

European colonialism, development and urbanization. Its legacy and path dependency patterns in post-colonial countries

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Abstract: From a pluridisciplinary perspective and based mainly on the historical institutional approach, the current research explores how colonialism has (re)shaped society, the economic developments and the urbanisation of the Global South, as well as its legacy. The extractive, settler, commercial and assimilationist/ missionary colonial models are comparatively approached, considering the great colonial powers (mainly French, British, Belgian, Portuguese), and with an emphasis on the issues of path dependence and inequalities. The paper highlights the duality of colonialism's consequences: promoting economic development and urbanization, while reinforcing socio-spatial segregation, institutional weaknesses and environmental injustice. The subject is extremely relevant from the perspective of the dependence theories in international relations, which explain the underdevelopment of the former colonial countries from the Global South through the long term impact of the various forms of exploitation and domination by the Global North. Understanding these legacies and conditionalities is essential for adopting more effective growth strategies and evidence-based policies in accelerating the development of the global South, reducing North-South inequalities and adopting urbanization models in line with new approaches focused on sustainability, inclusivity and liveability.

Keywords: colonialism, path dependency, colonial legacy, urbanization, post-colonial patterns

Introduction

Understanding the current broader landscape of the global economic and social development, and also of the specific challenges for the contemporary urbanism, require a return to the colonial era. Numerous studies show that the present limits in the Global South development and urbanization of the post-colonialized countries, but also specific issues of urban planning, spatial and social organization

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of cities were laid in the organizational forms and governance practices from the colonial area (Hugill, 2017; King, 1990;1976; Njoh, 2009; Shackleton & Gwedla, 2021; Watson, 2016;). The problem of colonialism in relation to current development challenges and urban planning is primarily linked to the colonial legacy and the path dependency patterns. Many scholars consider that the current limitations in the development paths and the cities transformation in the former colonized territories in accordance with new paradigms of growth (sustainability, inclusiveness or urban liveability) have their roots in the specific way in which these countries and cities developed in the colonial period and in the institutionalized governance models at that time (Celik, 1997; Home, 2013; Watson, 2016).

The colonial studies, as a scientific field of knowledge about the impact of the colonialism on the colonized territories from various perspectives (economic, socio-cultural, institutional, historical, architectural, political), explore the methods, tools and systemic approaches through which colonial powers established and maintained domination and control over occupied territories and populations, as well as the long-term consequences of this domination (King, 1990; Myers, 2011). There have been remodelling the economic and social structures, the institutions, the cultural patterns, the physical-spatial urban forms of spatial organization, but also of social organization, of governance models and practices (Celik, 1997). The consequences manifest themselves far in time, in the post-colonial period, including our days, reflecting the so-called „path dependence”, or „colonial legacy” (Watson, 2016; Shackleton & Gwedla, 2021). They are mainly reflected in the constraints on sustainable development, and modern urban transformation generated by the different characteristics of colonial urban models and in the limitations that the specific system of institutions, especially non-formal ones, generate on the development potential of former colonial countries and cities (Acemoglu et al., 2001; Beeckmans, 2013; King, 1976).

In the same time, the literature highlights important benefits of the colonialism, in terms of the economic growth (Grier, 1999), commercial integration through access to investments and foreign markets (Ferguson & Schularick, 2006), industrialization (Dell & Olken, 2020), architecture and urban built environment, infrastructure, health systems, education, socio-cultural transformation, institutions transformation, and governance (King, 1990; Gandy, 2006). For example, the Western European countries (the most powerful colonial powers) generated extensive processes of industrialization, large investment projects in infrastructure, and urban transformation in the colonized countries of Africa, America and Asia. Synergies and convergences resulted between the development and cultural patterns, between the architectural models and construction techniques of the colonizers and the colonized countries, which accelerated economic and urban modernization, and the integration with the global economy through trade, associated with a broad process of industrialization.

However, the impact and relationship between colonizing and colonized structures/entities experienced different manifestations, depending on the type of colonialism (Beeckmans, 2013; Hugill, 2017; Osterhammel, 2005). For example, in extractive colonialism, the development was focused on the creation of functional conditions for the exploitation of resources, with minimal investment in the built environment, and limited impact and improvements for the indigenous people (Acemoglu et al, 2001; Rodney, 1972; Tadei, 2014). The colonialism legacy was expressed in weak institutions and low/underperforming factors of growth, such as the infrastructure, good governance, and human capital. In the settler colonialism, the settlements transformation was radical, often leading to the replacement of local settlements with new settlements replicating the colonizers' urban models, a strict and aggressive spatial, social and legal segregation and to the displacement or at least the marginalization of the indigenous culture, identity and people (Hugill, 2017; Thiong, 1986). Settler colonialism, however, contributed to a strong process of the economic development and urbanization, creating favourable conditions for long-term development, despite negative postcolonial effects, such as poor quality of institutions and intra-urban inequalities, reflecting centre-periphery patterns, with informal peripheries (Dell and Olken, 2020; Porter and Yiftachel, 2017; Sokoloff & Engerman, 2000).

The colonial development paradigm and urban governance models also differed depending on the colonial power (British, French, Belgian, Japanese, etc.). For example, if the Western European colonialism pursued a civilizing mission (French and British colonialism) or a functional one (British), generating a segregated world (Perera, 2002), the Japanese colonialism manifested itself as a process of modernization and imperial integration, developing more cohesive and infrastructurally modernized cities (King, 1976; Moore, 2019).

Consequently, the colonialism generated a wide variety of models of development and urban planning in colonies, and the long-term impact in the post-colonial period depends essentially on the models of development and governance promoted by the colonists. Additionally, contemporary neo-colonial formulas and models (sino-colonialism, techno-colonialism, cultural and media globalisation, or real estate led-development with the gentrification effects) amplify the complexity of this landscape of international relations, with wide and controversial consequences on development, global inequalities, and urban development (Hughes, 2024; Perera et al, 2024; Watson, 2014;).

The main aim of the current paper is to advance the understanding of and to highlight (in comparative approach) the impact of the various colonial patterns on the contemporary development and the urbanization trends. In this respect, the specific objectives were: (1) to explore the global distribution of former European colonial powers, (based on the last known colonizer for each country) and the landscape of the colonised territories; (2) to identify the main colonialism forms and characteristics and their relevance on how the various colonial patterns influenced

the economic development, its legacy, and the urbanisation trends, and reshaped the social, economic, cultural and political structures and practices; (3) to assess the influence of colonialism on development and urbanisation highlighting some features of the colonial legacy.

The paper is based on the investigation of a large number of scientific contributions (reflected in various articles and books from different fields of expertise: area studies, international relations, political science, regional and urban studies, others), quantitative studies and analyses, as well as the use of maps. Spatial analysis (GIS- Geographic Information System) was used to reflect dimensions of the colonialism, urbanization and colonial legacy in the visualization form. The analysis was conducted in R. Quantitative analysis was also applied by using socio-economic, institutional and urbanization indicators to measure the impacts of various colonialism patterns. A detailed methodology is explained in Section 3. The main added value of the paper is the contribution to the deep understanding of the historical perspective of colonialism, with specific focus on the multidimensional issues of the economic development and urbanisation.

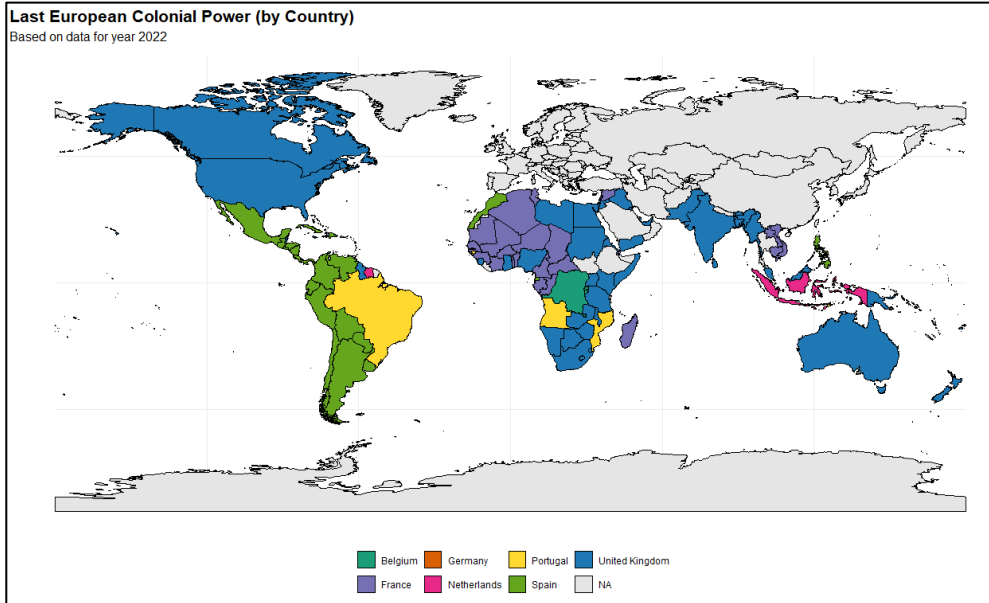
The paper is structured as follows. After the introductory chapter, highlighting the key coordinates of the paper (the relevance of the topic, the aim and the specific objectives), the next section provides a landscape of the colonialism at global level. The section 2 highlights in comparative perspective the key impact features of the various Western European colonial powers and patterns on the development and urbanisation in the colonised territories. Section 3 details the methodology and data issues, and the section 4 includes the statistical analysis (descriptive statistics) used to assess the development legacy of the colonialism, interpreted as path dependency. The paper ends with a section of conclusions and policy relevance.

1. The colonialism landscape at the global level

Colonialism refers to the set of methods, instruments, practices and ideological, cultural and political paradigms associated with the control that a dominant power (state or not) exercises over a territory and its indigenous population (Loomba, 1998; Njoh, 2008; Osterhammel, 2005). The main colonial countries were the European ones (Figure 1), and the colonialism history goes back to the late 15th century, in Africa (Figure 2) and South America (Figure 3)¹.

The map from Figure 1 highlights the territorial footprint of the main European empires and outlines regional patterns of colonial influence, whose effects persist to this day. Thus, this spatial representation illustrates not only the historical distribution of colonial power but also the institutional and geopolitical factors that sustain forms of path dependency in the current organization of international relations.

¹ Data used in this analysis comes from Our World in Data (Becker, 2023).

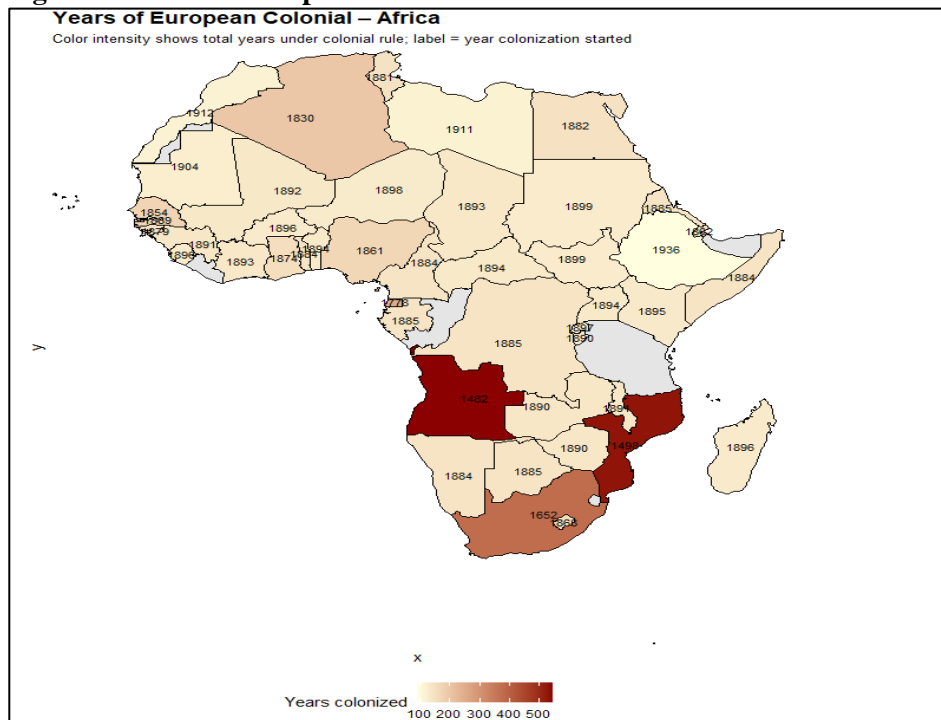
Figure 1. Last European Colonial Power by Country (2022)

Source: authors' representation based on data from Our World in Data

The visual representation of colonial rule shows the United Kingdom as the last colonial ruler for many countries in Africa, South Asia, the Middle East, the Caribbean and Oceania. France dominated West and North Africa, with traces of French language, education systems, and legal frameworks in Southeast Asia. Spain was the last colonizer for most Latin American countries and the Caribbean, while Portugal maintained influence through linguistic and cultural ties. Belgium is associated with the Democratic Republic of Congo, while the Netherlands appears mainly in Indonesia and parts of the Caribbean².

Africa has historically represented the most extensively colonized territory globally, both in terms of surface area and the number of countries affected. Figure 2 illustrates the temporal intensity of European colonial domination, expressed by the total number of years spent under colonial control, as well as the year in which colonization began for each country.

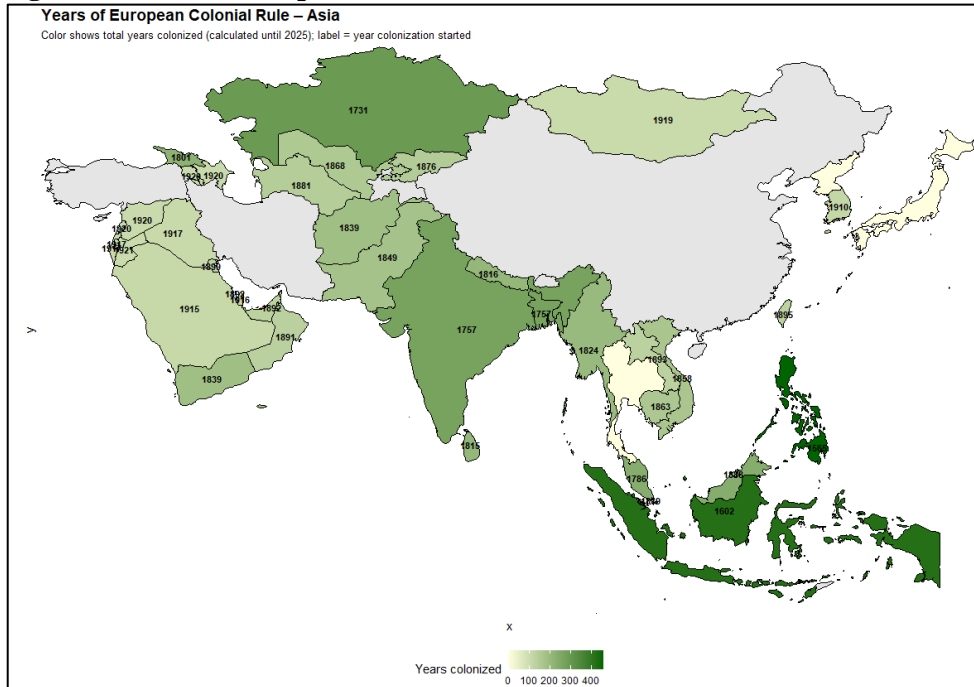
² Germany and Italy are absent from the final colonial footprints due to early loss of colonies or post-WWII redistribution. Countries in light gray were never colonized by a European power or for which no data is available, highlighting the global scale of European colonialism.

Figure 2. Years of European colonialism – Africa

Source: authors' representation based on data from Our World in Data

The map reveals that European colonial presence on the continent dates as far back as the late 15th century, with Angola colonized by Portugal starting in 1482, and Mozambique colonization beginning in 1498. These countries experienced over five centuries of colonial domination, highlighted by the darkest red shades on the map. The majority of African territories were colonized in the second half of the 19th century, particularly around the time of the Berlin Conference (1884–1885), which initiated the formal partitioning of Africa among European powers that began colonization in Africa around the 1880s–1890s, with some exceptions like Liberia and Ethiopia (Chamberlain, 2014). Northern Africa, particularly Algeria and Egypt, experienced earlier colonization than sub-Saharan states. Southern Africa, including Namibia, Botswana, and South Africa, was brought under European control early and retained colonial structures for longer durations.

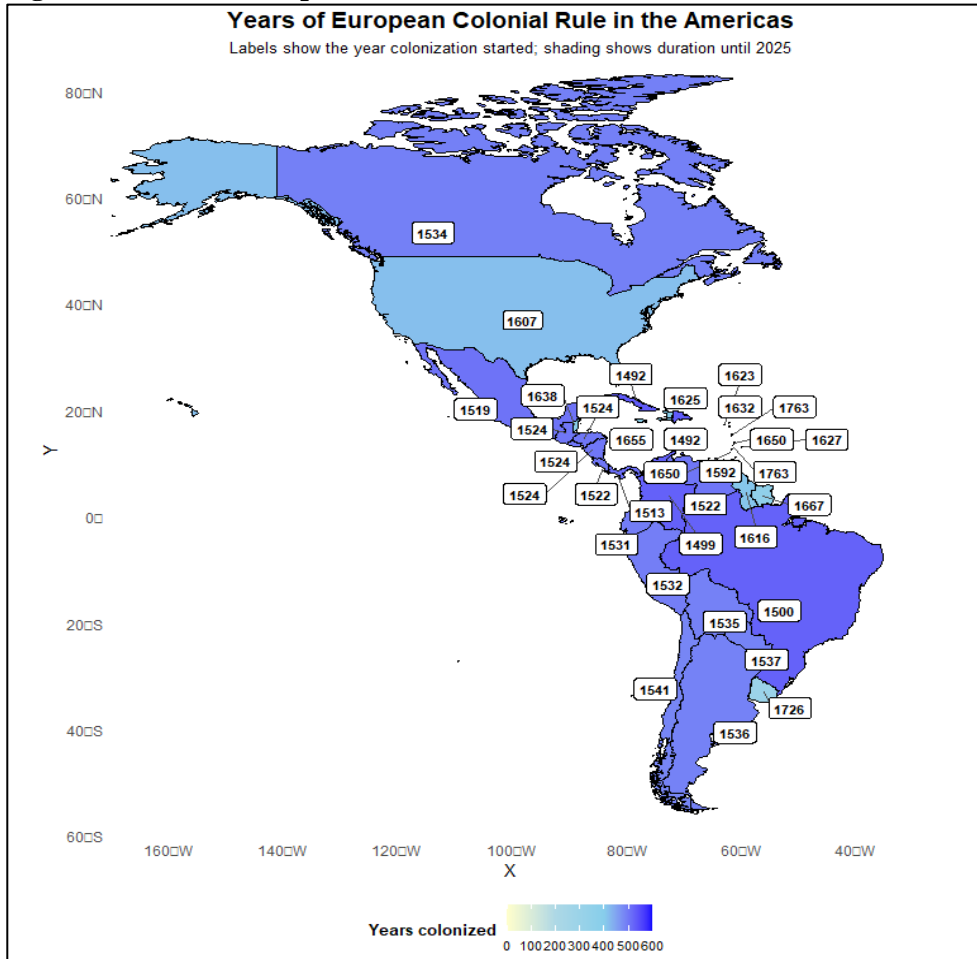
Asia's colonial landscape was more fragmented and temporally varied, with a broad chronological span from the early 17th century in Southeast Asia to the early 20th century in the Middle East. Countries like Indonesia and India had some of the longest durations under European rule, exceeding 250 years. In South Asia (Figure 3), colonization spread through a combination of military conquest, trade dominance, and indirect governance.

Figure 3. Years of European colonialism - Asia

Source: authors' representation based on data from Our World in Data

Sri Lanka (1815), Myanmar (1824), and Bangladesh (1757) follow similar timelines to India. Southeast Asia shows similar colonial longevity: Vietnam (1858) and Malaysia (1786) were colonized under French and British dominion respectively. The Middle East and Central Asia, on the other hand, reflect a much later colonial engagement. Many countries, such as Iraq (1920), Syria (1920), and Jordan (1921), were brought under British or French mandates following the dissolution of the Ottoman Empire after World War I. These colonial relationships were shorter, often lasting only a few decades. It is also important to note that several major Asian powers, China, Thailand, and Japan, were never formally colonized.

The first and longest-colonized world region, with the colonial era beginning soon after 1492 were the Americas (Figure 4).

Figure 4. Years of European Colonialism – North and South America

Source: authors' representation based on data from Our World in Data

Hispaniola, present-day Haiti and the Dominican Republic, was the initial point of contact for European colonization, followed by rapid expansion into Mexico, Peru, Brazil, and Central America. The Caribbean region was particularly notable for its intense and prolonged colonization by European empires, such as Spain, France, the United Kingdom, and the Netherlands. North America's colonization began in 1534, followed by British rule. South American countries followed Spain's expansion, while Brazil remained a colony until the 19th century.

Regardless of the colonial power, the duration of colonization, or the territories colonized, the domination and the control primarily aim at the exploitation of resources, although colonialism has sometimes assumed a missionary/civilizing role (Perera, 2002; Nkomazana & Setume, 2016). Despite some favorable effects on

development, colonialism led to the marginalization and sometimes even the elimination of indigenous society, by imposing laws, governance structures, cultural values, norms and urban planning systems in the interests of the colonizers (Loomba, 1998). Significant inequalities, economic and governance structures, as well as systems of institutions have resulted in various colonial legacies that influence the development capacity of colonized countries and cities today (Rodney, 1972). Models of colonialism and colonial legacies differ depending on many factors, but in essence, the following played a key role: local characteristics (geography, resources, population, culture, pre-existing organization); the nature of control, as determined by colonial policies; and the development models, governance structures, and property rights that colonists established in the colonies.

2. The colonialism legacy: key features of the development patterns and urbanisation

From the perspective of the historical institutionalism, colonialism represented a „critical juncture”, a „moment” of radical change in the historical trajectory of the colonized territories’ development (King 1990). Colonialism interrupted the cycle of their organic development, significantly transforming space, economy, society, culture, political systems (Osterhammel, 2005; Oliver & Oliver, 2017). At the same time, colonialism accelerated the processes of development of markets and capital, economic growth, urbanization, generated extensive processes of industrialization and technological development, introduced modern formulas of administration and governance, shaping and remodelling the colonized and the colonizers (Dell and Olken, 2020; Ferguson & Schularick, 2006). However, based, for the most part, on an exploitation of local resources and preferential trade with the colonizing country, colonialism led to poorly performing urban industrialization models, with resource- and labor-intensive economic specialization, and created a durable system of center-periphery dependency relations that persist in the post-colonial period and create constraints for the contemporary development and urbanisation (Amin, 1976; Porter & Yiftachel, 2017). Various scholars have also emphasized that colonialism disrupted indigenous governance structures, creating economic dependency that persists in post-colonial contexts (Rodney, 1972).

2.1. Colonialism patterns and the colonized countries’ development

Depending on the purpose, methods, and type of relations generated between colonists and the occupied territories, the main relevant distinction, from the point of view of economic development and urbanization, is between extractive colonialism and settler colonialism.

The *extractive colonialism* (exploitation colonialism) was dominant in Africa and South Asia. The main aim was the exploitation of resources, and is linked to the

expansion of capitalism. Investments in infrastructure and the impact on urbanization were reduced, having a strongly functional dimension, strictly correlated with maximizing the benefits for the colonial power obtained from the exploitation of resources (Table 1). Despite a minimal presence of the settler population, the colonial powers established segregated cities, with a strict social and racial hierarchy (Beeckmans, 2013; Njoh, 2008; Rodney, 1972). The settler colonialism was essentially differentiated by the permanent occupation and the pollution transfer from the colonial power, replacing the indigenous societies with a settler society (Porter & Yiftachel, 2019; Wolfe, 2006). Relevant examples are: Australia (British), Canada (French and British), United States (British); Algeria (French), and South Africa (British). The settler population were naturalized, radically redefining the political geography and the urbanization patterns, through a replication of the colonial countries legal system, and of the urban and spatial planning methods and forms (Hugill, 2017; Veracini, 2010). The urban planning played a key functional role, but it was used also as a tool for social and racial segregation, and to the cultural and ideological assimilation of the indigenous population, conducting to their marginalization and in some cases to the erasing of the indigenous tradition and identity (Perera, 2002; Porter & Yiftachel, 2019).

In contrast, *commercial or trade colonialism* aimed to generate systems for economic domination and control, having also a wider political, cultural and ideological impact. This form was practiced, for example, by the Dutch in Indonesia, British East India Company in India, or the Portuguese in coastal Africa (Table 1). The colonial powers mainly targeted trade routes, developing strategic ports and specialized commercial cities, integrating them in the global economic networks (Osterhammel, 2005). Relevant cities developed on the commercial colonial basis were: Malacca (Portuguese), Batavia (Dutch), Hong Kong, Singapore, Aden (all British), and Shanghai (international).

A specific form is the *assimilation colonialism*. Specific to the French and Japanese colonial paradigm (Table 1), this form promoted a mixed spatial development, reflecting the colonial institutional, cultural and economic dominance. The colonialists forced the adoption of their specific values, language, religion, legal system. In urban planning it was a transfer of the colonial power patterns, considering the hegemony of the origins' superiority and aiming a kind of „civilization” mission. Moreover, missionaryism emerged as a particular form of assimilationist colonialism. It was mainly promoted by the imperialist powers of Western Europe (British, French, Spanish and Portuguese) in America, Asia and Africa. It was mainly associated with the promotion of Christianity, in the name of a „supreme good” (Perera, 2002; Nkomazana & Setume, 2016). The missionaryism in many cases sustained the colonial project, and in other cases opposed it, in a resistance movement. Regardless of the relationship with the colonial power, the missionaryism has a strong colonial dimension in itself, by denying local values and culture, which led to their marginalization or even annihilation (Perera, 2002;

Thiong, 1986) and provided colonial authorities with a justification and moral authority in the name of a civilizing purpose.

Table 1. The main form of colonialism and key characteristics

Colonial pattern	Main characteristics	Examples	Authors
Extractive colonialism	<ul style="list-style-type: none"> - Extractive economy, with investments based on the functional paradigm (the functional role in the resources exploitation); - Segregated cities, despite the minimal presence of the settler population; - Minimal investments in built environment; - Extractive institutions; - Short –term approaches in development patterns and urban planning. 	Guinea (France); Nigeria (British); Democratic Republic of the Congo (Belgium); Indonesia (Netherlands)	Home (2013); Myers (2011); Njoah (2009)
Settler colonialism	<ul style="list-style-type: none"> - Permanent settlement and displacement of the indigenous populations; - Contribution to the rapid urbanization and cities' industrialization; - Development of infrastructure, public and private buildings and settlements based on a strict spatial and social segregation; - Contribution to the institutional transformation and the implementation of modern urban planning; - Extractive institutions; - Dominant of the European urban and spatial planning forms; 	United States (British); Australia (British); Algeria (French);	Wolfe (2006); Veracini (2010); Hugill, 2017; Sokoloff & Engerman, 2000;

Commercial/ trade colonialism	- Marginalization /elimination of local values, culture, identity;		
	- Important investment and infrastructure development (functional role); - Focus on the control of strategic points on the big trade routes, especially in the coastal areas (ports); - Limited direct control and intervention in urban governance; - Rapid integration of the colonial cities in the global economy, but promoting asymmetric dependency in the benefit of the colonial power;	India (British India Company); Indonesia (Dutch East India Company); Macau (Portuguese)	King (1976); Osterhammel (2005);
Assimilation & missionary colonialism	- Forcing the locals to adopt the colonialist culture, legal system, language, education models; - Mixed spatial and architectural patterns, reflecting the colonial dominance; in many cases, the assimilation has a missionary/ civilizing aim (e.g: Christianity missionarism), mainly associated with the British, and French colonialism.	Vietnam (French); Senegal (French); Korea (Japanese); Botswana (British);	Nkomazana & Setume (2016); Perera, 2002;

Source: authors’ representation based on the literature review

As overall, we can mention that, despite some positive long term consequences on the economic development and urbanization, the transversal key dimension of all colonial patterns was the segregation (spatial, economic, cultural, and social) and in most cases the deep and radical transformation of the territories and societies, negatively impacting the post-colonial development. Usually, the urban planning served as a mechanism of domination, control and assimilation, establishing long-

term economic, socio-cultural and institutional inequalities, in a multifaceted segregated world.

2.1. Colonial powers footprint

The most important colonial powers were: British, French, Dutch, Spanish, Portuguese, Belgium and Japanese, with a net dominance of the British Empire. The colonial patterns, even for the same colonial state, presented various characteristics and generated different impact and legacy in the post-colonial stage, depending on the local conditions and the synergies between the colonist and colonized systems, values, cultures, institutions (Hugill, 2017). British colonies developed inclusive institutional and governance systems in the settler colonies and extractive institutions in the non-settler colonies (King, 1990; Acemoglu et al., 2001). The main characteristic of the British legacy is the dual dimension, contributing both to better conditions for growth and development of the colonial cities and to inequalities (spatial, social), weak local institutions and under-performant urban governance. Often, the governance paradigm was centred on the indirect approach, using the local system and providing more flexibility, and a favourable framework for long term development than the French colonialism (Hugill, 2017). In urban planning, the British system developed dual cities („Garden city”, strongly segregated), with the European characteristics in the core and underdevelopment with low quality of residential buildings and infrastructure in the native neighbour (Home, 2013; King, 1997; Njoh, 2008). The French colonies implemented centralized administration, very bureaucratic, based on a bottom-up approach focused on assimilation and control, and developing non-performant institutional systems dominated by extractive institutions (Celik, 1997; Njoh, 2008; Sokoloff & Engerman, 2000; Tadei, 2014). The French colonial cities were very standardized, and highly centralized, applying the French urban pattern, but with urban areas strictly racial zoned, similar with other colonial systems, despite a higher interest for assimilation. In the case of the French legacy, key challenges are related to: low transformation capacity of the urban space, governance and planning systems, and strong conflicts, cultural and institutional tensions having roots in the colonial identity assimilation policy.

Other forms of colonialism (Belgian, Portuguese) present specific characteristics, but overall, they were based on similar practices of exploitation, coercion, assimilation and economic, cultural and institutional transformation, replicating the colonists’ models of development and urban planning, but integrating an evident spatial and social segregation and being the source of complex urban inequalities and systems of non-performing institutions (Kamalu, 2019).

A specific case is the South African colonialism. There, several forms and stages of colonization were intertwined (Dutch, 1652-1806; British, 1806-1961; Afrikaner/internal, 1961-1994). Commercial colonialism was combined with extractive colonialism and slavery, with settler colonial forms and with the Apartheid

system, with a colonial legacy dominated by inequalities, racial conflicts, deep spatial and social segregation, unjust institutions and property rights, difficult to eliminate and negatively influencing the contemporary urban development (Oliver & Oliver, 2017).

Comparatively, the British (India, Australia, Canada, South Africa, Nigeria, Singapore) favoured a more pragmatic, less extractive and less assimilating governance, creating dual relational outcomes and long term legacy, depending on the colonial system (extractive vs. settler). The French (Algeria, Morocco, Tunisia, Vietnam) was defined by assimilation practices and the arbitrary transfer of the French system (law, governance, urban planning, education and culture), with centralized and bureaucratic patterns. Strongly exploitative and assimilating, with rigid hierarchies and shaping long term the social structures, local identities and governance were the Belgian (Congo, Rwanda), the Spanish (Mexico, Peru, Chile) and the Japanese (Korea, Taiwan, the Philippines – during the WWII). The Dutch colonialism (Indonesia, South Africa) was mainly commercial but with a strong extractive dimension, resulting in long-term persistent disparities, and economic dependence. Finally, the Portuguese promoted a more missionary and civilizing approach.

From the complex set of colonialism's consequences and the possible ways of highlighting the path dependency patterns in the development dynamics of the colonized countries, the current research is focused on the economic development, government effectiveness and urbanization issues, looking to the various colonial patterns and colonizer countries from Europe. For comparability, 159 colonized countries from all continents and from all categories (colonial models) and non-colonized countries were included in the analysis.

3. Methodology and data

To analyse the impact of colonialism on contemporary economic development, it was used the *GDP per capita* (expressed in current US dollars), available in the World Bank database (code: NY.GDP.PCAP.CD). The data covers the period 1960–2023 and was complemented by a historical classification of countries according to their colonial status. Thus, each country was labelled either as „Colonized” or as „Never Colonized”, and in the case of colonized ones, the colonizing state was also specified (e.g. France, United Kingdom, Spain, etc.). In a first step, it was calculated for each country the average GDP per capita over the entire available interval, even in the presence of missing values. Subsequently, we compared the mean levels, medians and standard deviations of GDP for colonized versus non-colonized countries. Comparatively, we also analysed groups formed on the basis of the dominant colonizer, in order to identify possible systematic differences between former colonial empires. Boxplots provided a clear visual perspective on these variations. By examining spatial inequality and development

trajectories over time, thematic maps for the years 1960, 1990, and 2022 have been produced, which display both the distribution of spatial inequality and the evolution of these trajectories. These maps were used to visually analyse the distribution of GDP per capita worldwide, with countries classified into income quintiles. Finally, from the economic perspective, we analysed the dynamics of economic development by calculating the annual growth rates of GDP per capita for each country. The formula applied was:

$$GDP \text{ Growth rate} = \frac{GDP_t - GDP_{t-1}}{GDP_{t-1}} * 100$$

By analysing means and standard deviations, we compared colonized and non-colonized countries, as well as former colonies, grouped according to colonizing power. In the corresponding boxplots, the central tendencies and internal variations of each group have been highlighted.

The second issue integrated in our analysis was the governance quality, considering the strong impact of the colonialism of the institutions systems, and also the wider agreement in literature on the key role of institutions in growth and development (Acemoglu et al., 2001; Home, 2013; Njoh, 2009). From this perspective, it was analysed *the government effectiveness*, using data provided by the World Bank, specifically the indicator „*Government Effectiveness: Estimate*” from the Worldwide Governance Indicators (WGI) dataset³, for the 1996-2023 period. Descriptive statistics and boxplots were used to compare governance scores by colonial status and former colonial power. Annual averages of governance scores were computed to explore temporal trends in performance. Line plots contributed to visualize these trends, providing a dynamic understanding of institutional quality evolution over nearly three decades. This approach offers a static and dynamic perspective on colonial history’s relationship with governance effectiveness and the colonial legacy.

To particularly reflect the colonial legacy on urban development, the study explored the *urbanization trends*. The data was analysed using the World Bank’s Urban Population indicator, covering over six decades from 1960 to 2023. The data was categorized into two groups: colonized and never colonized, and countries were assigned to their former colonial powers. The study uses descriptive statistical analysis to compare urbanization rates across these groups, with two boxplots comparing colonized vs. never colonized countries and the other showing variation

³ This variable captures perceptions of the quality of public services, the quality of the civil service and its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The indicator is expressed as a standardized score ranging from approximately -2.5 (weak) to +2.5 (strong) governance performance. For each country, we calculated the average governance score across all available years, allowing for cross-sectional comparisons of long-term governance quality.

by former colonizer. The study also calculated the average annual growth rates of urbanization for each country and compares these dynamics between groups. A second round of boxplots visualized differences in annual growth performance based on colonial status, assessing whether formerly colonized countries experienced slower or faster urban transitions compared to countries that retained full political autonomy. The approach aimed to provide a descriptive and statistically robust understanding of how colonial history may relate to contemporary urban concentration and demographic modernization.

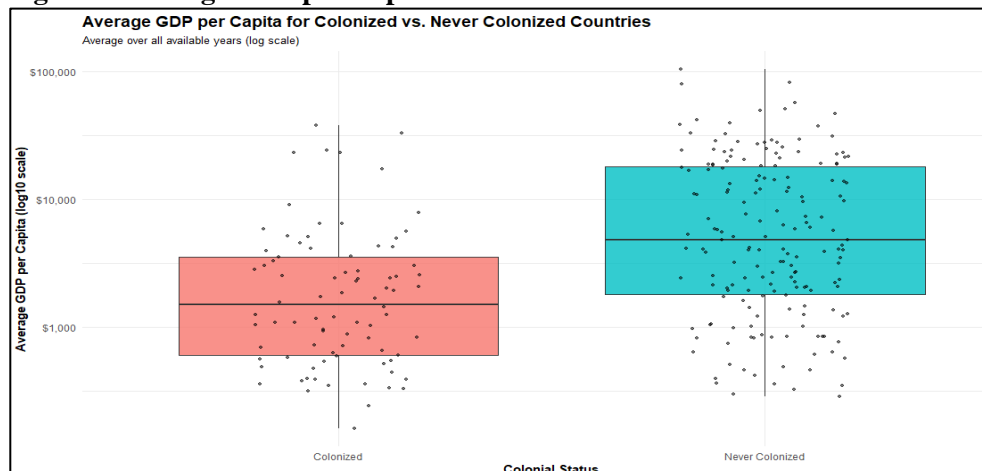
For all the three variables (GDP/capita, governance effectiveness and urbanization rate), we tested the statistical significance of the differences between colonial groups, applying the non-parametric Kruskal-Wallis test (Eskridge, 1994), followed by the Dunn post-hoc test for multiple comparisons. The Benjamini-Hochberg correction was used to adjust p-values, taking into account the control of the type I error rate in the context of multiple testing (Hollestein et al., 2021) (Annexes 1-3).

4. Results and interpretations

The statistical analysis proposed by the current research highlights critical constraints in the economic development, with key differentiations between the colonized and never colonized countries, and also between the various colonialism patterns, in terms of growth trends, inequalities, institutions quality and urbanization.

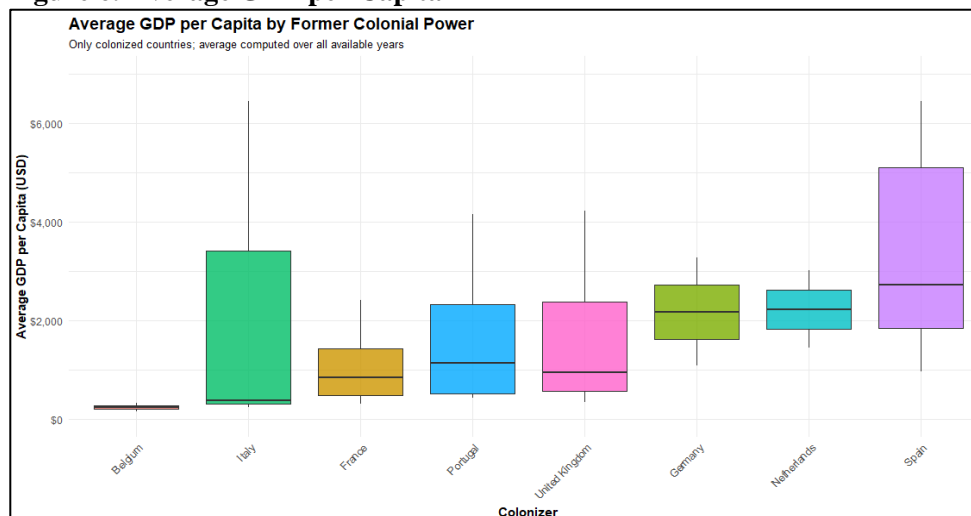
4.1. GDP per capita analysis

Based on GDP per capita analysis, the key conclusions is that the never-colonialized countries performed better compared to the colonialized ones, with important differences by the colonial power. Figure 5 shows a significant gap in median income levels between countries that experienced colonial domination and those that remained independent. Never-colonized countries have higher average GDP per capita and more stable economic performance, supporting the hypothesis that colonial legacy is associated with long-term economic disadvantages. Former colonies often integrated into global trade, leading to limited investment in local industrial development and infrastructure.

Figure 5. Average GDP per Capita for Colonized vs. Never Colonized Countries

Source: authors' representation based on data from World Bank

The distribution of average GDP per capita for former colonies, highlighting persistent economic differences (Figure 6). The former Belgian colonies have the lowest average levels and low internal variation, indicating weak and homogeneous economic performance.

Figure 6. Average GDP per Capita

Source: authors' representation based on data from World Bank

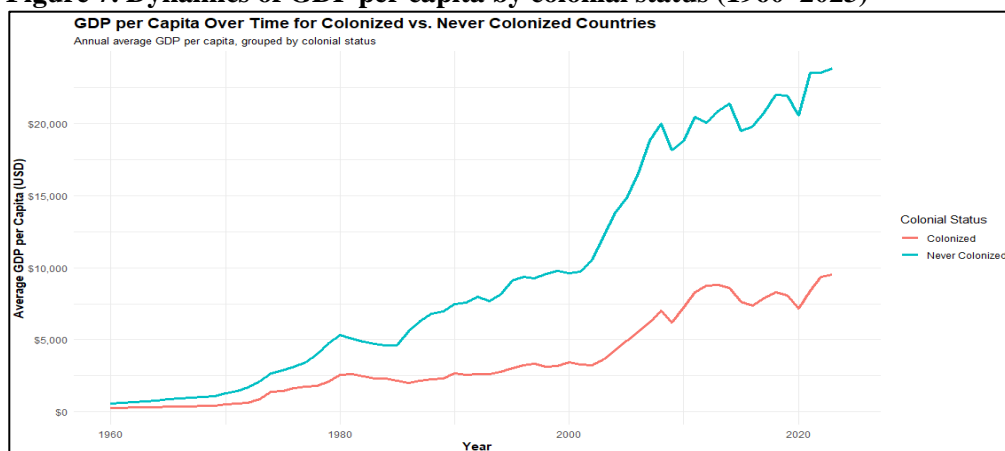
The former Italian and Spanish colonies show greater variation, suggesting uneven economic trajectories. The former British colonies have moderate average

GDP but considerable internal dispersion, with regional and institutional differences. The former French and Portuguese colonies have low average levels and little variation, while Germany and the Netherlands have superior economic performances. The identity of the colonizer significantly influences post-colonial economic trajectory.

The Dunn post hoc test from Annex 1 reveals that former Spanish colonies have significantly different GDP per capita values compared to French colonies, suggesting that the Spanish colonial model has been associated with higher economic performance. By comparing the former Spanish and Belgian colonies, we can argue that Spain left behind, as a result of the colonization process, states with better economic performance. However, the analysis shows us that no major differences are identified between the former colonies of France, Germany, Portugal, the Netherlands, and the United Kingdom, suggesting a modest homogeneity of postcolonial economic performance. The results highlight that it is not only the fact of a country being colonized that matters, but also who colonized it, but they are quite different from other studies highlighting for example better performance of the British compared with the French colonialism.

In dynamic, it can be observed (Figure 7) a persistent economic divergence between colonized and non-colonized countries over 1960-2023. Non-colonized countries have a higher average GDP per capita since the 1960s, with a widening gap after the 1990s. Former colonies have steady economic progress but with more volatility.

Figure 7. Dynamics of GDP per capita by colonial status (1960–2023)



Source: authors' representation based on data from World Bank

This suggests the colonial legacy influences post-colonial countries' economic performance through weak institutions, dependence on exports, and infrastructure imbalances. The figure supports the idea of incomplete or absent

convergence between former colonies and countries that did not experience colonization, reinforcing the conclusions drawn from previous figures regarding the persistence of global economic inequality. These observations can serve as a basis for formulating more equitable international policies focused on recovering historically inherited structural gaps.

Non-colonized countries have a slightly higher average growth rate (6.43%) compared to colonized countries (6.21%), (Table 2). The identified variation is due to the different economic trajectories of the post-independence states, while the non-colonized countries have more stable economic growth, a possible reason may be due to institutional continuity and internal control.

Table 2. Annual GDP per Capita Growth Rate by Colonial Status

Colonial Status	Average Growth Rate (%)	Standard Deviation (%)
Colonized	6.21	17.00
Never Colonized	6.43	14.40

Source: authors' representation based on data from World Bank

Significant differences are between the average values of the economic growth rates, considering the colonial power (Table 3) The lowest average rate is associated with the Belgian colonies, with only 2.28% and a relatively small standard deviation (SD = 11.4%), which reflects a weak and relatively uniform economic performance among them. This result reinforces the historical hypotheses regarding intensive exploitation and lack of investment in local development within the Belgian colonies.

Table 3. Annual GDP per Capita Growth Rate by Former Colonial Power

Colonizer	Average Growth Rate (%)	Standard Deviation (%)
Belgium	2.28	11.40
France	6.03	16.30
Germany	8.75	24.60
Italy	5.65	11.50
Netherlands	6.51	14.90
Portugal	5.44	16.30
Spain	6.28	13.80
United Kingdom	6.38	18.90

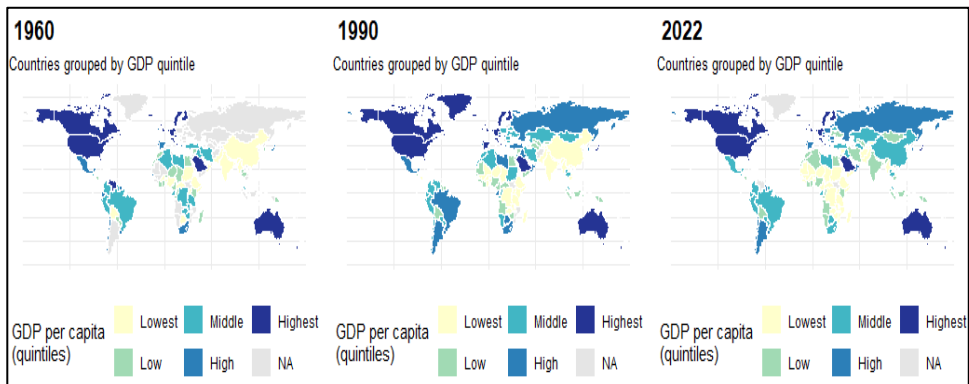
Source: authors' representation based on data from World Bank

In contrast, the former German colonies recorded the highest average growth rate, of 8.75%, although in this case to the variation is high (SD = 24.6%), indicating major differences between countries. The former Dutch (6.51%), British (6.38%) and Spanish (6.28%) colonies were above the overall average for the former colonies.

Also, the former colonies of the United States achieved growth comparable to the average of the European colonies (6.15%), suggesting that not all forms of colonialism have had a similar long-term economic impact. Thus, administrative models, investments in infrastructure, education, as well as decolonization factors influence the economic trajectory of the respective countries in the post-colonization period.

Finally, the Figure 8 reflects a comparative view of GDP per capita for the reference years 1960, 1990, and 2022, grouping countries into quintiles according to average income levels; both historical and contemporary patterns of global inequality are highlighted, with a focus on the trajectory of colonized nations.

Figure 8. Global Distribution of GDP per Capita Quintiles in 1960, 1990, and 2022

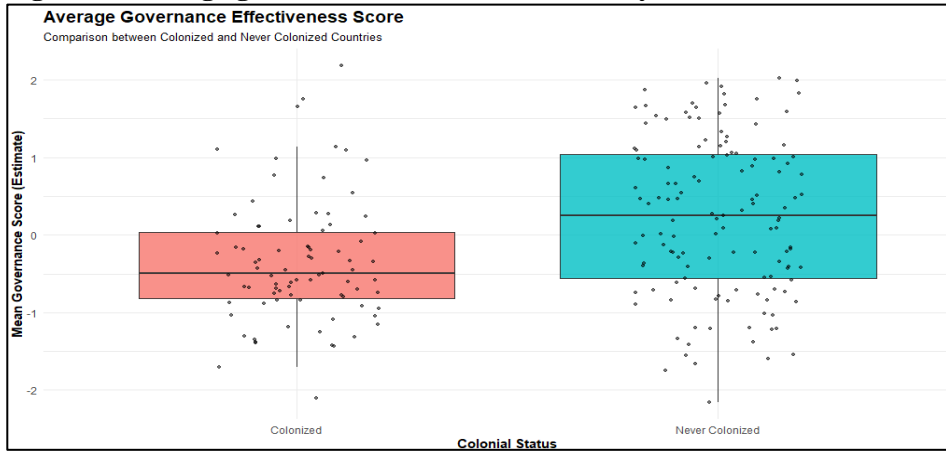


Source: authors' representation based on data from World Bank

Africa, South Asia, and Latin America have had the lowest GDP per capita rates since 1960, while Western Europe, North America, and Australia have had the highest rates, but some regions converged in 1990, with Sub-Saharan Africa remaining the lowest. In 2022, the global landscape is more diverse, with some formerly colonized countries showing upward mobility.

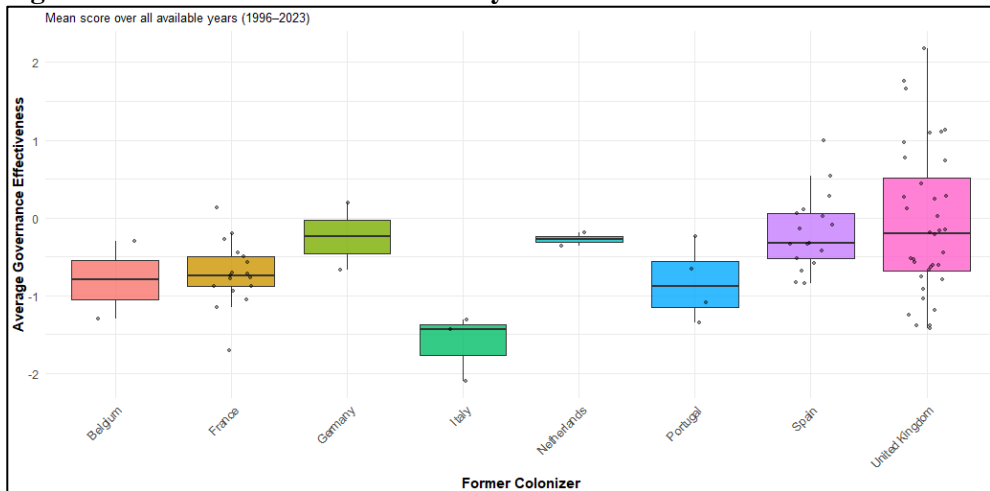
4.2. Governance effectiveness

The average governance effectiveness scores (as estimated by the World Bank) across all available years (1996–2023), comparing formerly colonized countries with those that were never colonized are reflected in the Figure 9. The distribution shows a clear divergence: countries that were never colonized generally exhibit higher governance scores, while colonized countries cluster around lower values, including negative effectiveness scores. The boxplot highlights persistent structural differences in governance quality potentially rooted in historical institutional legacies of colonization.

Figure 9. Average governance effectiveness score by colonial status

Source: authors' representation based on data from World Bank

Considering the colonial power (Figure 10), significant variation occurs between colonial powers, for example, the UK and Spanish colonies have higher governance scores, while those previously colonized by Italy, Portugal, or Belgium have consistently lower performance.

Figure 10. Government Effectiveness by Former Colonial Power

Source: authors' representation based on data from World Bank

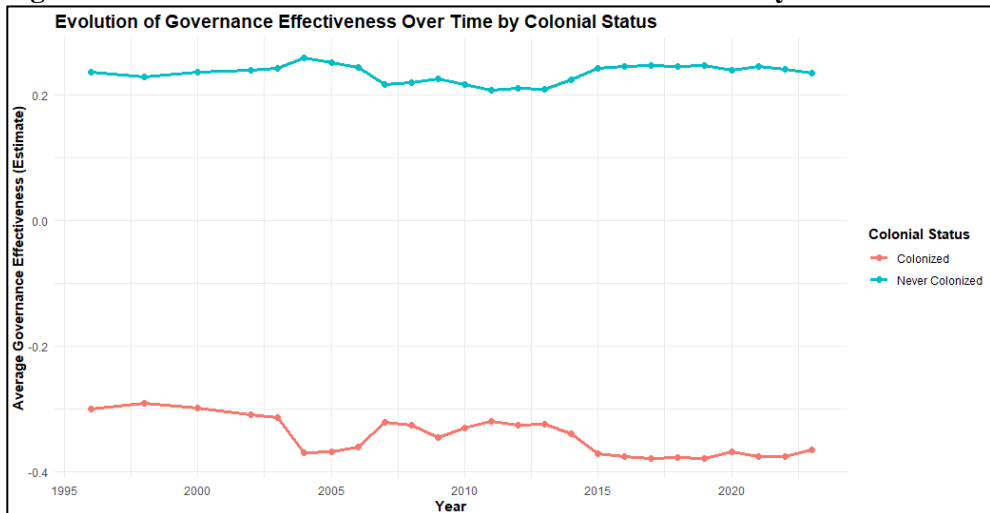
Heterogeneity in this case suggests that the identity of colonizing countries has long-run institutional impacts, with an emphasis on state capacity and administrative efficiency.

Dunn's test (Annex 2) shows few significant differences in government efficiency scores between former colonies, depending on the colonizing power. However, a few comparisons reach significance, suggesting institutional legacy. Italy and the United Kingdom have significantly higher government efficiency scores than those colonized by Italy, suggesting British institutions may have induced more effective post-colonial governance. France and Spain and Italy and Spain have marginally significant differences, suggesting a possible institutional advantage of Spanish colonies.

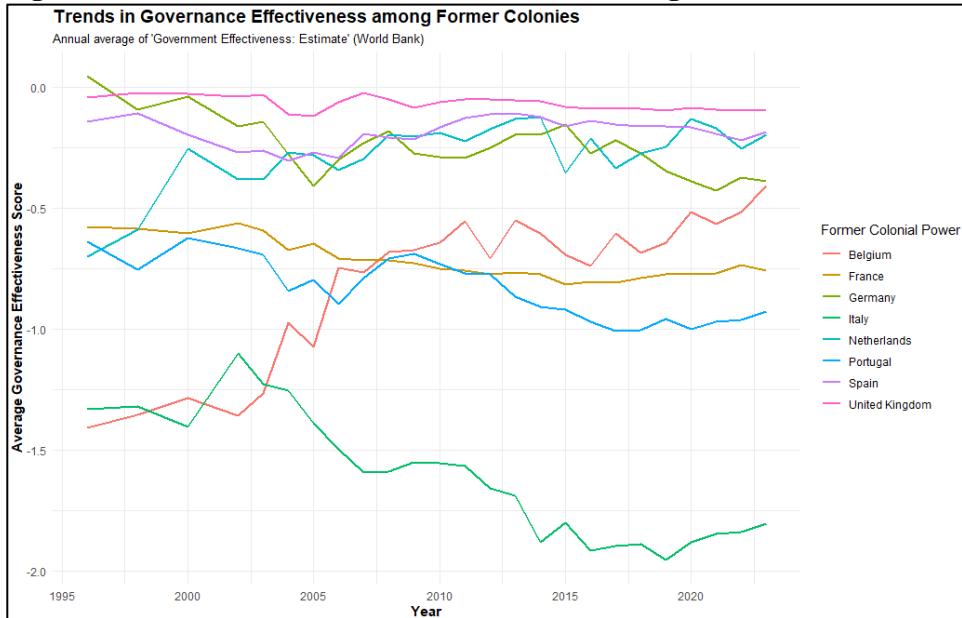
The gap between colonized and non-colonized countries remains relatively stable across time, with non-colonized countries maintaining a consistent advantage in governance performance (Figure 11). The existence of minor fluctuations and recorded trajectories suggest structural divergence, thus reinforcing the notion of path dependence in governance results.

The temporal trends in Governance Effectiveness across countries grouped by colonizing state (Figure 12) show differentiated trajectories, for example the former British colonies maintain higher average governance scores, while those colonized by Italy, Portugal and Belgium show lower or stagnant performance. Thus, some colonial powers (e.g. Spain and the Netherlands) show average results with relative stability.

Figure 11. Evolution of Governance Effectiveness over Time by Colonial Status



Source: authors' representation based on data from World Bank

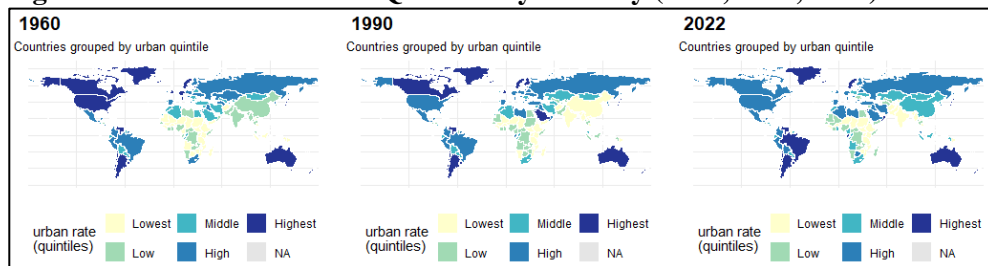
Figure 12. Trends in Governance Effectiveness among Former Colonies

Source: authors' representation based on data from World Bank

These patterns support the hypothesis that colonial administrative legacies contributed to persistent differences in institutional quality among postcolonial states.

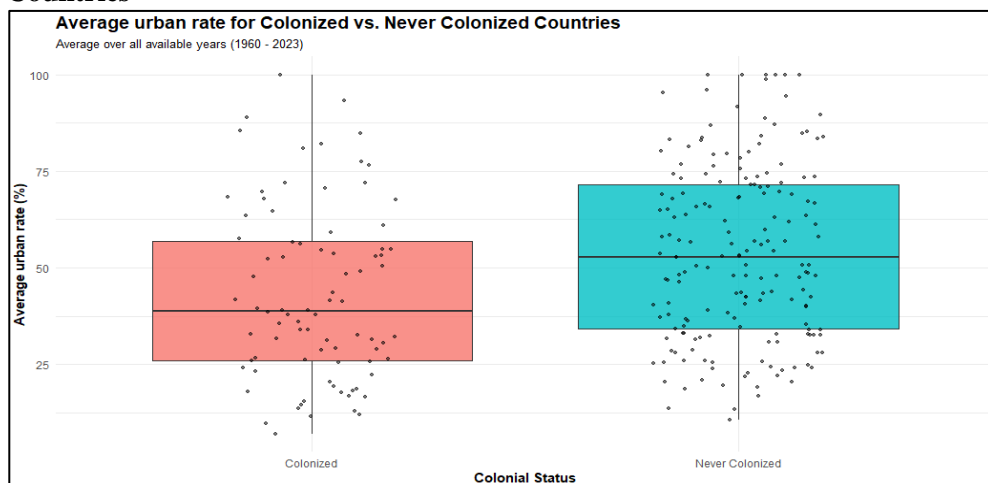
4.3. Urbanization trends

Considering the spatial distribution of countries grouped into quintiles based on the share of the urban population in three reference years: 1960, 1990, and 2022 (Figure 13), it can be distinguished that in 1960 Africa and parts of Asia belonged to the lower quintiles, while Europe, North America and Australia were already urbanized. By 1990, many countries in Latin America and Asia had increased towards the upper quintiles, and by 2022 the gap persisted, with a slight narrowing reflected in the global urbanization trend. However, many of the countries that were colonized remain overrepresented in the lower urbanization quintiles in all periods, suggesting long-term development disparities.

Figure 13. Urbanization Rate Quintiles by Country (1960, 1990, 2022)

Source: authors' representation based on data from World Bank

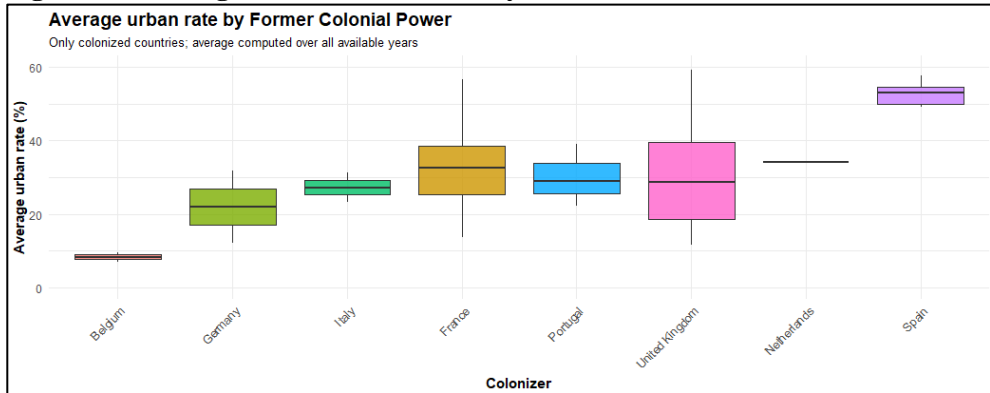
The boxplots from Figure 14 compares the average urban population share between countries that experienced colonization and those that did not.

Figure 14. Average Urbanization Rate for Colonized vs. Never Colonized Countries

Source: authors' representation based on data from World Bank

On average, countries that have never been colonized show a higher degree of urbanization over the entire period (1960-2023), and the distribution for colonized countries is more leftward representative, with a lower median and a wider dispersion, indicating a lower overall level of urban development.

A clear heterogeneity is observed among former colonial powers (Figure 15). Colonies of Spain and the Netherlands show notably higher median urbanization levels, while those previously governed by Belgium and Germany appear to lag behind. The existence of more persistent British and French colonies indicates an internal variation between the former territories, so this variation may reflect different colonial strategies and legacies in terms of infrastructure, administration, and post-colonial state formation.

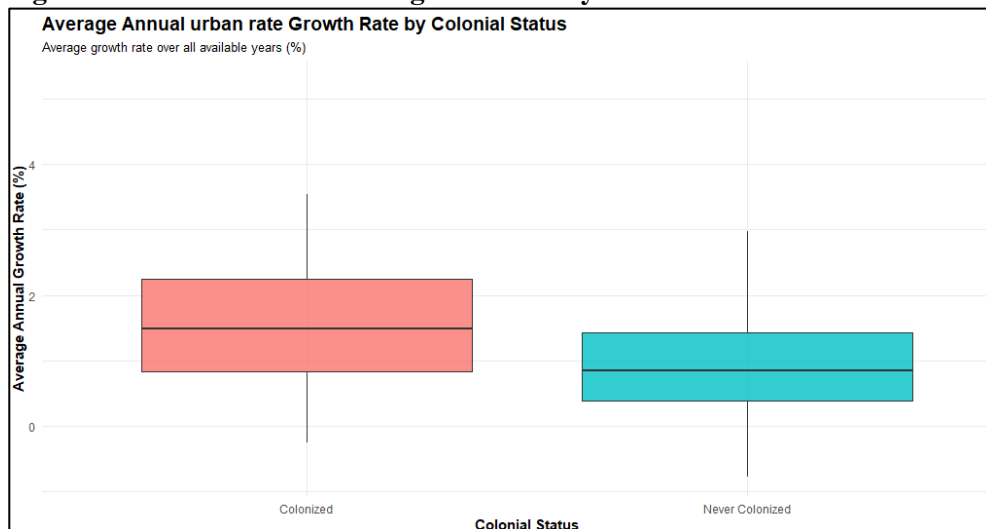
Figure 15. Average Urbanization Rate by Former Colonial Power

Source: authors' representation based on data from World Bank

According to Annex 3, the former Spanish colonies experienced average rates of urbanization compared to other colonial empires, the difference recorded is 10% at the significance level. When analysing the differences between Spain and Belgium, France, Germany, and the United Kingdom, they are statistically significant, adjusting for multiple comparisons. The results show that post-colonial urban development in the former territories of Spain has been more pronounced, due to historical, cultural, or geographical influences favourable to urbanization. On the other hand, for other former colonial powers, the differences in average urbanization rates are not statistically significant, registering a homogeneity of urbanization rates across these countries. In the case of the Spanish colonies, they stand out, explaining the different postcolonial trajectories in terms of demographic transition and urban development. According to the result, it is in line with previous visualizations and can serve as a starting point for a more detailed analysis of the determinants of urbanization in the postcolonial context.

At the same time, comparing the average annual growth rate in urbanization between colonized and never-colonized countries, colonized countries exhibit slightly higher urban growth rates, with a wider range, indicating faster but more uneven urban expansion (Figure 16).

This pattern may reflect rapid urbanization due to late-stage industrialization or migration from rural areas, contrasting with more stable urban growth in countries that were never colonized.

Figure 16. Annual urbanization growth rate by colonial status

Source: authors' representation based on data from World Bank

As overall the research results confirm the existence of the colonial legacy generating different development pattern ways between the former colonies and the non-colonialized countries, with various manifestations depending the colonial power.

Conclusions

Colonialism, in its various forms, from settler colonialism as having the strongest impact on the economic development and urbanization trends („hard colonialism”), to soft forms such as commercial colonialism, has a dual dimension from the perspective of the conditions and challenges it implies for the contemporary development (Loomba, 1998; Said, 1978). Colonialism contributed to the rapid growth and urbanization of occupied territories, and to a radical process of institutional transformation through the implementation of new models of governance, creating a favourable context of determinants and conditions that support the long-term development. Also, colonialism developed the built environment and the critical infrastructure, created new frameworks for education and health infrastructure, making colonial cities as poles of growth and development and creating the foundations of post-colonial urban development, industrialization and modernization (Grier, 1999; Acemoglu, at al., 2001; Ferguson & Schularick, 2006; Dell and Olken, 2020). At the same time, colonialism meant the alteration or even destruction of local values and culture, the exploitation of local populations and resources, socio-economic segregation and spatial inequalities that limit the capacity

of countries and cities to promote sustainable and inclusive development models. Colonialism generated institutional and governance systems that have remained dominated in some cases by extractive institutions (Sokoloff & Engerman, 2000; Wallerstein, 1974), hindering the economic development and perpetuating inequalities.

A stronger bottom-up approach in growth-based policies and urbanisation are required, with a particular focus on key determinants of sustainability, social segregation and inclusiveness, looking also to a (re)calibration of the territorial characteristics of cities. As the current research highlighted, including aspects based on the statistical analysis, improving the quality of institutions and increasing the performance of government mechanism are necessary to reduce the post-colonial path dependency.

Acknowledgements: This research has been conducted with the support received through the project „City-Focus - City: Future Organisation of Changes in Urbanisation and Sustainability”, project code CF 23/27.07.2023, financed through National Recovery and Resilience Plan for Romania within project call – PNRR-III-C9-2023-I8 PNRR/2023/Component 9/Investment 8. [Financed by the European Union – NextGenerationEU].

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Annex

Annex 1. Pairwise Comparisons of GDP per Capita among Former Colonial Powers (Dunn Test with Benjamini-Hochberg Adjustment)

Comparison	Z	P.unadj	P.adj (BH)
Belgium - France	-1.5095	0.131172	0.333892
Belgium - Germany	-1.90631	0.056609	0.264177
France - Germany	-1.04809	0.294596	0.549913
Belgium - Italy	-1.20505	0.228182	0.532425
France - Italy	0.040174	0.967954	0.967954
Germany - Italy	0.883208	0.377124	0.621145
Belgium - Netherlands	-1.98831	0.046778	0.261956
France - Netherlands	-1.1581	0.246825	0.531623
Germany - Netherlands	-0.08199	0.934653	0.96927
Italy - Netherlands	-0.97303	0.330541	0.578446
Belgium - Portugal	-1.56216	0.118251	0.331102
France - Portugal	-0.41203	0.680321	0.865863
Germany - Portugal	0.639064	0.522781	0.731893
Italy - Portugal	-0.331	0.740641	0.864081
Netherlands - Portugal	0.733741	0.463107	0.682473
Belgium - Spain	-2.99528	0.002742	0.038387
France - Spain	-3.29389	0.000988	0.027667
Germany - Spain	-0.44518	0.656191	0.874921
Italy - Spain	-1.81891	0.068925	0.2757
Netherlands - Spain	-0.3355	0.73725	0.897522
Portugal - Spain	-1.59476	0.110766	0.344607
Belgium - United Kingdom	-2.40615	0.016122	0.150471
France - United Kingdom	-2.15783	0.030941	0.216588
Germany - United Kingdom	0.217885	0.827518	0.891174
Italy - United Kingdom	-1.07828	0.28091	0.561819
Netherlands - United Kingdom	0.330747	0.740836	0.829736
Portugal - United Kingdom	-0.74976	0.453402	0.705292
Spain - United Kingdom	1.668749	0.095167	0.333085

Source: personal processing based on data from World Bank

Annex 2. Pairwise Comparisons of urban rate among Former Colonial Powers (Dunn Test with Benjamini-Hochberg Adjustment)

Comparison	Z	P.unadj	P.adj (BH)
Belgium - France	-1.93729	0.05271	0.21084
Belgium - Germany	-0.67643	0.498765	0.698271
France - Germany	1.029758	0.303124	0.565831

Belgium - Italy	-1.71402	0.086525	0.242269
France - Italy	-0.19357	0.846515	0.948096
Germany - Italy	-0.97303	0.330541	0.578446
Belgium - Netherlands	-2.0293	0.042428	0.197995
France - Netherlands	-0.78531	0.432275	0.711982
Germany - Netherlands	-1.35287	0.176098	0.410895
Italy - Netherlands	-0.50897	0.610775	0.814367
Belgium - Portugal	-1.83435	0.066602	0.233106
France - Portugal	-0.26164	0.793602	0.925869
Germany - Portugal	-1.05327	0.292216	0.584432
Italy - Portugal	-0.03131	0.975021	0.975021
Netherlands - Portugal	0.508885	0.610833	0.777424
Belgium - Spain	-3.41465	0.000639	0.008941
France - Spain	-3.27804	0.001045	0.009756
Germany - Spain	-2.50978	0.012081	0.084566
Italy - Spain	-1.57759	0.114661	0.291863
Netherlands - Spain	-0.70003	0.48391	0.752749
Portugal - Spain	-1.73471	0.082793	0.257578
Belgium - United Kingdom	-2.11615	0.034332	0.192258
France - United Kingdom	-0.32348	0.746334	0.90858
Germany - United Kingdom	-1.18505	0.235999	0.508306
Italy - United Kingdom	0.045481	0.963724	0.999417
Netherlands - United Kingdom	0.677169	0.498299	0.734335
Portugal - United Kingdom	0.097231	0.922543	0.993508
Spain - United Kingdom	3.449947	0.000561	0.015699

Annex 3. Pairwise Comparisons of Government Effectiveness among Former Colonial Powers (Dunn Test with Benjamini-Hochberg Adjustment)

Comparison	Z	P.unadj	P.adj (BH)
Belgium - France	-0.00816	0.993488	1
Belgium - Germany	-0.78825	0.430549	0.634493
France - Germany	-1.04629	0.295425	0.486583
Belgium - Italy	1.158891	0.2465	0.530924
France - Italy	1.699103	0.0893	0.277822
Germany - Italy	2.022379	0.043137	0.201307
Belgium - Netherlands	-0.87123	0.38363	0.596758
France - Netherlands	-1.15729	0.247154	0.494308
Germany - Netherlands	-0.08297	0.933872	1
Italy - Netherlands	-2.11327	0.034577	0.193634
Belgium - Portugal	0.167668	0.866845	1
France - Portugal	0.27227	0.785415	1

Germany - Portugal	1.077864	0.281095	0.491916
Italy - Portugal	-1.19502	0.232078	0.649819
Netherlands - Portugal	1.173674	0.240526	0.561227
Belgium - Spain	-1.18014	0.237944	0.605676
France - Spain	-2.55427	0.010641	0.074487
Germany - Spain	-0.12569	0.899981	1
Italy - Spain	-3.09813	0.001947	0.054528
Netherlands - Spain	-0.01469	0.988279	1
Portugal - Spain	-1.8488	0.064487	0.257947
Belgium - United Kingdom	-1.08503	0.27791	0.518766
France - United Kingdom	-2.65784	0.007864	0.0734
Germany - United Kingdom	0	1	1
Italy - United Kingdom	-3.07221	0.002125	0.029747
Netherlands - United Kingdom	0.114213	0.909069	1
Portugal - United Kingdom	-1.77111	0.076542	0.267898
Spain - United Kingdom	0.319273	0.74952	1