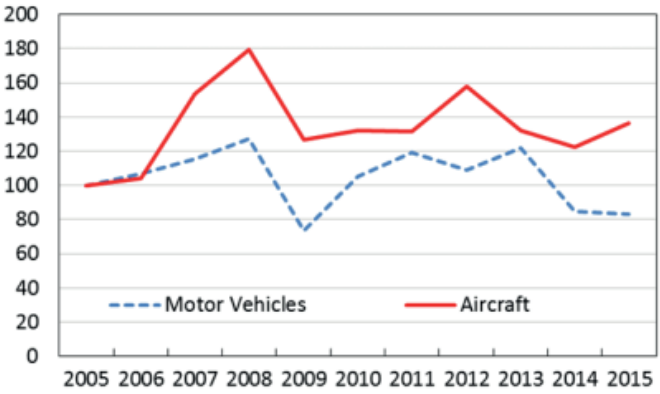


7.20. Figure: Production of Motor Vehicles
Source: ANFAVEA website, available at http://www.anfavea.com.br/tabelasnovo.html

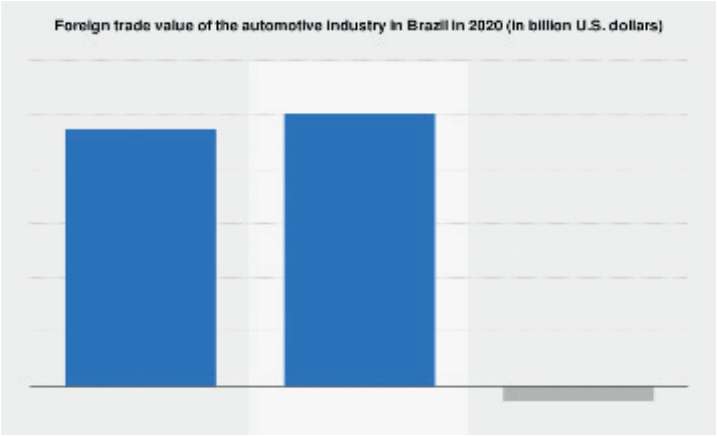
While many foreign producers have set up production plants in Brazil considering the attractive long-term potential of Brazil's consumer market, most of them have not integrated their Brazilian plants into global value chains (OECD, 2015b). Possibly due to the low level of exposure to foreign competition, productivity has fallen sharply behind that of Mexican car manufacturers, who are fully integrated into global production chains and have achieved remarkable gains in global market share. For example, Mexican plants produce 53 cars per worker and year, as opposed to 27 in Brazil, although the cars produced in Mexico are on average smaller models.

A very different story can be told about Brazil's aircraft industry. Given that production volumes of airplanes are much smaller than for automobiles, economies of scale mandate that firms in this industry focus on the global market. Embraer, originally created in 1969 as a state-owned company, was privatised in the 1990s and has become one of the top global players in the industry since then. Its initial strategy

was largely based on buying almost all components internationally for final assembly in Brazil, although over time it has started to produce parts itself. As a result of its roots, Embraer has always been strongly integrated into global production chains, and imports still account for 70% of its value added. At the same time, exports have grown steadily, performing significantly better than motor vehicle exports (**Figure 5.21**). By now, Embraer has become the world's third largest aircraft producer, and it is the global leader in the 70-130 seat aircraft segment, where it accounts for 60% of global deliveries.



7.21. Figure: Brazil: Exports of Motor Vehicles and Aircraft, 2005=100, in USD
Source: Ministry of Development, Industry and Foreign Trade, Brazil.



7.22. Figure: Brazil: Automotive Industry Foreign Trade Value 2020
Source: United Nations COMTRADE database (https://comtrade.un.org)

In 2020, Brazil imported approximately 12.6 billion U.S. dollars' worth of motor vehicles and auto parts. Meanwhile, exports of the Brazilian automotive industry totalled 11.9 billion dollars, resulting in a negative foreign trade balance of some 680 million dollars.

7.3.7 Minerals and Mining in Brazil

7.3.7.1 Background

Brazil is currently home to 187 active mines, which generated a total of USD 31 billion worth of mineral exports in 2016. As the world's largest producer of niobium, Brazil also ranks second in the world in terms of the production of iron ore, manganese, tantalite, and bauxite. In 2010, it traded almost 80 mineral commodities and globally stood out as a leading mineral producer. The country owns the fifth largest iron ore reserves in the world.

Brazil produces 70 mineral commodities, including four fuels, 45 industrial minerals and 21 metals. The country's gold seems to be evenly divided among major producers like Yamana Gold, Kinross and Anglo Gold Ashanti, and smaller companies like Jaguar and Eldorado Gold. As of December of 2018, Brazil's gold production was reported as 81,000 kilograms (kg).

Globally, the country has the following standing:

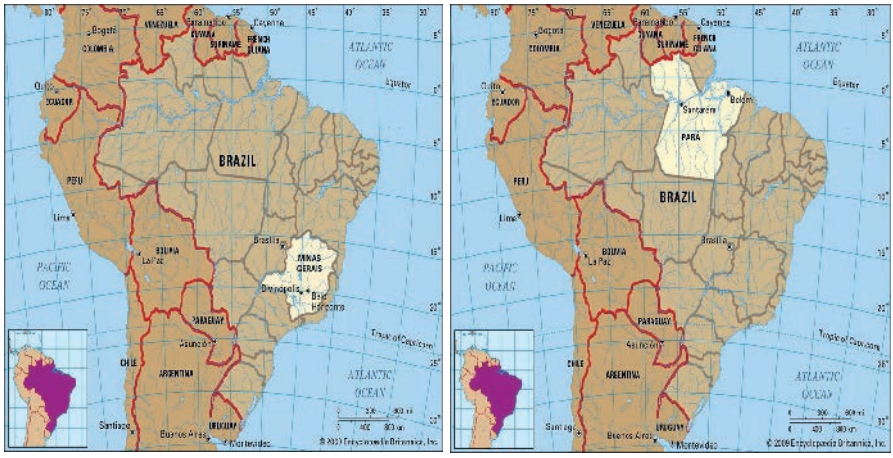
- The largest producer of niobium
- The third largest producer of bauxite
- Tenth largest gold producer
- The fifth largest producer of tin
- The second largest producer of iron ore
- Leading producer of huge quantities of aluminium, bauxite, and alumina
- Leading producer of steel feed stocks that include niobium

From a mining perspective, the vast resource base of Brazil, combined with current commodity prices, have enabled potential investors to consider Brazil an interesting proposition (Soutter, 2021).

Being home to the second-largest iron reserves in the world, the fourth-largest bauxite reserves, and the sixth-largest gold reserves, the bedrock of Brazil's prominent mineral industry is mainly metallic ores. While this country's mining industry dates to the quest for gold in colonial times and was one of the main contributors to inland territorial occupation, its historic economic importance is still very relevant. Mineral mining production in Brazil was valued at nearly 40 billion U.S. dollars in 2019 and generated over 195 thousand direct jobs. Throughout the years, the sector has become imperative to the growth of the local economy, especially in the states of Pará and Minas Gerais.

7.3.7.1.1 Minas Gerais and Carajás Mine – A Land of Riches

Nevertheless, aside from the prominence of the Carajás mine in Pará, Minas Gerais remains the largest iron-ore-producing state in Brazil, accounting for more than half of national iron ore production. In fact, this state's fertile resource environment is what first warranted its present name, which was given to it back in the early 1700s – which translated from Portuguese means 'general mines.' Centuries following the discovery of gold in the region, the state still leads in the production of this precious metal, as well as in the Brazilian production of bauxite and niobium. Accordingly, Minas Gerais has been attractive to many mining and metallurgical companies in the country, such as Vale, CBMM, ArcelorMittal Brazil, and Usiminas, thus living up to its name until this day (Bruna Alves, 2020).



7.23. Figure: Map of Location of Minas Gerais and Para Mining
Resource: Minas Gerais | state, Brazil | Britannica

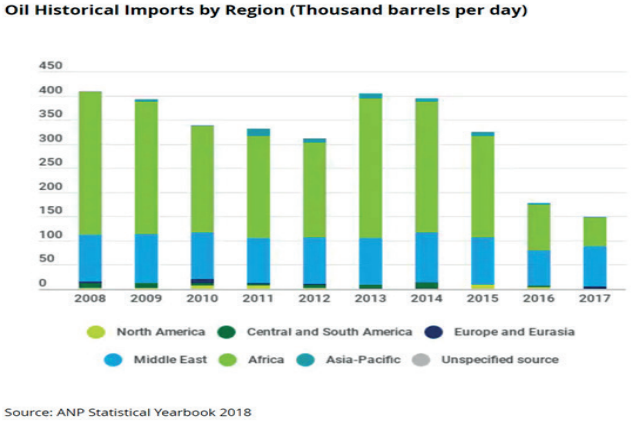
7.3.7.2 Crude Oil

In January 2020, for the first time, oil and natural gas production in Brazil exceeded four million barrels of oil equivalent per day (boe/d), totalling 4.041 million boe/d. The month recorded record oil production – 3.168 million barrels per day (bbl/d) – and natural gas – 138.753 million cubic meters per day (m^3/d).

- Oil production increased by 1.99% compared to December 2019 and 20.43% compared to January last year. Natural gas production was 0.71% higher than in the previous month and 22.58% higher than in the same month of 2019.
- Pre-salt production was 2.682 million boe/d, representing 66.37% of all national production. In this region, 2.150 million bbl/d of oil and 84.572 million m^3/d of gas were produced.

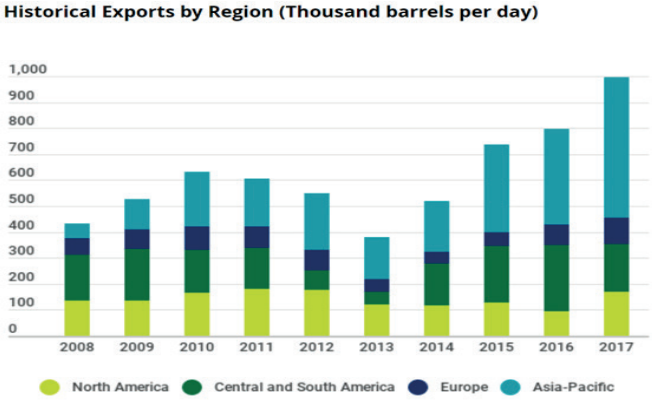
- The largest producer in January was the Lula field, with 1.052 million bbl/d of oil and 44.096 million m^3/d of gas.

Brazilian oil imports in the last 10 years came mainly from Africa (66%) and Middle East (29%) – more specifically, from Nigeria and Saudi Arabia (Deloitte, 2017).



7.24. Figure: Crude Oil Historical Imports by Region

The regions of Asia Pacific (39%), Central and South America (27%) and North America (23%) were the destination of 88% of Brazilian oil exports from 2008 until 2017. The Asia Pacific region has been rising in importance in the Brazilian oil export portfolio in the last years, driven by China and India.



7.25. Figure: Crude Oil Historical Exports by Region

The (Brazilian Petroleum Authority) – ANP (*Agência Nacional de Petróleo*) Dynamic Oil and Natural Gas Production Panel

Exploration and production form the basis of the oil industry. Large resources are invested in technological development, in the expansion of geological knowledge, and in the formation of a chain of goods and services that support this. The exploration of the fields helps to expand the geological knowledge of sedimentary basins.

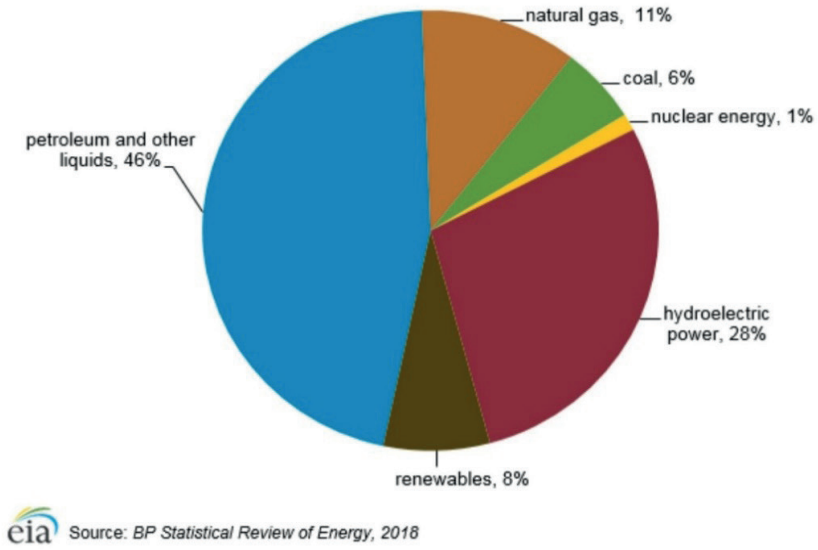
Brazil has 29 sedimentary basins of interest to hydrocarbon research, the area of which is 7.175 million km^2. But only a small percentage of these areas are under contract for exploration and production activities.

Contracts signed by ANP with companies on behalf of the Union generate a multiplier effect on the country's economy: they maintain the flow of investment, attract oil companies, and encourage the consolidation of a national industry of goods and services for the market.

With the production of oil and natural gas, the public coffers obtain funds through government participation stemming from concession contracts resulting from bids (signing bonuses, royalties, and special forms of participation). Some of these resources fuel human-resource-related training and the development of research that allows new exploratory leaps for the industry (ANP, 2021).

7.3.7.3 Natural Gas

Brazil is the ninth largest liquid gas producer in the world and the third largest producer in the Americas. In 2017, Brazil produced 3.36 million barrels per day (b/d) of petroleum and other liquids, making it the ninth largest producer in the world and the third largest in the Americas behind the United States and Canada. In 2017, Brazil was the eighth largest energy consumer in the world and the third largest energy consumer in the Americas, behind the United States and Canada. Total primary energy consumption in Brazil has grown by 28% in the past decade because of economic growth. Petroleum and other liquids represented about 46% of Brazil's domestic energy consumption in 2017 (EIA, 2019).



7.26. Figure: Total Primary Energy Consumption in Brazil by Fuel Type, 2017

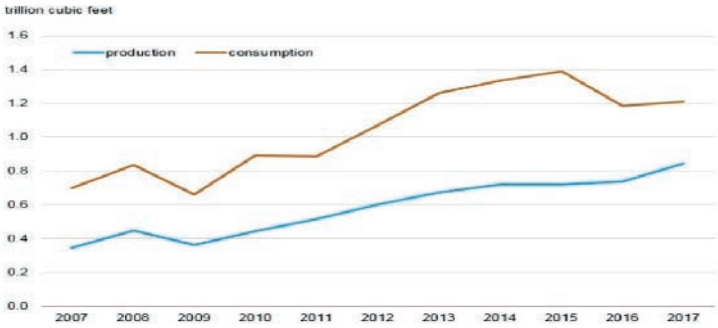
Despite Brazil's significant reserves, natural gas accounted for only 11% of Brazil's total primary energy consumption in 2017. Brazil's natural gas reserves are located primarily offshore in the Campos Basin.

Natural gas reserved: According to the Oil & Gas Journal, Brazil has 13 trillion cubic feet (Tcf) of proven natural gas reserves at the beginning of 2018, the third largest amount in South America after Venezuela and Peru.

In 2017, Brazil produced 846 billion cubic feet (Bcf) of natural gas, an increase from 2016 as Brazil continues to develop its vast offshore reserves.

Brazil's consumption of natural gas was 1.2 Tcf in 2017, an increase from 2016. Demand from the industrial sector was a little more than 50% of the country's total natural gas consumption in 2017.

Production of natural gas from the pre-salt layer grew 26% year year-on-year from 2016 to 2017 (EIA, 2019).



7.27. Figure: Brazil's Dry Natural Gas Production and Consumption
Source : International – U.S. Energy Information Administration (EIA)

7.3.7.4 Iron ore

Carajás Mine, the world's largest iron ore mine, is located in the state of Pará in Northern Brazil. Fully owned by Brazilian mining company Vale (CVRD), it has 7.2 billion metric tonnes of iron ore in proven and probable reserves (Technology, 2021).

Other mineral deposits were discovered later, Carajás is rich not only in iron ore but also manganese, copper, tin, aluminium, and even gold ores. The mine utilises complete trackless transport operation and other automation systems to reduce emissions and fuel costs. ABB was awarded a $103m contract in September 2014 to install electrical and automation systems to help move rock and ore around the mine site more efficiently and safely using the trackless system.

7.3.7.4.1 Carajás iron deposit and mine development

US Steel initially wanted to develop the Carajás iron deposit alone, but the Brazilian government was unwilling to hand control over to a foreign company. In 1970, the Brazilian Government opted instead to create a joint venture company, Amazonias Mineração (AMZA), which was 51% owned by Vale, while US Steel had 49%. US Steel subsequently withdrew from the joint venture in 1977 by selling its share to Companhia Vale do Rio Doce (CVRD) for $55m. Vale produced 237.9Mt of iron ore at the Carajas Mine for 2009, against 301.7Mt in 2008. Brazil is currently the world's largest exporter of iron ore with annual production of more than 510Mt.

7.3.7.4.2 Iron Ore Production at Carajás

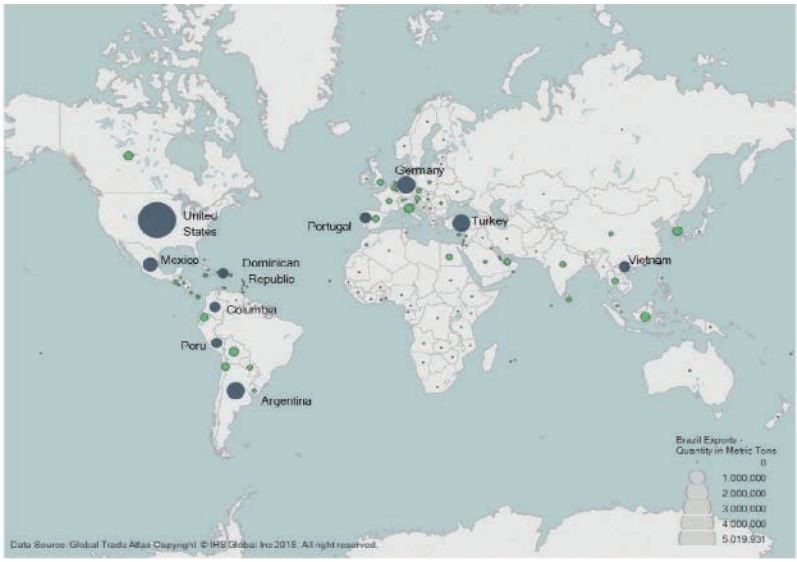
Vale's iron ore production for 2013 at Carajás was 104.88 million metric tonnes – a decline of 1.8% since 2012. In January 2012, Vale also obtained an operating licence for the N5 Sul pit, which will allow access to the new ore body in the N5 mine of

Carajás. The new ore body is believed to have the highest ferrous content within Vale's portfolio.

The Additional 40 project became operational in the second half of 2013 and reached full capacity in the first half of 2014, expanding iron ore production at the mining complex by 40 million metric tonnes per annum. Vale produced 129.6 million metric tonnes of ore from Carajas in 2015. Approximately 148.1 million metric tonnes of ore were produced from the mine in 2016 (Technology, 2021).

7.3.7.5 Steel Trade

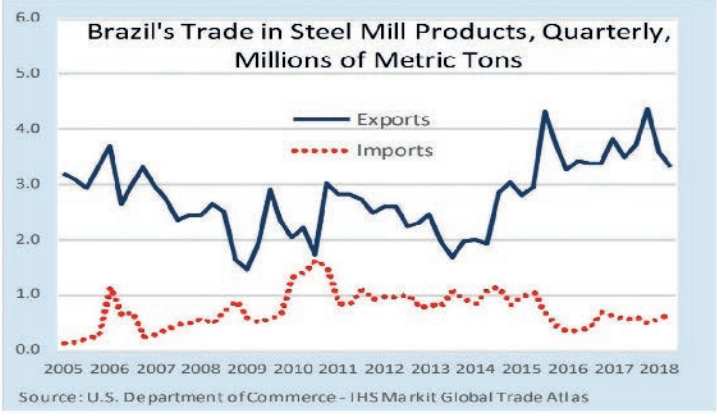
Brazil is the tenth largest steel exporter in the world. In year-to-date 2018 (through June), further referred to as YTD 2018, it exported 6.9 million metric tons of steel, down 6% from YTD 2017 levels. Brazil's exports represented about 3% of all steel exported globally in 2017. The volume of Brazil's 2017 steel exports was about one-fifth that of the volume of the world's largest exporter, China. In value terms, steel represented just 1.1 % of the total goods Brazil exported in 2017. Brazil exports steel to more than 110 countries and territories. The ten countries labelled on the map below represent the top markets for Brazil's exports of steel, each receiving more than 350 thousand metric tons, and accounting together for about 71% of Brazil's steel exports in 2017 (administration, 2018).



7.28. Figure: Brazilian Exports of Steel Mill Products 2017 (Top ten in blue circles)
Source: exports-brazil.pdf (trade.gov)

7.3.7.5.1 Analysis of Trade Relations

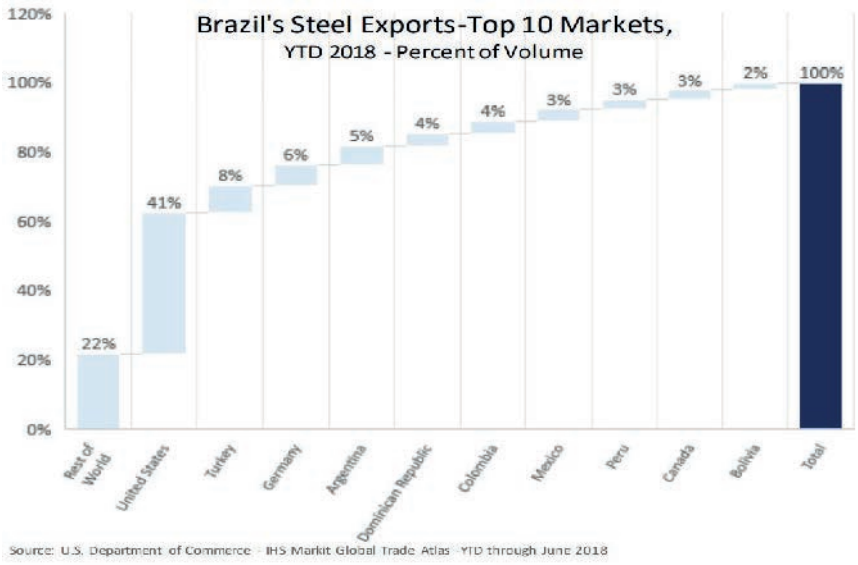
Brazil continues to maintain a large trade surplus in steel products. Decreasing exports and rising imports caused the trade surplus to narrow by half in 2010 to 3.1 million metric tons. The trade surplus soon widened again, increasing 320 % between 2010 and 2017. Between Q1 2009 and Q2 2018, exports grew 126 %, while imports grew 14 %. Brazil's trade surplus in YTD 2018 was 5.6 million metric tons, down 8 % from 6.1 million metric tons in YTD 2017 (administration, 2018).



7.29. Figure: Steel Trade Balance – Imports and Exports from 2005 – 2018
Source: exports-brazil.pdf (trade.gov)

Brazil's Steel Exports-Top 10 Markets, YTD 2018 - % of Volume

Exports by Top Market Exports to Brazil's top 10 steel markets represented 78 % of Brazil's steel export volume in YTD 2018 at 5.4 million metric tons (mmt). The United States was the largest market for Brazil's exports with 41 % (2.8 mmt), followed by Turkey at 8 % (0.5 mmt), and Germany at 6 % (0.4 mmt). The United States ranked first as a destination for Brazil's steel exports for most of the last decade. In YTD 2018, exports by volume to the United States increased by 10 %, when compared to YTD 2017.



7.30. Figure: Brazil's Steel Exports-Top 10 Markets, YTD 2018 – % of Volume

7.3.7.6 Pig Iron

Stena Metal Inc. trades in basic pig iron for steelmaking, as well as foundry and ductile pig iron for the castings industry. Most of the supply is from Brazil, which is the largest exporter of pig iron worldwide, with more than four million tons of exports annually. For the past 10 years, Stena has consistently been among the leading exporters of pig iron from Brazil. In the past few years, the company has supplemented Brazilian material with pig iron from other growing exporters, most notably Russia and India (Metal, 2021).

7.31. Figure: Pig Iron Pieces
Source: Pig iron | Stena Metalinc

7.3.6.7.6.1 Analysis of Trade Relation

Brazilian merchant pig iron prices have increased by more than $300/mt since the beginning of the coronavirus pandemic, while export volumes surpassed 10-year highs on the back of emerging Chinese demand and elevated iron ore prices. China was the primary destination for Brazilian basic pig iron in 2020, surpassing the US in the top spot for the first time since 2009.

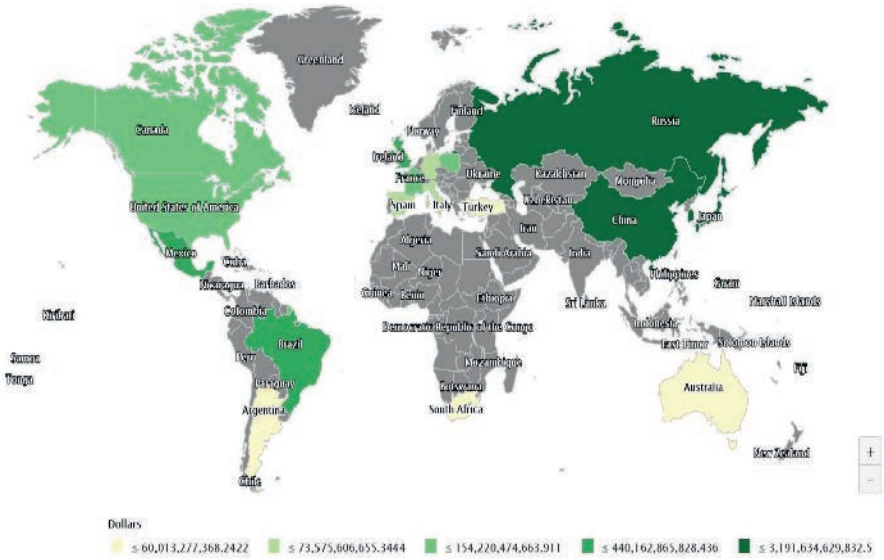
A combination of factors has resulted in a return for Brazil's basic pig iron sector to the bonanza period seen almost a decade ago.

Minas Gerais state in southeastern Brazil has become the nation's main pig iron producer (80%) and export hub (60%), overtaking the first place of the country's northern region until 2014 (platts, 2021).

7.3.7.7 Gold

The landscape of Minas Gerais includes great hills and plateaus as well as rivers and creeks where the explorers of Brazil believed there lay an abundant supply of gold. The pennants, rough-and-ready settlers, and residents of São Paulo, were among the few people who explored and inhabited the interior. It has been recorded that the *Paulistas* searched for gold as early as 1572 in Paranagua. The period between 1693–1695 was defined by the discovery of gold and the ensuing rush from the coastal areas inland to strike it rich. After a few years, the mining areas were oversaturated with people and gold was less plentiful, so new mining techniques were needed. People with substantial financial resources who could afford to develop and implement digging methods that employed troughs and hydraulic machines thrived. Somewhat less effective, but possible for poorer miners, was the practice of washing down the banks of creeks with sluices from higher ground.

Migration and Living Conditions: as soon as word got back to the coast that vast gold deposits had been discovered in Minas Gerais, a wave of people of all types descended upon inland Brazil. These settlers – white, black, mix-raced, men, women, old, young, rich, poor, members of religious groups and nobles – came from all parts of Brazil (University, 2013).



7.32. Figure: Total Reserves (includes gold, current US$)
Source: Total reserves (includes gold, current US$) - Brazil | Data (worldbank.org)

Man shows gold nugget extracted in mine in Minas Gerais
JACQUES LEPINE/ESTADÃO CONTENT

7.33. Figure: Gold Nugget Extracted from Mine in Minas Gerais
Source: Brasil extrai cerca de 2 gramas de ouro por habitante em 5 anos – Notícias – R7 Brasil

Brazil is historically a major producer of gold: in the last five years 406 tons of the precious metal have been mined, according to data from ANM (National Mining Agency) collected at the request of R7.[30] This means that the country produces, on average, 81.2 tons per year.

The amount is equivalent to each of the 209 million Brazilian inhabitants having two grams of gold in their pocket. Each gram of gold was quoted in May 2020 at R$174.56, totalling more than R$ 70 billion. On average, gold extraction in the country accounts for R$ 14.2 billion per year in Brazil. Most of this gold comes from the mountains of Minas Gerais, from where more than 60% of the metal is sourced in Brazil, followed by Goiás and Bahia.

According to ANM data, two companies concentrate 51% of gold extraction activity in Brazil. The main one is the Canadian Kinross, and the other is the South African AngloGold. Small prospectors, in turn, account for about 10% of the country's production.

7.3.7.7.1 Analysis of Trade Relations

According to Ibram (Brazilian Mining Institute), much of this gold is exported to other countries. The main buyers are Germany, which bought around 20% of the gold mined in the country in 2018, followed by the UK and Switzerland. Despite the expressive numbers, the potential for Brazilian gold extraction is still unknown. 'Investments are needed to better understand the country's geologic resources and improve legal certainty for those who are operating,' says Wilson Brumer, chair of Ibram's Board of Directors (R7 Brazil, 2019).

7.3.7.7.1 Illegal Markets

Although the numbers related to gold extraction in the country are impressive, there is still a large illegal market in both the extraction and trade of the precious metal.

There are no precise, updated figures about this trade. The Federal Police and revenue seized more than R $ 145 million from people linked to extraction schemes and the illegal trade of the product for money laundering purposes.

'Illegal extraction has a number of risks, ranging from unhealthy conditions, and risks to the environment reaching the destination of this gold,' Brumer said, noting that the country still needs to greatly improve the fight against illegal mining. In around June 2019, a plane with more than 100 kg of gold was seized in Goiás: the cargo was worth more than R$ 18 million and had no record of provenance.

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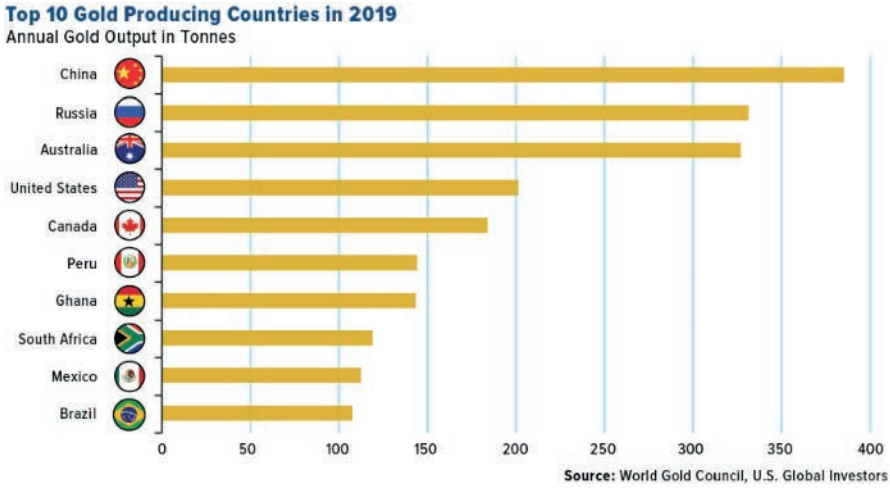
[30] R7 is an online portal that delivers news, entertainment, sports, and many other videos to its users. It was launched in 2009 and is based in São Paulo, Brazil.

According to the delegate responsible for the case, the documents submitted do not correspond to the amount of gold that was present in the aircraft. Initial investigations indicate that the person responsible for the plane could not clearly explain the origin of the metal. Police checks showed that the aircraft belongs to a mining company and an employee of this company was arrested. The plane would have left Goiânia and, according to the investigation, had been in Pará and Maranhão before returning to the capital of Goiás (R7 Brazil, 2019).

As seen in the chart below, China takes the number one spot for global gold producers by a wide margin. The top 10 rankings saw a big shift in 2019 – Russia took the lead over Australia to claim second, Indonesia fell off the list, and Brazil joined the ranks as the tenth largest producer. Ghana also jumped ahead of South Africa to become the continent's top producer.

As the figure below shows, Brazil produced 106.9 tons in 2019: Brazil produced 10 more tons of gold than the year prior to make the number 10 spot on this list. Illegal mining activity has risen sharply in the last five years in the heart of the Amazon rainforest. President Jair Bolsonaro has pushed the country to develop the Amazon economically and tap its mineral riches.

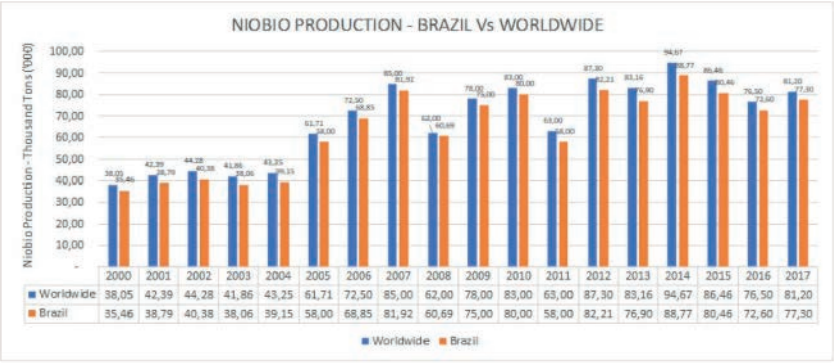


7.34. Figure: Gold production in a Selection of Countries

7.3.7.8 Niobium

In the middle of the twentieth century, geologist Djalma Guimarães discovered the largest pyrochloric mine in the region of Barreiro, in Araxá – Minas Gerais, from which the largest niobium mine found to date on Planet Earth was discovered.

Simultaneously, the space race developed in the United States and Russia, which led to the exponential expansion of niobium consumption by the aerospace industry (business 2018).



7.35. Figure: Niobio Production in Brazil
Source: Metal Ores (globalskybusiness.com)

CBMM (*Companhia Brasileira de Metalurgiae Mineração or Brazilian Metallurgy and Mining Company*) controls 80% of the world's supply and expected to end 2019 with record production. Brazil actively uses more than 90% of the known reserves, but there are deposits in various regions of the world and the market is still very limited.

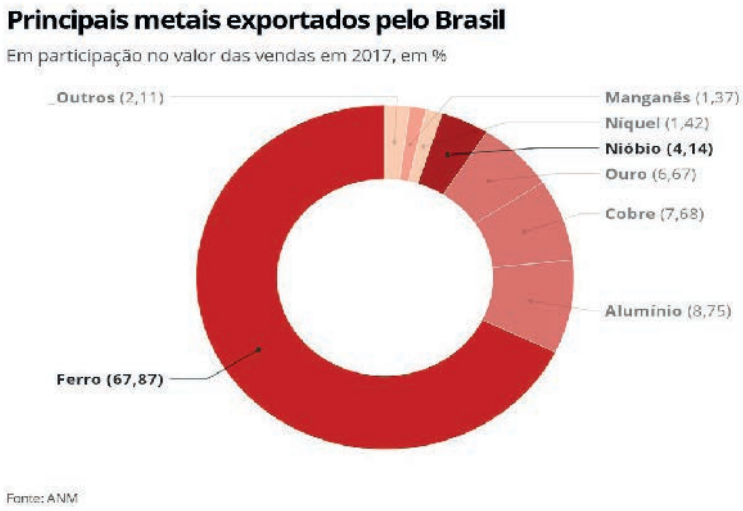
Currently, about 80% of all niobium that is sold in the world is extracted from Minas Gerais and produced by the Brazilian Metallurgy and Mining Company (CBMM). The largest niobium reserve in operation on the planet and the application of this metal is almost a Brazilian 'monopoly.'

7.3.7.8.1 Niobium Performance

The niobium produced in Araxá is currently exported to more than 50 countries and has as its main destination steel companies. It is mainly used in the production of special steels and super alloys. The metal acts as an 'improver.' It takes 400 grams per ton to produce lighter, more resistant steels. In addition, Niobium is currently employed in automobiles, airplane turbines, pipelines, ships, MRI machines, particle accelerators, lenses and even piercings and jewellery. The metal is sold mainly in the form of Ferro niobium alloy (with about two-thirds niobium content, and one-third of iron), obtained from several processing stages. The price of Ferro niobium has remained relatively stable in recent years and currently one kilo of metal sells

for about US$ 40. That is, 1 kilo of niobium is cheaper than 1 gram of gold, which is currently quoted at below $50.

The picture below shows the main metals exported in Brazil in terms of their share in the value of sales in 2017 in %. According to this, iron accounts for 67.87%, aluminium 8.75%, copper 7.68%, gold 6.67%, niobium 4.14%, nickel 1.42%, manganese 1.37%, and others 2.11%



7.36. Figure: Main material Exports in Brazil
Source : (Nióbio: G1 visita em MG complexo industrial do maior produtor do mundo | Economia | G1 (globo.com)

7.3.7.9 Diamonds in Brazil

Brazilian diamonds were discovered in around 1725 by gold miners along the banks of the Rio Jequitinhonha, in the state of Minas Gerais. For more than a hundred years, the country was the world's most important diamond source, as the famous Golconda deposit in India was nearly exhausted and South African mines were yet to be discovered.

Diamond mining in Brazil continues today, though is largely overshadowed by the output of other countries, but despite sporadic production, important stones continue to emerge from Brazil.

Brazil has several alluvial diamond sources, where stones are mined from the sands and gravels of riverbanks. There are also some potentially important diamond

pipes that may warrant larger-scale open-pit or underground mining. Diamonds are mined in several Brazilian states, including Mato Grosso do Sul, Bahia, and Rondônia. A diamond mine in Minas Gerais is famous for its gold and coloured gemstones, as well as other commercial minerals. Owned by GAR Minerals, the mine is located near the diamond-bearing Abaeté River and the town of Três Marias. GAR Minerals has six properties along the Abaeté River and six others near the town of Coromandel on the Santo Ignacio River, also in Minas Gerais. Each property is around 2 hectares – nearly five acres – and licensed for diamond exploration (Andy Lucas 2021).

In Table 5.4, below, a selection of diamonds recovered from the Abaeté River in Minas Gerais is illustrated, weighing a total of 77.82 carats, and typical of the material being found today in Brazil's alluvial deposits.

Ranking by Production (ct)		
Location	**Carats**	**US$ Millions**
Russia	35,500,000	3,379
Botswana	19,600,000	3,109
Canada	18,122,000	2,170
Australia	16,800,000	420
Angola	6,500,000	553
South Africa	6,117,000	658
Namibia	1,580,000	796
Sierra Leone	300,000	90
Lesotho	290,000	302
Brazil	**290,000**	**78**
Zimbabwe	200,000	18
Tanzania	170,000	41

7.4. Table: World Diamond Production 2017;
Source: https://www.gia.edu/gia-news-research-Diamond-Mining-in-minas-gerais-brazil

7.4 Conclusion

This research highlights the following aspects: Regarding world rankings, Brazil is positioned as the second largest exporter of soybeans (with the capacity and the possibility to become number one in a brief time, since it already occupies the position of the largest producer in the world), the second largest exporter of corn, the largest exporter of coffee and sugar, the largest producer of niobium and the second largest producer of iron ore, manganese, tantalite and bauxite. It can be concluded that the country dominates the production and export of important commodities and mineral products. Brazil's production and export potential are highlighted even more if we analyse the ability to react that has been shown in response to the growing demand from Asian countries (mainly China).

Although Brazil is not among the top five biggest exporters of crude oil, in the country balance this accounts for around 10.66% of total exports. Historically, the main destinations have been central and southern America, but Asia-Pacific countries have exceeded this, and now are the main importers. The main importing countries are China, the United States, Argentina, Netherlands, Japan, Chile, Mexico, Germany, Spain, and South Korea. However, Brazil is the second largest producer of iron ore, which is from the Carajás Mine (the state of Pará in Northern Brazil). China stands out as the main importer mostly due to its imports of animal and agricultural products (soybean, beef meat, pork meat, chicken meat), crude oil, and iron ore.

The country has great advantages due to its geographical, climatic, and sometimes cultural factors. Along with this, it has made technological improvements in several of the productive activities that generate value and contribute to the performance of the country, often in relation to the work of families (the main example of this is Tobacco), which has positive impacts on the local economy.

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8. CLIMATE CHANGE ATTITUDES ASSESSMENT WITH Q METHODOLOGY

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We would like to state our greatest appreciation to Prof. Sándor Kerekes for his inspiration, guidance, and sincere support in relation to conducting this research.

8.1. Introduction

Climate Change, whether believed to be real or not, is a very heartfelt reality that the current generation ought to face to ensure the future viability of civilization (IPCC, 2013). Despite the contentious debate that exists about the cause of climate change, the global consensus within the scientific community is that a casual correlation between human activities and climate change exists – supported by valid evidence, climate change has proved to be the outcome of intensive anthropogenic influence (Houghton et al., 2001). Over the last few decades, convergence on recognizing climate change as a global threat has occurred. Steps have been taken through numerous international environmental agreements, starting from the Montreal Protocol (1987) that led to the phasing out of the production and consumption of ozone-depleting substances, to the Kyoto Protocol (2005), which is an extension of United Nations Framework Convention on Climate Change (UNFCCC) established in 1992 to commit state parties to reduce greenhouse gas emissions according to collective targets.

Multiple factors shape human knowledge and perceptions. Education, culture, media, political ideology, and social norms can be regarded as the some of the prominent factors, besides more sophisticated contributions from family background and religion. Analogously, public opinions towards climate change vary extensively, even within a single family, being influenced by these distinct factors. Indeed, despite increasing international cooperation aimed at tackling climate change, there are still many obstacles to overcome to establish a more fundamental consensus about recognizing climate change as a global threat. In this, public knowledge, awareness, and participation play a crucial role, as both the adaptation and mitigation of climate change involve stakeholders at various levels, reinforcing and interacting with each another to identify and implement collective solutions. Nowadays, the role of citizens is gaining more and more importance as the public governance system is

transitioning from a centralised to a more bottom-up approach for addressing and solving social, economic, and environmental challenges. While significant energy has been expended on scientific research related to addressing climate change in the economic, social and political sciences, the investigation of the role and effects of public attitudes about climate change have not been explored much in academia.

In this study, the authors seek to assess the varying attitudes of twenty-one young adults towards climate change using Q-methodology. The participants are university students and young adults in working class from eleven countries. Q-methodology is deployed as it helps to investigate the different perspectives of participants about an issue by having them rank and sort a series of statements. The set of statements are formulated to examine the way people perceive climate change from scientific, social, economic, political and personal standpoints. The main purpose of the study is to assess the attitudes, behaviour, knowledge, and commitment level of young adults and to reveal if these factors relate to one another.

This paper continues with describing the research objectives and hypothesis, and then provides a literature review of studies on public opinion towards climate change. Then an introduction to Q-methodology is supplied, followed by the results and a discussion based on the main findings. Finally, the paper concludes with potential policy recommendations and research implications.

8.2 Research Objectives, Questions and Hypothesis

8.2.1 Research Objectives

a. To assess different attitudes and behaviours of university students and young adults to climate change.
b. To examine how people who are knowledgeable about climate change perceive the issue from multiple perspectives.
c. To observe the extent to which individuals are willing to commit themselves (e.g. changing daily practices or personal views) to combatting climate change.

8.2.2 Research Questions

a. Do attitudes about climate change differ according to people's occupations?
b. Does the perspective of people who are knowledgeable about climate change distinguish them from people who are less knowledgeable about climate change?
c. To what extent are individuals willing to commit themselves to combatting climate change?

8.2.3 Hypotheses

a. People who are more interested in climate change are more supportive of individual action aimed at minimizing climate change.
b. People are more willing to take individual action about climate change when there are clear benefits to it.

8.3 Climate Change Attitudes in Recent Literature

Understanding and assessing public involvement in the scope of climate change are vital tasks as scientific evidence proves that the rising level of carbon dioxide (CO_2) in the earth's atmosphere is caused by human activity, thus the ultimate solution is in our hands (IPCC, 2013). As emphasised in social psychology, attitudes are both enduring and changeable and have a powerful influence om the beliefs and behaviour of an individual. Subsequently, public opinions, values, and views about climate change have increasingly been an area of interest of many researchers and policy makers over the last few decades in the quest to create a more effective response to climate change. Studies have been undertaken using quantitative social surveys that signify the variability of perspectives of individuals concerning how they perceive the issue of climate change (Lorenzoni & Pidgeon, 2006).

A study conducted by Thompson (2017) uses data from a survey that presented 20 questions related to the most well-known beliefs about the causes and possibility of mitigating climate change on 746 respondents from 46 countries. Results show that the respondents had several misconceptions about climate change – some stated that climate change is only part of a natural cycle; many did not believe that it is happening; and others also believed that climate change would not affect them personally. In contrast, a significant number of respondents showed that they are aware and feel that climate change is an ongoing phenomenon which has negative effects on the environment, and that human activity does contribute to it, although they were uncertain about how to react or contribute to solving the problem.

Lorenzoni & Pidgeon (2006) further investigated public views about climate change in two of the most developed regions: The United States of America, and the European Union. Their findings showed that climate change is a complex and sometimes misunderstood issue even in those regions. Despite widespread concerns and awareness about environment issues related to climate change, Americans and Europeans deemed climate change to be less important than their social and personal problems. Although public opinion indicated some proof of willingness to take action to mitigate the effects of climate change, this was limited, and people believed that the government should be responsible for addressing and implementing measures to resolve the problem. These finding compliments those of Hurlbert (2011), who conducted a study that evaluated climate justice and the attitudes and

opinions of stakeholders at the United Nations Framework Convention on Climate Change (UNFCCC). The results revealed how the stakeholders believe that climate scientists should be given more credit to achieve a common goal: i.e., increasing the involvement of experts and enhancing the education and technical competency of UNFCCC members to promote cooperation aimed at mitigating climate change.

Furthermore, a study by Wang and Zhou (2020) described a public survey of the perceptions of Chinese citizens regarding climate change, showing that people were highly aware of climate change and its impacts, and deemed human activities the main cause. Although in the past climate change was not significant in the eyes of Chinese public (unlike air and water pollution), in recent years the public has been experiencing extreme and frequent climate-change-related phenomena such as droughts, floods, and heatwaves. Consequently, a combination of the increase in political focus, media coverage, and individual experiences of climate change has increased people's awareness and factual understanding of climate change. The survey also determined that a relatively significant number of Chinese people are willing to purchase environmentally friendly products and that the government should address climate change responsibly with public support.

In South Africa, Pasquini et al. (2013) conducted interviews with councilors and staff of eight municipalities in Western Cape Province. Results revealed that most of the respondents believe climate change to be an ongoing global phenomenon and anthropogenic activities to be the cause of climate change. However, the respondents confused climate change with 'the hole in the ozone layer,' while some indicated that climate change is the result of seasonal variations in the climate. Several respondents showed some knowledge and understanding of climate change, adaptation, and its relation to environmental protection services and risk reduction, which they had acquired from courses or workshops. Only a few of them had obtained information from 'official' or government channels, thus the study helped highlight municipalities' inadequate access to reliable and relevant information about the impacts of climate change and feasible adaptation measures. Similarly, a study conducted by Rahman et al. (2014) discusses awareness of climate change among high-school students in Bangladesh and demonstrates that even with the widespread coverage of climate change in the media, students lack a proper understanding of global as well as local issues in relation to climate change. These findings suggest the significance of the extensive degree of communication required for various sectors of the population to enhance public awareness of the urgency of tackling climate change.

From the above-mentioned studies, it can be conferred that preexisting findings on people's attitudes and awareness can be a vital source of understanding of human responses and behaviour in relation to climate change. In recent days, more extensive national and international environmental commitments are being made among NGOs, private institutions, and academia, all aiming to take larger

steps towards tackling climate change than before. However, there is more to be done in assessing and analyseng public attitudes and perceptions about climate change to effectively incorporate those elements into future initiatives and to meet current climate goals.

8.4 Methodology

8.4.1 What is Q Methodology?

Q methodology is a research method developed in 1953 by William Stephenson, a psychologist and physicist, in a book entitled *The Study of Behaviour: Q-technique and its Methodology*. The method is used in both clinical and research settings in psychology and social sciences to analyse people's subjectivity; and more specifically, to compare how people have different viewpoints about a topic. Q methodology started to increase in popularity as it was adopted by the International Society for the Scientific Study of Subjectivity (ISSSS) and details about it were published in a dedicated newsletter called *Operant Subjectivity: The Q Methodology Newsletter.* ISSSS has encouraged the society to meet every year since 1985 to discuss aspects of psychology, communication, politics science, health, and environment, and ultimately to foster a better understanding of subjectivity.

Q method uses factor analysis (i.e., Q factor analysis) to identify 'factors' representing shared ways of thinking by narrowing down varying individual viewpoints to a few factors. The data for analysis is acquired from a 'Q sort,' a series of statements that is based on a 'concourse' – the aggregate of all existing concepts people say or think about the issue under investigation (Brown, 1993). Statements are phrased in everyday language and participants score each of them: the range is usually from highly disagree (-4) to agree (4), based on their opinions.

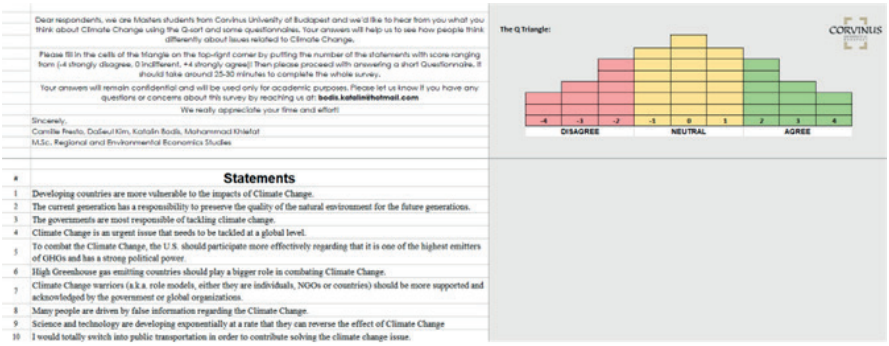
8.4.2 The Steps of Q Methodology

To investigate the subjectivity of young adults concerning their viewpoints about climate change, the following four steps were taken in the research: I. Defining the concourse and the Q set; II. Selecting the participant group; III. Q sorting the statements; IV. application of PQMethod software.

a. Defining the Concourse and the Q Sample

One of the main and first steps of Q methodology is defining the concourse, which can be described as 'the flow of communicability surrounding any topic.' The word originates from the Latin, meaning 'all running together'; in other words, ideas running together in thought (Brown, 1993). The fundamental purpose of Q methodology is to expose the structure of the concourse.

In the present study, the authors aimed to collect opinions about climate change, including those related to science, politics, education and everyday activities. Primarily, a range of 20 to 60 statements were developed to establish a list of comprehensive and well-founded statements. The statements were then categorised into one group that is called the 'Q sample' – as Brown (1993) describes it: 'a subset of statements, called a Q sample, is drawn from the larger concourse, and it is this set of statements which is eventually presented to participants in the form of a Q sort' (Brown, 1993). The final selection of statements was reduced to 39, and participants were asked to complete the pyramid/triangle, as seen in Figure 3.1, based on their level of disagreement, neutrality, or agreement.


Dear respondents, we are Masters students from Corvinus University of Budapest and we'd like to hear from you what you think about Climate Change using the Q-sort and some questionnaires. Your answers will help us to see how people think differently about issues related to Climate Change.

Please fill in the cells of the triangle on the top-right corner by putting the number of the statements with score ranging from (-4 strongly disagree, 0 Indifferent, +4 strongly agree)! Then please proceed with answering a short Questionnaire. It should take around 25-30 minutes to complete the whole survey.

Your answers will remain confidential and will be used only for academic purposes. Please let us know if you have any questions or concerns about this survey by reaching us at: bodis.katalin@hotmail.com

We really appreciate your time and effort!

Sincerely,
Camille Presto, DaSeul Kim, Katalin Bodis, Mohammad Khlefat
M.Sc., Regional and Environmental Economics Studies

The Q Triangle:

CORVINUS

-4 -3 -2 -1 0 1 2 3 4

DISAGREE NEUTRAL AGREE

#	Statements
1	Developing countries are more vulnerable to the impacts of Climate Change.
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.
3	The governments are most responsible of tackling climate change.
4	Climate Change is an urgent issue that needs to be tackled at a global level.
5	To combat the Climate Change, the U.S. should participate more effectively regarding that it is one of the highest emitters of GHGs and has a strong political power.
6	High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.
7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organizations.
8	Many people are driven by false information regarding the Climate Change.
9	Science and technology are developing exponentially at a rate that they can reverse the effect of Climate Change
10	I would totally switch into public transportation in order to contribute solving the climate change issue.

8.1. Figure: First part of the Excel sheet which was distributed among respondents. Statement numbers (on the left) were required to be sorted and allocated inside the pyramid (on the right). Source: The authors' own edition

b. The 39 statements

1. Developing countries are more vulnerable to the impacts of climate change.
2. The current generation has a responsibility to preserve the quality of the natural environment for future generations.
3. Governments are most responsible for tackling climate change.
4. Climate Change is an urgent issue that needs to be tackled at a global level.
5. To combat climate change, the U.S. should participate more effectively, considering that it is one of the largest emitters of GHGs and has strong political power.
6. High greenhouse gas emitting countries should play a bigger role in combating climate change.
7. Climate change warriors (a.k.a. role models, be they individuals, NGOs, or countries) should be better supported and acknowledged by the government or global organisations.
8. Many people are driven by false information regarding climate change.

9. Science and technology are developing exponentially at a rate that can reverse the effect of climate change
10. I would totally switch to using public transportation to contribute solving the climate change issue.
11. Developing countries should take as much responsibility for mitigating global warming as developed countries.
12. Glacier melting is one of the worst effects of climate change.
13. Climate change is an issue that is creating disruption around the world.
14. The renewable energy sector will enhance the economy.
15. Many people are affected regarding their opinion about climate change by mainstream media that have been portrayed as non-reliable sources.
16. We must continue to quickly develop inexpensive ways to generate electricity from nuclear power plants.
17. I am willing to pay an additional environmental tax to combat climate change.
18. International sustainability rankings are led by countries that are not really developing in a sustainable way.
19. Rich countries have created the global environmental crisis and they should solve it.
20. If we seriously want the developing world not to burn their forests, we should compensate them for lost profit.
21. The most serious environmental problem these days is caused by airborne dust, which directly enters our lungs and reduces our life expectancy.
22. Substances that cause direct health damage are released into the water or air only in developing countries.
23. Generally, more expensive products and services are of higher quality and less of a burden on the environment.
24. People who live in a place where the environmental load is barely perceptible do not feel the need to act.
25. If climate change could be reversed in the next thirty years, citizens in rich countries would have to give up only 1-2 percent of their consumption.
26. Climate change cannot be stopped, but the rich Nordic countries are capable of adapting.
27. If the main cause of environmental problems is overpopulation, the key to the solution is not in Europe and America, but in Africa and Asia.
28. Multinational companies are increasingly irresponsible throughout the world in relation to preserving the environment.
29. Countries with harsh winters and a poor agriculture sector can benefit from the small increase in temperature that will improve their farming industry.
30. With some countries that experience unexpected colder winters, their citizens will assume that global warming is not happening.

31. People are unwilling to sacrifice their consumption level to protect the environment.
32. Governments should regulate the amount of food that people can buy (e.g. a voucher system).
33. Due to coronavirus (COVID-19), many factories in China had to be closed for a certain time which visibly reduced air pollution. In order to have better air quality, some factories (which are not satisfying basic needs) should be closed.
34. Plants need carbon dioxide, so producing more CO_2 is not that bad.
35. Throughout the centuries, animals have been able to adapt to a changing climate, thus they can survive climate change.
36. With the occasional use of the home office, people do not have to travel to their workplaces. This helps to reduce GHG Emissions.
37. Climate change affects more urban than rural areas.
38. Governments should subsidise the construction of more weather-resistant buildings and roads in order to help adapt to extreme weather patterns.
39. People are influenced by information from the media regarding climate change.

c. Choosing the 21 Participants

The 21 respondents (P set) were chosen mainly from those who are familiar with climate change: students pursuing a master's degree on the Regional and Environmental Economic Studies program at Corvinus University of Budapest, and a mixed group of young adults of a relatively similar age range (i.e., between 20 to 30 years old). The emphasis on participant selection was to facilitate comparison between factors, not on sample size. The demographic background of participants was quite diverse – respondents came from 11 different countries – yet the characteristics of the group were found to be homogeneous considering the fact that the age gap was small, and education level was similar. To protect respondents' privacy, the research was conducted anonymously by putting responses in alphabetical order.

b. Q Sorting

Q sorting is the second most important part of Q-methodology, wherein respondents express their priorities and preferences about the statements. In practice, individuals are instructed to choose a coherent position for the given statements in a triangular answer format (see Figure 3.1). The selection range is nine units long, from -4 to +4, with -4 being 'strongly disagree,' 0 being 'neutral' and +4 being 'strongly agree.' The process of placing each statement in a given frame is not a simple task, as one might have to make compromises when distributing the statements over a fixed number of cells for each scale.

Subsequent to the Q sorting, the respondents were asked to fill out a short questionnaire regarding their demographic information, day-to-day activities, personal preferences, and opinions on the environment, education, government, and

media. The questionnaire was designed to help identify the distinct characteristics of each factor group.

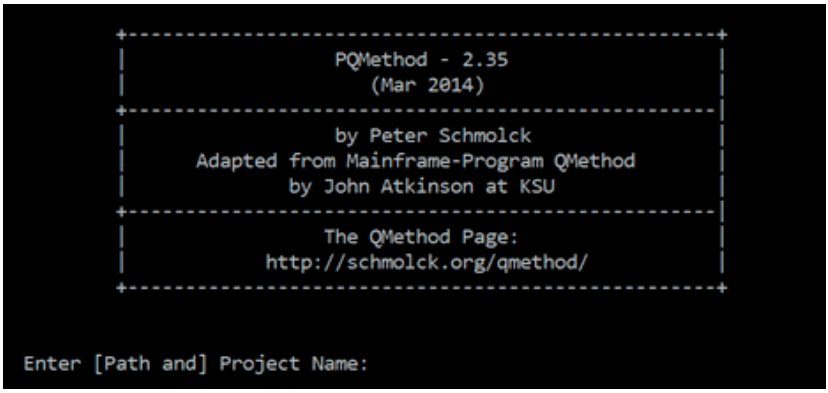
c. The Questionnaire:

1. Year of birth (Year)
2. What is your country of origin?
3. Size of family you grew up in (number of family members including yourself)
4. What kind of urban environment do you want to live in?
5. Would you like to work in a green NGO? (Y/N)
6. How often do you consume meat? (1 not at all ~ 10 very much)
7. To what extent do you use any purchased items, on average? (10% ~ 100%)
8. Would you give up having your own car if you could afford to use a rental car when you really needed a car? (Y/N)
9. Would you give up your own washing machine if you could afford to use a laundry service? (Y/N)
10. To what extent will the quality of the environment be a factor in your choice of residence? (1 not at all ~ 10 very much)
11. How much are you worried about future generations? (1 not at all ~ 10 very much)
12. In what type of settlement did you grow up (choose one): Village (fewer than 1,000 people) OR Town (1,000~100,000) OR City (up to 300,000 or more) OR Both Village/Town & City
13. In what type of housing environment did you grow up? (Choose one) Detached house (e.g., single-family house) OR Block of flats (e.g., townhouse) OR Apartment OR More than one
14. How much were you exposed to nature when you grow up? (1: not at all ~ 10 very much)
15. How satisfied are you with the way the media deals with climate change? (1: not at all ~ 10 very much)
16. How satisfied are you with the way educational institutions deal with climate change? (1: not at all ~ 10 very much)
17. How satisfied are you with the way government is dealing with climate change? (1: not at all ~ 10 very much)

d. PQMethod Software

The Q methodology was implemented using a statistical program called PQMethod (Figure 3.2), which is made specifically for the needs of Q studies by Peter Schmolck. The software enables the researcher to enter data (Q-sorts) in their original state, for instance as 'piles' of statement numbers. The software can calculate intercorrelations among the Q-sorts, then factor analysis is performed through the Centroid or Principal Component Analysis (PCA) method. The induced factors can

be rotated in different ways such as analytically (Varimax) or manually by adjusting two-dimensional plots. Last, when all the relevant factors are selected and the entries are 'flagged,' a final extensive report of the analysis is produced with various factor tables on factor loadings, statement factor scores, discriminating statements for each of the factors, as well as consensus statements across factors (Schmolck, 2020).



8.2. Figure: PQMethod Software home screen Source: The authors

8.5 Results & Discussion

8.5.1 Results – Factor Analysis

The data set was processed through PQMethod software to generate the following results: Correlation Matrix (Appendix B), Unrotated Factor Matrix (Appendix C), Cumulative Communalities Matrix (Appendix D), Factor Matrix with an X Indicating a Defining Sort (Table 3.1), Factor Scores with Corresponding Ranks (Appendix E), Correlations Between Factor Scores (Table 3.1), Factor Scores (for each of three factors generated) (Table 3.4), Descending Array of Differences Between Factors (Appendix F), Exact Factor Scores (SPSS) in Z-Score and T-Score units (Appendix G), Factor Q-Sort Values for Each Statement (Appendix H), Distinguishing Statements (Table 3.5), and Consensus Statements (Table 3.6).

Unrotated Factor Matrix

From the Unrotated Factor Matrix (Appendix C), the first three factors were chosen to be analysed with Eigenvalues of 8.30, 1.98, and 1.78 and R-squared (R^2) values of 40, 9, and 8 percent, respectively. As shown in Table 3.1, all of the three factor groups explain relatively little of the variability of the data. However, it is noteworthy that Factor 1 (F1) has a comparatively high R^2 value, explaining more variance within the data, while Factor 2 (F2) and Factor 3 (F3) have considerably lower explained variance

value. There exists a moderate positive correlation between the factors which explains that respondents have quite consistent opinions about climate change. Even though each factor is not clearly distinguished from the others, the study aims to examine the minor, yet sophisticated differences in the perceptions and attitudes of a relatively homogenous response group.

Correlations Between Factor Scores			
	1	2	3
1	1	0.458	0.529
2	0.458	1	0.460
3	0.529	0.460	1

8.1. Table: Correlation scores between factors 1, 2 and 3;
Source: The authors' own edition

We proceeded by flagging the responses in the Factor Matrix (Table 3.2). Of the 21 respondents in total, 7, 7, and 6 respondents were sorted into the F1, F2, and F3 groups, respectively, while one respondent was indicated as an outlier (respondent D fell into both F1 and F3). For the R^2 values of this stage, all three factors had similarly low scores: 20 (F1), 19 (F2), and 19 (F3) percent.

Factor Matrix with an X Indicating a Defining Sort				
QSORT		1	2	3
1	W	0.222	0.622X	0.433
2	V	-0.110	0.398	0.664X
3	U	0.556X	0.248	0.476
4	T	0.155	0.704X	0.296
5	S	0.264	0.812X	0.032
6	P	0.450	0.530X	0.252
7	O	0.174	0.543X	0.112
8	M	0.844X	0.013	0.223
9	J	0.013	0.868X	0.035
10	I	0.699X	0.084	0.108
11	H	0.692X	0.358	0.340
12	G	0.129	0.057	0.795X
13	F	0.092	0.447	0.676X
14	D	0.400	0.215	0.436
15	C	0.599X	0.272	-0.231
16	B	0.378	0.410	0.597X
17	A	0.523X	0.324	0.311
18	X	0.440	-0.049	0.567X
19	Y	0.258	0.353X	0.217
20	Z	0.262	0.091	0.715X
21	Q	0.690X	0.232	0.204
%	expl.Var. (R^2)	20	19	19

8.2. Table: Factor Matrix with an X Indicating a Defining Sort – Blue: Factor 1, Orange: Factor 2, Green: Factor 3 and Yellow: Outlier Source: The authors' own edition

Demographics

This section provides a summary of answers given to the questionnaire (Table 3.3) before proceeding to a comparative (not absolute) analysis of the responses based on the factor analysis.

For the F1 group, the birth year ranges between 1992-1996 among seven people coming from six different countries. The average family size they grew up with is 4.6 persons and 63% of them are willing to work in an environment-related ('green')

NGO. In comparison to the other factor groups, all F1 members are willing to give up their own car but are most unwilling to give up their own washing machine.

In F2, the birth year ranges between 1991-1996 among seven people coming from five countries. This group has the highest willingness to work in a green NGO, but members are the least willing to give up their own car. In addition, they were the least exposed to nature as they grew up and the least worried about the future generation.

People in F3 have the widest age range – between 1988 and 1997 for six people from three countries. They were most exposed to nature when they grew up. They are least satisfied with the way the government is dealing with climate change and are the most unwilling to work in a green NGO.

	Factor 1	Factor 2	Factor 3
Number of respondents	7	7	6
Number of origin countries	6	5	3
Birth Year (range)	1992-96	1991-96	1988-97
Family Size (average)	4.6	4.3	4.2
Respondents willing to work in a green NGO (%)	63%	83%	50%
Meat consumption level (1-10, average)	6.0	6.3	6.3
Item usage (average %)	81%	82%	87%
Respondents willing to give up own car (average %)	100%	57%	67%
Respondents willing to give up own washing machine (average %)	14%	43%	17%
Importance of environmental quality for residence (1-10, average)	8.1	7.3	8.5
Worry about future generation (1-10, average)	7.9	6.8	8.7
Exposure to nature when growing up (1-10, average)	7.4	6.5	8.0
Satisfaction level with media dealing with CC (1-10, average)	5.0	4.2	4.8
Satisfaction level with education dealing with CC (1-10, average)	4.3	4.7	5.3
Satisfaction level with government dealing with CC (1-10, average)	3.7	4.5	2.5

8.3. Table: Summary results from questionnaire displayed by Factor groups; Source: The authors' own edition

Factor Scores

To find the characteristics of each factor, Factor Scores greater than 1 and less than -1 were analysed to compare the statements most agreed/disagreeing with within factors. During the analysis, the authors attempted to each factor group according to its characteristics based on the Factor Scores, and Consensus and Distinguishing Statements. Due to the similitude of the statements most agreed/disagreed on among three factor groups, very distinctive statements were examined by selecting the statements that are uniquely present in each factor – i.e., statements with the highest and lowest z-scores were chosen – which are indicated in bold in Table 3.4. In addition to manually selecting the distinctive statements, the Distinguishing Statements (Table 3.5) which were found to be similar to those identified by manual selection were incorporated into the analysis to detail the differences even further between the factor groups.

Consensus Statements

Before going further into differentiating the factors in the Discussion section, it is worthwhile mentioning the Consensus Statements (CS), which were those that did not distinguish between any pair of factors (Table 3.6). Among the CS, the respondents agreed on the urgency of tackling climate change at a global level (St. 4) and the importance of increased US participation for combatting climate change (St. 5). A neutral consensus was expressed about the sentence that many people are driven by false information about climate change (St. 8), the exponential development of science and technology as a cure for climate change (St. 9), glaciers melting as one of the worst effects of climate change (St. 12), and rich countries being the origin as well as having to take the main responsibility for the global environmental crisis (St. 19). The disagreement consensus involved the sentences that rich Nordic countries will only be able to adapt to climate change (St. 26), that some countries that experience unusual colder winters will think that global warming is not happening (St. 30), and that animals can adapt to climate change (St. 35).

Factor Scores – For Factor 1		
No.	Statement	Z-SCORES
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.	2.13
4	Climate Change is an urgent issue that needs to be tackled at a global level.	1.74
1	Developing countries are more vulnerable to the impacts of Climate Change.	1.50

10	**I would totally switch into public transportation in order to contribute solving the climate change issue.**	1.29
5	To combat the Climate Change, the U.S. should participate more effectively regarding that it is one of the highest emitters of GHGs and has a strong political power.	1.28
3	The governments are most responsible of tackling climate change.	1.26
13	Climate Change is an issue that poses disruptions around the world.	1.21
36	**With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.**	-1.28
35	Throughout the centuries, animals have been able to adapt to the changing climate, thus they can survive within the Climate Change.	-1.40
23	Generally, more expensive products and services are of higher quality and less of a burden on the environment.	-1.56
22	Substances that cause direct health damage are released into the water or air only in developing countries.	-1.73
32	The governments should regulate the amount of food that people can buy. (e.g. ticketing system)	-1.84
34	The plants need Carbon Dioxide, so producing more CO2 is not that bad.	-1.90

Factor Scores – For Factor 2		
No.	Statement	Z-SCORES
36	**With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.**	2.04
4	Climate Change is an urgent issue that needs to be tackled at a global level.	1.79
1	Developing countries are more vulnerable to the impacts of Climate Change.	1.59
6	**High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.**	1.53
39	**People are influenced by the information from the media regarding Climate Change.**	1.20
5	To combat the Climate Change, the U.S. should participate more effectively regarding that it is one of the highest emitters of GHGs and has a strong political power.	1.15
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.	1.12
7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organisations.	1.09

35	Throughout the centuries, animals have been able to adapt to the changing climate, thus they can survive within the Climate Change.	-1.10
26	Climate change cannot be stopped, but the rich Nordic countries are capable of adapting.	-1.18
17	**I am willing to pay an additional environmental tax to combat climate change.**	-1.20
11	**The developing countries should take an equal responsibility in mitigating global warming as the developed countries.**	-1.35
28	**Multinational companies are increasingly irresponsible throughout the world towards preserving the environment.**	-1.69
32	The governments should regulate the amount of food that people can buy (e.g. ticketing system).	-1.90
34	The plants need Carbon Dioxide, so producing more CO2 is not that bad.	-1.91

Factor Scores – For Factor 3		
No.	Statement	Z-SCORES
4	Climate Change is an urgent issue that needs to be tackled a global level	2.14
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.	1.93
5	To combat the Climate Change, the U.S. should participate more effectively regarding that it is one of the highest emitters of GHGs and has a strong political power.	1.54
3	The governments are most responsible of tackling climate change.	1.48
33	**Due to the Coronavirus (COVID-19), many factories in China had to be closed for a certain time which visibly reduced the air pollution. In order to have a better air quality, some of the factories (which are not satisfying the basic needs) should be closed.**	1.33
7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organisations.	1.29
13	Climate Change is an issue that poses disruptions around the world.	1.08
25	**If Climate Change could be reversed in the next thirty years, citizens in rich countries would have to give up only 1-2 percent of their consumption.**	-1.13
34	The plants need Carbon Dioxide, so producing more CO2 is not that bad.	-1.13

29	**Countries with harsh winters and poor agriculture sector can benefit from the small amount of increase in temperature to have a better farming industry.**	-1.19
27	**If the main cause of environmental problems is overpopulation, the key to the solution is not in Europe and America, but in Africa and Asia.**	-1.23
22	Substances that cause direct health damage are released into the water or air only in developing countries.	-1.41
23	Generally, more expensive products and services are of higher quality and less of a burden on the environment.	-1.65
35	Throughout the centuries, animals have been able to adapt to the changing climate, thus they can survive within the Climate Change.	-1.80

8.4. Table: List of factor scores displaying statements with z-scores greater than 1 and less than -1; Source: The authors' own edition

Distinguishing Statements (P < .05; Asterisk (*) Indicates Significance at P < .01) Both the Factor Q-Sort Value (Q-SV) and the Z-Score (Z-SCR) are Shown.							
Factor 1							
		1		2		3	
No.	Statement	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
10	I would totally switch into public transportation in order to contribute solving the climate change issue.	3	1.29*	-1	-0.57	-2	-0.92
6	High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.	2	0.89	3	1.53	1	0.35
14	Renewable energy sector will enhance the economy.	2	0.82*	0	0	0	-0.11
31	People are unwilling to sacrifice their consumption level to protect the environment.	1	0.57	-2	-0.89	0	0
11	The developing countries should take an equal responsibility in mitigating global warming as the developed countries.	0	-0.18*	-3	-1.35	2	0.77

7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organisations.	-1	-0.33*	2	1.09	2	1.29
38	The governments should subsidise on constructing more weather-resistant buildings and roads in order to adapt to the extreme weather patterns.	-1	-0.52*	2	0.8	1	0.69
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	-2	-1.28*	4	2.04	2	0.94

Factor 2							
		1		2		3	
No.	Statement	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	-2	-1.28	4	2.04*	2	0.94
6	High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.	2	0.89	3	1.53	1	0.35
39	People are influenced by the information from the media regarding climate change.	0	0.08	3	1.2	1	0.5
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.	4	2.13	2	1.12*	4	1.94
13	Climate Change is an issue that poses disruptions around the world.	2	1.21	2	0.44	2	1.08
16	We must continue to quickly develop inexpensive ways to generate electricity from nuclear power plants.	-1	-0.55	1	0.27	-1	-0.38

20	If we seriously want the developing world not to burn their forests, we should compensate them for the lost profits.	-2	-0.57	0	0.18*	-1	-0.71
22	Substances that cause direct health damage are released into the water or air only in developing countries.	-3	-1.73	0	0.13*	-3	-1.41
3	The governments are most responsible of tackling climate change.	2	1.26	0	-0.05*	3	1.48
23	Generally, more expensive products and services are of higher quality and less of a burden on the environment.	-3	-1.55	-1	-0.22*	-4	-1.64
31	People are unwilling to sacrifice their consumption level to protect the environment.	1	0.57	-2	-0.89*	0	0
24	For people who live in a place where the environmental load is barely perceptible, they do not feel the need to act.	0	-0.16	-2	-0.90*	0	0.11
26	Climate change cannot be stopped, but the rich Nordic countries are capable of adapting.	-2	-0.65	-2	-1.18	-1	-0.6
17	I am willing to pay an additional environmental tax to combat climate change.	0	-0.04	-3	-1.20*	0	0.02
11	The developing countries should take an equal responsibility in mitigating global warming as the developed countries.	0	-0.18	-3	-1.35*	2	0.77
28	Multinational companies are increasingly irresponsible throughout the world towards preserving the environment.	1	0.38	-3	-1.69*	1	0.16

Factor 3							
		1		2		3	
No.	Statement	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
33	Due to the Coronavirus (COVID-19), many factories in China had to be closed for a certain time which visibly reduced the air pollution. In order to have a better air quality, some of the factories (which are not satisfying the basic needs) should be closed.	-1	-0.25	0	0.06	3	1.33*
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	-2	-1.28	4	2.04	2	0.94*
37	The climate change affects more urban than rural areas.	-2	-0.92	-2	-0.72	2	0.82*
11	The developing countries should take an equal responsibility in mitigating global warming as the developed countries.	0	-0.18	-3	-1.35	2	0.77*
1	Developing countries are more vulnerable to the impacts of Climate Change.	3	1.5	3	1.59	1	0.40*
6	High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.	2	0.89	3	1.53	1	0.35
32	The governments should regulate the amount of food that people can buy. (e.g. ticketing system)	-4	-1.84	-4	-1.9	0	0.08*
31	People are unwilling to sacrifice their consumption level to protect the environment.	1	0.57	-2	-0.89	0	0
18	International sustainability rankings are led by countries that are not really developing in a sustainable way.	2	0.79	1	0.42	0	-0.38*
8	Many people are driven by false information regarding the Climate Change.	1	0.22	1	0.21	-1	-0.39

15	Many people are affected regarding their opinion on Climate Change by some mainstream media that have been portrayed as a non-reliable source.	0	-0.02	1	0.29	-2	-0.75*
25	If Climate Change could be reversed in the next thirty years, citizens in rich countries would have to give up only 1-2 percent of their consumption.	0	-0.14	-1	-0.47	-2	-1.13
34	The plants need Carbon Dioxide, so producing more CO2 is not that bad.	-4	-1.9	-4	-1.91	-2	-1.14*
29	Countries with harsh winters and poor agriculture sector can benefit from the small amount of increase in temperature to have a better farming industry.	1	0.45	0	0.18	-3	-1.19*
27	If the main cause of environmental problems is overpopulation, the key to the solution is not in Europe and America, but in Africa and Asia.	-1	-0.25	-1	-0.21	-3	-1.24*

8.5. Table: Distinguishing statements listed by order, Factors 1, 2, and 3;
Source: The authors' own edition

Consensus Statements Those That Do Not Distinguish Between ANY Pair of Factors. All Listed Statements are Non-Significant at P>.01, and Those Flagged With an * are also Non-Significant at P>.05.							
		Factors					
		1		2		3	
No.	Statement	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
4*	Climate Change is an urgent issue that needs to be tackled at a global level.	4	1.73	4	1.79	4	2.14
5*	To combat the Climate Change, the U.S. should participate more effectively regarding that it is one of the highest emitters of GHGs and has a strong political power.	3	1.28	2	1.15	3	1.54
8	Many people are driven by false information regarding the Climate Change.	1	0.22	1	0.21	-1	-0.39

9*	Science and technology are developing exponentially at a rate that they can reverse the effect of Climate Change	-2	-0.58	-1	-0.62	-1	-0.57
12*	Glaciers melting is one of the worst effects of Climate Change.	1	0.34	0	0.08	1	0.16
19*	Rich countries have created the global environmental crisis and they should solve it.	1	0.26	1	0.29	0	-0.22
26	Climate change cannot be stopped, but the rich Nordic countries are capable of adapting.	-2	-0.65	-2	-1.18	-1	-0.6
30	With some countries experiencing unexpected colder winters, their citizens will assume that the global warming is not happening.	-1	-0.23	-1	-0.15	-2	-0.75
35	Throughout the centuries, animals have been able to adapt to the changing climate, thus they can survive within the Climate Change.	-3	-1.4	-2	-1.1	-4	-1.8

8.6. Table: Consensus statements with shading – Green: agree, Yellow: neutral, Red: disagree; Source: The authors' own edition

8.5.2 Discussion – Interpretation of the Results

Even though the respondents possess homogenous characteristics – they have a relatively small age gap between them and their background as well as interests lie in environmental issues, the fact that respondents come from 11 different countries makes the group very diverse. It is intriguing to note that the respondents consider the role of the US in tackling climate change to be significant. Perhaps a major factor in this is the US' recent withdrawal from the Paris Agreement in 2017, although the country has significant political, economic, and environmental influence around the globe. The respondents' neutrality about whether rich countries in general are responsible for creating and tackling climate change could be due to acknowledgement that there is a complex economic relationship between more and less developed countries in terms of generating polluting economic activities. Alternatively, it could be that people are generally indifferent to this issue, or that it is simply impossible to identify out who is more responsible for climate change. Respondents did not consider that glacier melting is one of the worst effects of climate change, perhaps because such a phenomenon is not perceivable in people's everyday lives and adverse effects are only projected to occur in the long term. From the statements the respondents disagreed with, it can be perceived that people consider the fact of a rising global temperature to

be undoubtable, and that it is inducing changing weather patterns. Also, it generated consensus that the deployment of capital and infrastructural assets alone cannot be sufficient for adapting to the rapidly changing climate.

Based on the overall comparison and individual analysis of the three factor groups, a title was given to reflect the unique characteristics of each factor. The titles given toF1, F2, and F3 follow: 'Self-action oriented, Doers,' 'Market oriented, Business believers,' and 'Fact oriented like Scientists,' respectively. Subsequently, the hypotheses of this study is tested based on the main findings.

F1 – 'Self-Action Oriented, Doers'

One of the distinctive traits found in the F1 group is that all the members are willing to totally switch to public transportation to help resolve climate change (St. 10). The Factor Scores with Ranks (Appendix E) showed that St. 10 ranked 4th, 28th, and 32nd for F1, F2, and F3 respectively, out of 39. These contrasting ranks for St. 10 exhibit F1 members' high level of commitment to changing their own lifestyles, which was unique to F1 group only. Contrastingly, the Factor Q-Sort Value (Q-SV, Table 3.5) for St. 7 (supporting CC warriors through government and global organisations) was -1, which is quite a lot lower than for F2 and F3 (both had a Q-SV of 2). Furthermore, people in this group believe in the economic potential of renewable energy more than the other groups, but they do not consider use of the occasional home office to be a way to reduce GHG emissions (St. 36), whereas the remaining groups did.

F2 – 'Market Oriented, Business Believers'

There are three main aspects that distinguish F2 from F1 and F3, which can be observed from St. 28, 3 and 17. In F2, people strongly disagreed that multinational companies (MNCs) are increasingly being irresponsible in relation to preserving the environment (St. 28) with Q-SV -3, where F1 and F3 had Q-SV 1. In addition, people in this group were neutral about the government being most responsible for tackling CC (St. 3), while the other groups agreed with the idea. Last, in the same line with St. 3, F2 disagreed most in terms of their willingness to pay an additional environmental tax (St. 17) among the three factors, with an Q-SV of -3. These aspects show that people in F2 strongly value the fact that more and more MNCs are deploying sustainable practices in their business models, independent of compulsory environmental regulations. Also, these results show that people in F2 are more skeptical about the role and performance of government and tend to rather count on the role of market interactions, including the positive environmental spillovers between small and large businesses.

F3 – 'Fact Oriented Like Scientists'

It was observed that people in F3 have a more rational and fact-oriented thinking structure. Some of the Distinguishing Statements for F3 (Table 3.5) reveal that the

latter would agree to close more factories to reduce pollution (St. 33) and had a neutral stance in terms of allowing the government to regulate the amount of food people can buy (St. 32). From these two examples, it is possible to describe people in F3 as those who like to prioritise one-dimensional impacts of any chosen solution because, in reality, much of the ongoing environmental challenges (e.g., increasing pollution, food waste, intensive farming, unsustainable land use pattern, etc.) could be solved if St 32 and 33 were implemented. The reason why the group F3 is named 'Scientists' is that people in this group are knowledgeable about urban areas being more vulnerable to the effects of climate change compared to rural areas (St. 37), and about how world agriculture is being negatively affected from the net effect of climate change. In fact, several studies have proved that current urban structure (such as impermeable surfaces and the high density of buildings and population) are leading to rising temperatures and decreasing precipitation compared to rural areas (Zeleňáková, et al., 2015). Also, agricultural scientists predict that the net effect of climate change on world agriculture will be negative, as there has been increased weed competition, expansion in the range of pathogens, and alteration of crop agroecosystems in the light of climate change (White, et al., n.d.).

Hypothesis Testing

To test the two hypotheses (a) People who are more interested in climate change are more supportive of individual action aimed at solving climate change, & (b) People are more willing to take individual action on climate change when there are clear benefits to it, the following three statements (# 10, 17 and 31) were examined with Factor Q-Sort Values (Appendix H):

10. I would totally switch to using public transportation to contribute solving the climate change issue.
17. I am willing to pay an additional environmental tax to combat climate change.
31. People are unwilling to sacrifice their consumption level to protect the environment.

The factor scores (Q-SV) for statement 10 show conflicting opinions among the three factor groups, wherein members of F1 have the strongest willingness to totally switch to public transportation (Q-SV 3), F2 have neutral opinions (Q-SV -1), and F3 slightly disagree with the statement (Q-SV -2). The Q-SV for statement 17 shows less variance in opinions: F1 and F3 are neutral (Q-SV 0), but F2 as a group strongly disagree with paying an additional environmental tax (Q-SV -3). For statement 31, F1 and F3 are neutral (Q-SV 1 and 0 respectively) and F2 slightly disagrees (Q-SV -2) that people in general are unwilling to sacrifice their consumption level.

In addition, two questions (# 8 and 9) from the questionnaire were revisited to test the hypotheses even further:

8. Would you give up having your own car if you could afford to use a rental car when you really needed a car? (Y/N)
9. Would you give up your own washing machine if you could afford to use a laundry service? (Y/N)

As can be seen from Table 3.3, only F1 group answered 'Yes' unanimously (100%), whereas F2 and F3 responded positively – 57% (67%) respectively – to Question 8. It is interesting to note that all the groups were unwilling to give up their own washing machine, with a 'Yes' rate of 14%, 43%, and 17% for F1, F2 and F3, respectively. From these results, it can be supposed that people in general had more negative opinions about giving up their own washing machines, as this is something that individuals need to use more frequently than a car in their day-to-day life. Willingness to give up one's own car would depend on how frequently one needs to drive each day, as well as on one's commitment to taking individual action.

Consequently, it is possible to reject the first hypothesis, as the majority was not willing to change their daily habits (although it is important to note that F1 showed very strong positivity towards statement 10 and question 8). Answering the second hypothesis is somewhat tricky, as in general it is hard to see a direct and short-term benefit from taking individual action related to sustainability (e.g., taking public transportation, recycling and using products that have lower environmental impact) and perceived benefits may not only be materialistic (e.g. economic savings or incentives) but also psychological (e.g. personal satisfaction). However, it is possible to support the second hypothesis as out of the three statements and two questions giving up one's own car would bring the clearest economic benefit by saving on the high purchase and maintenance-related costs, and all the factor groups showed more positivity towards Question 8 compared to all remaining ones.

8.6 Conclusion

As a consequence of the imbalance in the Earth's atmosphere, the survival of the planet's natural environment as well as the prosperity of humanity and the development of the world economy are under pressure. To handle climate change more efficiently and effectively, stronger collective action is necessary across nations, which requires a fundamental consensus that climate change represents an urgent global challenge.

This research was conducted with an aim of valuing public opinions and actions, which are considered a crucial factor in politics that shape the development of local, national, and international policies and goals. Hence, Q methodology was used to evaluate young adults' different attitudes and perceptions about climate change and to measure the extent and characteristics of individual commitments to combatting climate change.

According to the analysis of the Unrotated Factor Matrix, there was a moderate positive correlation between the factors, which meant that respondents had similar opinions about climate change (the strongest consensus concerned considering climate change as an urgent issue that needs to be tackled at a global level, Table 3.6). Although not each factor could be distinguished clearly from the others, the study sought to examine the minor yet delicate differences between the response groups. The following three titles were given to each factor: F1 – 'Self-action oriented, Doers,' F2 – 'Market oriented, Businesses,' and F3 – 'Fact oriented like Scientists' based on the analysis of results from the PQMethod software. The existence of these three groups proved that even within a homogenous group (consisting of young adults with either profound knowledge or interest in climate change), there is variety in how people approach the issue – from self-action oriented, market-oriented, and fact-oriented perspectives. By testing the two hypotheses, it could be observed that despite people's knowledge and interest in climate change, willingness to take individual action does not increase correspondingly, and people in general tend to favor individual forms of action that generate more concrete personal benefits (e.g., the economic benefits of not owing a car versus owning a washing machine).

The role of education, media, and the government is vital in influencing and shaping people's perception and behaviour. However, the respondents (from 11 different countries) in this research reported neutral to negative satisfaction about the way education, the media and government are dealing with climate change. To utilise the significant role of the three entities, it will be crucial for each of the latter to convey more transparent and reliable information about measuring the process and impact of climate change and to take broader action to address the urgency of the problem, as well as solutions for achieving sustainable development.

Considering the limitations of this research (e.g., the homogeneity of the response group and broad research objectives), it would be beneficial to narrow down the research objective from assessing general opinions about climate change to observing opinions about specific policy options (e.g., renewable energy policy, and environmental education policy reform) as well as taking individual action at various levels in any future research into personal behaviours and perceptions. Furthermore, to contribute to developing more practical and efficient environmental policy at the country level, it would be advantageous to conduct research based on a larger sample size consisting of individuals of a more diverse age range and education levels.

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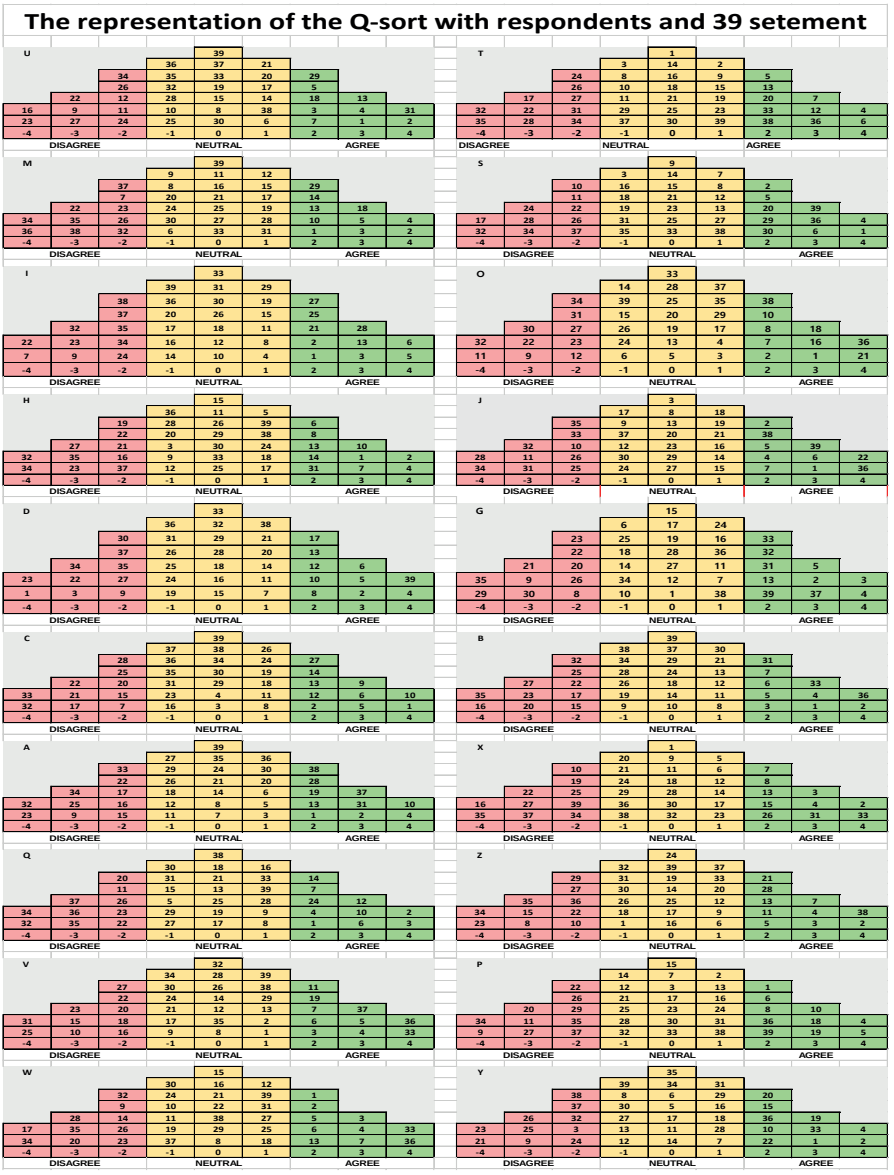
8.8 Appendix

A. Illustration of the Q-sort from respondents



B. Correlation Matrix Between Sorts

		Correlation Matrix Between Sorts																			
Sorts																					
1	W	100	46	43	61	62	52	35	33	55	37	45	52	39	24	14	71	31	40	31	36	43
2	V	46	100	31	41	34	25	22	5	30	19	18	46	56	27	10	61	34	25	25	47	12
3	U	43	31	100	29	42	46	40	58	26	43	67	36	43	40	12	62	61	54	39	45	34
4	T	61	41	29	100	74	42	25	19	55	21	42	25	44	44	25	49	26	35	22	43	39
5	S	62	34	42	74	100	38	29	24	66	34	45	6	32	30	36	48	35	21	28	20	31
6	P	52	25	46	42	38	100	47	46	48	34	59	42	51	45	28	46	51	27	37	17	44
7	O	35	22	40	25	29	47	100	21	41	21	33	8	45	19	2	28	41	-3	26	19	30
8	M	33	5	58	19	24	46	21	100	11	64	56	36	24	42	37	36	39	45	36	38	61
9	J	55	30	26	55	66	48	41	11	100	5	34	13	40	22	18	30	22	0	29	18	28
10	I	37	19	43	21	34	34	21	64	5	100	32	21	8	32	38	38	39	31	14	29	38
11	H	45	18	67	42	45	59	33	56	34	32	100	29	55	57	42	62	58	55	40	41	65
12	G	52	46	36	25	6	42	8	36	13	21	29	100	56	31	0	46	37	38	25	54	26
13	F	39	56	43	44	32	51	45	24	40	8	55	56	100	55	13	54	40	29	35	53	29
14	D	24	27	40	44	30	45	19	42	22	32	57	31	55	100	14	31	34	31	23	48	40
15	C	14	10	12	25	36	28	2	37	18	38	42	0	13	14	100	29	38	5	5	6	43
16	B	71	61	62	49	48	46	28	36	30	38	62	46	54	31	29	100	52	62	34	43	44
17	A	31	34	61	26	35	51	41	39	22	39	58	37	40	34	38	52	100	15	42	44	38
18	X	40	25	54	35	21	27	-3	45	0	31	55	38	29	31	5	62	15	100	16	36	41
19	Y	31	25	39	22	28	37	26	36	29	14	40	25	35	23	5	34	42	16	100	6	21
20	Z	36	47	45	43	20	17	19	38	18	29	41	54	53	48	6	43	44	36	6	100	51
21	Q	43	12	34	39	31	44	30	61	28	38	65	26	29	40	43	44	38	41	21	51	100

C. Unrotated Factor Matrix

		Unrotated Factor Matrix							
		Factors							
		1	2	3	4	5	6	7	8
Sorts									
1	W	0.7336	0.2917	0.0159	-0.2551	-0.2946	-0.0247	0.2586	0.213
2	V	0.5413	0.3645	0.4303	-0.1024	-0.071	0.4125	-0.1256	-0.0624
3	U	0.741	-0.2087	0.0654	0.1895	-0.267	-0.0843	0.0141	-0.3814
4	T	0.6625	0.3975	-0.1015	-0.3968	0.1635	-0.1322	-0.0083	-0.0513
5	S	0.6374	0.3972	-0.4068	-0.309	-0.0856	-0.0084	-0.0398	-0.1994
6	P	0.7119	0.0667	-0.1886	0.2804	-0.0038	-0.1141	0.0639	0.3409
7	O	0.4771	0.2677	-0.1962	0.5156	0.0276	0.0446	0.4111	-0.2139
8	M	0.6327	-0.5787	-0.1656	0.0542	-0.0492	-0.0662	0.1815	0.1426
9	J	0.5234	0.6127	-0.3244	0.0002	0.0679	-0.121	0.1033	0.0972
10	I	0.5217	-0.4267	-0.2301	-0.1518	-0.1757	0.3283	0.3369	-0.0646
11	H	0.8067	-0.2257	-0.1459	0.0767	0.1006	-0.2541	-0.2571	-0.0836
12	G	0.5626	-0.0461	0.5772	0.0573	-0.0393	0.1259	0.087	0.4552
13	F	0.6955	0.2588	0.3378	0.2474	0.2832	-0.0189	-0.1641	0.0391
14	D	0.6078	-0.1234	0.1085	0.0614	0.4892	-0.228	-0.0723	-0.1156
15	C	0.3766	-0.2238	-0.5429	-0.2141	0.1945	0.4202	-0.3718	0.1841
16	B	0.7979	0.0322	0.1716	-0.1861	-0.3013	0.1029	-0.1653	-0.0686
17	A	0.6704	-0.1318	-0.0875	0.3653	-0.0264	0.3828	-0.173	-0.1548
18	X	0.5551	-0.34	0.3055	-0.3622	-0.2607	-0.3793	-0.0944	-0.0982
19	Y	0.4776	0.0737	-0.0684	0.4314	-0.3502	-0.1701	-0.3059	0.1438
20	Z	0.6142	-0.1151	0.4439	-0.122	0.3826	0.1592	0.2016	-0.1756
21	Q	0.6556	-0.3144	-0.2066	-0.1344	0.2803	-0.1115	0.1396	0.1685
Eigenvalues		8.2977	1.9828	1.7752	1.3731	1.112	1.0143	0.8787	0.8142
% expl.Var.		40	9	8	7	5	5	4	4

D. Cumulative Communalities Matrix

		Cumulative Communalities Matrix							
		Factors 1 Thru							
		1	2	3	4	5	6	7	8
Sorts									
1	W	0.5381	0.6232	0.6235	0.6886	0.7754	0.776	0.8428	0.8882
2	V	0.293	0.4258	0.611	0.6215	0.6265	0.7967	0.8125	0.8164
3	U	0.5491	0.5926	0.5969	0.6328	0.7041	0.7112	0.7114	0.8569
4	T	0.4389	0.597	0.6073	0.7647	0.7914	0.8089	0.8089	0.8116
5	S	0.4063	0.564	0.7295	0.825	0.8323	0.8324	0.8339	0.8737
6	P	0.5068	0.5113	0.5469	0.6255	0.6255	0.6385	0.6426	0.7588
7	O	0.2276	0.2993	0.3377	0.6036	0.6043	0.6063	0.7754	0.8211
8	M	0.4003	0.7353	0.7627	0.7656	0.7681	0.7724	0.8054	0.8257
9	J	0.2739	0.6494	0.7546	0.7546	0.7592	0.7739	0.7845	0.794
10	I	0.2721	0.4542	0.5072	0.5302	0.5611	0.6689	0.7823	0.7865
11	H	0.6508	0.7017	0.723	0.7289	0.739	0.8036	0.8697	0.8767
12	G	0.3165	0.3187	0.6518	0.6551	0.6566	0.6725	0.6801	0.8873
13	F	0.4837	0.5506	0.6647	0.726	0.8062	0.8065	0.8335	0.835
14	D	0.3694	0.3847	0.3964	0.4002	0.6396	0.6915	0.6968	0.7101
15	C	0.1418	0.1919	0.4867	0.5325	0.5704	0.7469	0.8852	0.9191
16	B	0.6366	0.6377	0.6671	0.7018	0.7926	0.8032	0.8305	0.8352
17	A	0.4494	0.4668	0.4744	0.6079	0.6086	0.7551	0.785	0.809
18	X	0.3082	0.4237	0.5171	0.6483	0.7163	0.8601	0.8691	0.8787
19	Y	0.2281	0.2335	0.2382	0.4243	0.547	0.5759	0.6695	0.6902
20	Z	0.3772	0.3905	0.5875	0.6024	0.7489	0.7742	0.8149	0.8457
21	Q	0.4298	0.5287	0.5713	0.5894	0.668	0.6804	0.6999	0.7283
cum % expl		40	49	57	64	69	74	78	82

E. Factor Scores with Corresponding Ranks

Factor Scores with Corresponding Ranks (Z-scores)							
		Factor 1		Factor 2		Factor 3	
No.	Statement No.	z-score	Rank	z-score	Rank	z-score	Rank
1	Developing countries are more vulnerable to the impacts of Climate Change.	1.5	3	1.59	3	0.4	13
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.	2.13	1	1.12	7	1.94	2
3	The governments are most responsible of tackling climate change.	1.26	6	-0.05	23	1.48	4

4	Climate Change is an urgent issue that needs to be tackled at a global level.	1.73	2	1.79	2	2.14	1
5	To combat the Climate Change, the U.S. should participate more effectively regarding that it is one of the highest emitters of GHGs and has a strong political power.	1.28	5	1.15	6	1.54	3
6	High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.	0.89	8	1.53	4	0.35	14
7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organisations.	-0.33	27	1.09	8	1.29	6
8	Many people are driven by false information regarding the Climate Change.	0.22	16	0.21	16	-0.39	25
9	Science and technology are developing exponentially at a rate that they can reverse the effect of Climate Change	-0.58	31	-0.62	29	-0.57	27
10	I would totally switch into public transportation in order to contribute solving the climate change issue.	1.29	4	-0.57	28	-0.92	32

11	The developing countries should take an equal responsibility in mitigating global warming as the developed countries.	-0.18	23	-1.35	36	0.77	10
12	Glaciers melting is one of the worst effects of Climate Change.	0.34	14	0.08	20	0.16	16
13	Climate Change is an issue that poses disruptions around the world.	1.21	7	0.44	10	1.08	7
14	Renewable energy sector will enhance the economy.	0.82	9	0	22	-0.11	21
15	Many people are affected regarding their opinion on Climate Change by some mainstream media that have been portrayed as a non-reliable source.	-0.02	18	0.29	12	-0.75	30
16	We must continue to quickly develop inexpensive ways to generate electricity from nuclear power plants.	-0.55	29	0.27	14	-0.38	24
17	I am willing to pay an additional environmental tax to combat climate change.	-0.04	19	-1.2	35	0.02	19
18	International sustainability rankings are led by countries that are not really developing in a sustainable way.	0.79	10	0.42	11	-0.38	23
19	Rich countries have created the global environmental crisis and they should solve it.	0.26	15	0.29	13	-0.22	22

20	If we seriously want the developing world not to burn their forests, we should compensate them for the lost profits.	-0.57	30	0.18	17	-0.71	29
21	The most serious environmental problem these days is caused by airborne dust, which directly enters our lungs and reduces our chances of life.	-0.13	20	0.25	15	-0.47	26
22	Substances that cause direct health damage are released into the water or air only in developing countries.	-1.73	37	0.13	19	-1.41	37
23	Generally, more expensive products and services are of higher quality and less of a burden on the environment.	-1.55	36	-0.22	26	-1.64	38
24	For people who live in a place where the environmental load is barely perceptible, they do not feel the need to act.	-0.16	22	-0.9	32	0.11	17
25	If Climate Change could be reversed in the next thirty years, citizens in rich countries would have to give up only 1-2 percent of their consumption.	-0.14	21	-0.47	27	-1.13	33
26	Climate change cannot be stopped, but the rich Nordic countries are capable of adapting.	-0.65	32	-1.18	34	-0.6	28

27	If the main cause of environmental problems is overpopulation, the key to the solution is not in Europe and America, but in Africa and Asia.	-0.25	25	-0.21	25	-1.24	36
28	Multinational companies are increasingly irresponsible throughout the world towards preserving the environment.	0.38	13	-1.69	37	0.16	15
29	Countries with harsh winters and poor agriculture sector can benefit from the small amount of increase in temperature to have a better farming industry.	0.45	12	0.18	18	-1.19	35
30	With some countries experiencing unexpected colder winters, their citizens will assume that the global warming is not happening.	-0.23	24	-0.15	24	-0.75	31
31	People are unwilling to sacrifice their consumption level to protect the environment.	0.57	11	-0.89	31	0	20
32	The governments should regulate the amount of food that people can buy. (e.g. ticketing system)	-1.84	38	-1.9	38	0.08	18

33	Due to the Coronavirus (COVID-19), many factories in China had to be closed for a certain time which visibly reduced the air pollution. In order to have a better air quality, some of the factories (which are not satisfying the basic needs) should be closed.	-0.25	26	0.06	21	1.33	5
34	The plants need Carbon Dioxide, so producing more CO2 is not that bad.	-1.9	39	-1.91	39	-1.14	34
35	Throughout the centuries, animals have been able to adapt to the changing climate, thus they can survive within the Climate Change.	-1.4	35	-1.1	33	-1.8	39
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	-1.28	34	2.04	1	0.94	8
37	The climate change affects more urban than rural areas.	-0.92	33	-0.72	30	0.82	9
38	The governments should subsidise on constructing more weather-resistant buildings and roads in order to adapt to the extreme weather patterns.	-0.52	28	0.8	9	0.69	11
39	People are influenced by the information from the media regarding climate change.	0.08	17	1.2	5	0.5	12

F. Descending Array of Differences (showing the statements with differences greater than 1 and less than -1)

Descending Array of Differences (z-score)				
Between Factors 1 and 2				
No.	Statement	F 1	F 2	Difference
28	Multinational companies are increasingly irresponsible throughout the world towards preserving the environment.	0.38	-1.69	2.07
10	I would totally switch into public transportation in order to contribute solving the climate change issue.	1.29	-0.57	1.86
31	People are unwilling to sacrifice their consumption level to protect the environment.	0.57	-0.89	1.46
3	The governments are most responsible of tackling climate change.	1.26	-0.05	1.31
11	The developing countries should take an equal responsibility in mitigating global warming as the developed countries.	-0.18	-1.35	1.18
17	I am willing to pay an additional environmental tax to combat climate change.	-0.04	-1.20	1.17
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.	2.13	1.12	1.01
39	People are influenced by the information from the media regarding climate change.	0.08	1.20	-1.11
38	The governments should subsidise on constructing more weather-resistant buildings and roads in order to adapt to the extreme weather patterns.	-0.53	0.80	-1.33
23	Generally, more expensive products and services are of higher quality and less of a burden on the environment.	-1.56	-0.22	-1.33
7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organisations.	-0.32	1.09	-1.42
22	Substances that cause direct health damage are released into the water or air only in developing countries.	-1.73	0.13	-1.85
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	-1.28	2.04	-3.32

Between Factors 1 and 3				
No.	Statement	F 1	F 3	Difference
10	I would totally switch into public transportation in order to contribute solving the climate change issue.	1.29	-0.92	2.21
29	Countries with harsh winters and poor agriculture sector can benefit from the small amount of increase in temperature to have a better farming industry.	0.45	-1.19	1.64
18	International sustainability rankings are led by countries that are not really developing in a sustainable way.	0.79	-0.38	1.17
1	Developing countries are more vulnerable to the impacts of Climate Change.	1.50	0.40	1.10
38	The governments should subsidise on constructing more weather-resistant buildings and roads in order to adapt to the extreme weather patterns.	-0.53	0.69	-1.22
33	Due to the Coronavirus (COVID-19), many factories in China had to be closed for a certain time which visibly reduced the air pollution. In order to have a better air quality, some of the factories (which are not satisfying the basic needs) should be closed.	-0.25	1.33	-1.58
7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organisations.	-0.33	1.29	-1.62
37	The climate change affects more urban than rural areas.	-0.92	0.82	-1.74
32	The governments should regulate the amount of food that people can buy. (e.g. ticketing system)	-1.84	0.08	-1.92
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	-1.28	0.94	-2.22

Between Factors 2 and 3				
No.	Statement	F 2	F 3	Difference
22	Substances that cause direct health damage are released into the water or air only in developing countries.	0.13	-1.41	1.54
23	Generally, more expensive products and services are of higher quality and less of a burden on the environment.	-0.22	-1.65	1.42

29	Countries with harsh winters and poor agriculture sector can benefit from the small amount of increase in temperature to have a better farming industry.	0.18	-1.19	1.37
1	Developing countries are more vulnerable to the impacts of Climate Change.	1.59	0.40	1.19
6	High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.	1.53	0.35	1.18
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	2.04	0.94	1.10
15	Many people are affected regarding their opinion on Climate Change by some mainstream media that have been portrayed as a non-reliable source.	0.29	-0.75	1.04
27	If the main cause of environmental problems is overpopulation, the key to the solution is not in Europe and America, but in Africa and Asia.	-0.21	-1.24	1.03
24	For people who live in a place where the environmental load is barely perceptible, they do not feel the need to act.	-0.90	0.11	-1.01
17	I am willing to pay an additional environmental tax to combat climate change.	-1.20	0.02	-1.23
33	Due to the Coronavirus (COVID-19), many factories in China had to be closed for a certain time which visibly reduced the air pollution. In order to have a better air quality, some of the factories (which are not satisfying the basic needs) should be closed.	0.06	1.33	-1.27
3	The governments are most responsible of tackling climate change.	-0.05	1.48	-1.52
37	The climate change affects more urban than rural areas.	-0.72	0.82	-1.53
28	Multinational companies are increasingly irresponsible throughout the world towards preserving the environment.	-1.69	0.16	-1.85
32	The governments should regulate the amount of food that people can buy. (e.g. ticketing system)	-1.90	0.08	-1.98
11	The developing countries should take an equal responsibility in mitigating global warming as the developed countries.	-1.35	0.77	-2.12

G. Exact Factor Scores in Z-score and T-score

Exact Factor Scores (á la SPSS) in Z-Score and T-Score units							
		Factor 1		Factor 2		Factor 3	
No.	Statement No.	Z	T	Z	T	Z	T
1	Developing countries are more vulnerable to the impacts of Climate Change.	1.21	62	1.73	67	-0.76	42
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.	1.81	68	0.37	54	1.46	65
3	The governments are most responsible of tackling climate change.	0.89	59	-0.82	42	1.27	63
4	Climate Change is an urgent issue that needs to be tackled at a global level.	1	60	1.25	62	1.83	68
5	To combat the Climate Change, the U.S. should participate more effectively regarding that it is one of the highest emitters of GHGs and has a strong political power.	0.82	58	0.78	58	0.97	60
6	High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.	0.93	59	1.42	64	-0.26	47
7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organisations.	-0.97	40	1.13	61	1.59	66
8	Many people are driven by false information regarding the Climate Change.	0.6	56	0.44	54	-0.54	45
9	Science and technology are developing exponentially at a rate that they can reverse the effect of Climate Change	-0.4	46	-0.42	46	-0.77	42
10	I would totally switch into public transportation in order to contribute solving the climate change issue.	2.02	70	-0.18	48	-1.36	36

11	The developing countries should take an equal responsibility in mitigating global warming as the developed countries.	-0.25	48	-1.39	36	1.07	61
12	Glaciers melting is one of the worst effects of Climate Change.	0.45	54	-0.07	49	-0.04	50
13	Climate Change is an issue that poses disruptions around the world.	1.01	60	0.05	51	0.88	59
14	Renewable energy sector will enhance the economy.	0.87	59	-0.22	48	-0.31	47
15	Many people are affected regarding their opinion on Climate Change by some mainstream media that have been portrayed as a non-reliable source.	0.2	52	-0.08	49	-0.58	44
16	We must continue to quickly develop inexpensive ways to generate electricity from nuclear power plants.	-0.78	42	0.58	56	-0.59	44
17	I am willing to pay an additional environmental tax to combat climate change.	0.04	50	-1.45	36	0.68	57
18	International sustainability rankings are led by countries that are not really developing in a sustainable way.	0.83	58	0.41	54	-0.57	44
19	Rich countries have created the global environmental crisis and they should solve it.	0.2	52	0.42	54	-0.45	45
20	If we seriously want the developing world not to burn their forests, we should compensate them for the lost profits.	-0.48	45	0.2	52	-0.43	46
21	The most serious environmental problem these days is caused by airborne dust, which directly enters our lungs and reduces our chances of life.	-0.14	49	0.17	52	-0.23	48

22	Substances that cause direct health damage are released into the water or air only in developing countries.	-1.71	33	0.31	53	-1.06	39
23	Generally, more expensive products and services are of higher quality and less of a burden on the environment.	-1.08	39	-0.11	49	-1.62	34
24	For people who live in a place where the environmental load is barely perceptible, they do not feel the need to act.	0	50	-0.72	43	0.09	51
25	If Climate Change could be reversed in the next thirty years, citizens in rich countries would have to give up only 1-2 percent of their consumption.	0.24	52	-0.58	44	-0.97	40
26	Climate change cannot be stopped, but the rich Nordic countries are capable of adapting.	-0.15	49	-1.07	39	-0.39	46
27	If the main cause of environmental problems is overpopulation, the key to the solution is not in Europe and America, but in Africa and Asia.	0.07	51	-0.21	48	-1.66	33
28	Multinational companies are increasingly irresponsible throughout the world towards preserving the environment.	0.66	57	-1.86	31	0.57	56
29	Countries with harsh winters and poor agriculture sector can benefit from the small amount of increase in temperature to have a better farming industry.	0.51	55	0.3	53	-1.17	38
30	With some countries experiencing unexpected colder winters, their citizens will assume that the global warming is not happening.	0.11	51	0.01	50	-0.77	42
31	People are unwilling to sacrifice their consumption level to protect the environment.	1.22	62	-1.36	36	0.42	54

32	The governments should regulate the amount of food that people can buy. (e.g. ticketing system)	-1.79	32	-1.98	30	1.18	62
33	Due to the Coronavirus (COVID-19), many factories in China had to be closed for a certain time which visibly reduced the air pollution. In order to have a better air quality, some of the factories (which are not satisfying the basic needs) should be closed.	-0.74	43	-0.14	49	2	70
34	The plants need Carbon Dioxide, so producing more CO2 is not that bad.	-1.4	36	-1.23	38	-0.68	43
35	Throughout the centuries, animals have been able to adapt to the changing climate, thus they can survive within the Climate Change.	-1.05	40	-0.29	47	-1.43	36
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	-2.13	29	2.86	79	0.67	57
37	The climate change affects more urban than rural areas.	-1.51	35	-0.31	47	1.11	61
38	The governments should subsidise on constructing more weather-resistant buildings and roads in order to adapt to the extreme weather patterns.	-0.79	42	0.91	59	0.62	56
39	People are influenced by the information from the media regarding climate change.	-0.32	47	1.14	61	0.26	53

H. Factor Q-Sort Values for Each Statement

Factor Q-Sort Values for Each Statement				
No.	Statement No.	**F 1**	**F 2**	**F 3**
1	Developing countries are more vulnerable to the impacts of Climate Change.	3	3	1
2	The current generation has a responsibility to preserve the quality of the natural environment for the future generations.	4	2	4

3	The governments are most responsible of tackling climate change.	2	0	3
4	Climate Change is an urgent issue that needs to be tackled at a global level.	4	4	4
5	To combat the Climate Change, the U.S. should participate more effectively regarding that it is one of the highest emitters of GHGs and has a strong political power.	3	2	3
6	High Greenhouse gas emitting countries should play a bigger role in combating Climate Change.	2	3	1
7	Climate Change warriors (a.k.a. role models, either they are individuals, NGOs or countries) should be more supported and acknowledged by the government or global organisations.	-1	2	2
8	Many people are driven by false information regarding the Climate Change.	1	1	-1
9	Science and technology are developing exponentially at a rate that they can reverse the effect of Climate Change	-2	-1	-1
10	I would totally switch into public transportation in order to contribute solving the climate change issue.	3	-1	-2
11	The developing countries should take an equal responsibility in mitigating global warming as the developed countries.	0	-3	2
12	Glaciers melting is one of the worst effects of Climate Change.	1	0	1
13	Climate Change is an issue that poses disruptions around the world.	2	2	2
14	Renewable energy sector will enhance the economy.	2	0	0
15	Many people are affected regarding their opinion on Climate Change by some mainstream media that have been portrayed as a non-reliable source.	0	1	-2
16	We must continue to quickly develop inexpensive ways to generate electricity from nuclear power plants.	-1	1	-1
17	I am willing to pay an additional environmental tax to combat climate change.	0	-3	0
18	International sustainability rankings are led by countries that are not really developing in a sustainable way.	2	1	0
19	Rich countries have created the global environmental crisis and they should solve it.	1	1	0
20	If we seriously want the developing world not to burn their forests, we should compensate them for the lost profits.	-2	0	-1
21	The most serious environmental problem these days is caused by airborne dust, which directly enters our lungs and reduces our chances of life.	0	1	-1
22	Substances that cause direct health damage are released into the water or air only in developing countries.	-3	0	-3

23	Generally, more expensive products and services are of higher quality and less of a burden on the environment.	-3	-1	-4
24	For people who live in a place where the environmental load is barely perceptible, they do not feel the need to act.	0	-2	0
25	If Climate Change could be reversed in the next thirty years, citizens in rich countries would have to give up only 1-2 percent of their consumption.	0	-1	-2
26	Climate change cannot be stopped, but the rich Nordic countries are capable of adapting.	-2	-2	-1
27	If the main cause of environmental problems is overpopulation, the key to the solution is not in Europe and America, but in Africa and Asia.	-1	-1	-3
28	Multinational companies are increasingly irresponsible throughout the world towards preserving the environment.	1	-3	1
29	Countries with harsh winters and poor agriculture sector can benefit from the small amount of increase in temperature to have a better farming industry.	1	0	-3
30	With some countries experiencing unexpected colder winters, their citizens will assume that the global warming is not happening.	-1	-1	-2
31	People are unwilling to sacrifice their consumption level to protect the environment.	1	-2	0
32	The governments should regulate the amount of food that people can buy. (e.g. ticketing system)	-4	-4	0
33	Due to the Coronavirus (COVID-19), many factories in China had to be closed for a certain time which visibly reduced the air pollution. In order to have a better air quality, some of the factories (which are not satisfying the basic needs) should be closed.	-1	0	3
34	The plants need Carbon Dioxide, so producing more CO_2 is not that bad.	-4	-4	-2
35	Throughout the centuries, animals have been able to adapt to the changing climate, thus they can survive within the Climate Change.	-3	-2	-4
36	With an occasional home office, people do not have to travel to their workplace. This would help to reduce GHG Emissions.	-2	4	2
37	The climate change affects more urban than rural areas.	-2	-2	2
38	The governments should subsidise on constructing more weather-resistant buildings and roads in order to adapt to the extreme weather patterns.	-1	2	1
39	People are influenced by the information from the media regarding climate change.	0	3	1
Variance = 4.359 St. Dev. = 2.088				

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