

**POLITECNICO DI TORINO**

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Master's thesis

**Foreign Direct Investments in Africa as a  
driver of human development.  
The African case.**

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## **Abstract**

This thesis addresses the very relevant issue of the impact of Foreign Direct Investments (FDIs) on the economic growth and well-being of developing countries. To this end, the thesis focuses on Africa, the fastest growing continent where FDIs have recently become sizeable. After reviewing the literature on FDI taxonomies, economic motivations, and impact on recipient countries, the thesis analyses the impact of FDIs on the Human Development Index, developed by the United Nations to capture not only the economics performance but also the level of education and life expectancy in the country. By using a panel dataset covering more than 30 years (1992-2023) and almost 50 countries and applying both standard panel data techniques and GMM estimators to take into account endogeneity issues, we uncover that FDIs have a positive, but weakly statistically significant, impact on all the three dimensions of the HDI index.



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# **Chapter 1: Theoretical Framework of Foreign Direct Investment**

## **1.1 Introduction and Definitions (multinational and FDIs)**

In today's global scene, the interconnections between different economies are deeply integrated and growing, with the movement of capital between countries becoming a fundamental feature of international development. A key factor in economic growth in this context has been the expansion and spread of Multinational Enterprises (MNEs), a dynamic driven by the use of Foreign Direct Investment (FDI) as a strategic tool for international expansion.

The first to use the term “multinationals” was David E. Lilienthal during a lecture at Carnegie Mellon University in 1960, defining them as “companies (...) that are based in one country but also operate and live according to the laws and customs of other countries” (Lilienthal, 1960; Fieldhouse, 1986), identifying as a salient feature the fact that the company organizes and coordinates activities that transcend national borders (Goldstein and Piscitello, 2007).

Dunning and Lundan have explicated the relationship between the phenomenon of multinationals and the one of FDIs specifying that a multinational or transnational enterprise is an enterprise that makes foreign direct investments and owns or, in some way, controls value-added activities in more than one country. They emphasize that it is exactly the nature of control that characterizes the essence of the modern multinational. In this regard, the United Nations Conference on Trade and Development (UNCTAD) defines multinational enterprises as entities composed of a parent enterprise and its foreign affiliates, where the parent company is an enterprise that controls the activities of other entities situated outside of its own country of origin, usually through the ownership of a certain quantity of equity capital stake. As a matter of fact UNCTAD, to establish the existence of such control, and to confirm a “lasting interest” in the management of the enterprise, sets a fundamental parameter: the parent company must hold at least 10% of the ordinary shares or voting rights in a foreign affiliate (UNCTAD, 2025). This threshold is not just an UNCTAD convention, but a recognized macroeconomic standard, aligned with the guidelines established by the International Monetary Fund (IMF) in the *Balance of Payments and International Investment Position Manual* (IMF, 2025) and by the

Organisation for Economic Co-operation and Development (OECD) in the *Benchmark Definition of Foreign Direct Investment* (OECD, 2025).

The OECD also emphasizes that this threshold evidences a "lasting interest" and a strategic long-term relationship, ensuring a significant degree of influence over the management, between the direct investor and the direct investment enterprise. Furthermore, based on the degree of equity ownership, the OECD classifies direct investment enterprises into:

- subsidiaries (over 50% of the voting power is held),
- associates (between 10% and 50%),
- quasi-corporations, such as branches (effectively 100% owned by their parents).

However, although this percentage provides a strict threshold, the concept of control which distinguishes FDIs from portfolio investments remains important. Goldstein and Piscitello (2007) report that while the former ensure that the investor has control of the foreign affiliated company, the latter, consisting of bank loans, bonds, and equity stakes, do not provide the means to exercise managerial authority.

## **1.2 Historical Context and Evolution**

Goldstein and Piscitello (2007) provide an historical overview of multinational enterprises from ancient times to contemporary era, which has been summarized and reworked as follows.

Commercial entities characterised by a hierarchical organisation, the use of a multi-ethnic workforce, the generation of added value across multiple locations, and the adoption of strategies aimed at securing resources and markets were already present in antiquity, for example, Sumerian merchants who, as early as 2500 BC, were already stationing agents in foreign ports to manage their trade. During the Renaissance and in the centuries that followed, proto-banks and trading companies (such as the British East India Company) emerged, pioneering the international trade in resources right up to the pre-industrial era.

From the Second Industrial Revolution onwards, there was a profound shift in the development of multinational enterprises, advances in transport and communication, such as transatlantic liners and the telegraph, facilitated the expansion of international trade

and enabled more centralised management of the various production and distribution centres. The United States became the main destination for and source of capital, enabling it to acquire expertise in large-scale production, closing the gap with Europe and paving the way for it to become the leading economic power of the 20th century.

Well-known examples include Samuel Colt, who in 1852 became the first American to open a factory in Europe (London) to prevent the counterfeiting of his firearms, and Singer, which in 1867 opened a sewing machine factory in Glasgow, became the first true American multinational and by 1914, it controlled 90 per cent of the global market and manufactured in five different countries.

Even then, the United States stood out from other countries due to its foreign direct investment, which far exceeded its portfolio investment. At the outbreak of the Great War, the total stock of foreign investment stood at 9 per cent of global GDP – a proportion that would not be matched again until 80 years later – with the United States second only to Great Britain, which held half of that total.

In the period between the two world wars, there was a reversal of globalisation, companies focused more on their domestic markets, portfolio investment increased and financial speculation gained ground, eventually leading to the Great Depression, during which half of American banks' foreign loans became non-performing. The resources sector, bucking the trend, continued to attract foreign investment. In sectors such as the diamond and oil industries, several companies formed international cartels to control supply and keep prices stable.

The following thirty years, from 1945 to 1975, were a period of rapid economic growth and social development for the West, despite Europe being divided into two political blocs. During this period, the supremacy of the US economy was confirmed, to the extent that, by 1960, half of the total stock of foreign direct investment worldwide was American-owned. American multinationals concentrated their investments in the rapidly growing European market, particularly following the establishment of the European Economic Community, whilst also developing a certain interest in developing countries such as those in Latin America. Investment in the oil and petrochemical industries also grew, and the business support services sector expanded.

The 1973 oil crisis highlighted the vulnerabilities of the US economy, in the face of exogenous shocks, multi-divisional structures proved less resilient than the more agile models adopted by Japanese firms. A significant trend during this period was the intensification of intra-European foreign direct investment. The stock of foreign direct investment remained modest, stabilising at 5 per cent of global GDP, a figure amounting to only half that reached before the Great War, despite thirty years of steady economic growth.

The 1990s ushered in a second golden age for globalisation, driven by the liberalisation of emerging economies and the regionalisation of the global economy, which led to the fragmentation of production chains across multiple countries.

### 1.3 Methods of internationalization of the company

International firms can commit financially across a wide range of levels, all based on the risk and the level of control one decides to have over a foreign activity, which leads to a different degree of internationalization. Usually, the use of FDI as a tool to become a multinational is not an immediate step, but rather it represents the most advanced step in a strategic path of international expansion. As illustrated by Goldstein and Piscitello (2007) and further explored by Dunning (1993), the final decision is always a result of a cost-benefit analysis, where companies find a balance between risk, degree of control, and committed resources.

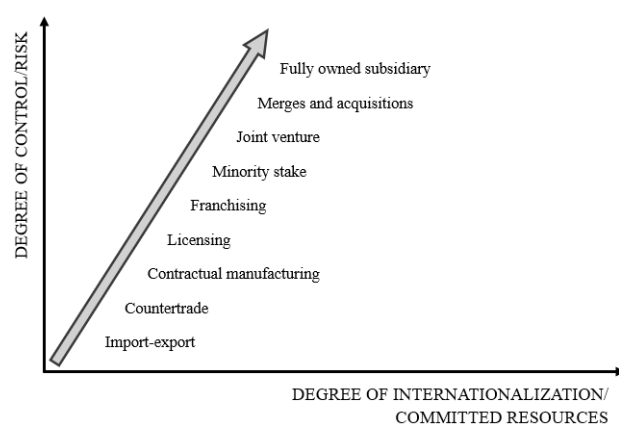


Figure 1 - degree of internationalization (Adapted from: Goldstein and Piscitello, 2007)

Internationalization can be seen as an ideal continuum that begins with exports, as the minimum involvement of the firm, and ends with fully owned subsidiaries as a form of greater commitment (Goldstein and Piscitello, 2007).

A first step concerns firms entering the foreign market through export, which requires a low capital commitment and minimal organizational disruption. Furthermore, as reported by Dunning, a company relies on export when it finds it more cost-effective to produce in its own country. However, exports can be influenced by specific trade policies, such as anti-dumping duties and investment incentives, that the host countries can apply to discourage foreign imports and actively incentivize FDI. This often triggers tariff-jumping dynamics reaction by multinationals from industrialized countries, which shift from exporting to foreign investment as a strategic countermeasure (Blonigen, 2002; Loree and Guisinger, 1995).

A second step of internationalization is represented by non-equity agreements, such as licensing and franchising, where companies enter a new market without committing equity capital. The foreign firms maintain a certain degree of control while avoiding the direct financial risk of a physical subsidiary, but, on the other hand, they are exposed to high contractual costs, such as negotiation and monitoring, and the risk of technology imitation. In this context, it is relevant to note how technological progresses have allowed a significant broadening of the spectrum of non-equity modes toward Global Sourcing and Virtual Organizations (Nanut and Tracogna, 2011), enabling the reduction of coordination costs and allowing digital control of the entire value chain, effectively replacing the need to own physical assets (Casella and Formenti, 2018; Nambisan and Luo, 2022).

An enterprise proceeds with a Foreign Direct Investments when it needs to protect specific competitive advantages and exert hierarchical control over its international operations. As illustrated in Figure 1 and outlined by Goldstein and Piscitello, FDIs are positioned at the apex of the internationalization continuum, encompassing Fully Owned Subsidiaries, M&As, Joint Ventures, and Minority Stakes. The adoption of these equity modes requires a high resource commitment and exposes the firm to a high-risk environment from a financial, political, and operational point of view. Despite this, the multinational is ready to accept this trade-off, dictated precisely by a higher return, as

well as neutralizing the inefficiencies due to external opportunism, thus making direct ownership the most powerful tool to extract value and maximize potential in the host market.

## **1.4 Classification of foreign direct investments**

### **1.4.1 Based on the direction of capital flow**

A first classification of FDIs is based on the direction of capital flow across national borders, dividing it into inward and outward investments. The former represents foreign capital invested in the domestic economy, while the latter represent local capital invested in the foreign economy.

This macroeconomic distinction responds to the needs of individual countries from a statistical and policy formulation perspective. As reported by the IMF in its Balance of Payment Manual (BPM5), it emphasizes how FDI is an important item in the Financial Account and the International Investment Position (IIP), making it a fundamental tool for analyzing national and international dynamics (IMF, 1993; Eurostat, n.d.).

Furthermore, a distinction must be made between the measurement of flows and stock of FDI. FDI flows refer to the amount of FDI transactions recorded during a reporting period (typically a year) and are characterized by three main components: equity, reinvested earnings, and intra-company loans.

- Equity capital is the purchase by a foreign direct investor of shares in a company in a country other than his own.
- Reinvested earnings include the direct investor's share, in proportion to direct equity participation, of profits not distributed as dividends by affiliates, or profits not remitted by the foreign investor.
- Intracompany loans or intracompany debt transactions refer to the borrowing and lending of short- or long-term funds between direct investors (parent companies) and affiliated companies (UNCTAD, 2025b).

In contrast, FDI stocks refer to the total accumulated value of foreign-owned assets at a given time.

Regarding data collection, UNCTAD reports in its WIR that it collects published and unpublished national official FDI data flows directly from central banks, statistical offices, or national authorities that constitute the main source (more than 90 percent) for the reported data on FDI, while the remainder is complemented by data obtained from other international organizations with partial data availability, such as the International Monetary Fund (IMF), the World Bank, and the Organization for Economic Co-operation and Development (OECD), as well as regional organizations (UNCTAD, 2025).

#### **1.4.2 Based on the strategic motives**

A more detailed distinction between foreign direct investments is that reported by Dunning and Lundan (2008) and based on investment motivations. This taxonomy is one of the most cited and the authors distinguish four main types of foreign direct investment: resource seeking, market seeking, efficiency seeking and strategic assets seeking investments.

Resource-seeking investment aimed at acquiring specific resources that are either unavailable in the home country or available at a much higher cost. The term resource typically refers to physical natural resources and raw materials, which certainly are the major components, but they also refer to workforce, products and technology.

Market-seeking refers to the opportunity to gain access to a host country's market or to expand into one or more adjacent regions. A company may pursue this strategy for various reasons. For instance, it may have experienced issues in previous commercial relationships with the target country, or the political environment may have shifted toward more protectionist measures. Moreover, proximity to certain markets offers several distinct advantages, such as the ability to adapt products to consumer needs more effectively and the capacity to serve those customers faster than the competition.

Efficiency-seeking involves the optimization of the production process along the value chain as a motive for FDI. Having access to a portfolio of geographically dispersed activities enables the parent enterprise to make the most of production factors, as well as differing economic and political systems and policies. This motive partly explains the significant interest in developing economies, which represent an opportunity to carry out labour-intensive and low-tech activities at a much lower cost. These investments take

advantage of economies of scale and scope, and differences in consumer tastes and supply capabilities. Efficiency-seeking investments are the most difficult to attract, but they can become much more than a source of capital, as they can create more diverse jobs and increase productivity and value.

Finally, strategic asset-seeking investments arise from managerial awareness of the risks of assuming their status quo is guaranteed for the future. It is therefore always necessary to seek to improve their potential growth and competitive advantage (Anthony et al., 2011). Companies actively seek new competences and strategic assets, such as local distribution networks, qualified human capital, or established brands, capable to guarantee the sustainability of their competitive advantages. It is no coincidence that research and development (R&D) operations abroad often generate positive spillovers and learning dynamics that enrich the parent company itself with new innovative capabilities.

It is crucial to clarify that these categories of FDI are not mutually exclusive, but in practice it is almost always the combination of two or more of them that provides a sufficiently robust reason for accomplishing the high risks inherent in cross-border investments.

#### **1.4.3 Based on activity structure: Horizontal and Vertical FDI**

Foreign Direct Investments can also be classified by the way multinational enterprises organize their global value chain and integrate foreign activities with those of the parent company. Traditional literature highlights the dichotomy between vertical and horizontal integration, however, we also report the case in which this distinction is not clearly defined.

Horizontal FDI occurs when a multinational enterprise duplicates its home country's activities, producing the same goods or offering the same services, in a foreign host country, replicating in this way the production process closer to the final consumer. The primary objective is to directly serve the host country's market, thus bypassing trade barriers, import quotas, and high transportation costs. This underlines how horizontal FDI is linked to market-seeking motives. A trade-off model was formalized by Markusen with which he observed how this strategy, despite leading to a duplication of fixed costs, it's

able to reduce the variable costs associated with exports, also allowing a more immediate response to the needs of local consumers (Markusen, 1984).

Vertical FDI (VFDI), unlike what was previously discussed, does not address the duplication of business units, but rather involves the geographical fragmentation of the firm's value chain. Helpman has reported how multinationals, by dividing production processes between different countries, exploit the differences in factor endowments between them, characterized by differences in costs, such as labour and access to raw materials. This leads to a disaggregation between capital-intensive headquarters activities (R&D, marketing, management, and finance), which require greater capital and highly skilled labour, and manufacturing activities that are more labour and resource intensive to minimize overall costs (Helpman, 1984).

A third category concerns multinationals for which there is no clear distinction between vertically and horizontally integrated plants. An example is export-platform foreign direct investments, which occur when the parent company makes an investment in a foreign country with the aim of producing goods for a third-country market. This category shares both market-seeking aspects, as with HFDIs, and resource-seeking aspects, as with VFDIs. Although export-platform FDIs are widely used in practice, they have not attracted the same interest in the literature, reducing them to specific case studies due to the complexity of distinguishing their horizontal and vertical components (Ekholm et al., 2007).

This phenomenon is particularly beneficial when the company decides to move a phase of the vertical component of the production process, such as assembly, to a low-cost country that is part of a preferential trading arrangement (PTA) area. A preferential trading agreement can be defined as a trade agreement between two or more countries that grants preferential treatment to certain products imported from member countries, by reducing or eliminating tariffs, quotas, and other barriers to imports and exports, giving them a competitive advantage over non-member countries. PTA member countries create an enlarged market, and if we consider that FDI incurs fixed costs, given an increase in economies of scale, the size of this market matters. Caves (2007) reports how this policy can influence foreign direct investment rather than simple trade. For those firms outside the PTA that previously exported to a member country, an enlargement of the market

could lead to a shift toward foreign direct investment, increasing the multinational's activity within the PTA. Meanwhile, those already within the PTA and already serving other PTA members with FDI can maximize their profits by consolidating production in one member country and exporting to the remaining member countries, benefiting from the policy's advantages, thus reducing their multinational activity.

One of the most recent examples of a PTA is the AfCFTA (African Continental Free Trade Area), the largest free trade area in the world by number of participants, which includes almost all the member countries of the African Union. Shingal (2024) demonstrates how in the presence of such agreement there is a growth in FDI, mainly regarding greenfield investments, the positive effect of which is further accentuated with the depth of the negotiated agreement and by African host countries with strong governance indicators. A real case can be observed in the Ghanaian automotive sector, where large foreign manufacturers, such as Volkswagen and Toyota, taking advantage of the AfCFTA single market, are replacing their imports with direct investments, in order to create an assembly hub in Ghana, from which to produce and export their vehicles to other member countries. (JICA, 2022).

Each of these structures has advantages and disadvantages. HFDIs can benefit from trade cost savings, as local production allows the company to avoid transportation costs and avoid host country tariff barriers. They also allow companies to have more direct market access. However, they encounter duplication of fixed costs due to the opening of a new plant, and with fragmented production, the company cannot fully exploit the benefits of economies of scale. VFDIs benefit from factor price savings and are able to generate economies of scale, but their fragmented production entails costs in terms of coordinating activities and trade. (Barba Navaretti et al., 2006).

#### **1.4.4 Based on the mode of entry: Greenfield, Brownfield and Joint Venture**

A final distinction is made based on the entry modes of the multinational enterprise into the host country market utilizing equity capital. The primary modes are classified into: greenfield investments, mergers and acquisitions (or brownfield investments), and joint ventures.

A greenfield investment occurs when a firm invests in new physical plants and productive assets in the host country, which remain the exclusive property of the parent company. Hill (2021) highlighted how this mode requires the highest commitment of resources and guarantees absolute control over the operations of the new entity, allowing the firm to build an idiosyncratic organizational culture, implement its own technological standards, and pursue its own organizational routines without enduring the transition costs and frictions that could arise within a pre-existing organization. However, this mode necessitates a substantial initial investment, entails significantly long lead times before generating profits, and exposes the enterprise to exceptionally high market risks.

Alternatively, brownfield investments involve entering a foreign market following the acquisition of an existing local firm. This allows for very rapid market entry and the immediate acquisition of strategic assets, such as established distribution networks, a pre-existing client portfolio, and brand awareness; on the other hand, acquisitions entail risks, such as the cultural distance between the host country and the home country of the investment, which can compromise the post-acquisition integration process, leading to conflicts and operational inefficiencies (Kogut and Singh, 1988).

When entering markets characterized by high uncertainty or significant cultural distance, as demonstrated by Kogut and Singh (1988), Joint Ventures (JVs) are preferred. These arise from a strategic alliance between two or more entities, such as the foreign multinational and the local firm, which jointly leverage synergies, know-how, and capital. Such a partnership enables the foreign multinational to share financial burdens and risks, allowing it to benefit from the local partner's knowledge regarding the competitive conditions, culture, language, political systems, and economic systems of the host country (Hill, 2021).

Underscoring the distinction between the two main foreign market entry modes is their correlation with the host country's level of development. It is important to note how cross-border M&As, despite experiencing a gradual decline in recent years, still represent a large share of FDI inflows in developed economies, particularly in the United States, although their value remains subdued. Conversely, greenfield investments are a dominant share of FDI in developing countries, as, involving the creation of new facilities, especially in the industry and service sectors, they have a significant development impact

through productive capacity build-up, job creation, and technology and know-how dissemination (UNCTAD, 2025).

## **1.5 Economic Theories of Foreign Direct Investment**

This section presents a brief analysis of the primary theories of international trade, starting from the classical theories of Smith and Ricardo up to Dunning's eclectic paradigm to explain what drives a firm to invest abroad, all aimed at providing a foundation for a deeper understanding of the determinants and effects of FDI across various countries.

Classical economic theories of international trade trace their origins to the turn of the 18th and 19th centuries; first, Smith, with his theory of 'absolute advantage,' describes how international trade is justified by the fact that a country specializes in the production of a good or service for which it holds an absolute advantage, in terms of productive efficiency, over another country, which in turn will specialize in the production of a good or service for which it is more efficient, thereby allowing both parties to benefit from the exchange. This model was subsequently refined by Ricardo with the theory of 'comparative advantage,' noting how trade opportunities arise even if a country possesses a relative advantage in the production of a specific good or service compared to another, thus allowing it to export to countries over which it holds an advantage and import from countries over which it holds a disadvantage. Therefore, according to these theories, international trade relies on the differences in the endowments of factors of production—such as raw materials, capital, labour costs, technology, and entrepreneurship—among various countries. Such classical approaches still serve as a theoretical tool to justify an initial degree of internationalization, such as exporting, but they are profoundly inadequate for explaining the growing flow of foreign direct investments, especially among advanced countries (Goldstein and Piscitello, 2007).

Starting from this observation, Hymer (1976) identifies greater market power as the primary motivation for FDI; in an initial phase, the firm grows in its domestic market through a process of concentration, and subsequently, when the firm can no longer grow within the local market, it exploits the profits derived from the degree of monopoly achieved to expand internationally, thereby reinforcing its strategic power and control over destination markets as well. Furthermore, according to Hymer, multinational enterprises manage to exploit the imperfections of the international market to their advantage by relying on their intangible assets (technology, skilled personnel, know-how,

patents, and exclusive trademarks) to offset the costs and barriers associated with operating a business abroad (the liability of foreignness (Zaheer, 1995)); moreover, given the nature of their competitive advantages, firms prefer to maintain a certain degree of hierarchical control to protect themselves from the risk of diffusion and imitation, effectively favouring FDI over other forms of internationalization.

The dynamics of international trade have also been influenced by the growing development of new technologies, which has generated a technological gap among the various countries involved; in this context, Vernon (1966) proposed the product life cycle theory, illustrating how the exhaustion of this gap leads to a shift from exports to FDI. This model is divided into four distinct phases: innovation, growth, maturity, and decline. An initial phase, the firm begins to sell its innovative and non-standardized product; this moment is characterized by uncertainty regarding the new technology, and the firm seeks to maintain a certain degree of flexibility by locating its production close to its factors of production and high-income final consumers, all while remaining in its home country. As the product moves toward standardization, the need for flexibility diminishes, and the focus shifts toward reducing production costs; the product begins to be recognized in other high-income countries as well, which leads to an increase in domestic production for the firm, allowing for the exploitation of economies of scale and the initiation of exports. In this phase, if the additional production costs and transport costs combined are greater than the costs of producing directly abroad, the firm decides to replace exports with foreign production; parallel to this phase, the technological gap begins to narrow, and the first imitations may emerge among local firms. Thus arises the need to defend market shares and reduce costs associated with tariff barriers and transportation costs, prompting the innovative firm to open production subsidiaries directly in the foreign market—a dynamic linked to the concept of Horizontal FDI, driven by market-seeking rationales. Finally, when the product has reached full maturity, technological innovation is no longer an advantage, and competition drives the minimization of production costs; therefore, the multinational firm decides to shift its production to developing countries, where labour costs are lower—a strategy in line with the concept of Vertical FDI and the logic of efficiency-seeking, from where the finished product can also be re-imported back to the home country. As highlighted by Goldstein and Piscitello (2007), this model by Vernon is characterized by oligopolistic dynamics, where FDI represents a strategic reaction by the firm to protect its market from the entry of new imitators. It is precisely

from this oligopolistic nature of international markets that Graham's contribution emerges, utilizing game theory to formulate his 'exchange of threats' model to demonstrate how the investments of European firms in the United States during the 1970s, also referred to as the 'Atlantic inversion,' were a reaction to the aggressive behaviour enacted by US multinationals in Europe.

A theory that emerged in the 1970s to explain the proliferation of foreign investments and the growth of multinational enterprises is the internalization theory by Buckley and Casson (1976). This theory builds upon Coase's (1937) transaction cost theory, which posits that the free-market entails transaction costs—such as information search, negotiation, and monitoring—to secure exchanges, thereby prompting the firm to adopt a hierarchical organizational structure to transform these burdens into internal coordination costs that prove more economical and efficient. Applying this theory to the context of multinational enterprises, Buckley and Casson observed that international markets for intermediate goods, particularly concerning intangible assets, are structurally imperfect. The presence of market failures and inefficiencies, stemming from bounded rationality alongside imperfect and asymmetric information, leaves the firm vulnerable to opportunistic behaviour by local firms, this forces the multinational to favor a hierarchical solution to own and control foreign operations, facilitated by FDI, rather than resorting to contractual transactions with independent foreign firms. The internalization paradigm works both for horizontal and vertical FDI: the difference is that the former internalizes a market for proprietary assets (ownership inputs), the latter for intermediate products (Caves, 2007).

The eclectic paradigm proposed by Dunning in 1980 synthesizes all the previously discussed theories into three primary determinants of international activity, which, again according to Dunning, must occur simultaneously for a firm to decide to undertake foreign direct investment and operate as a multinational enterprise. These factors are:

- Ownership advantages – O, building upon Hymer's propositions, the firm must possess competitive advantages in order to operate in a foreign market, which, as highlighted by Dunning and Lundan (2008), can encompass both tangible and intangible assets.
- Location advantages – L, dependent on the specific characteristics of the host country in terms of attractiveness, such as factors of production, transportation

costs, market size, institutional policies aimed at attracting foreign investment, and social advantages like a narrower cultural distance between the host country and the investing country.

- Internalization advantages – I, refer to the fact that a firm gains an advantage in foreign markets by internalizing its transactions rather than resorting to market mechanisms through the use of direct investments.

This paradigm demonstrates that foreign direct investments are not a phenomenon driven by a single cause, but rather by the intersection of the firm's proprietary resources and competitive advantages (O), the characteristics of the country chosen for investment (L), and the necessity to control and protect these advantages through internalization (I).

## **1.6 Determinants of FDI**

Multinational corporations' activities do not follow a consistent and homogeneous pattern in their distribution across the world's various countries and regions. This is because companies can be influenced by different factors that can make a host country more or less attractive for investment. Several empirical studies address these factors, differentiating between various economic regions, their levels of development, sectors of interest, sometimes resulting in some inconsistency in the results. As previously stated, foreign direct investment is defined as an investment aimed at acquiring a lasting interest in markets outside their own national borders. These investments are motivated by the prospect of high profitability, coupled with the possibility of reducing production costs, directly accessing the local market, acquiring higher-quality natural resources and human capital at a lower cost, thereby increasing their efficiency and improving their international market positioning. According to the OLI paradigm, these flows of capital are driven by Location (L) advantages. In practice, the specific empirical factors that attract the multinational are the tangible manifestations of this advantage. On the other hand, FDI inflows into a host country are crucial to their economic growth, as they bring with them knowledge, technology, capital, and job creation. For this reason, various countries compete to attract as many of these investments as possible, especially developing and less developed countries, which rely particularly on this foreign capital to transform and accelerate their economies. However, the ability to attract more or less investment will depend on the interaction of economic, institutional, and political factors (Islam and Beloucif, 2024).

### *Market size*

Market size as measured by GDP or GDP per capita plays a crucial role in the decisional process of MNEs, it seems to be the most robust FDI determinant in econometric studies. This determinant is particularly important for companies that consider making a horizontal FDI and pursue a market-seeking approach. Due to the larger market size, the companies are able to better take advantage of economies of scale, spreading their fixed costs over a larger potential demand in that market. For instance, recent studies of Nguyen and Cieslik (2021) report how the total income and the similarity in market size remain the main determinants for Horizontal FDI, underlining how, as the fastest-growing region in the world, the Asian market will grow closer to the market size of the European countries, implying that the Horizontal FDI from Europe to Asia will continue to increase. From a sector perspective, while market size is relevant for services and manufacturing, it is irrelevant for the primary sector, which is driven more by the availability of natural resources than by local macroeconomic demand. Furthermore, this determinant has the opposite effect for the other two sectors, as a higher level of GDP per capita can deter efficiency in seeking manufacturing due to higher labour costs, while attracting more FDI for the tertiary sector, where proximity to a market characterized by relatively high wages and purchasing power is required (Walsh and Yu, 2010).

### *Transport costs*

Transportation costs heavily influence the decision to undertake FDI. This dynamic is based on the proximity-concentration trade-off theory developed by Brainard (1997), which states that a company prefers to undertake local production rather than export when shipping costs exceed the fixed costs of new plant. Therefore, this study highlights how there is a positive correlation between transportation costs and HFDI, while it finds a negative correlation with efficiency-seeking VFDI which rely on a continuous cross-border supply chain. This dynamic is also explained in the literature through gravity models, which show that distance serves as an econometric indicator for transportation costs. This positive correlation is further confirmed by the work of Helpman et al. (2004), demonstrating that when transportation costs associated with distance increase, firms are more inclined to engage in HFDI. A more recent study conducted by Irarrazabal et al. (2013) reports a controversial result, stating that high transport costs can act as a severe deterrent. Although trade barriers can incentivize HFDI by bypassing the cost of shipping

the finished product, excessive distance can deter all forms of multinational production, as the logistics costs to support the intra-firm supply chain can be unsustainable, especially for core products.

#### *Labour cost*

Labour costs are one of the main motivating factors for efficiency-seeking investments. In fact, in value chains, activities with a high level of unskilled labour intensity are relocated to developing countries to exploit the low cost of labour. The study by Bellak et al. (2008), on the transition economies of Central and Eastern Europe (CEEC), measures this factor as unit labour costs, which weight labour costs with productivity, and reports how an increase in unit labour costs translates into a contraction in FDI flows. An example of this outsourcing dynamic is the case of maquiladoras, production plants relocated by US firms to Mexico to exploit the difference in production factors between the two countries (Feenstra and Hanson, 1997). In this context, it's important to consider that labour cost differentials do not create static advantages but lead to ongoing global industrial reallocation, for example China, which began as the "world's factory" leveraging its availability of low-cost labour, attracting immense efficiency-seeking foreign direct investment in labour-intensive sectors, however, its sustained economic growth, resulting in rising domestic wages, has eroded this advantage. In response, Chinese companies themselves are investing capital and relocating their labour-intensive operations to economies with lower incomes and costs, such as sub-Saharan Africa and other emerging countries (Lin, 2012).

#### *Exchange rate*

Firms can be influenced by a more or less favourable exchange rate in their investment decisions. A weaker exchange rate can be expected to increase vertical FDI, as firms can take advantage of relatively low prices in host markets to purchase equipment or to increase profits in their home country on goods shipped from that market, in the case of reimported production. This relationship finds empirical support in Froot and Stein (1991), who show that within an imperfect capital market model, a weaker host country currency tends to increase inward FDI. This is explained by the fact that depreciation makes host country assets less expensive than the same assets in the home country. Blonigen's (1997) study reaches similar conclusions focusing on firm-specific assets,

reporting that a devaluation of the local currency facilitates the acquisition of such resources by foreign investors, thus stimulating FDI inflows. On the other hand, it could be theorized that a strong exchange rate, effectively acting as a barrier to trade entry, pushes foreign firms to relocate production directly to the host country (HFDI). This thesis, however, has not found solid support in empirical studies (Walsh and Yu, 2010).

### *Openness*

Trade openness refers to the degree to which an economy is structurally integrated into the international trading system; it is typically measured as the ratio of total trade to GDP. There is considerable evidence indicating that trade openness is a significant determinant of FDI. Studies such as those by Edwards (1990) and Pistoiesi (2000) report a strong positive effect of openness on FDI. Furthermore, Resmini (2000), studying manufacturing investments in Central and Eastern Europe, found that this type of vertical FDI benefits from trade openness, as it is a sector for which international trade in intermediate goods and capital is important (Chakrabarti, 2001). On the other hand, a decrease in openness could lead to more horizontal investments, as such investments could benefit from circumventing trade barriers by duplicating the production process directly in the host country.

Trade openness remains a significant determinant of FDI inflows even for large emerging markets such as the BRICS economies (Brazil, Russia, India, China, and South Africa) (Maryam and Mittal, 2020), where, despite differences, it is reported that policies aimed at liberalizing trade regimes are strongly correlated with foreign capital participation. Although this factor is vital, many countries, especially those in sub-Saharan Africa, have historically benefited to a lesser extent than other developing countries, partly because a lack of infrastructure has acted as a constraint (Asiedu, 2002).

### *Agglomeration effects*

Studies identify the presence of agglomeration effects as a factor that can induce firms to locate investments in certain countries. Agglomeration effects can arise from the presence of knowledge spillovers between firms, the availability of specialized production factors, and the opportunities arising from links with suppliers and customers. These conditions, when present simultaneously, lead to the creation of an industrial cluster in the host country, where it is more efficient for firms to be located in proximity to other firms. In

particular, foreign direct investment can benefit from the presence of external economies of scale, and new investing firms can reduce the uncertainty and risk of a given investment, finding it rational to imitate the past investment decisions of other investors (DeCoster and Strange, 1993; Head, Ries, and Swenson, 2000). Empirical evidence on the effects of agglomeration on FDI is reported in several studies, including Wheeler and Mody (1992) in the case of US firms and Barrell and Pain (1999) in the Western European context.

### *Institutional quality*

Institutional quality is a key determinant of FDI attraction, particularly for less developed countries, and is assessed based on various factors, including political stability, protection of property rights, control of corruption, the burden of bureaucracy and regulations, contract enforcement, protection of civil rights, and the effectiveness of government action. Studies on the effects of good and bad governance generally confirm that countries characterized by good governance attract greater investment (Henisz, 2000; Stein and Daude, 2001; Globerman and Shapiro, 2002) and that strong intellectual property rights (IPR) protection generally has a marked positive effect on FDI flows (Li and Resnick, 2003) as companies are more comfortable using independent foreign suppliers, whereas in the absence of a sufficient level of protection they could decide to keep the business internally. Furthermore, the importance of IPR protection varies between industries, especially for high-technology sectors that are much more sensitive to differences on the extent of existing legal protection and on the quality of enforcement mechanisms between different countries. The study conducted by Smarzynska Javorecik (2004) found that weak protection seemed to induce foreign affiliates in all sectors to focus their activities more on distribution rather than on production.

Regarding bad governance, corruption is a major concern, and much empirical evidence confirms that it has a negative impact on attracting FDI, although it is sometimes difficult to isolate statistically. Indeed, across OECD countries, variations in the level of corruption and bad governance are not so marked as to lead to a difference in FDI flows. An exception is resource-seeking investments, which are relatively insensitive to bad governance, as firms are limited in their choice of where to invest. Furthermore, corruption is perceived by investors as an arbitrary tax that increases operating costs and discourages the inflow of foreign firms (Shleifer and Vishny (1993); Wei (2000)). Finally,

corruption not only reduces the inward flow of FDI, but also leads to a higher proportion of investments from relatively more corrupt countries (Cuervo-Cazurra (2006)), corruption is also linked to the choice of the type of entry modality of multinationals, which prefer short-term contracting and joint ventures to mitigate the impact (Uhlenbruck et al. 2006).

### *Fiscal incentives*

Multinationals, driven by the goal of maximizing their global profits, show a certain sensitivity to tax incentives in their decisions. In fact, empirical evidence shows an investment elasticity with respect to taxes equal to -0.6 (Hines, 1999). Devereux and Griffith (1998) reported that tax differences primarily affect the choice of where to locate an investment, rather than the decision to undertake it or not. Many countries, in an attempt to incentivize multinationals to undertake investments in their country, resort to tax discounts or subsidies in order to reduce the fixed and operating costs of a subsidiary, however, triggering the so-called tax incentive paradox. By incentivizing only specific sectors, they fuel lobbying pressure (rent-seeking) from other sectors to receive the same benefits. A proliferation of such incentives can over time lead to a complex tax system, encouraging tax evasion (Klemm (2010)). In conclusion, if on the one hand incentives can positively counteract the effects of FDI, on the other hand a complex tax structure, combined with institutional weaknesses, risks generating market distortions that can cancel out such benefits (Morisset and Pirnia, 2000).

## **1.7 External effects of FDI**

In the previous paragraph, we analysed the various determinants that drive multinational enterprises to undertake direct investments in a foreign market and now we focus on the effects that such investments contribute to create.

Paus and Gallagher (2008) outline a first conceptual framework, subsequently extended by Farole and Winkler (2014), which studies foreign direct investment (FDI) spillovers, specifically the mediating factors that shape their nature and extent. According to this model, several forces determining the success of a spillover, such as the spillover potential of foreign investors, the absorptive capacity of local agents, and the interaction between them.

A potential spillover represents the set of theoretical benefits in terms of productivity, technology, and knowledge that a foreign investor makes available in the host country,

while absorptive capacity is the ability of local firms and workers to recognize the value of new external information, assimilate it, and apply it for commercial ends (Cohen and Levinthal, 1990).

These forces interact with four main mediating factors: the foreign and domestic firm characteristics, the host country factors and institutional framework, and the transmission channels to determine actual FDI spillovers (*see figure 2* for the representation of the framework, the processes described in the model are interdependent, making it a dynamic model).

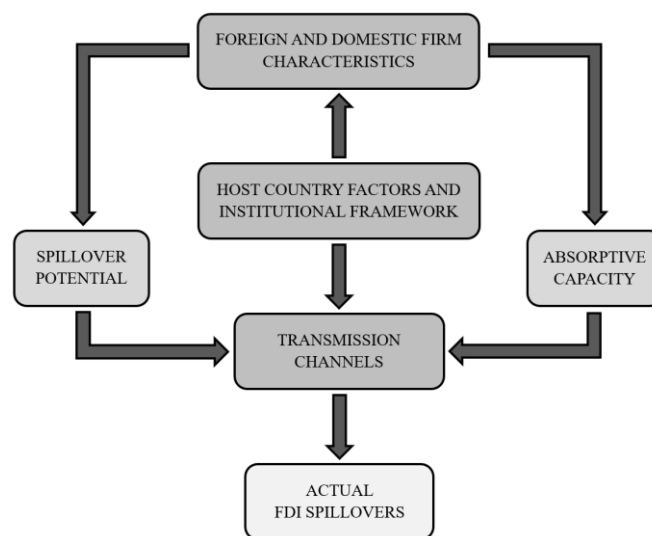


Figure 2 - The Role of Mediating Factors for FDI Spillovers: A Conceptual Framework

### 1.7.1 Transmission channels

When discussing spillovers, a natural question arises regarding where and how these FDI spillovers occur. Several transmission channels have been identified in the literature, the most significant being: supply chains, labour turnover, and changing market forces.

Spillovers along the supply chain operate strictly vertically, given that the local firm is vertically integrated, whereas through the other channels, labour turnover and changing market forces, they can operate both horizontally and vertically. These vertical spillovers can be distinguished into backward spillovers, when the local firm becomes a supplier for multinational enterprises, and forward spillovers, when the foreign enterprise provides inputs to the local firm. Subcontracting arrangements represent another potential spillover

channel, occurring when a foreign firm outsources specific production phases to local companies operating within the same industrial sector.

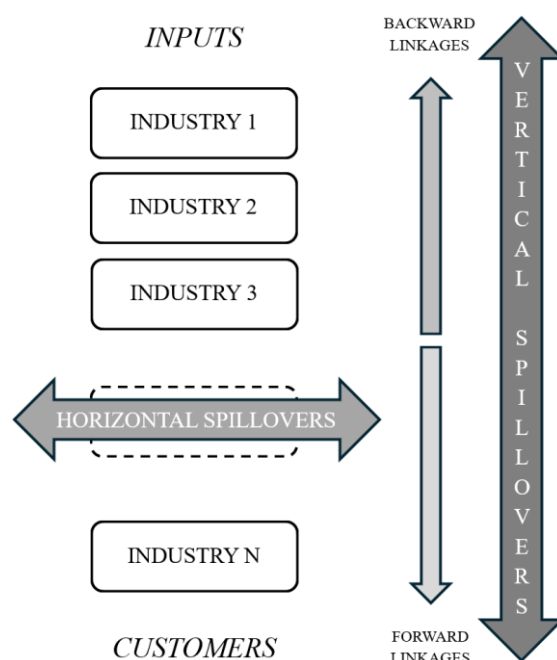


Figure 3 - Types of spillover

These spillovers occur along the supply chain for multiple reasons. Primarily, multinationals may demand better and/or a wider range of inputs, enforcing strict standards regarding quality, delivery times, and technological efficiency, thereby increasing overall productivity. Spillovers can occur intentionally, as multinationals may be interested in assisting local producers by sharing their technological capabilities, providing personnel training, assisting with quality control, offering insights for production line organization, and providing inputs and machinery.

Conversely, spillovers can also occur unintentionally, where the mere presence and proximity of the multinational within the host country's industry can induce knowledge diffusion in the sector, leading to an increase in competitiveness. In fact, many investing firms do not necessarily attempt to restrict this spontaneous generation of spillovers, as it can trigger a win-win mechanism: a general increase in competitiveness within a specific industry can enhance the productivity, reliability, and quality of the entire sector (Blomström et al., 2001). Naturally, competition does not always generate positive effects, when foreign firms implement overly aggressive strategies, they can cause a market-stealing effect, where local companies become too uncompetitive to keep pace with foreign entrants (Goldstein and Piscitello, 2007).

When executing an investment, multinationals provide their workforce with knowledge and skills that cannot be entirely internalized, these can leak on both a horizontal and vertical level through labour turnover. Labour-driven spillovers are typically not realized in the short term, as the knowledge must first be absorbed by the local workforce. However, in the short term, it is more likely that multinationals will attract high-quality labour away from domestic firms by offering superior benefits and higher wages, potentially generating a negative spillover effect (Sinani and Meyer, 2004; Hoekman and Javorcik, 2006; Crespo and Fontoura, 2007). Furthermore, the impact of these spillovers depends on the skill level of the target workforce. Different educational backgrounds dictate different learning curves and, consequently, different absorptive capacities, where the capacity to absorb new knowledge can sometimes be larger for individuals with a lower educational background due to the steeper learning curve they face.

Spillovers through labour turnover depend on several factors: the ability of domestic firms to attract labour previously employed by multinationals, the ease of establishing new local businesses, the amount of knowledge and skills that local workers have acquired within the multinational firms, and the ability of labor to flow freely between firms.

Local producers are also exposed to the products, marketing strategies, and production processes of multinationals, deriving knowledge spillovers from them through imitation and reverse-engineering. This diffusion of knowledge, known in the literature as the demonstration effect, encourages local firms to adopt advanced technologies and processes, as observing the success of foreign firms reduces uncertainty regarding the effectiveness of such tools.

Finally, spillovers can occur through changing market forces via competition, collaboration, and imitation. As previously stated, the entry of a foreign firm results in increased competition in product, labour, and credit markets between local and foreign enterprises, particularly if the multinational also serves the local market. In the short and medium term, local firms may face losses in sales and market share.

### **1.7.2 Characteristics of the foreign firm**

Farole and Winkler (2014) divide the characteristics of the foreign firm into various components that dictate spillover potential. The first component concerns the degree of ownership the foreign firm acquires through the investment, although its effects on knowledge transfer are somewhat ambiguous. On the one hand, a larger share of foreign

ownership is positively correlated with the parent firm's willingness to transfer its proprietary knowledge, especially in the form of technology. On the other hand, a greater involvement of local firms, including through contractual relationships such as Joint Ventures (JVs), can provide beneficial effects for domestic firms, as foreign firms may be less able to protect and reduce spillovers, unintentionally encouraging knowledge leakage through demonstration effects. This also benefits local human capital, which gains the opportunity to be involved at the top management level and learn faster. Empirical studies tend to support the view that JVs foster more positive spillover effects compared to other foreign ownership structures.

Another aspect that moderates FDI spillovers is the length of the foreign firm's presence in the host country. Longer-lasting relationships have a greater impact on the local economy, as established foreign affiliates are more familiar with the local context and are therefore more efficient in managing relationships with local suppliers and the workforce. The motives behind FDI, as previously explored, are also closely linked to the generation of spillovers. Resource-seeking investments were traditionally believed to have limited spillover potential due to their high capital and technology intensity, as well as limited time horizons, however, more recent studies affirm the growing existence of backward linkage potential driven by the fact that many extractive companies rely on local suppliers for inputs that fall outside their core competencies. Efficiency-seeking investments, typical of the manufacturing sector, are considered excellent vehicles for spillovers., indeed, by requiring a lot of manpower and a wide range of supplies, they allow this investment to integrate into the local economic fabric, making it an excellent candidate for the generation of spillovers. Nevertheless, activities focused purely on export-oriented assembly often merely exploit low local wages without transferring specific technologies or knowledge. Market-seeking investments present strong potential, especially in the retail sector, as retailers tend to source from local producers, particularly for food and other perishable products. Finally, asset-seeking investments, where foreign companies actively seek advanced skills and technologies in another country, present the highest spillover potential, this is because they require closer collaboration with local suppliers, customers, and workers, as seen in joint R&D activities.

Different global sourcing and production strategies also determine the potential for spillovers: highly internalized production or models such as co-sourcing severely limit local opportunities, while outsourcing and co-location, namely, the establishment of foreign input suppliers in the host country, create new opportunities for local companies

and allow them to exploit the full potential of spillovers. Especially for high-technology industries, the effects on local companies most often materialize as second-tier suppliers, as access to the role of first-tier supplier is often precluded by the consolidation of global supply chains.

The benefits of spillovers also depend on the technological intensity of multinationals, with the most advanced generating greater knowledge transfer, provided that the technological gap with local firms is compatible with their absorptive capacity. It is also essential to distinguish between the technology of the final product and that of the production phases, since, as frequently happens in developing countries, labour-intensive low- and medium-tech activities are often relocated, where the potential spillover can be reduced along the production chain.

The home country of the FDI plays a key role in potential spillovers. It significantly influences managerial practices and corporate culture, which are reflected in differences in labour deployment, employee training approaches, and skill development, moreover, the presence of multiple foreign firms originating from diverse countries brings substantial benefits to the absorptive capacity of local firms, increasing their propensity to learn and open up to innovation. Simultaneously, such heterogeneity enhances knowledge transmission channels, creating more opportunities to learn through observation, imitation, collaborations along the supply chain, and the transfer of skilled workers through labour turnover.

Finally, the foreign firm's entry mode into the host market matters. Greenfield investments introduce a sudden impact on local economies, which come into contact with new leading technologies through an extensive knowledge transfer process. This generates positive spillovers, unless the technological gap is too wide to allow absorption by domestic firms. In the case of Brownfield investments, such as Mergers & Acquisitions (M&As), the initial effects are more limited, as the foreign firm is more inclined to adopt the host country's existing technology and only gradually improve upon it.

### **1.7.3 Characteristics of the local firm**

While transmission channels and the characteristics of the foreign firm are significant, it is equally important to consider the characteristics of the local firm and its absorptive capacity, which depends on a wide range of determinants.

The first factor mediating FDI spillovers is the technological gap, and opinions regarding its role are conflicting. On one hand, a wide technological gap can be advantageous for local firms as it increases the catching-up potential and the potential for FDI spillovers. On the other hand, if the gap between multinationals and local firms is too large, the latter may be less capable of absorbing spillovers (Jordan, 2011). Girma (2005) reconciles these views by defining that above or below a certain threshold, spillover effects are limited or even negative.

The absorptive capacity of local firms is positively correlated with their R&D activities. The same applies to firm size, a concept linked to productivity, where larger firms are able to compete with multinationals, to imitate their tools, and to attract workers previously employed by foreign enterprises. They are also more visible, making them more likely to be selected as local suppliers and more capable of meeting the required standards and volumes. Furthermore, the availability of skilled labour is positively correlated with the ability to absorb foreign technology, such workers are better at reverse-engineering products or adopting the sophisticated management practices introduced by multinational corporations, particularly in larger firms (Sinani and Meyer, 2004).

Various aspects of localization also prove important for the magnitude of FDI spillovers. First, agglomeration economies, the co-location of foreign and domestic firms in the same region, can mediate benefits. Second, firms located in regions with better access to skilled labour or research facilities tend to have higher absorptive capacity compared to those in less developed regions. Third, geographical distance from multinationals is a determining factor: positive spillovers are often circumscribed within the multinational's region, while negative spillovers may arise from foreign firms located outside the region (Resmini and Nicolini, 2007).

Export intensity is also linked to the absorptive capacity of domestic firms for two reasons. First, local exporters are characterized by higher productivity, making them more resilient to the negative rivalry effects generated by foreign firms (Crespo and Fontoura, 2007). Second, as a local firm exports more, it faces less direct competitive pressure from multinationals in the domestic market, which may reduce the incentive to improve, thereby limiting positive spillovers.

The distinction between private and state-owned enterprises (SOEs) is also fundamental. Private firms are argued to have higher absorptive capacity due to their greater willingness to restructure and imitate, as well as their market- and export-oriented nature.

The competition factor follows a trend similar to the technological gap, where FDI spillovers are larger for countries below a minimum threshold ("no competition") and above a maximum threshold ("dynamic competition") of development. Between these thresholds, FDI spillovers are smaller due to a crowding-out effect on local firms (Meyer and Sinani, 2009).

#### **1.7.4 Host Country Factors and the Institutional Framework**

As illustrated in Figure 2, host country factors and the institutional framework play a mediating role in FDI spillovers across three complementary fronts, influencing the characteristics of both foreign investors and local firms, and affecting the transmission channels, which consequently influence spillover potential and absorptive capacity.

A primary factor that can influence the effect of FDI concerns labour market regulations. Javorcik and Spatareanu (2005) found that greater labour market flexibility has a positive impact on the probability of attracting foreign investment, although its translation into spillovers depends on the absorptive capacity of domestic firms, however, an excessively flexible labor market could disincentivize companies from investing in long-term employee training, effectively reducing the ability of local workers and firms to acquire skills and knowledge. Conversely, rigid employment regulations correspond to an increase in training investments, thereby enhancing the absorptive capacity of local firms, reducing labour turnover and therefore the possibility of spillovers. Absorptive capacity can also be influenced by regulations regarding wage constraints, where, unlike state-owned enterprises (SOEs), private companies face fewer constraints and can attract more highly skilled labour by offering higher wages, effectively increasing their absorptive capacity (Farole and Winkler, 2014; Hale and Long, 2011).

A second factor that influences the quality of FDI attracted and thus the potential for spillovers is the strength of intellectual property rights (Gorodnichenko, Svejnar, and Terrell, 2007). On the one hand, having strong intellectual property rights encourages foreign firms to transfer more advanced technologies with strong spillover potential; on the other, these same rights act as barriers to knowledge and technology transfer to local firms. While policies mandating technology transfer to domestic firms could be implemented, this might trigger a defensive reaction from foreign investors, who could preemptively limit the level and nature of the knowledge they transfer to their local affiliates.

The human capital endowment of domestic firms, as previously discussed, influences their capacity to absorb knowledge spillovers. This human capital is heavily influenced by the local learning and innovation infrastructure, which shapes the absorptive capacity of the workforce, especially managers, and acts as a key determinant of the effectiveness of knowledge transmission channels.

Furthermore, a country's trade policy can influence both spillover potential and absorptive capacity. While more open markets have the ability to attract foreign firms and thus hold greater spillover potential, excessively open markets might lead foreign investors to become highly export-oriented, subsequently encouraging local firms to become so. According to some studies, foreign investors are more likely to introduce new technologies in countries with more inward-oriented regimes, thereby increasing the extent of spillovers through demonstration effects, conversely, in outward-oriented regimes, foreign firms might focus more heavily on international distribution and marketing (Crespo and Fontoura, 2007). In an open trade regime, domestic firms are better prepared for the competition resulting from the entry of foreign companies, which enhances their ability to absorb FDI spillovers (Meyer and Sinani, 2009; Havranek and Irsova, 2011). Regarding investment policies, such as subsidies, foreign firms that benefit from them have been shown to generate positive backward spillovers (Du, Harrison, and Jefferson, 2011). Industrial policies, specifically programs designed to support the development of local SMEs, also play an important role in facilitating FDI spillovers, particularly when the productivity and technological gap is wide, however their success relies heavily on the domestic absorptive capacity of local firms.

To conclude, institutional quality is a determining factor capable of influencing the type of FDI attracted, the spillover potential, and domestic firms' absorptive capacities. A study conducted by Meyer and Sinani (2009) utilizing the Corruption Perceptions Index found that a country's level of transparency has a U-shaped effect on FDI spillovers: countries with both low and high levels of transparency benefit the most from FDI, whereas countries with a medium level exhibit weaker spillover.

## **Chapter 2: African continent and FDI trends**

### **2.1 The African continent: geography, population, economy**

The African continent currently comprises 54 internationally recognised countries, most of which gained independence from European colonialism in the second half of the twentieth century. However, this process of colonisation and subsequent decolonisation left behind fragmented states with borders that frequently fail to reflect ethnic and linguistic realities, giving rise to crises of institutional legitimacy and internal conflicts that have characterised the continent's post-independence history.

Economic, social, cultural, and historical-political differences divide the continent into two macro-regions: North Africa and Sub-Saharan Africa (SSA). The former consists of six countries (Algeria, Egypt, Libya, Morocco, Djibouti, and Tunisia) that the World Bank includes in the geopolitical region known as MENA "Middle East and North Africa", this grouping is justified by reasons that go beyond geographical proximity, as it reflects deep socio-cultural and linguistic ties, such as the prevalence of the Arabic language and the Islamic religion, as well as the sharing of similar structural challenges. The second macro-region comprises 48 states with more heterogeneous characteristics, which are in turn divided by the United Nations Statistics Division (UNSD) into 4 sub-regions - Western Africa, Eastern Africa, Central Africa, and Southern Africa - in order to ensure demographic homogeneity in statistical reporting. It should be noted that these distinctions are not uniform, but vary depending on the body that establishes the criteria, as in the case of the SSA macro-region, the United Nations includes Djibouti, whereas the World Bank includes Sudan.

In 2024, the African population surpassed the threshold of 1.5 billion inhabitants, of whom 1.29 billion reside in SSA, approximately 15.9% of the entire world population, a figure that underscores the demographic weight of this region in the global economic and political landscape. Since 1960, the population has grown fivefold, representing the most rapid relative demographic expansion in recent human history. From 2015 to 2024, the average annual population growth rate in SSA was approximately 2.6%, compared to a global average of 1.1%. It is projected that the African population will reach 2.5 billion inhabitants by 2050, accounting for approximately 28% of the global population, more than one in four people (see Fig. 4 & Fig. 5) (UNECA, 2024).

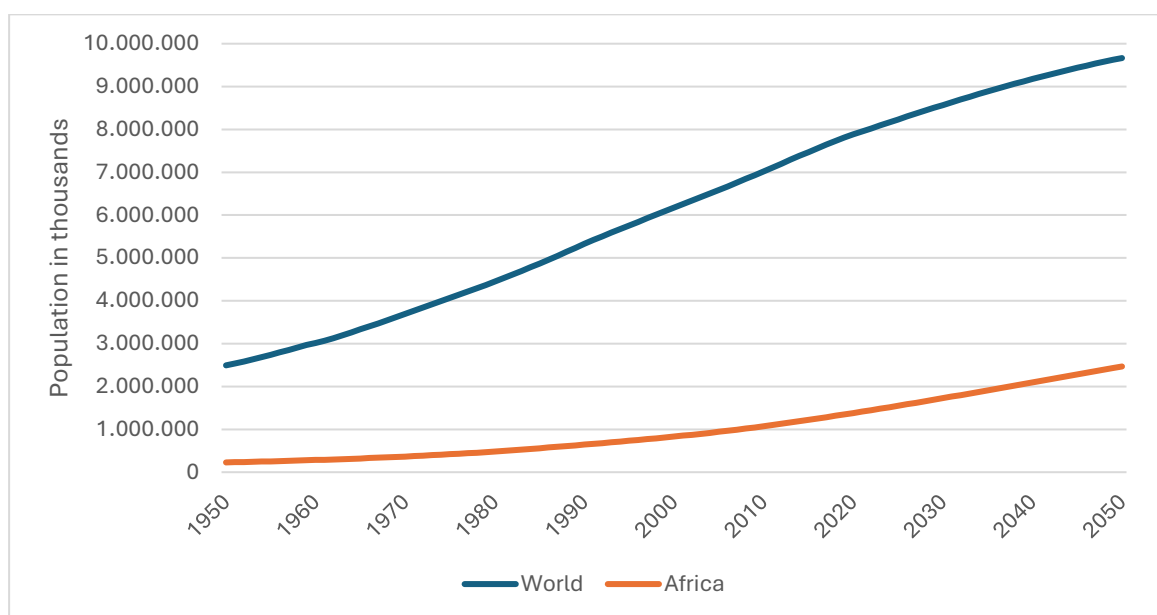


Figure 4 - Population evolution: comparison between Africa and the World (1950–2050). Source: Own elaboration based on UN DESA, World Population Prospects 2024 data.

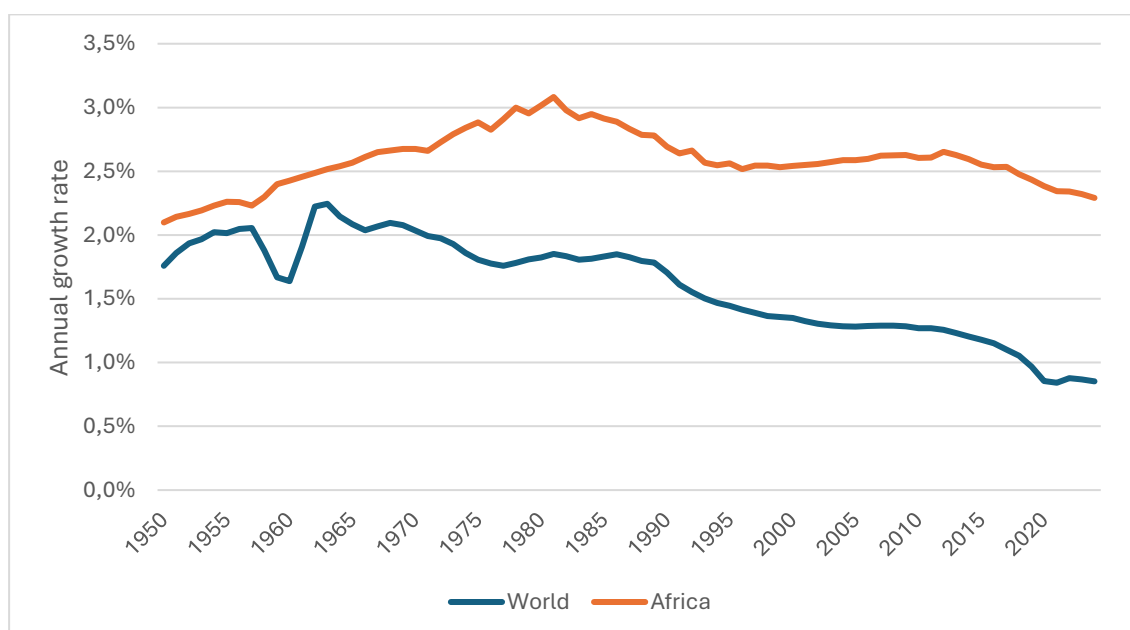


Figure 5 - Annual population growth rate: comparison between Africa and the World (1950–2025). Source: Own elaboration based on UN DESA, World Population Prospects 2024 data.

In 2024, the gross domestic product of SSA reached 1.98 trillion USD, a figure that fails to match that of individual nations such as Canada or Italy, countries with a substantially lower number of inhabitants, thereby highlighting the vast gap between population size and the real value of the economy. Given the strong demographic growth facing the

African continent, it is important to monitor GDP per capita as an indicator of economic growth. The most recent data reports a GDP per capita for SSA of 1,532.9 US dollars in 2024, with values for individual nations such as Burundi standing at 219.4 US dollars, the lowest in absolute terms. However, the single GDP value measured in US dollars does not account for the region's real purchasing power, which is markedly lower than that of Western countries, indeed, calculating GDP at Purchasing Power Parity (PPP), this value doubles or even triples for individual countries, reaching 7.12 trillion US dollars for the entire sub-Saharan area (see Annex.1). Despite this statistical upward adjustment, the situation remains alarming, as a general lack of wealth persists, translating into an insufficient availability of capital to finance development (World Bank, 2026).

The World Bank also adopts a taxonomy based on the different income levels of various countries, specifically, it divides economies into four distinct groups based on Gross National Income per capita (GNI per capita): low income (equal to or below 1,135 USD), lower middle income (1,135–4,495 USD), upper middle income (4,496–13,935 USD), and high income (equal to or above 13,936 USD) (World Bank, 2026, *World Bank Country and Lending Groups*). Applying this classification to the African context reveals significant economic fragmentation, highlighting the internal heterogeneity of the macro-regions. In the North Africa region, for instance, while Algeria and Libya fall into the upper middle income category, the remaining countries sit in lower brackets, meanwhile, in the SSA region, with the exception of the Seychelles which falls into the high income category, the other 47 countries are distributed across the intermediate and low income brackets: 6 belonging to the upper middle income category (Botswana, Cabo Verde, Equatorial Guinea, Gabon, Mauritius, and South Africa), 19 to the lower middle income bracket, and 22 to the low income bracket (see Annex 1).

Sub-Saharan Africa also has the highest extreme poverty rate globally, approximately 72 percent of the world's extreme poor reside here, of whom roughly half live in just five countries (see Fig.6). Despite the economic growth projected for this region, estimated at 3.8% in 2025 and accelerating to 4.4% over the 2026–27 biennium, and a projected GDP per capita growth rate of 1.6% in 2025 and 1.9% for 2026–27, these trends are not sufficient to achieve a meaningful reduction in extreme poverty in the short term. A further critical factor is the low growth-poverty elasticity that characterises the SSA region compared to other developing regions, where high levels of income inequality and

productive distortions make growth less efficient at reducing poverty. It is also observed that, considering the international threshold of 3 USD per capita per day in 2021 purchasing power parity, the poverty rate is projected to fall from 49.8% in 2025 to 48.4% in 2027, while the absolute number of people in extreme poverty continues to rise due to demographic growth, increasing from 576 million in 2022 to an estimated 671 million in 2027. Still, overall modest growth, fast population growth, and limited investment in sectors that generate income for the poor remain a binding constraint to accelerating poverty reduction (see Fig.6) (World Bank, 2025. *Africa's Pulse*).

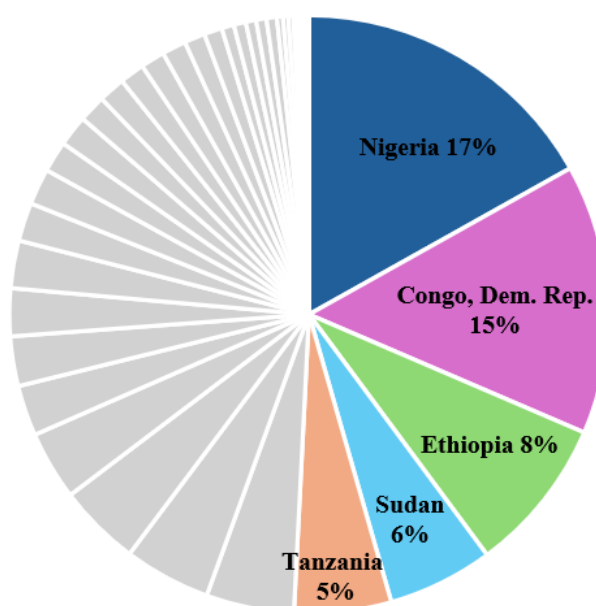


Figure 6 - Five Countries Account for Half of the Poor in Sub-Saharan. Source: World Bank Poverty and Inequality Platform

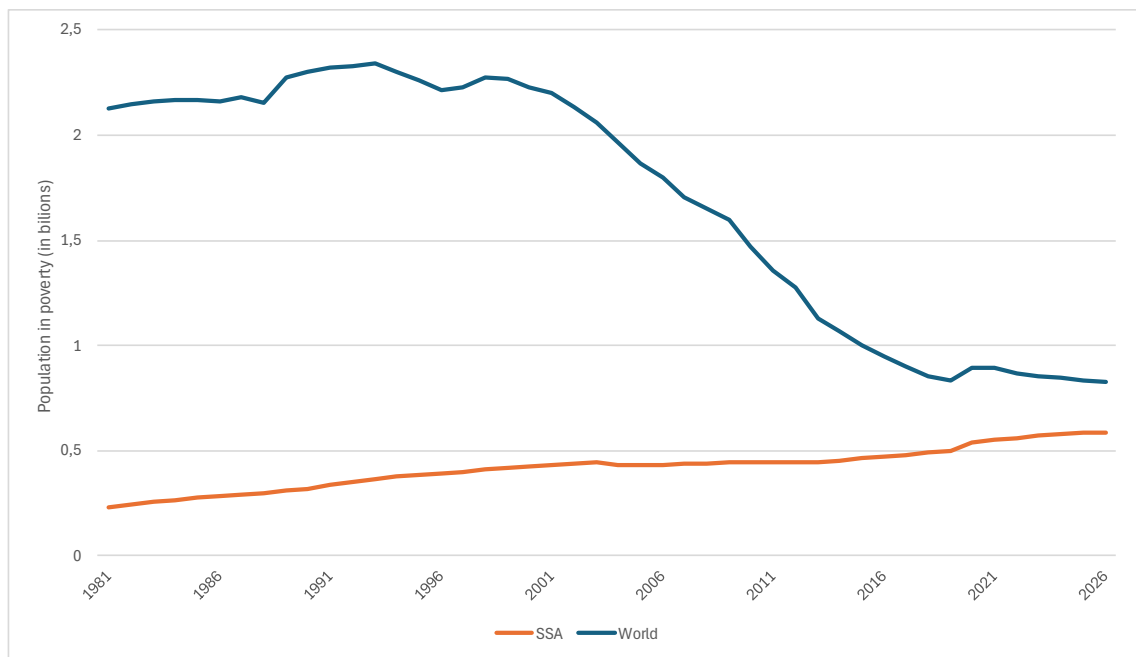


Figure 7 - Population living below the poverty line (2021 PPP). Source: World Bank (2026), *Poverty and Inequality Platform*. Accessed on 2026-05-22

In the context of the massive demographic transition currently underway on the continent, there is an urgent need to stimulate economic growth in order to create new employment opportunities. Projections for the period 2025–2050 indicate that the working-age population of the SSA region will grow at a faster pace than that of other developing regions, with an increase of 620 million individuals, the majority of whom will reside in low-income countries or in contexts characterised by conflict and institutional fragility. Economic growth, however, does not translate into effective job creation, as the responsiveness of the labour market to economic growth is extremely weak: a 1% increase in growth is associated with an average increase of only 0.04% in individuals holding formal salaried employment. This situation, further compounded by economic performance falling below expectations and by the pace of demographic growth, gives rise to an endemic level of underemployment and pushes the workforce towards low-quality occupations, where subsistence self-employment and the informal economy constitute the norm. This employment shortfall is symptomatic of deep-seated limitations in the entrepreneurial and organisational development of the region, significant obstacles to the formation and establishment of enterprises that preclude the creation of formal employment. This dynamic is underscored by the fact that in Sub-Saharan Africa only one worker in six holds formal dependent employment, in contrast to high-income economies, where this ratio is one in two (World Bank, 2025. *Africa's Pulse*).

The macroeconomic picture described above has made the African continent, and SSA in particular, a priority for international organisations such as the International Monetary Fund (IMF), the World Bank, the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Development Programme (UNDP). These organisations, together with others at the national level, support African economies through various forms of assistance, ranging from debt cancellation to the provision of credit and humanitarian aid, as well as indirect investment. However, while these contributions, classified as ODA (Official Development Assistance), are fundamental to the continent's development, they are progressively losing ground, in terms of financial volume, relative to other types of capital flows, foremost among which are Foreign Direct Investments (FDI) (OECD/AUC, 2023).

## **2.2 Institutions and Political Situation**

Sub-Saharan Africa is not a politically unified territory, on the contrary, it exhibits deep internal fragmentation among its various countries. It is neither a confederation of states nor a singular international political entity. The historical, economic, structural, and institutional divergences with the North African region further define the profound heterogeneity of the continent (Ingrao, 2009). Despite this, a future African political integration remains a desirable objective, articulated within programmes such as the African Union's Agenda 2063 (African Union, 2015).

The SSA region remains strongly fragmented both politically and economically despite international interventions, and such fragmentation acts as a barrier to structural and industrial transformation and to the attraction of FDI. To overcome this fragmentation, several Regional Economic Communities (RECs) have been established - among them the East African Community (EAC), the Economic Community of West African States (ECOWAS), and the Southern African Development Community (SADC) - which promote socioeconomic development on a supranational basis, facilitating the free movement of goods, capital, and labour, harmonising cross-border tariffs, and establishing common external tariffs to protect nascent regional industries. Nevertheless, despite the efforts of these organisations, economic integration remains limited.

To understand the current institutional and economic vulnerabilities and fragmentation of Sub-Saharan Africa, it is essential to consider the historical development of this region, which, as previously introduced, has been profoundly shaped by the colonisation processes carried out by the major European powers. These began in the sixteenth century and concluded in the nineteenth century with the arbitrary and artificial partition of the continent (the "Scramble for Africa") and the imposition of institutional models.

In the twentieth century, many countries underwent a transition towards independence, these countries were subsequently subjected, unfortunately, to external and internal conflicts, such as coups d'état and civil wars, as the result of an abrupt transformation and of weak political apparatuses ill-suited to managing such change. These fundamentally fragile and unstable post-colonial structures fostered predatory behaviour on the part of the political leaderships that consolidated power within them (Ingrao, 2006; Carbone, 2005). Problems of legitimacy and authority, as much as issues of territorial control, allowed opportunistic behaviour to prevail, giving rise to inequality at the national level along ethnic and factional lines. Across the continent, moreover, modern governance structures, which more closely follow a Western model in order to enable investment, frequently clash with traditional authorities, producing a profound institutional duality that critically undermines territorial political unity (Fessehaie & Rustomjee, 2018).

One instrument for measuring the vulnerability and fragility of a country is the Fragile State Index, an annual classification and assessment produced by the Fund for Peace since 2005. This index evaluates the challenges, shocks, and pressures to which a country is subject, while simultaneously assessing the capacity of state institutions and society to manage, mitigate, and absorb such pressures effectively (The Fund for Peace, 2024). The FSI employs 12 composite indicators divided into four macro-categories: cohesion indicators (security apparatus, factionalized elites, group grievance), economic indicators (economic decline, uneven economic development, human flight and brain drain), political indicators (state legitimacy, public services, human rights and rule of law), and social indicators (demographic pressures, refugees and internally displaced persons, external intervention). Each of the 12 indicators is assigned a score ranging from zero (maximum stability) to 10 (maximum fragility), the sum of these values generates an overall score for each country ranging from 0 to 120, where a higher value indicates a greater degree of vulnerability. Based on this score, the FSI divides countries into four

groups (Alert, Warning, Moderate, Sustainable), each assigned a different colour (FFP, 2024).

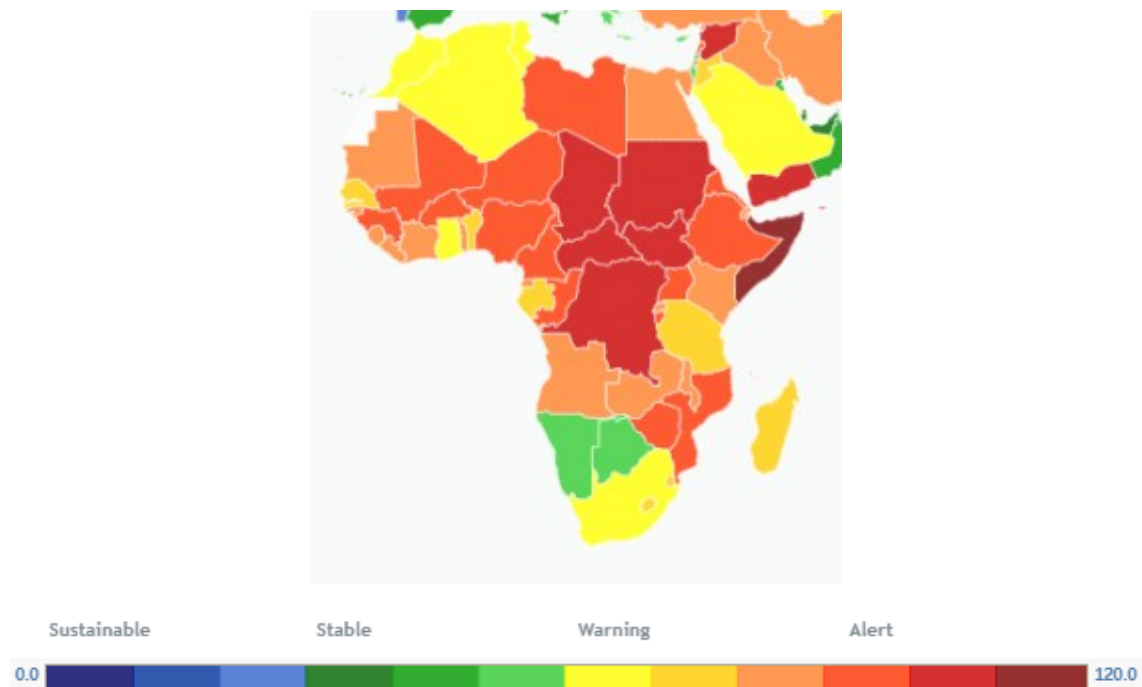


Figure 8 - Fragile States Index (FSI) across the African continent. Source: The Fund for Peace, 2024

Analysing the most recent data for the year 2024, 6 of the top 10 ranked countries are African, rising to 33 when considering the top 50 (see Fig.7). Despite an overall improving trend, as many as 14 African countries currently fall within the Alert zone, 5 within the High Alert zone, and Somalia occupies first place in the Very High Alert zone with a score of 111.3. The only exceptions belonging to positive index ranges are island states such as Mauritius, Seychelles, and Cabo Verde, and Southern African nations such as Botswana and Namibia (FFP, 2024). (See Annex 1).

This classification highlights how the general political environment of the African continent is not favourable to investors. In particular, the external perception is strongly influenced by international indices and statistical data, which consequently tend to associate risk with the intrinsic nature of the country itself, in the absence of genuine direct and in-depth knowledge of the territory.

### **2.3 Industrialization and urbanization**

The African continent requires robust economic growth capable of creating jobs, generating prosperity, and reducing poverty on a large scale. This can be achieved through structural transformation driven by industrialisation, principally by means of an expansion of the manufacturing sector relative to other sectors, such as agriculture and services. Indeed, manufacturing-based industrialisation lies at the heart of the African Union's Agenda 2063, a document that sets out the blueprint for transforming the continent.

The question of industrialisation on the continent, particularly in the SSA region, follows a different path from that of developed countries, where historically economic development has been accompanied by a reduction in agricultural employment in favour of an increase in manufacturing and services employment. As a rule, the industrial development of a country follows an inverted U-shaped trajectory, whereby manufacturing initially grows, creating jobs and wealth, reaches a peak, and then declines, signalling a diminished role for that sector in the economy. This decline is referred to as "deindustrialisation". Initially, the literature had posited a "premature deindustrialisation" of the region (Rodrik, 2016), according to which the decline of the manufacturing sector would have occurred at an earlier stage than historically observed, at income levels still far below those of developed economies that had begun to deindustrialise, implying a pessimistic outlook for the region's industrialisation prospects. However, more recent studies have found no strong evidence that Africa has undergone or is undergoing premature deindustrialisation (Mensah 2020; Ngumkeu and Zeufack 2019). The region has in fact continued to industrialise, recording steady employment growth in the manufacturing sector, despite the anomaly of value added, which has not grown at the same pace and has even recorded declines. Confirming this discrepancy, World Bank data for Sub-Saharan Africa show a clear stagnation: the share of manufacturing value added as a percentage of GDP remained virtually unchanged at around 10% over the period 2016–2024, moving from 10.28% in 2016 to 9.94% in 2024 (see Tab.1 & Tab.2). This trend stands in contrast to global averages and those of other developed regions, demonstrating that the employment transition is not translating into genuine industrial wealth creation. This phenomenon is also likely attributable to a subset of strongly export-oriented countries that distort the continental average. The decline in the manufacturing

sector's share of value added, combined with the increase in its employment share, has contributed to a stagnation, and at times a decline, in manufacturing labour productivity (Abreha et al., 2021).

| Sub-saharan africa                                         | 2016  | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  | 2023  | 2024  |
|------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Agriculture, forestry, and fishing, value added (% of GDP) | 16,41 | 15,74 | 15,69 | 18,25 | 20,15 | 19,45 | 19,38 | 19,24 | 17,95 |
| Industry (including construction), value added (% of GDP)  | 23,27 | 24,99 | 26,40 | 24,68 | 23,15 | 24,02 | 24,82 | 24,98 | 25,27 |
| Manufacturing, value added (% of GDP)                      | 10,28 | 10,35 | 10,44 | 10,07 | 9,66  | 10,01 | 10,12 | 10,23 | 9,94  |
| Services, value added (% of GDP)                           | 54,10 | 52,97 | 51,76 | 51,56 | 50,98 | 49,46 | 48,18 | 49,31 | 49,62 |

*Table 1 - Value added by sector (% of GDP): Sub-Saharan Africa. Source: Author's elaboration based on World Bank data*

| World                                                      | 2016  | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  | 2023  | 2024  |
|------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Agriculture, forestry, and fishing, value added (% of GDP) | 4,14  | 4,10  | 3,93  | 4,07  | 4,41  | 4,33  | 4,29  | 4,13  | 4,05  |
| Industry (including construction), value added (% of GDP)  | 26,21 | 26,70 | 27,17 | 26,60 | 26,00 | 27,14 | 27,26 | 26,27 | 25,63 |
| Manufacturing, value added (% of GDP)                      | 16,23 | 16,29 | 16,40 | 15,98 | 15,99 | 16,52 | 15,86 | 15,40 | 14,99 |
| Services, value added (% of GDP)                           | 65,16 | 64,66 | 64,40 | 65,03 | 65,62 | 64,30 | 62,53 | 63,33 | -     |

*Table 2 - Value added by sector (% of GDP): World. Source: Author's elaboration based on World Bank data*

The agricultural sector still employs a significant portion of the region's workforce, confirming a persistent slowness in structural change, and according to World Bank institutional data, the share of workers employed in agriculture stood at 49% in 2025 (see Fig.9). This regional average, however, conceals national realities in which agriculture absorbs up to 85% of total employment in the case of Burundi, and 73% in the cases of Mozambique and Niger. Despite this concentration of workers, the economic contribution of agriculture appears disproportionately modest, with value added as a percentage of GDP standing at approximately 18% in 2024, underscoring the sector's low productivity, which is likely also due to a structure more oriented towards subsistence, making very limited use of technological capital, often obsolete, and relying on poor-quality land, fertilisers, and irrigation systems, with no storage infrastructure in place. Such a high share of workers employed in a low-productivity agricultural sector is an indicator of low industrialisation, with a manufacturing sector that is unable to generate sufficient labour demand to trigger a transfer of human capital.

Alongside manufacturing stagnation and the weakness of the agricultural sector, the economic landscape of Sub-Saharan Africa has witnessed steady employment growth in the services sector, reaching 38% of total employment and maintaining its status as the largest determinant of value added. In effect, Africa is undergoing a structural

transformation that does not rest on marked industrial development, but on the expansion of a low-skilled tertiary sector, driven primarily by low manufacturing activity.

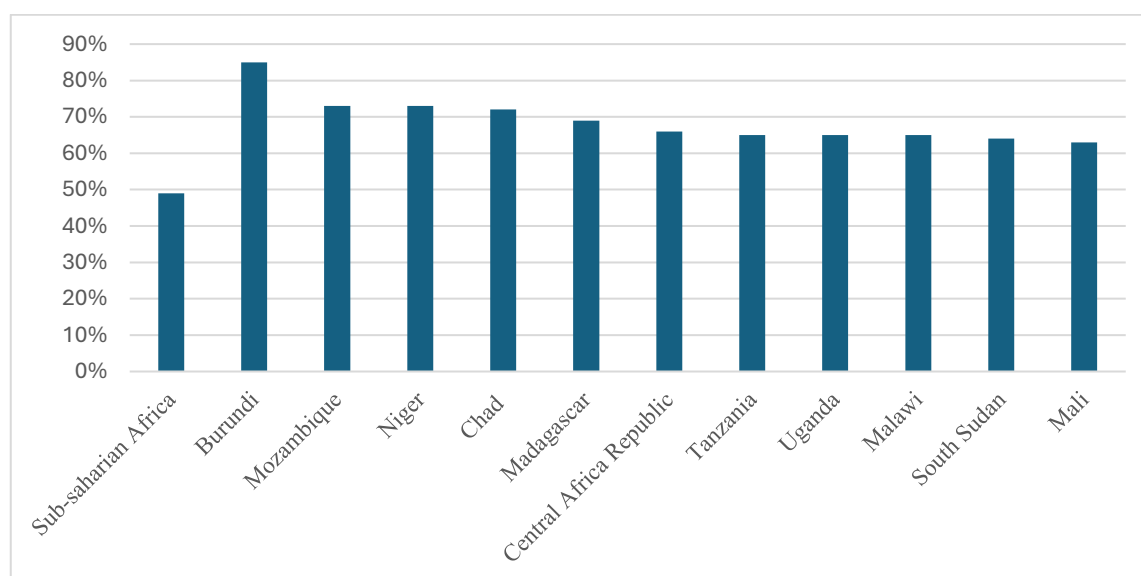


Figure 9 - Top 10 Sub-Saharan African Countries by Share of Employment in Agriculture (2025) Source: World Bank Open Data (2025). Employment in agriculture (% of total employment).

The expansion of services employment has certainly contributed to economic growth and absorbed part of the sharp decline in agricultural employment. This transition has, however, translated predominantly into a reallocation of activity towards relatively low-productivity sectors, such as personal services and retail trade, rather than towards more productivity-enhancing manufacturing. Consequently, this type of sectoral shift has a limited impact on the continent's genuine structural transformation (African Development Bank, 2024).

The stagnation of manufacturing, the fragility of agriculture, and the proliferation of low-value-added services are phenomena deeply interconnected with the way in which the Sub-Saharan African economy relates to the rest of the world. Indeed, today the industrialisation process of a region is strategically linked to Global Value Chains (GVCs). World Bank data offer a picture of Sub-Saharan Africa's participation that is asymmetric, characterised by very high Forward Participation and low Backward Participation.

Africa supplies primarily raw inputs that others transform, an abundance of land, natural resources, and extractive deposits that physiologically determine strong Forward Participation. Primary products, both mineral and unprocessed agricultural (for example cocoa and coffee), leave the continent in raw form to be processed by foreign manufacturing. Indeed, as can be seen in Table 5, exports of intermediate goods (extractive or basic agricultural commodities) in SSA amount to 311.5 billion dollars, equivalent to 80% of total exports, while finished consumer goods account for only 14.14%. Conversely, low Backward Participation is evidenced by the limited imports of foreign components to be processed and re-exported as higher-value-added products. Rather than importing inputs to produce, Sub-Saharan Africa imports goods directly for final consumption, which accounts for 42.95% of total imports, valued at 185.6 billion dollars, followed by imports of capital goods.

Africa is positioned at the two ends of the production chain, being almost entirely absent from the middle segment, which is historically where labour-intensive manufacturing resides and where the greatest creation of structured employment is concentrated.

*Table 3: Top 5 exported products in SSA - 2023 (Source: adjustment from World Bank data (2023). Link: <https://wits.worldbank.org/CountryProfile/en/Country/SSF/Year/2023/Summary>)*

| <b>Exported Products</b>               | <b>Value (Mln USD)</b> |
|----------------------------------------|------------------------|
| Crude petroleum oils                   | 105,756                |
| Gold (non-monetary, semi-manufactured) | 24,594                 |
| Copper cathodes and sections           | 18,610                 |
| Liquefied Natural Gas (LNG)            | 10,836                 |
| Refined petroleum products             | 9,014                  |

*Table 4: Top 5 imported products in SSA - 2023 (Source: adjustment from World Bank data (2023). Link: <https://wits.worldbank.org/CountryProfile/en/Country/SSF/Year/2023/Summary>)*

| <b>Imported Products</b>             | <b>Value (Mln USD)</b> |
|--------------------------------------|------------------------|
| Refined petroleum products           | 89,338                 |
| Tanks and armoured fighting vehicles | 9,341                  |
| Crude petroleum oils                 | 8,827                  |
| Medicaments (in measured doses)      | 6,384                  |
| Radio/TV transmission apparatus      | 5,517                  |

Table 5: Exports and imports of products by stage of processing in Sub-Saharan Africa (SSA) – 2023. Link: <https://wits.worldbank.org/CountryProfile/en/Country/SSF/Year/2023/Summary>

| Product Categories | Exports          |                  | Imports          |                  |
|--------------------|------------------|------------------|------------------|------------------|
|                    | Export(US\$ Mil) | Product share(%) | Import(US\$ Mil) | Product share(%) |
| Raw materials      | 189,733          | 48.26            | 35,222           | 8.15             |
| Intermediate goods | 121,858          | 31.00            | 88,289           | 20.43            |
| Consumer goods     | 55,595           | 14.14            | 185,611          | 42.95            |
| Capital goods      | 23,39            | 6.46             | 111,868          | 25.89            |

This structural weakness is also reflected in the continent's urbanisation dynamics. In Sub-Saharan Africa, urbanisation is proceeding in the absence of a solid industrial base, despite the fact that historically, in Europe and Asia, urban expansion was driven by the industrial sector (Gollin et al., 2016). Currently, approximately 45% of the African population lives in urban settings, a figure that has grown considerably given that in 1990 the share stood at only 31%. With an average annual rate of 3.5%, Africa is home to the world's fastest-growing urban population, which by 2050 is estimated to reach 60–65% of the total population (Africa Center for Strategic Studies, 2024) (see Fig.10).

However, the nature of many countries as exporters of natural resources has given rise to what the literature defines as "Consumption Cities", as opposed to "Production Cities". In the former, urbanisation derives from an increase in revenues from natural resources rather than from industrial productivity, which in turn feeds demand for local non-tradable and informal services rather than stimulating local manufacturing. This results in the existence of highly populated urban centres, such as Lagos in Nigeria, with urbanisation rates comparable to those of China, yet lacking the industrial base necessary to ensure productivity growth and a lasting improvement in living standards. Consequently, urbanisation translates into a demographic transition devoid of an economic dividend, confining the workforce to a low-growth informal services sector (Gollin et al., 2016) (See Annex. 2)

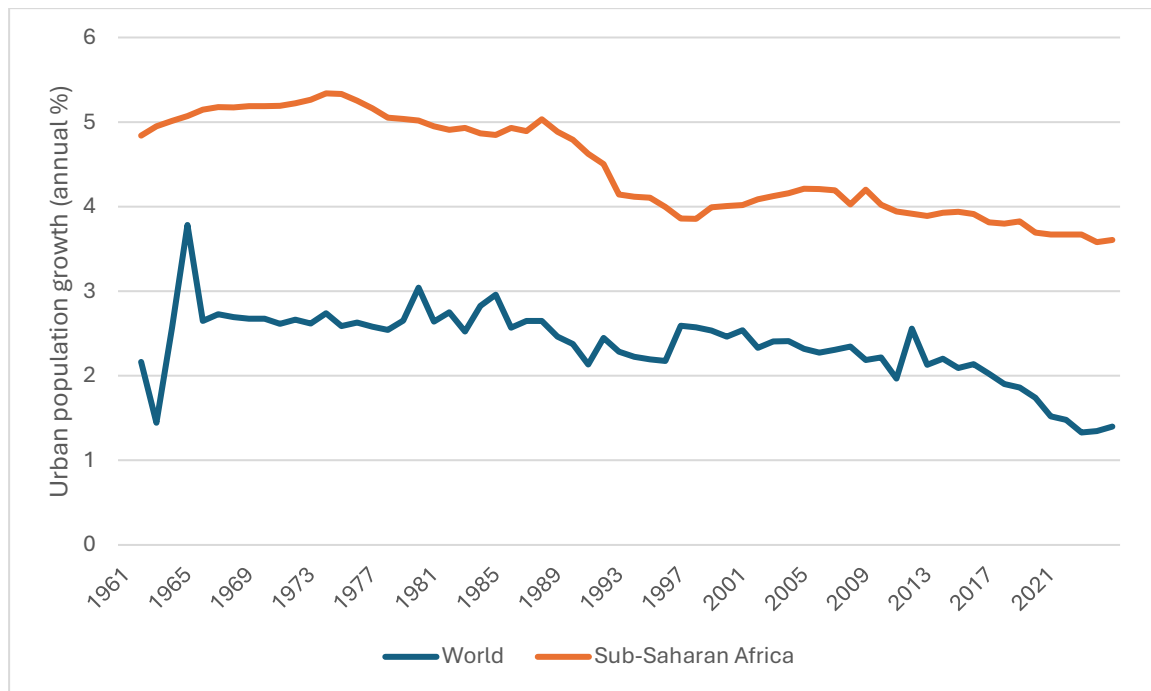


Figure 10 - Urban population growth (annual %): Sub-Saharan Africa vs World (1961-2024). Source: Author's elaboration based on World Bank Open Data

## 2.4 FDI Trends in Africa

Over recent decades, foreign direct investment has recorded exponential growth at the global level. From the 1990s through to the financial crisis of 2008, FDI flows experienced a phase of strong expansion, reaching a historical peak in 2015 with inflows exceeding 2.2 trillion US dollars. From that peak, capital flows underwent sharp fluctuations, with a severe contraction in 2020 due to the Covid-19 pandemic. Today, official global FDI data show a modest 4% increase in nominal inflows which, net of anomalous European financial flows, reflect an 11% decline in real investment, marking the second consecutive year of contraction, lagging behind global economic growth (UNCTAD, 2025).

The African continent, running entirely counter to this trend, recorded a remarkable 75% rebound in 2024, attracting investments of 97 billion US dollars, a figure driven largely by a single large-scale development project in Egypt, thereby coming to represent 6% of global FDI inflows and 11% of total FDI directed towards developing countries (Figure 11) (UNCTAD, 2025).

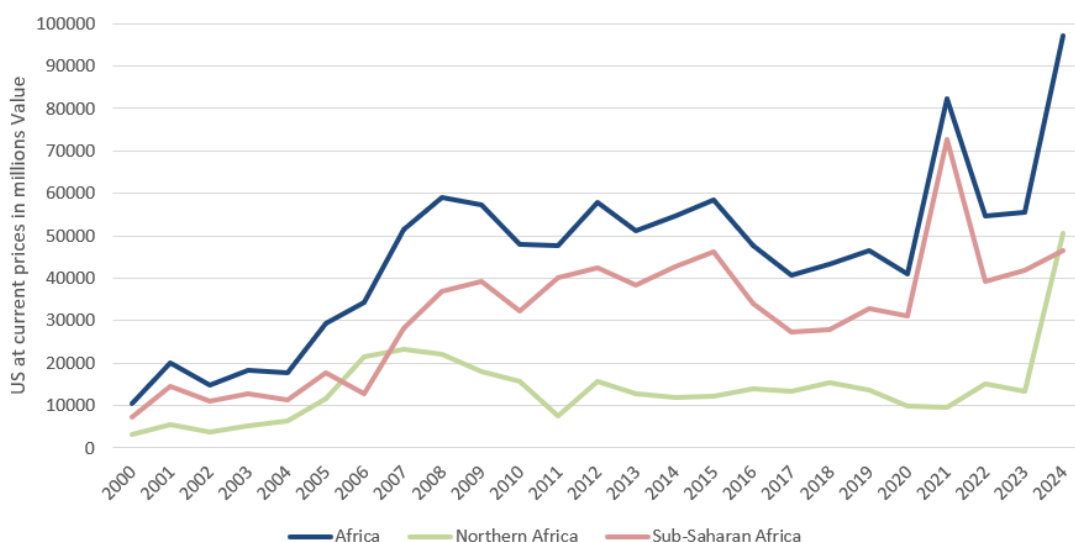


Figure 11- FDI Inflows into the African continent, 2000–2024. Source: own analysis of UNCTAD data

As highlighted by the historical trajectory of FDI inflows into the African continent in Figure 11, from the 2008 financial crisis onwards, greater resilience and lower volatility were observed relative to the global average, primarily for the Sub-Saharan Africa region. While traditional investment hubs such as Europe, the United States, and Japan suffered a sharp inflow contraction of 29%, Africa initially recorded record levels, before experiencing in 2009 a more contained decline compared to the rest of the global market (UNCTAD, 2009).

The following decade was marked by abrupt slowdowns driven by geopolitical and exogenous crises. In 2011, flows contracted as a result of political instability in North Africa (the "Arab Spring"), which caused an almost total halt to inflows in previously leading countries such as Egypt and Libya (UNCTAD, 2012). A further setback occurred in 2014 due to the confluence of events including the collapse of commodity prices, the economic impact of the Ebola epidemic, and the proliferation of regional conflicts (UNCTAD, 2015).

In 2020, the Covid-19 pandemic caused a 16% decline in inflows, bringing them down to 40 billion US dollars. This halt to global activity dragged the continent into its first recession in 25 years, hitting primarily those economies dependent on the export of energy resources (UNCTAD, 2021).

The post-pandemic recovery was uneven, with figures frequently inflated by individual extraordinary transactions. The 44% decline recorded in 2022 was in fact a correction from an exceptionally high 2021, attributable to a single large transaction in South Africa. Excluding that 2021 factor, growth in 2022 would have been a modest 7%, furthermore, the number of announced greenfield projects and international finance projects grew by 39% and 15% respectively, with the energy sector recording the largest increases, both in extractive activities and in power generation (UNCTAD, 2023).

In 2023, a contraction in international finance projects unfortunately occurred, falling by 25% in number and 50% in value, a worrying collapse given their essential role in the continent's infrastructural development (UNCTAD, 2024).

In 2024, as previously mentioned, a peak in FDI inflows was recorded, even net of the Egyptian megaproject, these registered an increase of 12%. At the same time, however, declines in new greenfield projects (-5%) and the continued fall in international financing outlined uncertain prospects for the future of long-term investment on the continent (UNCTAD, 2025) (for further details on statistical data, see Annex 3).

Also to be borne in mind is the heterogeneity of the various African regions, which is likewise reflected in differing capacities to attract foreign investment. In 2024, Egypt and Morocco alone accounted for over 85% of North Africa's FDI inflows (excluding the Egyptian urban development project of Ras El-Hekma, valued at 35 billion US dollars), driven primarily by investment in renewable energy and energy transition. Côte d'Ivoire, Senegal, Ghana, and Guinea accounted for 61% of West Africa; the Democratic Republic of Congo, Chad, and Gabon for 76% of Central Africa; Ethiopia, Mozambique, Uganda, and the United Republic of Tanzania for 65% of East Africa; and South Africa and Namibia for 90% of Southern Africa (UNCTAD, 2025).

Foreign investment in Africa has seen an increasingly prominent participation by multinationals from developing countries, yet European investors remain among the largest holders of FDI stock on the continent, occupying three of the top four positions. The principal holder of stock is the Netherlands, which is partly attributable to indirect investments from companies headquartered elsewhere, particularly in the United States, that use Dutch territory as a financial hub.

UK multinationals are concentrated primarily in four countries (South Africa, Egypt, Nigeria, and Ghana) where approximately half of their FDI stock is in financial services. Investment stock from US multinationals has grown significantly, driven by new investments in various industries such as digital infrastructure and by consolidation and expansion in the energy sector. In general, a decline in the total volume of investment from 2019 to 2023 was recorded among the top 10 investor countries, with the exception of the United States, Italy, and Germany, where it increased slightly. In recent decades, new partners have emerged, such as China and India, where FDI from Chinese companies, estimated at 42 billion dollars, has shown greater diversification beyond the extractive sector alone, with growing investment in construction materials, food processing, pharmaceuticals, and motorcycle manufacturing. Furthermore, approximately one third of the projects financed by the Belt and Road Initiative, the mega-plan of strategic investments promoted by Beijing, in Africa concern social infrastructure such as healthcare, education, water, sanitation, and renewable energy (UNCTAD, 2025) (see Fig.12).

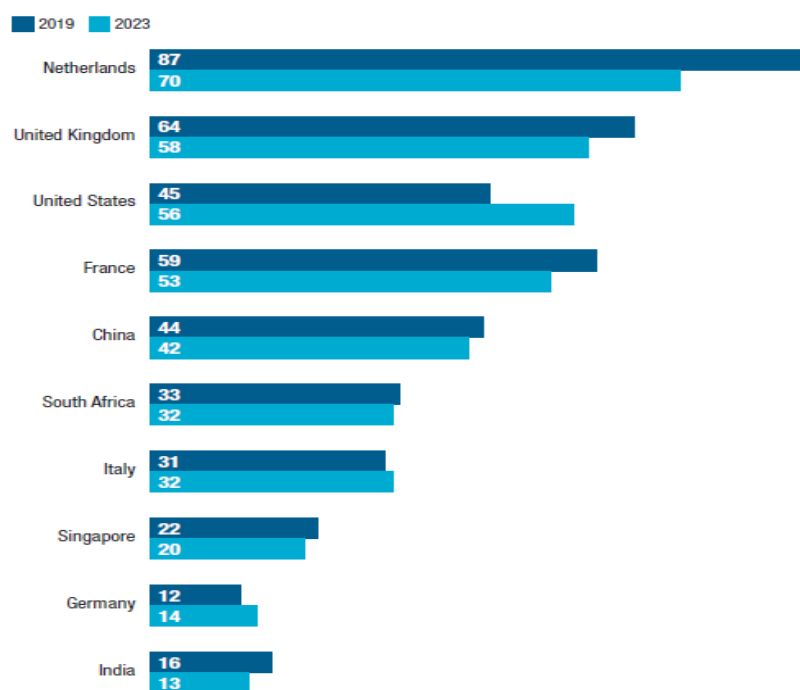


Figure 12 - Top 10 investor economies by FDI stock. Source: UNCTAD, FDI/MNE database (<https://unctad.org/fdistatistics>).

Greenfield investments recorded a sharp contraction of 37% in value in 2024, settling at 113 billion US dollars, with a 5% decrease in the number of projects. Despite this decline, FDI prospects indicate a structural transition on the continent, with capital moving away from traditional oil investments to focus on infrastructure and ecological transition projects, favouring fewer but more capital-intensive projects. Extractive activities contribute 13% of the total value of new greenfield projects, despite accounting for less than 2% of all projects. Within this sector, a structural shift has occurred, with investment in the extraction of critical minerals such as cobalt, lithium, and rare earths, and in renewable energy projects, on the rise, while FDI in fossil fuel processing is in decline, this is driven primarily by rising demand for these resources, which are key to energy transmission. Approximately 80% of the capital flowing into the sector originates from Singapore, France, Canada, the United Kingdom, and Italy. The countries that benefit most from this growth and that best exemplify the mineral-driven transition are Guinea and the Democratic Republic of Congo, attracting megaprojects worth 19 billion dollars in iron ore projects and 9 billion dollars in copper and battery mineral projects respectively. In Angola, a 6-billion-dollar project in the extractive sector was announced by the French company TotalEnergies, alongside another megaproject in renewable energy in Tunisia, also totalling 6 billion dollars. Furthermore, such greenfield projects in Africa have recorded growth in strategic industries such as construction, which accounts for approximately 10% of total value with average projects of 1.8 billion dollars, and logistics infrastructure. Although still modest in proportion, approximately 6%, the digital economy has emerged as one of the fastest-growing sectors, expanding by more than three quarters in project value and by nearly one third in project numbers over the last five years. At the regional level, North Africa was the only region to record growth in greenfield investment, with a 12% increase in value, now representing the destination for as much as 67% of greenfield project spending across the entire continent (UNCTAD, 2025) (see Fig. 13).

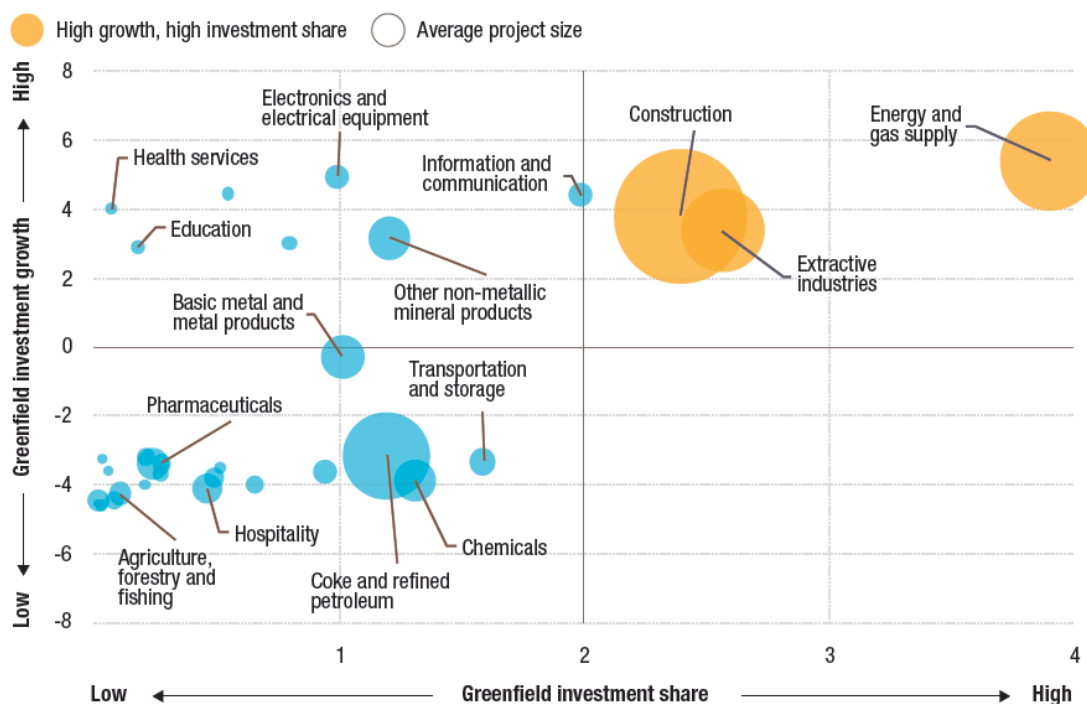


Figure 13 - Energy, construction and extractive industries were the leading sectors for greenfield investment in Africa. Industry share in greenfield projects, growth rate and average project size, 2020–2024. Source: UNCTAD, 2025

As regards cross-border M&A operations, these have historically represented approximately 15% of total FDI inflows into Africa. In 2024, however, the most recent year considered, the continent recorded a negative figure, with net disinvestments of 1.5 billion dollars, compared to 9.5 billion recorded in the previous year. The cause of this critical decline is not attributable to a generalised loss of interest in the continent, but is explained by significant disinvestments on the part of multinational enterprises historically tied to the fossil fuel sector, such as the US company Exxon Mobil, which sold its onshore oil and gas assets in Nigeria to local company Seplat Energy for 1.1 billion US dollars (UNCTAD, 2025).

This acquisition crisis has hit the West African region hardest, due to the disengagement of the fossil fuel sector. It is nonetheless not a signal of a retreat from the African market, but rather a shift in entry strategies, whereby multinationals are progressively abandoning the acquisition of existing assets in favour of large-scale greenfield investments. This approach allows for more direct control over new strategic infrastructure, such as the large-scale green hydrogen production hubs in Angola and Tunisia, port and logistics infrastructure in Senegal, and the development of digital networks and fintech in Togo (UNCTAD, 2025).

## Chapter 3: Human Development Index (HDI)

### 3.1 Definition of the Human Development Index

The Human Development Index (HDI) was first introduced in the Human Development Report (HDR) in 1990, published by the United Nations Development Programme (UNDP), as a result of an intellectual endeavour led by the Pakistani economist Mahbub ul Haq, together with a group of scholars that included Amartya Sen.

The HDI is a composite statistical tool designed to indicate and measure the level of development of a given country, this indicator goes beyond the traditional economic model, which equates the concept of development with that of economic growth, emphasising gross domestic product (GDP) as an indicator of a society's well-being. It is, in fact, a composite measure of the average outcomes achieved across key dimensions of human development, capturing aspects relating to standard of living, education and healthcare.

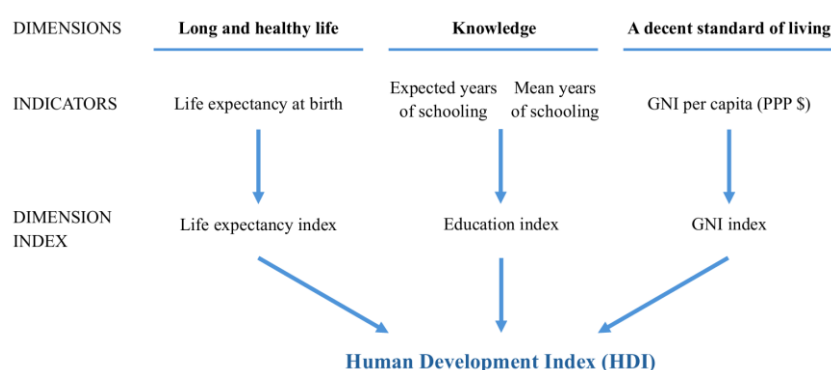


Figure 14 - Graphical presentation of the Human Development Index (HDI) calculation. Source: Adapted from United Nations Development Programme, Human Development Report 2025, Technical Notes

Each of these dimensions is associated with one or more sub-indicators, which are standardised and then aggregated to form the composite HDI using a geometric mean (see Fig.14). These dimensions and their associated sub-indicators are:

- the 'Long and healthy life' dimension is assessed on the basis of life expectancy at birth;
- the 'Knowledge' dimension is measured on the basis of both expected years of schooling and mean years of schooling;

- the ‘Standard of living’ dimension is measured using Gross National Income per capita at Purchasing Power Parity (GNI per capita (PPP \$)).

However, this index is a simplified measure that does not consider various other aspects associated with human development, such as gender equality, multidimensional poverty, social security, sustainability and rights. Furthermore, the HDI is measured in thousandths, with values ranging from 0 to 1, where 1 represents the highest possible level of development; based on the results for each individual country, the UNDP classifies countries into four categories: countries with very high human development ( $HDI \geq 0.800$ ), countries with high human development ( $0.700 \leq HDI \leq 0.799$ ), countries with medium human development ( $0.500 \leq HDI \leq 0.699$ ) and countries with low human development ( $HDI < 0.500$ ).

### **3.1.1 The HDI as an alternative measure to GDP**

GDP, defined as the monetary value of all final goods and services produced within a country over a given period of time, has for decades been the main yardstick for measuring a nation’s progress. It is, however, an indicator of economic growth and not necessarily an indicator of social development.

The main criticism levelled at GDP is that it provides no information on how the wealth generated is distributed within the country and, consequently, does not offer a true picture of quality of life, whilst also ignoring relevant aspects such as unpaid work and the depletion of natural resources during the growth process. From a statistical point of view, this results in a distortion when assessing a nation’s well-being solely through per capita income, where the vast wealth of a few citizens inflates the average figure, making even the poorest citizens appear wealthier. Consequently, there is a certain discrepancy between the information provided by this economic aggregate and the actual living conditions of society, making a transition to a well-being-centred measurement necessary (Stiglitz, Sen & Fitoussi, 2009).

This vision centred on economic growth is superseded by the Capability Approach theory formulated by Nobel laureate Amartya Sen, which proposes that development should no longer be assessed on the basis of income (means), but on the basis of people’s actual

freedom to live the lives they desire (ends). This theory is based on two concepts: ‘functionings’, that is what an individual actually chooses to be and do, such as being in good health or being educated, and ‘capabilities’, that is, the actual freedoms and opportunities for choice that enable the individual to achieve various functionings. For example, a wealthy person who chooses to fast and a person who is starving share the same functioning of being undernourished, but only the wealthy person has the capability to choose freely whether or not to eat (Sen, 1999).

Sen’s theory found practical application with the introduction in 1990 of the Human Development Index (HDI) by the United Nations Development Programme (UNDP) under the guidance of the economist Mahbub ul Haq. The HDI was created precisely as an alternative to measuring socio-economic progress based on economic growth, defining people as the true measure of a nation’s well-being (UNDP, 1990) and translating Sen’s ‘functionings’ into key dimensions such as life expectancy, educational attainment and gross national income.

The multidimensional structure of the HDI limits income to just one of the dimensions assessed, recognising that economic growth alone is not sufficient to define human development, and highlighting how many countries with similar levels of per capita GDP may have different index scores depending on how the wealth generated is distributed within society and invested in essential services such as healthcare and education (UNDP, 1990).

Many studies on the impact of Foreign Direct Investment on well-being have assumed a perfect correlation between economic growth and social well-being, mostly using per capita GDP as an indicator. However, in line with the Capability Approach and the findings outlined above, an increase in per capita GDP following the inflow of foreign capital into an economy does not automatically translate into an improvement in national well-being, particularly if the wealth generated is not redistributed or if it leads to inequalities; therefore, the use of a variable such as the HDI to assess whether FDI leads to genuine social progress becomes important (Gohou & Soumaré, 2012).

### 3.1.2 Steps to calculate HDI

As previously mentioned, the calculation of HDI values is divided into two steps: the first involves the creation of dimensional indices, whilst the second step involves the aggregation of these dimensional indices using a geometric mean of the three dimensional indices.

To create the dimensional indices, minimum and maximum values (reference values) are set to transform the indicators, which are expressed in different units, into indices ranging from 0 to 1, in other words, they are standardised. These ‘goalposts’ serve, respectively, as natural zeros, below which the very survival of society is compromised, and as ideal targets against which the sub-indicators are standardised.

These values are set out in the following table.

| Dimension          | Indicator                           | Minimum | Maximum |
|--------------------|-------------------------------------|---------|---------|
| Health             | Life expectancy at birth (years)    | 20      | 85      |
| Education          | Expected years of schooling (years) | 0       | 18      |
|                    | Mean years of schooling (years)     | 0       | 15      |
| Standard of living | GNI per capita (2021 PPP \$)        | 100     | 75,000  |

*Table 6 - Goalposts for the Human Development Index (HDI) components. Source: Adapted from United Nations Development Programme, Human Development Report 2025, Technical Notes*

The natural minimum value for life expectancy at birth has been set at 20 years, this choice is based on historical evidence, which shows that no country recorded a value below 20 years during the 20th century (Maddison 2010; Oeppen and Vaupel 2002; Riley 2005).

The maximum value for life expectancy at birth has been set at 85 years, whilst ambitious, this target has proved realistic for many countries over the last thirty years (in 2023, Hong Kong, Monaco and San Marino reported the highest figures, at 85.51, 86.37 and 85.71 years respectively), owing in particular to a general and steady improvement in living conditions and advances in medicine.

As regards the indicators for the ‘Education’ dimension, a minimum value of 0 years has been set, a choice justified by the fact that societies can exist even in the absence of formal education.

The maximum value for expected years of schooling is 18 years, equivalent to the time required to obtain a master’s degree in most countries, whilst the maximum value for the average years of schooling (for people aged 25 and over) is set at 15 years in 2025.

As regards the standard of living dimension, the minimum value set for the Gross National Income (GNI) per capita indicator is \$100, due to the share of subsistence production and non-market production, which are not captured in official data, particularly in the case of the poorest economies.

The maximum value for this indicator, on the other hand, is set at \$75,000 per capita, this threshold has been chosen so that higher values do not lead to an improvement in a given country’s ranking by directly contributing to the HDI value. In 2023, as many as nine countries (Brunei Darussalam, Denmark, Ireland, Liechtenstein, Luxembourg, Norway, Qatar, Singapore and Switzerland) exceeded this threshold.

Once the reference values have been established, the sub-indicators are calculated using the following formula:

$$\text{Dimension Index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}} \quad (1)$$

For the education dimension, which comprises two distinct indicators, Equation 1 is applied to each of them, and the arithmetic mean of the two resulting indices is then calculated. The use of the arithmetic mean allows for the perfect interchangeability of the two indices relating to expected years of schooling and the average years of schooling, this is particularly appropriate for developing countries where levels of education amongst the adult population are low, but which are pursuing the objective of ensuring schooling, particularly at primary and secondary levels, for school-age children.

Each Dimension Index serves as a proxy for the associated capabilities, it can therefore be assumed that the function linking income to capabilities is concave (Anand and Sen, 2000). In other words, this means that, as income rises, each additional dollar contributes to the expansion of capabilities to a progressively lesser extent. For this reason, the logarithm of the observed values, as well as the corresponding minimum and maximum values, is used for the income variable.

Listed below are the various Dimension Indices discussed so far:

- $Health\ Index = \frac{le-20}{85-20}$  (2)

- $Expected\ years\ of\ schooling\ Index\ (EYS) = \frac{eys}{18}$  (3)

- $Mean\ years\ of\ schooling\ Index\ (MYS) = \frac{mys}{15}$  (4)

- $Education\ Index = \frac{EYS+MYS}{2}$  (5)

- $Income\ Index = \frac{\ln(GNI_{pc})-\ln(100)}{\ln(75,000)-\ln(100)}$  (6)

The HDI is the geometric mean of the three dimensional indices:

$$HDI = (I_{Health} * I_{Education} * I_{Income})^{1/3} \quad (7)$$

### 3.1.3 Methodology to express income

The World Bank's 2024 World Development Indicators database provides estimates of Gross National Income (GNI) per capita expressed in purchasing power parity (PPP) and at constant 2021 prices for a wide range of countries. However, when this indicator is not available, either in full or in part, the Human Development Report Office estimates it using a two-stage procedure.

In the first stage, the value of GNI per capita expressed in local currency is converted into PPP terms relative to the base year 2021; in the second stage, a time series of GNI per capita at 2021 PPP is constructed by applying real growth rates to the base-year value.

### 3.1.4 Human development categories

The 2014 Human Development Report introduced a system of fixed thresholds to classify countries into four levels of human development. These thresholds, known as cut-off points (COPs), are determined on the basis of HDI values obtained using the quartiles (q)

of the distributions of the indicators that make up the index, calculated as the average for the period 2004–2013:

$$COP_q = HDI (LE_q, EYS_q, MYS_q, GNIpc_q), q = 1,2,3 \quad (8)$$

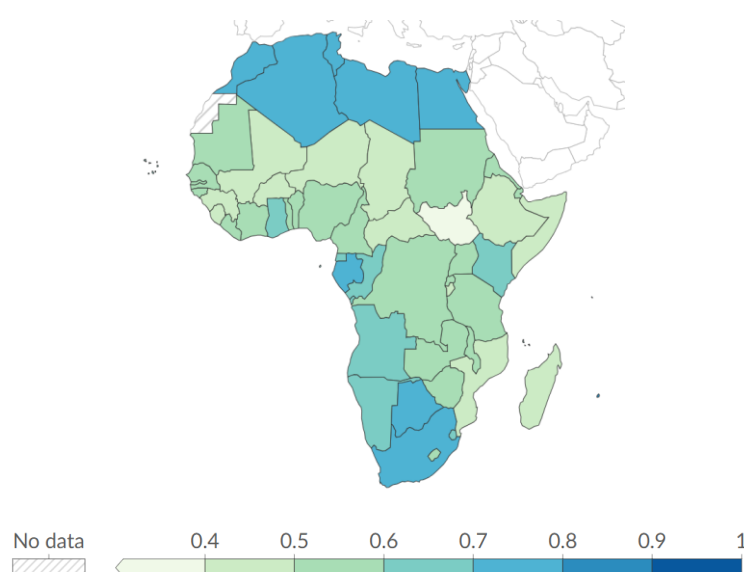
For example, LE1, LE2 and LE3 represent the first, second and third quartiles, respectively, of the distribution of life expectancy at birth observed across different countries.

The thresholds for grouping countries, as introduced in the 2014 report, are currently in use:

|                             |                 |
|-----------------------------|-----------------|
| Very high human development | 0.800 and above |
| High human development      | 0.700–0.799     |
| Medium human development    | 0.550–0.699     |
| Low human development       | Below 0.550     |

*Table 7 - Human Development Index (HDI) classification categories. Source: Adapted from United Nations Development Programme, Human Development Report 2025, Technical Notes*

Below is a map taken from the Human Development Report (2025), showing the most up-to-date HDI figures for 2023.



*Figure 15 - Human Development Index Africa, 2023. Data source: UNDP, Human Development Report (2025)*

### **3.2 Major criticisms and methodological evolution of the HDI**

The HDI was developed in response to the need to move beyond a concept of development and progress based solely on macroeconomic factors, such as economic growth, quantified using summary indicators such as GDP per capita or GNP per capita, on the assumption that an increase in national output and per capita income would lead to a general and widespread improvement in living standards. However, this conception of development has shown several shortcomings in translating into genuine social prosperity. The introduction of the HDI in 1990 was precisely a response to the need for a measure that would place people at the centre of the development process, one that would highlight the achievements made in terms of the expansion of fundamental freedoms and capabilities, aspects that economic growth alone was unable to address (Kelley, 1991; Anand and Sen, 1994).

The HDI, however, is a composite measure of the multidimensional nature of human development and well-being, capturing only a few fundamental dimensions such as health, education and standard of living, and synthesising them into a single value.

Over the years, this index has been the subject of numerous criticisms and modifications, leading to a major revision in the 2010 HDR. Therefore, the subsequent sections will primarily explore the major pre-2010 criticism raised against the HDI and subsequently the changes it has undergone.

#### **3.2.1 Pre-2010 Criticisms: Variables, Indicators and Functional form**

##### ***3.2.1.1 Choice of variables and indicators***

The choice of variables has been criticised both for the exclusion from the index of certain dimensions of well-being, such as equity, human rights and sustainability, and for the indicators used to define the dimensions in question.

One of the strongest criticisms concerns the fact that the HDI is a mix of stock and flow variables (Kelley, 1991 and Ryten, 2000), where, as already noted for the FDI, stock variables are measurements taken at a specific point in time and represent accumulated quantities, such as the adult literacy rate and life expectancy, whilst flow variables are measured over a period of time, such as per capita GDP and school enrolment rates. This gives rise to a problem of comparability between the variables, as the two economic

measures have different units of measurement and cannot be compared with one another. Another issue relating to this mix of stock and flow variables is the HDI's responsiveness to changes in society, as the use of stock variables means that the index primarily measures the results of past efforts, rather than reflecting the most recent changes.

Other critics have highlighted the need to distinguish between indicators representing inputs, that is the extent to which the conditions deemed essential for a good life are provided, and outputs, that is the way in which people actually thrive. In fact, the HDI includes both outcome-oriented (output) and means-oriented (input) indicators, such as literacy (Booyesen, 2002).

In the case of the education dimension, for example, the construction of new schools and the enrolment of children in school programmes represent inputs, whilst educated and trained individuals represent outputs and a clear milestone in human development in one of its fundamental dimensions. This example supports the view put forward by Diener and Suh (1997) and Chibber and Laajaj (2007), who argue that indicators should focus on outcomes for two main reasons: firstly, to give countries complete freedom to decide how to achieve that goal; and secondly, because if the outcome is not observable, the data would not reflect the actual situation.

Still on the subject of education and health, the HDI has been criticised for focusing on quantitative aspects rather than taking quality into account. Life expectancy, for example, is a measure of longevity, but it says nothing about people's state of health throughout their lives, considering only part of the 'long and healthy life' dimension.

In the 2010 Human Development Report, with regard to how the HDI is calculated, no new dimensions were added beyond the core ones, despite the recognised importance of taking other factors into account when calculating the index. The reasons behind these methodological and policy choices are set out below.

The HDR is based on a distinction, conceived by Amartya Sen (2002), between two types of human freedom: freedom of opportunity, that is the actual possibility of achieving the outcomes one values in life (such as education and a long, healthy life), and freedom of process, that is the guarantee that the systems through which we achieve these outcomes

are fair and just (such as civil rights and democracy). According to this distinction, the HDI remains an index of freedoms of opportunity, whilst dimensions more closely linked to freedoms of process, such as empowerment, sustainability and equity, are analysed separately.

Certain factors, such as civil liberties and rights, have not been included in the index, partly due to difficulties in measuring them and partly for political reasons, as their potential inclusion triggered formal protests at the UN from Cuba and the Arab League. With regard to inequalities, however, three new indices have been introduced alongside the main one: the inequality-adjusted Human Development Index, the gender inequality index and the multidimensional poverty index.

As regards other dimensions, such as sustainability and empowerment, difficulties have arisen in measuring them and assigning them a numerical and economic value. As regards sustainability, there has been a clash on two fronts: between those who advocate ‘weak sustainability’, convinced that technological capital compensates for the loss of natural resources, and those who advocate ‘strong sustainability’, according to which environmental damage cannot be replaced. The greatest difficulty with regard to empowerment, however, has been the lack of a global consensus on a rigorous definition of the concept.

As will be seen in the next paragraph, almost all the indicators have been revised, the only parameter to remain unchanged is life expectancy.

### ***3.2.1.2 Functional form***

Other criticisms prior to the reform of the 2010 report concerned the functional form of the HDI, specifically, the main issues centred on assumptions of substitutability, the normalisation of indicators, the asymmetric treatment of income, and the choice of weights.

The use of the arithmetic means to aggregate the three dimensions of health, education and income implied perfect substitutability between the dimensions of the index, assuming constant marginal returns for each of them and a constant marginal rate of substitution between two dimensions. This could lead to trade-offs between the factors,

which is deeply problematic, as it runs counter to the intuition that a severe decline in one dimension should require greater attention rather than being offset. Perfect substitutability could therefore, paradoxically, encourage a country to maximise its HDI score by focusing entirely on a single dimension, whilst ignoring the others. In order to limit substitutability, the arithmetic mean was replaced by the geometric mean in the 2010 report.

A second criticism was levelled at the decision to assign equal weights to the various dimensions. Annand and Sen (1997) observed that ‘any choice regarding weights should be open to scrutiny and debate in the political arena’, they emphasise that such weights should not be an arbitrary choice, but should reflect individual preferences, follow a process of social choice where the decision is collective, and be grounded in a sound theoretical or normative basis. Nevertheless, the HDR opted to assign equal weights to each dimension, since, according to ul Haq (1995), all are considered equally important and there are no a priori reasons to assign greater importance to one over the others.

As regards normalisation, it is important to emphasise that this is not merely an operation to keep the index within the range 0–1, but that the choice of normalisation method can significantly affect the HDI values. Since this index uses an additive form, it will depend on the measurement scale adopted, such as the choice of minimum and maximum values for the individual dimensions. Between 1990 and 1993, the minimum and maximum values observed annually were used (‘moving goalposts’), this approach has been criticised as it made it impossible to compare a country’s progress across different years. Since 1994, fixed limits have been adopted, highlighting the HDI’s extreme sensitivity to the choice of these limits.

The use of upper and lower limits for indicators has drawn criticism of the practice known as ‘capping’, that is truncating values once the set upper limit is reached, the main purpose of which is to reduce the influence of extreme values. In the case of income, for example, an upper limit of \$40,000 had been set, whilst this was not binding when it was introduced in 1994, the 2009 HDR revealed that as many as 13 countries exceeded this per capita GDP threshold. Criticism centred on the redundancy of this measure, as the diminishing marginal effect of income was already incorporated into the HDI through a logarithmic transformation. Furthermore, authors such as Sager and Najam (1998) reported that

capping limited the values of the wealthiest nations, thereby narrowing the gap with the poorest countries. These issues with the capping also affected other dimensions, such as life expectancy, with an upper limit set at 85 years, indeed, this constraint was removed in the 2010 report.

Finally, the use of a logarithmic transformation for income has attracted criticism regarding the asymmetric treatment of the variables. As previously noted, income undergoes this transformation because it is based on the fact that an increase in this indicator has a diminishing marginal effect on well-being. Several critics (Kelley 1991, Acharya and Wall 1994, Srinivasan 1994, Paul 1996, and Noorbakhsh 1998) have questioned why this transformation is not also applied to the other indicators. The justification lies in the ‘capability approach’ theory, whereby, whilst health and education are regarded as intrinsic capabilities, income is regarded as the means (the input) that people use to develop these capabilities. This ties in with the fact that income is transformed into capabilities at a diminishing rate, meaning that the function is concave, for this reason, a logarithmic transformation is used, without which the distinction between capabilities and the inputs required for their development would be ignored.

### ***3.2.1.3 Redundancy, robustness and discriminatory power***

The HDI has also been criticised for the high correlation between its core dimensions, which results in a certain degree of informational redundancy. One example is provided by the studies of Ivanova et al. (1999), which show that much of the variance in life expectancy is explained by income and educational attainment, consequently, they report that the final HDI ranking would undergo only minimal changes if the assessment excluded educational attainment and income, basing the index solely on life expectancy.

However, Saisana et al. (2005) noted an ambivalence regarding the impact of the high correlation between indicators, reporting that, in the case of a multi-criteria model such as the HDI, a strong correlation is often regarded as evidence of internal consistency capable of capturing different facets of the same construct. This characteristic lends a certain robustness to the index, ensuring stability in the results and in the rankings of the various countries even if there were variations in the choice of weights and normalisation methods.

Further criticism concerns the index's discriminatory power, that is, its ability to clearly distinguish between different countries, particularly at the upper and lower ends of the distribution. This issue is linked to certain indicators that have very similar values, preventing adequate differentiation, particularly for the most developed countries. One example is the adult literacy rate, an indicator used until 2010, which had by then reached a natural ceiling of around 100 per cent in most developed countries, thus becoming a variable incapable of reflecting differences in human capital among the wealthiest nations. In 2010, both indicators for the education dimension were replaced: the literacy rate was replaced by the average number of years of schooling, whilst the gross enrolment rate was replaced by expected years of schooling, both of these shows greater variation across countries, thereby increasing the index's ability to distinguish between them.

### **3.2.2 The 2010 HDR Reform: changes in the HDI**

Since its introduction in 1990 in the first Human Development Report, the Human Development Index (HDI) has established itself as a tool for measuring well-being, moving beyond the concept of a nation's development based solely on economic growth; nevertheless, as noted earlier, the success stemming from its simplicity has been the subject of various criticisms. In response to this, the index has never remained unchanged over time, but has always undergone updates and improvements, until, in 2010, the HDR undertook a radical overhaul of the index, introducing three fundamental changes: (i) changes to the indicators, (ii) changes to the calculation method, and (iii) changes to the maximum and minimum values.

#### ***3.2.2.1 Changes to the indicators***

Prior to 2010, the education dimension was measured by combining two indicators, the literacy rate and the gross enrolment rate, weighting them at two-thirds and one-third respectively. However, over time, literacy has lost its ability to illustrate global progress and development, as many countries had reached universally high levels, thereby limiting the index's ability to distinguish between them. To allow for better differentiation between countries, the focus has therefore shifted to more precise measures, such as

average years of schooling and expected years of schooling, which, moreover, use a single unit of measurement: years of study.

The Life Expectancy indicator for the health dimension has remained unchanged, whilst this is certainly a measure of longevity, it does not capture all the components of a long and healthy life. For this reason, the WHO (World Health Organization) has sought to develop an indicator of healthy life expectancy (HALE – Health-Adjusted Life Expectancy) for 192 countries, defining the number of years a person is expected to live in good health. Although this indicator showed promise, it has encountered significant limitations in terms of data availability and international comparability, meaning that, for the time being, it is not a suitable candidate for the HDI.

This approach, which aims to capture not only the quantity but also the quality of a dimension through an indicator, is also being applied to the field of education, with international assessments of proficiency levels in science, mathematics and reading, although only a limited amount of data is currently available.

As regards the standard of living dimension, gross domestic product per capita has been replaced by gross national income per capita, both valued in US\$ at purchasing power parity (PPP). This change represents an improvement in the representation of a country's economy, since, compared with GDP, which measures an economy's productive capacity within its own borders, per capita GNI better reflects citizens' actual control over resources, as it also includes net transfers from abroad, such as remittances, which are crucial to the standard of living in many developing countries.

#### ***3.2.2.2 Changes to the calculation method***

A substantial change, as mentioned earlier, is the method used to aggregate the sub-indicators, which has shifted from the arithmetic mean to the geometric mean.

The arithmetic mean assumed that the dimensions were perfectly interchangeable, meaning that a serious shortfall in one dimension could be offset by an increase in another, without compromising the HDI value.

The geometric mean, on the other hand, significantly reduces the level of substitutability of the components, considering the overall balance, this means that a decrease in a specific dimension can no longer be easily offset by an increase in another. This methodology better reflects the assumption that a minimum baseline level is required for each capacity in order to benefit from the others, furthermore, it ensures that a percentage

change in any of the three variables has the same impact on the final HDI value. As regards the impact on the final values, the geometric mean tends to favour countries with a more balanced composition of development, compared with those showing varying levels of development across the different dimensions; overall, the impact on the HDI ranking was moderate.

### ***3.2.2.3 Changes to maximum and minimum values***

The maximum and minimum values for the dimensions have undergone several changes over the years, but with the 2010 reform, the minimum value for life expectancy rose from 25 years to 20 years, whilst the maximum values for each dimension changed from being ‘predefined thresholds’ to ‘observed maximums’. Until 2009, the most evident impact of the rigid, predefined upper limits concerned the standard of living dimension, where the income value was capped at the \$40,000 PPP threshold, reflecting the belief that, beyond a certain level, an increase in income did not translate into real benefits for the expansion of human capabilities.

This shift from predefined maximum values to observed maximums was dictated particularly by the economic growth dimension, which, unlike the health and education dimensions, does not naturally tend towards a physiological limit. However, the use of observed maximums presented practical limitations, as they could vary from year to year, risking the distortion of HDI values and thus making cross-temporal comparison difficult. For this reason, in 2014, the index reverted to the predefined thresholds of maximum and minimum values, which, as previously noted, were defined as ‘natural zeros’, that is the minimum limits essential for subsistence, and ‘aspirational targets’.

### **3.2.3 Post-HDR 2010 criticisms and ongoing debates**

Following the change to the HDI formula in 2010, from an arithmetic mean to a geometric mean, new criticisms were raised by Ravallion (2010) regarding the presence of implicit trade-offs. By calculating the marginal rates of substitution between income and longevity, he highlighted a significant disparity, whereby an additional year of life in Zimbabwe is worth only \$0.53, compared with a value of around \$9,000 for high-income countries. According to Ravallion, accepting such a trade-off would lead to a paradoxical conclusion, namely that, to increase human development, it is more cost-effective to invest in health rather than in income in wealthier countries. However, Ravallion’s

interpretation misrepresents the true meaning of the index, which does not indicate an investment priority, but rather reflects the fact that the HDI assigns almost no weight to an increase in income in an already wealthy country, compared to the health dimension, thereby confirming a fundamental assumption of the human development approach: that, once a certain level of economic well-being has been exceeded, an increase in income leads to only a negligible improvement in the actual expansion of human capabilities.

In response to Ravallion's criticisms, Klugman et al. (2011) clarified that the HDI is an index of capabilities, rather than a function of social well-being to be maximised. The aim of maximising it would be a conceptual error, as it would imply assigning a value of zero to all dimensions not included in the calculation. The capabilities approach is a theory that does not presume to define exhaustively all the components of a good and fulfilling life, rather, the purpose of the index is to summarise and measure the actual freedom that people enjoy choosing and leading different lives.

### **3.3 The Human Development Index in Africa**

The African continent is an important context for the HDI, as it highlights what standard GDP-based metrics fail to capture: namely, whether or not economic growth translates into genuine development for the population, an aspect of particular relevance to this region, which is all too often characterised by a significant gap between these two dimensions.

The latest available HDI data date from 2023 and are provided by the UNDP, these show that the average for African countries stands at 0.580, with the lowest figure being 0.388 for South Sudan and the highest being 0.848 for the Seychelles. The African average lies below the global average of 0.741, in fact, only 6 of the continent's 54 countries exceed this threshold, namely the Seychelles, Mauritius, Algeria, Egypt, Tunisia and South Africa. In the global HDI ranking, as many as 18 African countries occupy the bottom 20 positions, whilst only four countries feature among the top 100, with none of them appearing in the top 50.

Since the first figures from 1990, when the average score for the African continent stood at 0.440, a general improvement in the index has been observed for the vast majority of African countries. Between 1990 and 2023, around 20 countries changed their

development category: the most common transition was from Low Human Development to Medium Human Development, affecting 12 countries (Morocco, Ghana, Equatorial Guinea, São Tomé and Príncipe, Angola, Comoros, Zimbabwe, Cameroon, Zambia, Côte d'Ivoire, Uganda, Mauritania); the second most common was the shift from Medium to High Human Development, involving as many as 6 countries (Algeria, Egypt, Tunisia, South Africa, Gabon, Libya); a country such as Mauritius moved across two categories, progressing from Medium to Very High Human Development, rising from 0.627 in 1990 to 0.806 in 2023; finally, the Seychelles moved from High to Very High Human Development, rising from 0.758 in 2010 to 0.848 in 2023 (see Annex.4).

Since the index was introduced in 1990, there have been some very negative extremes, reflecting the profound differences and historical contexts across the continent. The most significant example is the negative peak recorded in Rwanda in 1994, where the index reached a value of 0.199. This figure is the direct consequence of the socio-economic and humanitarian collapse caused by one of the continent's darkest chapters: the genocide of the Tutsis, in which more than half a million people lost their lives.

### **3.3.1 The Health Dimension**

Health is one of the three dimensions that make up the Human Development Index; this issue is also central to the United Nations' 2030 Agenda, which sets as its third Sustainable Development Goal the task of ensuring healthy lives and promoting well-being for all at every stage of life.

Life expectancy at birth is the indicator used for the health dimension; the OECD defines it as the average lifespan a newborn can be expected to live, assuming that age-specific mortality rates remain constant. Between 1990 and 2023, a general improvement in life expectancy at birth has been observed, this is not solely due to medical advances, but also to a combination of socio-economic factors such as: a reduction in infant mortality, access to safe drinking water, sanitation, rising incomes and literacy (Roser et al., 2013).

Since 2000, there has been a significant 10-year increase in life expectancy on the African continent, rising from 55.03 to an average of 65.42 in 2023. This increase has undoubtedly taken place against a backdrop of improvements in the socio-economic factors mentioned

earlier, as well as better access to healthcare, such as antibiotics and vaccination campaigns to control malaria, for example. World Bank data indeed show an increase in current health expenditure per capita in the sub-Saharan region, rising from \$32.43 in 2000 to \$79.37 in 2023, peaking at \$92.84 in 2013. Although this figure represents only 7 per cent of global per capita current health expenditure, investment in healthcare has almost tripled in the region.

Life expectancy at birth in Africa stands at 65.42 in 2023, well below the global average of 73.33 years. North Africa, albeit slightly, raises Africa's average life expectancy compared with that of sub-Saharan Africa, the difference is small, given that the average of five North African countries is being compared with that of 49 sub-Saharan countries (see Fig.16; see Annex 4).

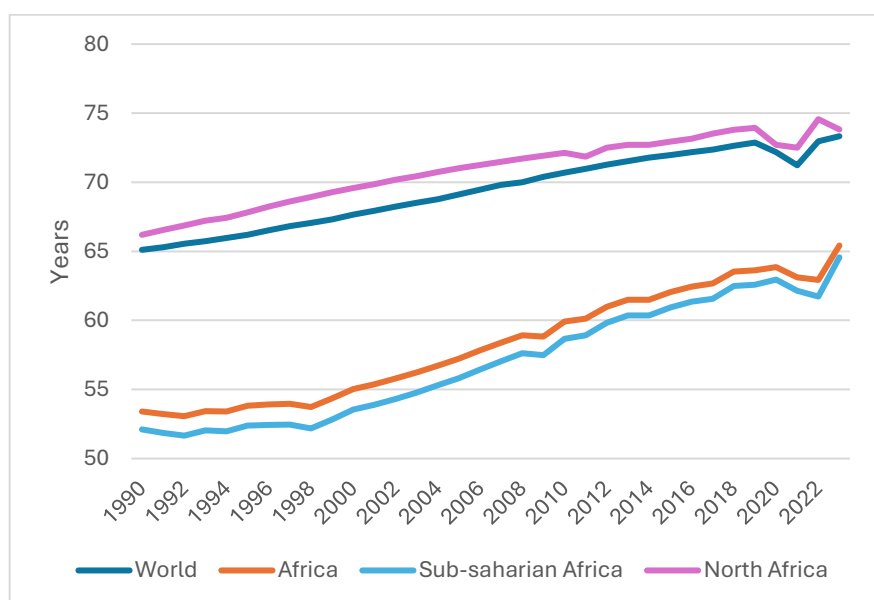
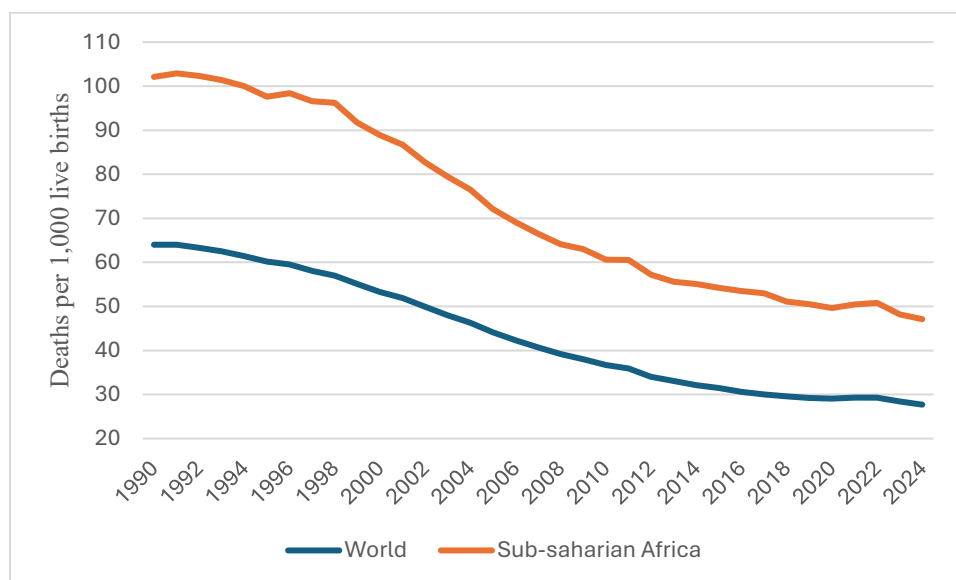


Figure 16 - Life expectancy at birth: a comparison between Africa and the World (1990–2023). Source: Author's elaboration based on United Nations Development Programme, Human Development Data Center, 2025

There is also a difference in life expectancy between women and men, with women in sub-Saharan Africa having an average life expectancy of around 64 years, whilst men have an average of around 61 years; this difference is also evident on a global scale, with averages of 76 and 71 years respectively.

Factors such as maternal mortality and infant mortality influence life expectancy. Since 2000, the African region has made significant progress in reducing maternal mortality, with a 40 per cent reduction, falling from 727 to 442 deaths per 100,000 live births

between 2000 and 2023, supported by a decline in fertility rates and improved access to contraceptives. Despite this decline, the region still accounts for 70 per cent of maternal deaths globally and, at the current annual rate of reduction of 2.2 per cent, the figure is projected to reach 350 maternal deaths per 100,000 live births by 2030, a figure five times higher than the target set by the Sustainable Development Goals (SDGs) of fewer than 70 deaths (WHO, 2025). The infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year. Since 1990, the trend both globally and in the sub-Saharan region has been one of a steady decline over time, although the African region continues to have higher infant mortality rates than the global average. Despite a narrowing of the gap over the last thirty years, in 2024 infant mortality in sub-Saharan Africa is approximately double the global average (*see Fig.17*).



*Figure 17 - Infant mortality rate trends: a comparison between Sub-Saharan Africa and the World (1990-2024). Source: Author's elaboration based on World Bank Open Data*

A vast body of literature has investigated the relationship between economic development and public health. What has emerged is that there is a certain bidirectionality: on the one hand, several studies report that economic growth favours a general improvement in health conditions and higher life expectancy in the long term (Preston, 1975), whilst the same cannot be said for short-term macroeconomic fluctuations (Cutler et al., 2006). On the other hand, public health is one of the drivers of growth, in that: healthier individuals are more productive at work, a higher life expectancy allows for greater investment in

human capital and education, as well as encouraging increased savings, all of which are key factors for sustained, long-term development (Bloom et al., 2000).

Another question concerns the impact of FDI on health and the channels through which this impact occurs. Several empirical studies have reported that the inflow of foreign capital can generate negative externalities, encouraging harmful lifestyles, such as increased consumption of tobacco, ultra-processed foods and alcohol, with repercussions on obesity rates, particularly in low- and middle-income countries (Stuckler et al., 2012). Furthermore, Jorgenson (2009) found that direct investment in the secondary sector is correlated with higher levels of environmental pollution and a consequent rise in infant mortality rates. Burns et al. (2017), however, found that FDI had a beneficial effect on mortality by age group in low- and middle-income countries, reporting that the entry of multinational companies can lead to higher wages and improved working conditions, thereby contributing to a reduction in adult mortality.

### **3.3.2 The Education Dimension**

The education, as with health, is one of the goals of the 2030 Agenda, specifically the fourth goal, which aims to ensure inclusive and equitable quality education and to promote lifelong learning opportunities for all.

The education index, as previously set out in formula (5), is calculated using two sub-indicators: the expected years of schooling for school-age children and the average years of schooling for the adult population aged 25 and over. According to data from the Human Development Report 2023/24 published by the United Nations Development Programme (UNDP), in 2023 the average education index in Africa stood at 0.502, with an average of 10.921 years of expected schooling and an average of 5.967 years of schooling for adults.

In the field of education, one of the most critical issues on the African continent is the literacy rate among both the adult population and young people. According to World Bank data, only 68.69 per cent of adults aged over 15 can both read and write, demonstrating an understanding of a short, simple sentence relating to their daily lives, compared with a global average of 87.74 per cent. Furthermore, this figure varies

drastically by geographical area, ranging from 91.15 per cent in South Africa to 35.63 per cent in Mali, and by gender: 62.66 per cent for women and 74.88 per cent for men. The same gender disparity is also found among the younger population, aged 15 to 24, with a literacy rate of 76.58 per cent for females and 81.34 per cent for males (*see Annex 4*).

These profound disparities stem from socio-cultural, economic and infrastructural factors, which hinder access to and completion of schooling, with girls being the hardest hit. In fragile economic contexts, education often represents an opportunity cost that families find difficult to bear, leading them to prioritise boys' education at the expense of girls', with the latter being assigned to domestic chores, caring for younger siblings or forced into early marriage (World Bank, 2018). Furthermore, girls' schooling is also discouraged by the school environment, where the lack of adequate and separate toilet facilities, together with potential intimidation, harassment and the risk of violence, whether from teachers or other male pupils, lead to early school leaving (UNICEF, 2019; UNESCO, 2016).

In addition to gender differences, there are other factors that are holding back education in various parts of sub-Saharan Africa. Health crises are one such factor, such as the HIV/AIDS epidemic, which, although now better controlled thanks to antiretroviral therapies, has forced, and continues to force, many children to drop out of school to care for sick family members or even to take on the role of head of the household, forced to work to support their families (UNAIDS, 2014). Finally, the presence of armed conflicts and persistent political instability in various parts of the continent severely and systematically affect the education system (GCPEA, 2022).

### **3.3.3 The Standard of Living Dimension**

In the Human Development Index (HDI), the dimension relating to a decent standard of living is measured using Gross National Income (GNI) per capita at purchasing power parity (PPP). This indicator is necessary to compare the actual economic well-being of individuals across countries with different costs of living.

In the case of sub-Saharan Africa, there has been strong growth in GNI, with the figure reaching 5 trillion 360 billion dollars (PPP) by 2023. However, the extremely high rate of population growth is holding back growth in terms of individual income, which in fact

follows a trend of more modest growth (see figure below), with a GNI per capita of around 4,250 PPP dollars, compared to a global average of 19,000 (see Fig.18).

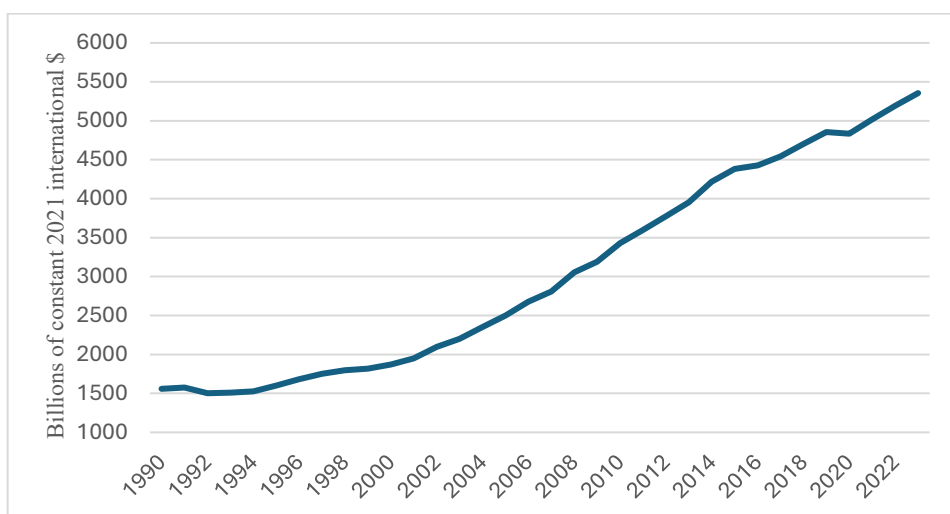


Figure 18 - Aggregate Gross National Income (GNI) trend in Africa (1990–2023). Source: Author's elaboration based on United Nations Development Programme, Human Development Data Center, and World Bank Open Data

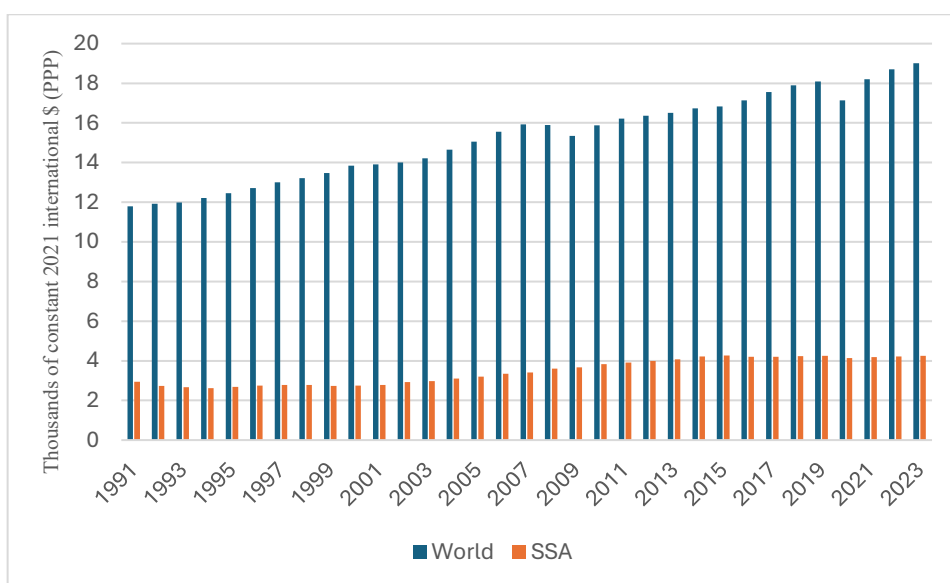


Figure 19 - Gross National Income (GNI) per capita (PPP): a comparison between Sub-Saharan Africa and the World (1991–2023). Source: Author's elaboration based on United Nations Development Programme, Human Development Data Center, and World Bank Open Data

This trend in the African region is more stagnant than the global average, indicating that, whilst global per capita income has grown over the last thirty years, sub-Saharan Africa is struggling more to convert the wealth it produces into a real improvement in living standards for the majority of the population (see Fig.19; see Annex 4 for further information).

## **Chapter 4: Empirical Analysis of FDI and HDI in African context**

So far, we have outlined the theoretical framework relating to Foreign Direct Investment (FDI) and the Human Development Index (HDI) and described the specific trends within the African continent. In this chapter, we shall move on to the main body of the study, where, by applying econometric models to panel data for a sample of 54 African countries, we shall attempt to empirically test the existence, direction and magnitude of the relationship between FDI inflows and human development, including its three dimensions (health, education and income). The structure of the chapter is as follows: we begin by defining the dataset used, then move on to defining the dependent variable, the independent variable and the control variables, followed by an account of the methodologies employed, and conclude with a discussion of the results obtained.

### **4.1 Data definition and variables**

#### *Welfare variable (Dependent variable)*

The first step in constructing econometric models is to define and extract the data for the dependent variable from the available databases. The phenomenon to be analysed is measured using the Human Development Index (HDI), for which data are provided by the United Nations Development Programme (UNDP) database, covering the period from 1990 up to the latest update in 2023. The econometric models will also utilise the sub-indicators of the composite HDI, which define its three fundamental dimensions, specifically: life expectancy at birth (Health), expected years of schooling and mean years of schooling (Education), and finally gross national income per capita at purchasing power parity (Standard of living). The use of these sub-indicators is intended to facilitate an empirical assessment, including at a disaggregated level, to evaluate how each is influenced by the inflow of foreign capital.

Many studies have analysed the relationship between FDI and economic growth, defined as GDP growth, on the assumption that the latter and well-being are perfectly and positively correlated. This assumption has, however, been the subject of debate, and various sources have shown that GDP can rise whilst the poverty rate increases. Compared with this wide range of studies, very few papers have analysed the direct

relationship between FDI and well-being, amongst those that have used the HDI as a measure of well-being are: Sharma and Gani (2004), who analysed the impact of FDI on the HDI for middle- and low-income countries, and Gohou and Soumaré (2012), which focused more on the African continent. It was precisely the latter study that served as the basis for defining the independent variable and the control variables for our analysis, the data for which were drawn primarily from the World Bank's World Development Indicators (WDI) database.

#### *Foreign Direct Investment*

**Variable.1** “fdi\_gdp” - *Foreign Direct Investment as a percentage of GDP (Independent variable)*

The data relating to the independent variable were extracted from the World Bank's WDI database for the indicator “Foreign direct investment, net inflows (% of GDP)”, identified in the dataset as “fdigdp”.

The World Bank calculates FDI as net FDI inflows, i.e. new investment inflows less disinvestment by foreign investors in the host country. These flows consist of the sum of share capital, reinvested profits and other short- and long-term capital recorded in the balance of payments, with the ultimate aim of acquiring a lasting interest in a company operating in a country other than that of the investor.

The figure is reported as a percentage of the host country's GDP, which is particularly useful for our econometric models, allowing us to compare 54 countries with diverse economies, indeed, relating investment to GDP enables us to measure its actual impact, making the data proportionate and comparable.

**Variable 2.** “fdi\_gcf” - *Ratio of foreign direct investment to gross capital formation*

This variable is defined as the ratio of foreign direct investment to gross capital formation. The data for this variable are drawn from the WDI, specifically from the indicators “Foreign direct investment, net inflows (BoP, current US\$)” and “Gross capital formation (current US\$)”, listed in the dataset as “fdi” and “gcf” respectively. The first indicator quantifies the absolute value of net FDI inflows expressed in current US\$, as reported in the balance of payments, whilst the second, again according to the World Bank, includes acquisitions less disposals of productive assets for the purposes of fixed capital formation, inventories or valuables, also expressed in current US\$, meaning no adjustment has been made to account for price changes over time. This variable makes it possible to measure

the impact of foreign capital on the overall investment capacity of the recipient country, highlighting what proportion of total investment is financed by foreign resources.

### *Control variables*

For constructing the models, various regressors (control variables) listed below were taken into account, with the aim of isolating the effect of foreign direct investment as much as possible and minimising the distortion caused by omitted variables. These are categorised below as: economic variables and political risk variables.

### *Economic variables*

#### **Variable 3.** “gdppc” - *GDP per capita*

According to the World Bank’s definition, GDP is the sum of the gross value added by all resident producers in the economy, plus any taxes on products and minus any subsidies not included in the value of the products. It is calculated without making deductions for the depreciation of manufactured assets or for the depletion and degradation of natural resources. The data here are also taken from the World Bank’s WDI, this time relating to the indicator ‘GDP per capita (constant 2015 US\$)’, identified in the dataset as ‘gdppc’. It is defined as gross domestic product divided by the estimated mid-year population and is expressed in constant 2015 US\$ to neutralise the effect of inflation over time, thereby allowing values to be compared across the entire time horizon under consideration.

#### **Variable 4.** “gov\_fin\_cons” – *Government expenditure*

The data are taken from the World Bank’s WDI for the indicator “General government final consumption expenditure (% of GDP)”, identified in the dataset as “gov\_fin\_cons”. According to the World Bank, this indicator represents expenditure incurred by resident institutional units on the purchase of goods and services intended to directly satisfy human needs or requirements, whether individual or collective. General government final consumption expenditure comprises all current public expenditure on the purchase of goods and services (including employees’ remuneration) and most expenditure on defence and national security, but excludes military expenditure, which is classified under general government capital formation. This indicator is expressed as a percentage of Gross Domestic Product (GDP), i.e. the total income generated by the production of goods and services within an economic territory during a given accounting period.

By including this control variable, it is expected that higher government spending will result in a greater provision of essential goods and services, such as education and healthcare, which have a direct and positive impact on the HDI, particularly in developing countries where citizens' basic needs are primarily met through government spending. Controlling for this variable therefore prevents the positive impact on well-being generated by fiscal and social policies from being erroneously attributed to the inflow of foreign capital.

**Variable 5.** “inflation” – *Macroeconomic instability*

Inflation is measured by the annual growth rate of the implicit GDP deflator and indicates the change in prices across the economy as a whole. The implicit GDP deflator is the ratio of GDP at current prices in local currency to GDP at constant prices in local currency. The data are drawn from the World Bank's WDI for the indicator 'Inflation, GDP deflator (annual %)', identified in the dataset as 'inflation'. The inclusion of inflation allows us to capture macroeconomic instability, and it is expected to have a negative effect on well-being, as high inflation leads to an increase in the prices of basic goods, primarily affecting the poorest section of the population.

**Variable 6.** “openness” – *Trade openness*

Trade openness is defined as the sum of imports and exports as a percentage of GDP and measures the degree of openness of the target country. This indicator is derived from three indicators taken from the World Bank's WDI, specifically 'Exports of goods and services (current US\$)', 'Imports of goods and services (current US\$)' and 'GDP (current US\$)'. Several studies have reported on this indicator, examining its relationship with both FDI and the HDI, specifically, Hamdi and Hakimi (2022) demonstrated that trade openness has a positive and statistically significant impact on the HDI in the long term.

**Variable 7.** “credit” – *Financial development*

This variable is intended to measure a country's financial development, specifically, it measures the financial resources provided to the private sector by financial corporations, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable that establish a claim for repayment, all expressed as a percentage of GDP. The data used are extracted from the WDI for the indicator 'Domestic credit to the private sector by banks (% of GDP)', identified in the dataset as 'credit'. The inclusion

of this variable is justified by macroeconomic mechanisms, whereby greater access to credit enables households to overcome their liquidity constraints in order to invest in education and meet medical expenses, it also allows businesses to obtain funds to expand, thereby increasing employment and wages.

#### *Political risk variables*

##### **Variables 8 and 9.** “PR” and “CL” – *Political rights rating and Civil liberties rating*

The political rights rating measures the freedom to engage in political activism, specifically in the areas of the electoral process, political pluralism, and government participation and functions. The civil liberties rating measures the freedom to act in order to exercise one’s civil rights, such as freedom of expression and belief, freedom of association and organisation, the rule of law, personal autonomy and individual rights. In the dataset, the two variables are denoted as ‘PR’ and ‘CL’. The data are compiled by Freedom House based on their standardised historical scale, in which they assign each country an index for ‘political rights’ and one for ‘civil liberties’, with a value ranging from 1 to 7, where 1 represents the greatest degree of freedom and 7 the smallest degree of freedom, and where the average of the ratings determines the status of Free (from 1 to 2.5), Partly Free (from 3 to 5), or Not Free (from 5.5 to 7). As regards the use of these control variables in the context of the HDI, it is very interesting to quote Amartya Sen (1999): “There has never been a famine on a large scale in a democratic country, however poor it may be. This is because famines are extremely easy to prevent if the government makes the effort to do so, and a government in a multi-party democracy, characterised by free elections and a free press, has strong political incentives to implement measures to prevent them”. This statement highlights how a government subject to free elections and a free press has a greater incentive to allocate resources to essential areas such as education and health, which have a direct impact on human development, this also ties in with the concept of ‘capabilities’ developed by Sen himself.

The initial intention of this empirical analysis was to simultaneously include all the mentioned control variables in our regressions, in order to account for the diverse macroeconomic and institutional contexts of the host countries, unfortunately, this comprehensive approach runs up against structural econometric constraints, so we focused solely on the control variable related to government expenditure, as detailed in the next paragraph of methodology.

| Variable     | Obs  | Mean     | Std. Dev. | Min     | Max       |
|--------------|------|----------|-----------|---------|-----------|
| hdi          | 1597 | 0,510    | 0,124     | 0,215   | 0,853     |
| life_exp     | 1836 | 58,280   | 8,529     | 12,158  | 76,508    |
| exp_school   | 1710 | 9,081    | 3,065     | 1,942   | 19,694    |
| mean_school  | 1658 | 4,733    | 2,323     | 0,728   | 11,610    |
| gnipc        | 1800 | 5439,978 | 5795,879  | 479,886 | 33095,320 |
| fdi_gdp      | 2723 | 2,838    | 7,625     | -82,892 | 161,824   |
| fdi_gcf      | 2100 | 0,099    | 0,518     | -20,233 | 6,475     |
| gdppc        | 3151 | 1972,948 | 2623,994  | 169,788 | 20077,740 |
| gov_fin_cons | 2435 | 15,396   | 7,061     | 2,048   | 62,133    |
| inflation    | 3066 | 28,596   | 504,937   | -31,566 | 26765,860 |
| openness     | 2465 | 0,630    | 0,340     | 0,020   | 3,477     |
| credit       | 2895 | 16,602   | 14,893    | 0,154   | 103,655   |
| PR           | 2602 | 5,017    | 1,774     | 1       | 7         |
| CL           | 2602 | 4,773    | 1,483     | 1       | 7         |

Table 8 – List of variables together with their descriptive statistics

| Variable                         | Description                                                                                                        | Source of data |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------|
| <i>Welfare</i>                   |                                                                                                                    |                |
| hdi                              | Human Development Index                                                                                            | HDR of UNDP    |
| life_exp                         | Life Expectancy at Birth (years)                                                                                   | HDR of UNDP    |
| exp_school                       | Expected Years of Schooling (years)                                                                                | HDR of UNDP    |
| mean_school                      | Mean Years of Schooling (years)                                                                                    | HDR of UNDP    |
| gnipc                            | Gross National Income Per Capita (2021 PPP\$)                                                                      | HDR of UNDP    |
| <i>Foreign Direct Investment</i> |                                                                                                                    |                |
| fdi_gdp                          | Foreign direct investment, net inflows (% of GDP)                                                                  | WDIs           |
| fdi_gcf                          | Foreign direct investment, net inflows (BoP, current US\$)/Gross capital formation (current US\$)                  | WDIs           |
| <i>Control variables</i>         |                                                                                                                    |                |
| <i>Economic variables</i>        |                                                                                                                    |                |
| gdppc                            | GDP per capita (constant 2015 US\$)                                                                                | WDIs           |
| gov_fin_cons                     | General government final consumption expenditure (% of GDP)                                                        | WDIs           |
| inflation                        | Inflation, GDP deflator (annual %)                                                                                 | WDIs           |
| openness                         | (Exports of goods and services (current US\$) + Imports of goods and services (current US\$)) / GDP (current US\$) | WDIs           |
| credit                           | Domestic credit to private sector by banks (% of GDP)                                                              | WDIs           |
| <i>Political risk variables</i>  |                                                                                                                    |                |
| PR                               | Political rights rating                                                                                            | Freedom House  |
| CL                               | Civil liberties rating                                                                                             | Freedom House  |

Table 9 – the description and the sources of variables

## 4.2 Econometric methodology

The empirical study conducted is based on an econometric analysis of panel data. The original dataset was constructed by collecting observations for N=54 countries on the African continent over a time horizon of T=32, from 1992 to 2023, the last year for which HDI data are available, resulting in a total of  $N \times T = 1,728$  potential observations for each variable, these are referred to as ‘potential’ as there may be missing values for certain years and for certain countries. The use of a panel structure offers several advantages over

cross-sectional or time-series data, specifically, it allows for the control of individual heterogeneity, reduces collinearity between variables, increases the degrees of freedom, and provides more informative data and greater variability (Baltagi, 2021).

The final data structure is that of an unbalanced panel, given that, when working with macroeconomic data in developing contexts, such as African countries, the presence of missing values is to be expected, as the temporal continuity of the time series may be disrupted by exogenous factors, such as political instability or structural shortcomings in data collection. From the panel, the countries with the highest number of missing values, particularly in the main variables under study, which we will report below, are São Tomé and Príncipe, Somalia and South Sudan.

Remaining within the context of missing data, an initial regression was carried out to isolate the ‘Country-Year’ observations that contained complete data for all variables, discarding rows with missing values. This process revealed a greater prevalence of missing data in the years prior to 1992, for this reason, the time period under consideration begins in that year.

#### *Choice of the ‘Government Expenditure’ control variable*

In the models we will examine below, we have included government expenditure, ‘gov\_fin\_cons’, as a control variable, from amongst the indicators considered. There are two main reasons for this choice:

- Socio-economic rationale: as has been noted on several occasions, the HDI is a composite index that measures health, education and living standards. On the African continent, the provision of essential services, such as the running of hospitals and schools, the supply of medicines, and the payment of salaries to school and hospital staff, depends heavily on state intervention, therefore, increased government spending translates into a greater provision of these services, which has a positive impact on health and education.
- Econometric rationale: from an econometric perspective, omitting this variable from the models would lead to an omitted variable bias, the rationale lies in the fact that countries which, through higher government spending, are able to provide better infrastructure and services, as well as stimulate domestic human development, attract more foreign capital.

It is therefore important to control for the level of public expenditure by including it in the models, as failing to do so could lead to improvements in human development being erroneously attributed solely to FDI, when in reality they may be generated by the fiscal and distributional policies of local governments.

#### *Econometric models*

The econometric methodology adopted followed a step-by-step approach, in which various econometric models were tested using different estimators. The analysis began with a basic dynamic panel model, then moved on to a dynamic panel model with cumulative variables and finally utilised a dynamic panel model with variables based on four-year periods. The methodology outlined below was applied not only to the HDI in its aggregate form, but also to its individual sub-indicators, which were used as dependent variables alongside their respective autoregressive terms.

#### *Basic dynamic model and fixed-effects (FE) estimator*

In the first stage, it was decided to use a dynamic panel model, termed ‘dynamic’ because the dependent variable, with a time lag, was included as a regressor, also known as an autoregressive term. The inclusion of this term is dictated by the nature of the dependent variable in question, which exhibits low variability in the short run.

In our case, we are working with a panel comprising N countries, this therefore does not represent a random sample from an infinite population, but corresponds to the entire population of interest, where each country is characterised by unique factors that remain constant over time, such as geographical location or historical and institutional heritage, characteristics that are well suited to a fixed-effects estimator.

The model takes the following form:

$$HDI_{i,t} = \rho HDI_{i,t-1} + \beta_1 FDI_{i,t} + \beta_2 GOV_{i,t} + \mu_t + \alpha_i + \varepsilon_{i,t} \quad (9)$$

Where  $HDI_{i,t-1}$  represents the lag of the dependent variable,  $FDI_{i,t}$  is foreign direct investment as a percentage of GDP,  $GOV_{i,t}$  is general government final consumption expenditure, also expressed as a percentage of GDP,  $\mu_t$  represents the time-specific dummies included to control for global shocks common to all countries in year t,  $\alpha_i$  are the country-specific fixed effects and  $\varepsilon_{i,t}$  is the error term.

The inclusion of fixed effects therefore makes it possible to eliminate the bias that would arise from the unobservable and time-invariant characteristics of individual countries, furthermore, the inclusion of time-specific dummy variables isolates the impact of global exogenous shocks. However, the inclusion of the autoregressive term in the fixed-effects estimator causes a systematic bias, known as the Nickell bias, whereby the transformed  $HDI_{it-1}$  variable is correlated with the error term, leading to a bias in the coefficients (Nickell, 1981). Another limitation of the fixed-effects estimator is the assumption of strict exogeneity of the independent variables, which unfortunately is not satisfied given that there is a problem of reverse causality between FDI and HDI, this implies endogeneity for the independent variable, which has led to the use of more complex estimators, such as the next one (Roodman, 2009).

#### *Generalized Method of Moments (GMM)*

To overcome the limitations of the fixed-effects estimator, the GMM estimator devised by Arellano-Bond in 1991 was introduced; this estimator works with panel data characterised by a limited number of T and a large number of N.

The estimator resolves the Nickell bias problem through an initial step in which it calculates the first differences of the individual variables, subtracting year t-1 from year t. This leads to the following equation:

$$\Delta HDI_{i,t} = \rho \Delta HDI_{i,t-1} + \beta_1 \Delta FDI_{i,t-1} + \beta_2 \Delta GOV_{i,t-1} + \Delta \mu_t + \Delta \varepsilon_{i,t} \quad (10)$$

where the fixed effect of individual countries disappears, thereby resolving the Nickell bias.

However, this difference first gives rise to a new problem of correlation between the transformed regressor  $\Delta HDI_{i,t-1} = HDI_{i,t-1} - HDI_{i,t-2}$  and the error term  $\Delta \varepsilon_{i,t} = \varepsilon_{i,t} - \varepsilon_{i,t-1}$  arises due to the temporal link between  $HDI_{i,t-1}$  and  $\varepsilon_{i,t-1}$ . The GMM estimator resolves this problem by introducing instrumental variables, such as the lagged values of these variables in place of the current ones, for example,  $HDI_{i,t-2}, HDI_{i,t-3}$  if we consider a lag of 1 and 2 years, respectively, since the development index from 2- and 3-years prior is not influenced by the error term.

Hansen's test checks whether the instrumental variables are exogenous; therefore, if the test yields a low p-value, the exogeneity hypothesis must be rejected. The problem with

this test is that, when there are a large number of T periods, an overabundance of instruments arises, which no longer allows us to detect any hidden endogeneity, resulting in a p-value approaching 1. When the number of countries is fewer than the number of instruments, the estimated model becomes overfitted, resulting in distorted estimates.

#### *Cumulative approach and LSDVC estimator*

We subsequently opted to create cumulative variables, such as the stock of FDI and public expenditure accumulated over 6- and 10-year horizon respectively, the rationale for this lies in the fact that the impact of foreign capital and public expenditure does not translate instantly into an improvement in lagging indicators such as life expectancy and years of schooling.

Furthermore, the LSDVC (Least Square Dummy Variable Corrected) estimator was introduced as a valid alternative to the GMM estimator discussed earlier, given that the latter works well on panels with very large sample sizes (N), but in the case of small sample sizes, as is the case with African countries, it can generate too many instruments, leading to overfitting and unreliable results. The LSDVC estimator, on the other hand, is designed for panels with a limited sample size (N) and a moderate time horizon.

#### *Four-year time aggregation model*

Given the inherent slowness of the HDI and its sub-indicators, particularly those relating to the health and education dimensions, in responding to macroeconomic stimuli, and in order to move from annual fluctuations in the regressors to multi-year trends, the 32 years of observations were grouped into eight four-year periods. Consequently, the four-year average was calculated for the dependent variable, whilst the four-year sum was calculated for the FDI and GOV predictors, in order to measure the inflow of foreign capital and total public expenditure over the period.

The model equation is set out below:

$$HDI_{i,q} = \rho HDI_{i,q-1} + \beta_1 \sum_{t \in q} FDI_{i,t} + \sum_{t \in q} GOV_{i,t} + \mu_q + \alpha_i + \varepsilon_{i,q} \quad (11)$$

The main aim is to reduce data noise in the short term by switching to four-year trends, so as to assess whether massive inflows of foreign capital and public expenditure lead to

actual, and indeed lasting, changes in human development. LSDVC estimators and fixed-effects models have been tested on this new model.

### 4.3 Results and discussion

#### *Impact of FDI on the aggregate HDI*

|                       | Fixed Effects             | GMM                       | LSDVC with<br>stock cum    | LSDVC regarding<br>four-year terms |
|-----------------------|---------------------------|---------------------------|----------------------------|------------------------------------|
|                       | hdi                       | hdi                       | hdi                        | hdi_quad                           |
| hdi L1                | 0.889738***<br>(0.010547) | 0.924672***<br>(0.037890) | 0.866432***<br>0.866432*** |                                    |
| hdi_quad L1           |                           |                           |                            | 0.727211***<br>(0.073724)          |
| fdi_gdp               | 0.000049<br>(0.000052)    |                           |                            |                                    |
| fdi_gdp L1            |                           | -0.000052<br>(0.000058)   |                            |                                    |
| fdi_cum (6y stock)    |                           |                           | 0.000004<br>(0.000030)     |                                    |
| fdi_gdp_cum_q_1       |                           |                           |                            | -0.000022<br>(0.000085)            |
| gov_fin_cons          | 0.000013<br>(0.000072)    |                           |                            |                                    |
| gov_fin_cons L1       |                           | 0.000203<br>(0.000150)    |                            |                                    |
| gov_cum (10y stock)   |                           |                           | 0.000007<br>(0.000027)     |                                    |
| gov_fin_cons_cum_q_1  |                           |                           |                            | 0.000008<br>(0.000060)             |
| Observations          | 1221                      | 1213                      | 869                        | 334                                |
| Number of countries   | 50                        | 50                        | 48                         | 53                                 |
| Number of instruments |                           | 122                       |                            |                                    |
| AR(1) p-value         |                           | 0.202                     |                            |                                    |
| AR(2) p-value         |                           | 0.272                     |                            |                                    |
| Hansen Test p-value   |                           | 1.000                     |                            |                                    |

Standard errors in parentheses.

Time dummies are included but not reported.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Table 10 - Econometric estimates of the impact of Foreign Direct Investments on the aggregate Human Development Index (HDI)*

Table 10 presents the econometric results relating to the estimation of the impact of foreign direct investment on the Human Development Index (HDI). The analysis began with a fixed-effects estimator (column 1) where, due to the endogeneity of the lagged dependent variable and, consequently, the presence of Nickell bias, the results were distorted and unreliable. To resolve this bias, we therefore switched to a GMM estimator (column 2), in which we considered the lags of the predictors `fdi_gdp` and `gov_fin_cons`, however, it can be seen that the number of countries (50) is significantly lower than the number of instruments (122), this leads to an overfitting problem for the GMM estimator, as confirmed by the Hansen test p-value of 1, a clear warning sign for the estimate arising from the proliferation of instruments, which reduces the reliability and validity of the

estimates. To overcome this problem for a dynamic panel with limited N and T, the LSDVC estimator was chosen, first using a 6-year cumulative stock for FDI and a 10-year cumulative stock for public expenditure as regressors (column 3), and subsequently an average of the HDI index calculated over four-year periods together with cumulative stocks referring to the previous four-year period for the two regressors (column 4). The results show that the lagged dependent variable (hdi L1 and hdi\_quad L1) has a consistently positive coefficient that is statistically significant at the 1% level, confirming that the Human Development Index is strongly dependent on past levels. As regards FDI, the coefficients are negligible and have no statistically significant impact, therefore, the inflow of foreign capital does not translate into a tangible improvement in human development in the countries analysed. The control variable for public expenditure also shows a negligible and statistically insignificant effect, suggesting that short- and medium-term injections of public expenditure do not translate into actual improvements in human development on the African continent.

#### *Impact of FDI on Health*

|                       | Fixed Effects             | GMM                       | LSDVC with stock cum      | LSDVC regarding four-year terms |
|-----------------------|---------------------------|---------------------------|---------------------------|---------------------------------|
|                       | life_exp                  | life_exp                  | life_exp                  | life_exp_quad                   |
| life_exp L1           | 0.607255***<br>(0.021660) | 0.724101***<br>(0.071474) | 0.473361***<br>(0.034988) |                                 |
| life_exp_quad L1      |                           |                           |                           | 0.836322***<br>(0.059000)       |
| fdi_gdp               | 0.001279<br>(0.015644)    |                           |                           |                                 |
| fdi_gdp L1            |                           | 0.022104<br>(0.035419)    |                           |                                 |
| fdi_cum (6y stock)    |                           |                           | 0.002559<br>(0.005331)    |                                 |
| fdi_gdp_cum_q_1       |                           |                           |                           | -0.004069<br>(0.007786)         |
| gov_fin_cons          | 0.004238<br>(0.018430)    |                           |                           |                                 |
| gov_fin_cons L1       |                           | 0.029635<br>(0.035419)    |                           |                                 |
| gov_cum (10y stock)   |                           |                           | 0.007709*<br>(0.004125)   |                                 |
| gov_fin_cons_cum_q_1  |                           |                           |                           | 0.010471*<br>(0.005690)         |
| Observations          | 1334                      | 1325                      | 908                       | 378                             |
| Number of countries   | 50                        | 50                        | 48                        | 54                              |
| Number of instruments |                           | 122                       |                           |                                 |
| AR(1) p-value         |                           | 0.163                     |                           |                                 |
| AR(2) p-value         |                           | 0.688                     |                           |                                 |
| Hansen Test p-value   |                           | 1.000                     |                           |                                 |

Standard errors in parentheses.

Time dummies are included but not reported.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Table 11 - Econometric estimates of the impact of Foreign Direct Investments on Life Expectancy at Birth*

Table 11 presents the econometric results relating to the impact of FDI on health outcomes, expressed as life expectancy at birth (life\_exp). The GMM estimator suffers from the same overfitting issues discussed earlier. Life expectancy also shows a strong dependence on values from previous years, with consistently positive and significant coefficients for the lagged dependent variable. As regards FDI, no coefficient is statistically positive, demonstrating that the inflow of foreign capital does not translate into an improvement in general health in the African countries analysed. A significant finding concerns public expenditure, which, in the medium to long term (cumulative 10 years) and in the previous four-year aggregate, shows positive and statistically significant coefficients at the 10 per cent level. This highlights how a sustained increase in public expenditure leads to an improvement in essential services and, consequently, an improvement in the health status of the population.

### *Impact of FDI on Education*

|                       | Fixed Effects             | GMM                       | LSDVC with stock cum      | LSDVC regarding four-year terms |
|-----------------------|---------------------------|---------------------------|---------------------------|---------------------------------|
|                       | exp_school                | exp_school                | exp_school                | exp_school_quad                 |
| exp_school L1         | 0.948858***<br>(0.006984) | 0.966431***<br>(0.040504) | 0.903406***<br>(0.022323) |                                 |
| exp_school_quad L1    |                           |                           |                           | 0.882340***<br>(0.056030)       |
| fdi_gdp               | 0.001549<br>(0.001920)    |                           |                           |                                 |
| fdi_gdp L1            |                           | -0.000039<br>(0.001795)   |                           |                                 |
| fdi_cum (6y stock)    |                           |                           | 0.000851<br>(0.000725)    |                                 |
| fdi_gdp_cum_q_1       |                           |                           |                           | -0.000923<br>(0.002487)         |
| gov_fin_cons          | 0.005483***<br>(0.001920) |                           |                           |                                 |
| gov_fin_cons L1       |                           | 0.001442<br>(0.004682)    |                           |                                 |
| gov_cum (10y stock)   |                           |                           | 0.000465<br>(0.000590)    |                                 |
| gov_fin_cons_cum_q_1  |                           |                           |                           | 0.001250<br>(0.002036)          |
| Observations          | 1300                      | 1291                      | 896                       | 355                             |
| Number of countries   | 50                        | 50                        | 48                        | 53                              |
| Number of instruments |                           | 122                       |                           |                                 |
| AR(1) p-value         |                           | 0.051                     |                           |                                 |
| AR(2) p-value         |                           | 0.238                     |                           |                                 |
| Hansen Test p-value   |                           | 1.000                     |                           |                                 |

Standard errors in parentheses.

Time dummies are included but not reported.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 12 - Econometric estimates of the impact of Foreign Direct Investments on Expected Years of Schooling

|                       | Fixed Effects             | GMM                       | LSDVC with<br>stock cum   | LSDVC regarding<br>four-year terms |
|-----------------------|---------------------------|---------------------------|---------------------------|------------------------------------|
|                       | mean_school               | mean_school               | mean_school               | mean_school_quad                   |
| mean_school L1        | 0.974957***<br>(0.007259) | 1.016329***<br>(0.121215) | 0.996584***<br>(0.014285) |                                    |
| mean_school_quad L1   |                           |                           |                           | 0.976597***<br>(0.047686)          |
| fdi_gdp               | 0.001443**<br>(0.000718)  |                           |                           |                                    |
| fdi_gdp L1            |                           | -0.000449<br>(.)          |                           |                                    |
| fdi_cum (6y stock)    |                           |                           | 0.000115<br>(0.000275)    |                                    |
| fdi_gdp_cum_q_1       |                           |                           |                           | -0.000902<br>(0.000835)            |
| gov_fin_cons          | 0.000403<br>(0.000936)    |                           |                           |                                    |
| gov_fin_cons L1       |                           | 0.000845<br>(.)           |                           |                                    |
| gov_cum (10y stock)   |                           |                           | 0.000363<br>(0.000229)    |                                    |
| gov_fin_cons_cum_q_1  |                           |                           |                           | 0.000450<br>(0.000635)             |
| Observations          | 1254                      | 1246                      | 891                       | 344                                |
| Number of countries   | 50                        | 50                        | 48                        | 53                                 |
| Number of instruments |                           | 122                       |                           |                                    |
| AR(1) p-value         |                           | 0.887                     |                           |                                    |
| AR(2) p-value         |                           | .                         |                           |                                    |
| Hansen Test p-value   |                           | 1.000                     |                           |                                    |

Standard errors in parentheses.

Time dummies are included but not reported.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Table 13 - Econometric estimates of the impact of Foreign Direct Investments on Mean Years of Schooling*

The tables 12 and 13 present the results relating to the analysis of the ‘Education’ dimension, measured by ‘Expected years of schooling’ (exp\_school) and ‘Mean years of schooling’ (mean\_school). As regards the results of the first two estimators, FE and GMM, the situation is similar to that described for the previous cases. What emerges from the cumulative and four-year models using the LSDVC estimator is that the education dimension is the component most dependent on its own past values, with coefficients close to 1 and significant at the 1 per cent level, indicating that the mean years of schooling are almost entirely determined by the past. FDI and government expenditure do not have any significant impact, in the latter case, this could be a sign of allocative inefficiency, where state funds fail to translate into improvements in educational outcomes.

## Impact of FDI on Standard of living

|                       | Fixed Effects               | GMM                       | LSDVC with stock cum      | LSDVC regarding four-year terms |
|-----------------------|-----------------------------|---------------------------|---------------------------|---------------------------------|
|                       | gnipc                       | gnipc                     | gnipc                     | gnipc_quad                      |
| gnipc L1              | 0.853239***<br>(0.012685)   | 0.992209***<br>(0.018656) | 0.906901***<br>(0.032130) |                                 |
| gnipc_quad L1         |                             |                           |                           | 0.865404***<br>(0.119206)       |
| fdi_gdp               | -0.354460<br>(4.617803)     |                           |                           |                                 |
| fdi_gdp L1            |                             | 2.518401<br>(10.414721)   |                           |                                 |
| fdi_cum (6y stock)    |                             |                           | 0.371106<br>(1.400740)    |                                 |
| fdi_gdp_cum_q_1       |                             |                           |                           | 5.806059<br>(4.592153)          |
| gov_fin_cons          | -17.695445***<br>(5.497718) |                           |                           |                                 |
| gov_fin_cons L1       |                             | -2.535984<br>(9.338964)   |                           |                                 |
| gov_cum (10y stock)   |                             |                           | -1.806235<br>(1.125538)   |                                 |
| gov_fin_cons_cum_q_1  |                             |                           |                           | -5.910757<br>(4.078633)         |
| Observations          | 1318                        | 1309                      | 900                       | 370                             |
| Number of countries   | 50                          | 50                        | 48                        | 54                              |
| Number of instruments |                             | 122                       |                           |                                 |
| AR(1) p-value         |                             | 0.064                     |                           |                                 |
| AR(2) p-value         |                             | 0.933                     |                           |                                 |
| Hansen Test p-value   |                             | 1.000                     |                           |                                 |

Standard errors in parentheses.

Time dummies are included but not reported.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 14 - Econometric estimates of the impact of Foreign Direct Investments on Gross National Income per capita

Table 14 shows data relating to the standard of living dimension, measured as gross national income per capita (GNI per capita). As with the previous results, this dimension also shows a strong dependence on its own past values, with positive and statistically significant coefficients. FDI, in any form, does not yield significant results, this demonstrates that the inflow of foreign capital does not translate into an increase in the population's income in the African context, given that FDI is generally associated with GDP growth, this leads to the conclusion that there is an ineffective redistribution of the wealth generated. Public expenditure shows a strong, negative and significant correlation in the fixed-effects model, unfortunately, the results of this model are distorted by the presence of the Nickell bias, and when other estimators are used, the significance disappears. This indicates that public expenditure, even when aggregated over several years, does not affect the standard of living of the population.

#### **4.5 Robustness check: restricting the sample to Sub-Saharan Africa excluding South-Africa**

In order to verify the validity of the results obtained, a robustness test was carried out by restricting the panel to sub-Saharan African countries only, excluding North African countries (Algeria, Egypt, Libya, Morocco and Tunisia) and South Africa. This decision was made to isolate the sub-Saharan context from economies that diverge from the rest of the African continent, which differ in terms of income levels, degree of industrialisation and the type of investment attracted. The findings confirm the evidence discussed previously, namely that human development and its dimensions remain strongly dependent on past values; furthermore, the FDI coefficients remain non-significant, demonstrating that the inability of foreign capital to trigger improvements in human development and well-being is not caused by the inclusion of heterogeneous economies.

## Conclusion

This thesis set out to investigate the effects of foreign direct investment (FDI) on well-being and human development in the African context, using the Human Development Index (HDI) and its three fundamental dimensions (health, education and standard of living), moving beyond the assumption that equates economic growth with human development.

The initial theoretical framework highlighted how FDI's potential to generate positive externalities through various transmission channels, such as technology transfer, human capital formation and supply chain linkages, depends largely on the host country's absorptive capacity, the nature of the investment and the institutional context. In the African context, as reported in Chapter 2, an increase in FDI inflows has been noted, with recent shifts towards greenfield investments in infrastructure and renewable energy, however, despite this, the continent's participation in the global value chain remains asymmetrical, based primarily on the export of unprocessed raw materials, this, combined with the spread of 'consumer cities' and poverty, suggests that there may be a disconnect between foreign capital inflows and the extent of human development.

To test the relationship between FDI and HDI was analysed a panel dataset covering the 54 African countries over a time horizon from 1992 to 2023. The econometric methodology applied progressed from a fixed-effects (FE) estimator, to a Generalised Method of Moments (GMM) and, finally, to a Least Square Dummy Variable Corrected (LSDVC) estimator, the latter was used to overcome the Nickell bias, the endogeneity of the variables and overfitting issues associated with the GMM.

The results showed that all FDI coefficients, whether in the form of cumulative flows or stocks, were statistically insignificant, indicating that, in the African context, an inflow of foreign capital does not automatically translate into improvements in human development and its individual dimensions, at the same time, they confirmed that human development in Africa is deeply dependent on its past values. Medium- and long-term public expenditure, on the other hand, showed a positive and statistically significant coefficient for the health dimension, whilst it did not yield any significant results for the other two dimensions. Finally, a robustness test was conducted excluding North African economies and South Africa, which confirmed the results obtained.

In conclusion, the findings of this research challenge the narrative that attracting foreign capital necessarily leads to an improvement in human development and its dimensions,

although FDI leads to economic growth and an increase in GDP, the benefits fail to have a tangible impact on health, education and living standards.

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## Annex 1: Economic classification and fragile rankings

- Gross Domestic Product (GDP) per capita, Nominal and Purchasing Power Parity (PPP), of African Countries (2025). Note: Data for Eritrea (2011) and South Sudan (2015) represent the latest available data. Source: World Bank (World Bank Open Data)

| Country                  | GDP per capita, current US\$ | GDP per capita, PPP (current international \$) |
|--------------------------|------------------------------|------------------------------------------------|
| Algeria                  | 6051,0                       | 18586,3                                        |
| Angola                   | 3129,5                       | 10251,3                                        |
| Benin                    | 1658,3                       | 4816,9                                         |
| Botswana                 | 7778,1                       | 20697,9                                        |
| Burkina Faso             | 1147,6                       | 3071,6                                         |
| Burundi                  | 233,8                        | 1248,1                                         |
| Cabo Verde               | 5796,5                       | 12165,3                                        |
| Cameroon                 | 1972,4                       | 5787,9                                         |
| Central African Republic | 556,1                        | 1313,9                                         |
| Chad                     | 1022,3                       | 2902,7                                         |
| Comoros                  | 2055,8                       | 4238,3                                         |
| Congo, Dem. Rep.         | 806,8                        | 1919,8                                         |
| Congo, Rep.              | 2514,7                       | 7248,4                                         |
| Cote d'Ivoire            | 3050,1                       | 8208,9                                         |
| Djibouti                 | 3905,6                       | 8452,0                                         |
| Egypt, Arab Rep.         | 3085,8                       | 20204,0                                        |
| Equatorial Guinea        | 6615,3                       | 16133,1                                        |
| Eritrea                  | 688,7                        | 1742,3                                         |
| Eswatini                 | 4108,3                       | 12529,3                                        |
| Ethiopia                 | 932,7                        | 3621,7                                         |
| Gabon                    | 8263,0                       | 22218,3                                        |
| Gambia, The              | 919,1                        | 3705,6                                         |
| Ghana                    | 3257,2                       | 8610,3                                         |
| Guinea                   | 1877,3                       | 4934,7                                         |
| Guinea-Bissau            | 1123,8                       | 3293,1                                         |
| Kenya                    | 2362,9                       | 7015,9                                         |
| Lesotho                  | 1089,0                       | 3184,1                                         |
| Liberia                  | 915,3                        | 1981,1                                         |
| Libya                    | 6448,8                       | 16521,4                                        |
| Madagascar               | 599,3                        | 1952,5                                         |
| Malawi                   | 671,5                        | 1899,3                                         |
| Mali                     | 1193,3                       | 3502,8                                         |
| Mauritania               | 2197,5                       | 7675,5                                         |
| Mauritius                | 12991,3                      | 33666,6                                        |
| Morocco                  | 4672,5                       | 11111,7                                        |
| Mozambique               | 626,9                        | 1697,9                                         |
| Namibia                  | 4875,9                       | 11985,7                                        |
| Niger                    | 775,4                        | 2177,3                                         |
| Nigeria                  | 1224,3                       | 9531,6                                         |
| Rwanda                   | 1123,7                       | 4164,4                                         |
| Sao Tome and Principe    | 4084,4                       | 6388,5                                         |
| Senegal                  | 1954,7                       | 5463,2                                         |
| Seychelles               | 19449,4                      | 35854,0                                        |
| Sierra Leone             | 846,3                        | 3716,9                                         |
| Somalia, Fed. Rep.       | 661,2                        | 1642,8                                         |
| South Africa             | 6597,7                       | 15905,7                                        |
| South Sudan              | 1080,1                       | 1154,9                                         |
| Sudan                    | 1164,5                       | 2192,3                                         |
| Tanzania                 | 1318,8                       | 4471,0                                         |
| Togo                     | 1383,9                       | 4079,4                                         |
| Tunisia                  | 4656,6                       | 15233,5                                        |
| Uganda                   | 1206,3                       | 3487,7                                         |
| Zambia                   | 1317,9                       | 4379,3                                         |
| Zimbabwe                 | 3021,4                       | 6470,4                                         |

- Classification of African Countries by Income Level. Source: World Bank (World Bank Country and Lending Groups)

| Low Income               | Lower Middle Income   | Upper Middle Income |
|--------------------------|-----------------------|---------------------|
| Burkina Faso             | Angola                | Algeria             |
| Burundi                  | Benin                 | Botswana            |
| Central African Republic | Cameroon              | Cabo Verde          |
| Chad                     | Comoros               | Equatorial Guinea   |
| Congo, Dem. Rep.         | Congo, Rep.           | Gabon               |
| Eritrea                  | Côte d'Ivoire         | Libya               |
| Gambia, The              | Djibouti              | Mauritius           |
| Guinea-Bissau            | Egypt, Arab Rep.      | South Africa        |
| Liberia                  | Eswatini              |                     |
| Madagascar               | Ghana                 | High Income         |
| Malawi                   | Guinea                | Seychelles          |
| Mali                     | Kenya                 |                     |
| Mozambique               | Lesotho               |                     |
| Niger                    | Mauritania            |                     |
| Rwanda                   | Morocco               |                     |
| Sierra Leone             | Namibia               |                     |
| Somalia, Fed. Rep.       | Nigeria               |                     |
| South Sudan              | São Tomé and Príncipe |                     |
| Sudan                    | Senegal               |                     |
| Togo                     | Tanzania              |                     |
| Uganda                   | Tunisia               |                     |
|                          | Zambia                |                     |
|                          | Zimbabwe              |                     |

- Fragile States Index 2024: Global Country Rankings. Source: Fund for Peace, 2024

| Very Sustainable |             |      |
|------------------|-------------|------|
| 179th            | Norway      | 12,7 |
| 178th            | Finland     | 14,3 |
| 177th            | Iceland     | 15,2 |
| 175th            | New Zealand | 15,9 |
| 175th            | Denmark     | 15,9 |
| 174th            | Switzerland | 16,2 |
| 172th            | Ireland     | 18,6 |
| 172th            | Canada      | 18,6 |
| 171th            | Luxembourg  | 18,7 |
| 170th            | Netherlands | 19,5 |
| 169th            | Australia   | 19,6 |

| Sustainable |             |      |
|-------------|-------------|------|
| 168th       | Sweden      | 20,6 |
| 167th       | Austria     | 23,1 |
| 166th       | Germany     | 24   |
| 165th       | Singapore   | 25,4 |
| 164th       | Portugal    | 25,9 |
| 163th       | Slovenia    | 26,1 |
| 162th       | France      | 28,3 |
| 161th       | South Korea | 29,8 |

| Very Stable |                      |      |
|-------------|----------------------|------|
| 160th       | Japan                | 30,2 |
| 159th       | Belgium              | 30,3 |
| 158th       | Malta                | 31,1 |
| 157th       | Uruguay              | 33,7 |
| 156th       | United Arab Emirates | 34,7 |
| 155th       | Slovak Republic      | 35,3 |
| 154th       | Estonia              | 36,5 |
| 153th       | Lithuania            | 37,4 |
| 152th       | Czech Republic       | 37,7 |
| 151th       | Mauritius            | 37,8 |
| 150th       | Costa Rica           | 39,4 |
| 149th       | Qatar                | 39,8 |

| Elevated Warning |                        |      |
|------------------|------------------------|------|
| 79th             | Gabon                  | 70,2 |
| 78th             | Brazil                 | 70,3 |
| 77th             | Bosnia and Herzegovina | 71   |
| 76th             | Peru                   | 72   |
| 75th             | India                  | 72,3 |
| 74th             | Benin                  | 72,5 |
| 72th             | Azerbaijan             | 72,8 |
| 72th             | Tajikistan             | 72,8 |
| 71th             | Laos                   | 73,8 |
| 70th             | Senegal                | 74,2 |
| 69th             | Jordan                 | 74,3 |
| 68th             | Lesotho                | 74,6 |
| 67th             | Timor-Leste            | 74,8 |
| 66th             | Guatemala              | 74,9 |
| 65th             | Kyrgyz Republic        | 74,9 |
| 64th             | Philippines            | 75,1 |
| 63th             | Colombia               | 75,6 |
| 62th             | Tanzania               | 75,7 |
| 61th             | Gambia                 | 76,1 |
| 60th             | Nicaragua              | 76,7 |
| 58th             | Solomon Islands        | 77,6 |
| 58th             | Eswatini               | 77,6 |
| 57th             | Nepal                  | 78   |
| 56th             | Honduras               | 78,1 |
| 55th             | Cambodia               | 78,6 |
| 54th             | Papua New Guinea       | 78,8 |
| 53th             | Madagascar             | 79,8 |

| More Stable |                |      |
|-------------|----------------|------|
| 148th       | United Kingdom | 40,8 |
| 146th       | Chile          | 41,1 |
| 145th       | Latvia         | 41,4 |
| 144th       | Poland         | 41,7 |
| 143th       | Spain          | 44   |
| 142th       | Argentina      | 44,2 |
| 141th       | United States  | 44,5 |
| 140th       | Barbados       | 44,7 |
| 139th       | Croatia        | 45,9 |
| 138th       | Hungary        | 46,2 |
| 137th       | Oman           | 47,4 |
| 136th       | Panama         | 47,7 |
| 135th       | Bahamas        | 48   |
| 134th       | Kuwait         | 49,3 |
| 133th       | Bulgaria       | 49,4 |

| Stable |                     |      |
|--------|---------------------|------|
| 132th  | Mongolia            | 50,7 |
| 130th  | Romania             | 51   |
| 130th  | Seychelles          | 51   |
| 129th  | Israel              | 51,5 |
| 127th  | Antigua and Barbuda | 51,9 |
| 127th  | Grenada             | 51,9 |
| 126th  | Malaysia            | 53,1 |
| 125th  | Trinidad and Tobago | 53,5 |
| 124th  | Botswana            | 53,6 |
| 123th  | Brunei Darussalam   | 53,9 |
| 122th  | Cyprus              | 54,1 |
| 121th  | Greece              | 54,7 |
| 120th  | Albania             | 55,9 |
| 119th  | Vietnam             | 56,2 |
| 118th  | Montenegro          | 56,9 |
| 117th  | Belize              | 57   |
| 116th  | Cape Verde          | 57,2 |
| 115th  | Kazakhstan          | 57,8 |
| 114th  | Macedonia           | 58,1 |
| 113th  | Suriname            | 58,8 |
| 112th  | Cuba                | 59,1 |
| 111th  | Guyana              | 59,2 |
| 109th  | Namibia             | 59,3 |
| 109th  | Jamaica             | 59,3 |

| High Warning |                   |      |
|--------------|-------------------|------|
| 52th         | Malawi            | 80,5 |
| 51th         | Togo              | 81,1 |
| 50th         | Zambia            | 81,2 |
| 49th         | Djibouti          | 81,6 |
| 48th         | Russia            | 81,6 |
| 47th         | Comoros           | 81,7 |
| 46th         | Rwanda            | 81,8 |
| 45th         | Sierra Leone      | 82,6 |
| 44th         | Egypt             | 82,8 |
| 43th         | Iran              | 82,9 |
| 42th         | Equatorial Guinea | 83,7 |
| 41th         | Türkiye           | 84   |
| 40th         | North Korea       | 84,9 |
| 39th         | Cote d'Ivoire     | 85,3 |
| 38th         | Angola            | 85,6 |
| 37th         | Bangladesh        | 85,9 |
| 36th         | Kenya             | 86,5 |
| 35th         | Liberia           | 86,9 |
| 34th         | Mauritania        | 87   |
| 33th         | Sri Lanka         | 88,2 |
| 32th         | Guinea Bissau     | 88,4 |
| 31th         | Iraq              | 88,6 |
| 30th         | Venezuela         | 89   |

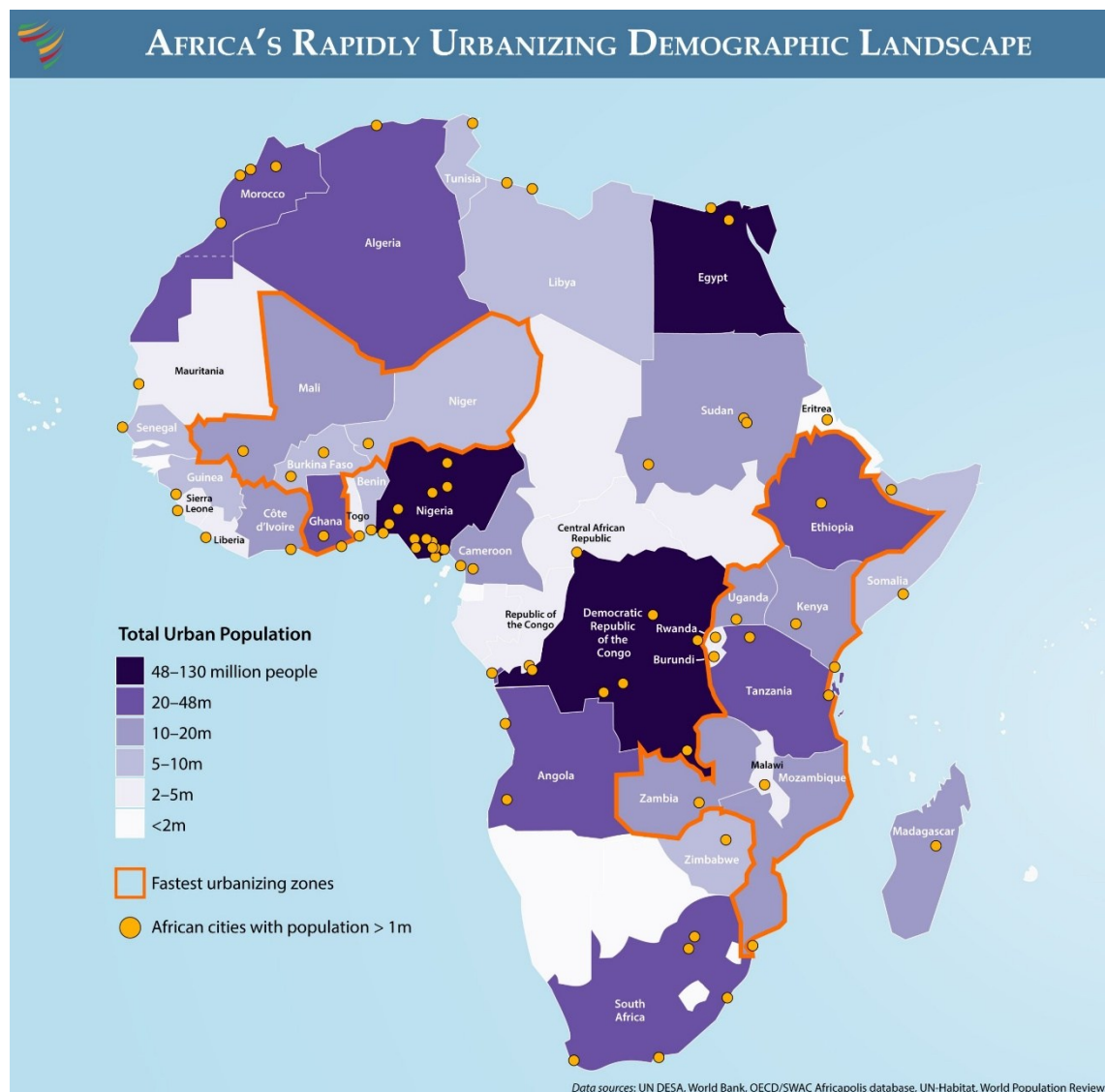
| Warning |                       |      |
|---------|-----------------------|------|
| 108th   | Dominican Republic    | 60,2 |
| 107th   | Maldives              | 60,3 |
| 106th   | Ghana                 | 60,8 |
| 105th   | Paraguay              | 61,5 |
| 104th   | Turkmenistan          | 62,2 |
| 103th   | Saudi Arabia          | 63,2 |
| 102th   | Indonesia             | 63,7 |
| 101th   | Samoa                 | 63,9 |
| 100th   | Bahrain               | 64,2 |
| 99th    | China                 | 64,4 |
| 98th    | Bhutan                | 64,5 |
| 97th    | Moldova               | 64,7 |
| 96th    | Uzbekistan            | 64,8 |
| 95th    | Thailand              | 66,2 |
| 94th    | Fiji                  | 66,4 |
| 93th    | Micronesia            | 66,9 |
| 92th    | Tunisia               | 67,2 |
| 91th    | Serbia                | 67,8 |
| 90th    | Ecuador               | 68   |
| 89th    | Armenia               | 68,1 |
| 88th    | Sao Tome and Principe | 68,5 |
| 87th    | Algeria               | 68,6 |
| 85th    | El Salvador           | 68,7 |
| 85th    | Belarus               | 68,7 |
| 84th    | Morocco               | 68,8 |
| 83th    | Mexico                | 69   |
| 82th    | Georgia               | 69,3 |
| 81th    | Bolivia               | 69,4 |
| 80th    | South Africa          | 69,6 |

| Alert |                |      |
|-------|----------------|------|
| 29th  | Congo Republic | 90,2 |
| 28th  | Uganda         | 91,1 |
| 27th  | Pakistan       | 91,7 |
| 26th  | Eritrea        | 92,1 |
| 25th  | Mozambique     | 92,5 |
| 24th  | Burundi        | 92,6 |
| 23th  | Lebanon        | 92,7 |
| 22th  | Ukraine        | 93,1 |
| 21th  | Burkina Faso   | 94,2 |
| 20th  | Cameroon       | 94,3 |
| 19th  | Niger          | 95,2 |
| 18th  | Zimbabwe       | 95,7 |
| 17th  | Guinea         | 96,4 |
| 16th  | Libya          | 96,5 |
| 15th  | Nigeria        | 96,6 |
| 14th  | Mali           | 97,3 |
| 13th  | Palestine      | 97,8 |
| 12th  | Ethiopia       | 98,1 |
| 11th  | Myanmar        | 100  |

| High Alert |                           |       |
|------------|---------------------------|-------|
| 10th       | Chad                      | 102,7 |
| 9th        | Haiti                     | 103,5 |
| 7th        | Central African Republic  | 103,9 |
| 7th        | Afghanistan               | 103,9 |
| 6th        | Yemen                     | 106,6 |
| 5th        | Congo Democratic Republic | 106,7 |
| 4th        | Syria                     | 108,1 |
| 3th        | South Sudan               | 109   |
| 2th        | Sudan                     | 109,3 |

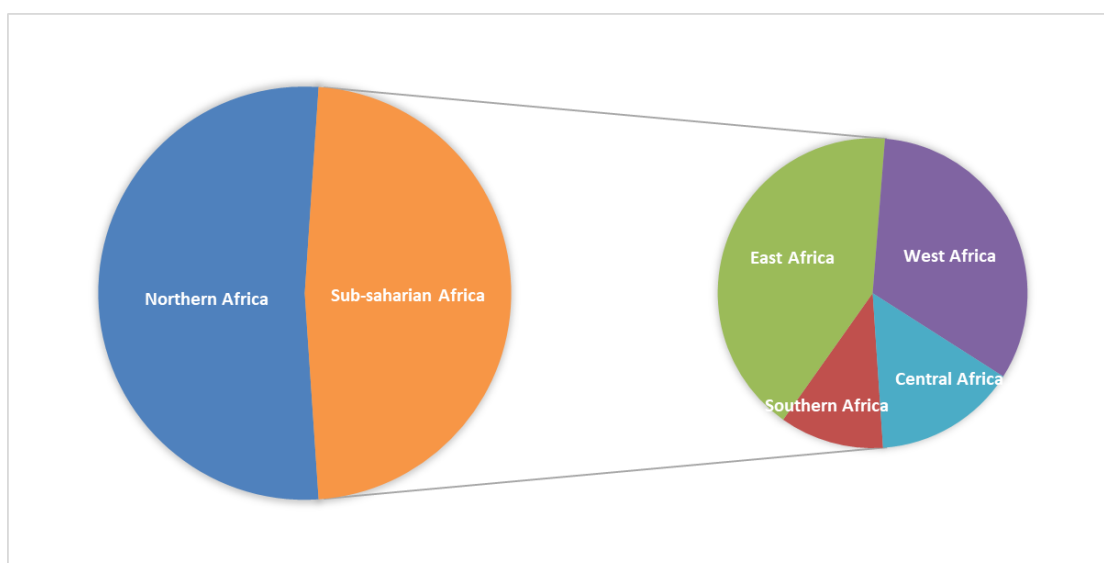
| Very High Alert |         |       |
|-----------------|---------|-------|
| 1th             | Somalia | 111,3 |

## Annex 2: Demographic trends and urbanization in Africa

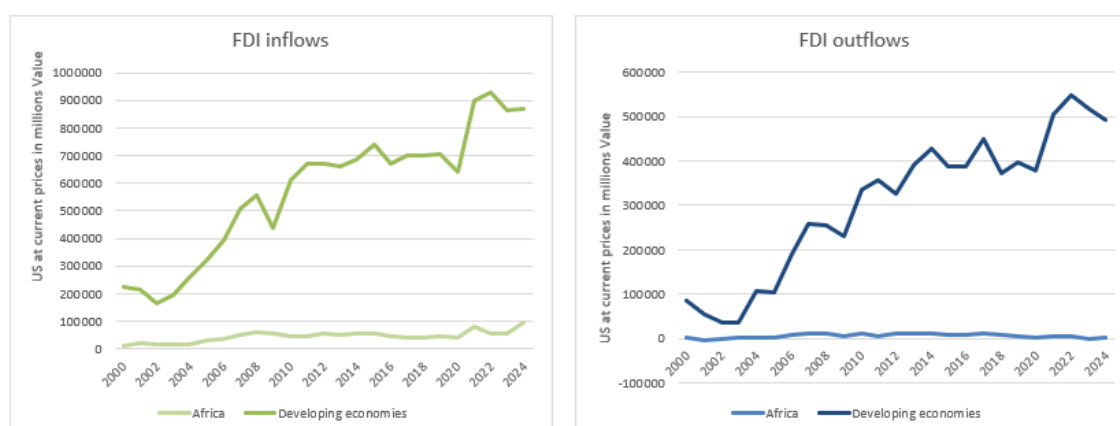


## Annex 3: Foreign Direct Investments trends and distribution in Africa

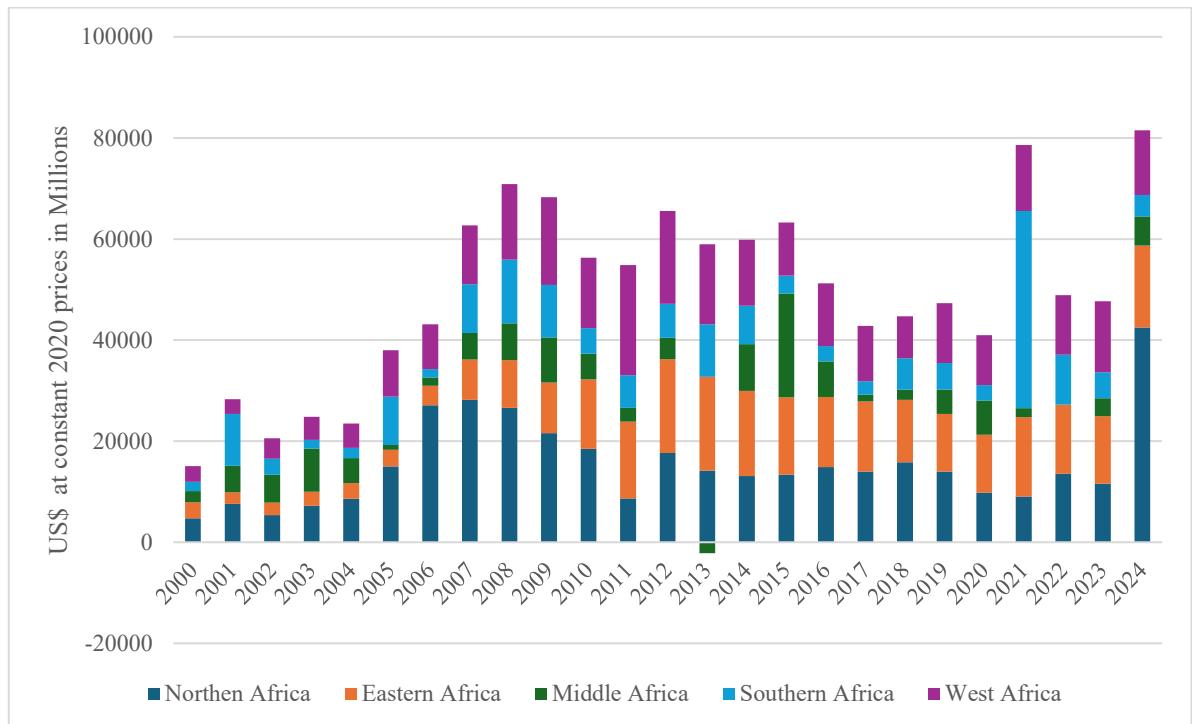
- Macroregional distribution of FDI inflows in Africa (2024). Source. UNCTAD, UNCTADstat Data Centre



- FDI Inflows and Outflows: Africa vs. Developing Economies (2000–2024). Source: UNCTAD, UNCTADstat Data Centre



- Distribution of FDI inflows in African macro-region, period (2000-2024). Source: UNCTAD, UNCTADstat Data Centre. Data deflated using the US GDP Deflator (Base 2020 = 100) from World Bank Open Data.



## Annex 4: Human Development Index in Africa

- Human Development Index (HDI) values and categories for African countries (2023). Source: United Nations Development Programme, Human Development Data Center, 2025

| Country               | HDI (2023) | Country                            | HDI (2023) |
|-----------------------|------------|------------------------------------|------------|
| Seychelles            | 0,848      | Mauritania                         | 0,563      |
| Mauritius             | 0,806      | Nigeria                            | 0,56       |
| Algeria               | 0,763      | Tanzania (United Republic of)      | 0,555      |
| Egypt                 | 0,754      | Lesotho                            | 0,55       |
| Tunisia               | 0,746      | Senegal                            | 0,53       |
| South Africa          | 0,741      | Gambia                             | 0,524      |
| Gabon                 | 0,733      | Congo (Democratic Republic of the) | 0,522      |
| Botswana              | 0,731      | Malawi                             | 0,517      |
| Lybia                 | 0,721      | Benin                              | 0,515      |
| Morocco               | 0,71       | Guinea-Bissau                      | 0,514      |
| Eswatini (Kingdom of) | 0,695      | Djibouti                           | 0,513      |
| Equatorial Guinea     | 0,674      | Sudan                              | 0,511      |
| Cabo Verde            | 0,668      | Liberia                            | 0,51       |
| Namibia               | 0,665      | Eritrea                            | 0,503      |
| Congo                 | 0,649      | Guinea                             | 0,5        |
| Sao Tome and Principe | 0,637      | Ethiopia                           | 0,497      |
| Ghana                 | 0,628      | Mozambique                         | 0,493      |
| Kenya                 | 0,628      | Madagascar                         | 0,487      |
| Angola                | 0,616      | Sierra Leone                       | 0,467      |
| Comoros               | 0,603      | Burkina Faso                       | 0,459      |
| Zimbabwe              | 0,598      | Burundi                            | 0,439      |
| Zambia                | 0,595      | Mali                               | 0,419      |
| Cameroon              | 0,588      | Niger                              | 0,419      |
| Côte d'Ivoire         | 0,582      | Chad                               | 0,416      |
| Uganda                | 0,582      | Central African Republic           | 0,414      |
| Rwanda                | 0,578      | Somalia                            | 0,404      |
| Togo                  | 0,571      | South Sudan                        | 0,388      |

### TABLE LEGEND

|                             |  |
|-----------------------------|--|
| Very High human development |  |
| High human development      |  |
| Medium human development    |  |
| Low human development       |  |

- Life expectancy at birth in African countries (2023). Source: United Nations Development Programme, Human Development Data Center, 2025

| Country                       | LE (2023) |
|-------------------------------|-----------|
| Tunisia                       | 76,51     |
| Algeria                       | 76,26     |
| Cabo Verde                    | 76,06     |
| Morocco                       | 75,31     |
| Mauritius                     | 74,93     |
| Seychelles                    | 72,86     |
| Egypt                         | 71,63     |
| Sao Tome and Principe         | 69,72     |
| Lybia                         | 69,34     |
| Botswana                      | 69,16     |
| Senegal                       | 68,68     |
| Eritrea                       | 68,62     |
| Mauritania                    | 68,48     |
| Gabon                         | 68,34     |
| Uganda                        | 68,25     |
| Rwanda                        | 67,79     |
| Namibia                       | 67,39     |
| Malawi                        | 67,35     |
| Ethiopia                      | 67,32     |
| Tanzania (United Republic of) | 67        |
| Comoros                       | 66,78     |
| Zambia                        | 66,35     |
| Sudan                         | 66,33     |
| South Africa                  | 66,14     |
| Djibouti                      | 65,99     |
| Gambia                        | 65,86     |
| Congo                         | 65,77     |

| Country                            | LE (2023) |
|------------------------------------|-----------|
| Ghana                              | 65,5      |
| Angola                             | 64,62     |
| Eswatini (Kingdom of)              | 64,12     |
| Guinea-Bissau                      | 64,09     |
| Equatorial Guinea                  | 63,71     |
| Cameroon                           | 63,7      |
| Burundi                            | 63,65     |
| Kenya                              | 63,65     |
| Madagascar                         | 63,63     |
| Mozambique                         | 63,61     |
| Zimbabwe                           | 62,78     |
| Togo                               | 62,74     |
| Liberia                            | 62,16     |
| Côte d'Ivoire                      | 61,94     |
| Congo (Democratic Republic of the) | 61,9      |
| Sierra Leone                       | 61,79     |
| Niger                              | 61,18     |
| Burkina Faso                       | 61,09     |
| Benin                              | 60,77     |
| Guinea                             | 60,74     |
| Mali                               | 60,44     |
| Somalia                            | 58,82     |
| South Sudan                        | 57,62     |
| Central African Republic           | 57,41     |
| Lesotho                            | 57,38     |
| Chad                               | 55,07     |
| Nigeria                            | 54,46     |

- Expected and Mean years of schooling in Africa (2023). Source: United Nations Development Programme, Human Development Data Center, 2025

| Country                  | Mean years of schooling (years) | Expected years of schooling (years) | Education Index |
|--------------------------|---------------------------------|-------------------------------------|-----------------|
| Seychelles               | 11,2                            | 18,23                               | 0,88            |
| South Africa             | 11,61                           | 13,79                               | 0,77            |
| Mauritius                | 10,1                            | 14,16                               | 0,73            |
| Eswatini                 | 8,69                            | 15,25                               | 0,713           |
| Egypt                    | 10,14                           | 13,13                               | 0,703           |
| Algeria                  | 7,42                            | 15,5                                | 0,678           |
| Gabon                    | 9,69                            | 12,48                               | 0,67            |
| Botswana                 | 10,48                           | 11,43                               | 0,667           |
| Tunisia                  | 7,6                             | 14,67                               | 0,661           |
| Congo, Rep.              | 8,32                            | 12,68                               | 0,63            |
| Morocco                  | 6,2                             | 15,08                               | 0,625           |
| Equatorial Guinea        | 8,28                            | 12,49                               | 0,623           |
| Lybia                    | 7,78                            | 12,93                               | 0,618           |
| Kenya                    | 8,63                            | 11,47                               | 0,606           |
| Zimbabwe                 | 8,93                            | 11,06                               | 0,605           |
| Namibia                  | 7,27                            | 11,79                               | 0,57            |
| Comoros                  | 6,01                            | 13,29                               | 0,57            |
| Lesotho                  | 7,73                            | 10,99                               | 0,563           |
| Togo                     | 5,86                            | 13,1                                | 0,559           |
| Sao Tome and Principe    | 5,99                            | 12,86                               | 0,557           |
| Ghana                    | 7,11                            | 11,42                               | 0,554           |
| Zambia                   | 7,4                             | 11,02                               | 0,553           |
| Congo, Dem. Rep.         | 7,38                            | 10,91                               | 0,549           |
| Nigeria                  | 7,59                            | 10,51                               | 0,545           |
| Angola                   | 5,96                            | 12,17                               | 0,537           |
| Uganda                   | 6,32                            | 11,56                               | 0,532           |
| Cameroon                 | 6,57                            | 10,79                               | 0,519           |
| Cabo Verde               | 6,09                            | 11,37                               | 0,519           |
| Rwanda                   | 4,88                            | 12,59                               | 0,512           |
| Liberia                  | 6,17                            | 10,47                               | 0,496           |
| Côte d'Ivoire            | 4,87                            | 11,41                               | 0,479           |
| Mozambique               | 4,59                            | 10,85                               | 0,454           |
| Malawi                   | 5,24                            | 9,9                                 | 0,45            |
| Tanzania                 | 6,07                            | 8,59                                | 0,441           |
| Guinea-Bissau            | 3,67                            | 10,64                               | 0,418           |
| Gambia                   | 4,68                            | 8,98                                | 0,405           |
| Madagascar               | 4,59                            | 9,06                                | 0,405           |
| Benin                    | 3,19                            | 10,45                               | 0,397           |
| Burundi                  | 3,47                            | 9,83                                | 0,389           |
| Mauritania               | 4,85                            | 7,95                                | 0,383           |
| Eritrea                  | 5,09                            | 7,34                                | 0,374           |
| Guinea                   | 2,49                            | 10,39                               | 0,372           |
| Sudan                    | 3,96                            | 8,62                                | 0,372           |
| Sierra Leone             | 3,54                            | 9,06                                | 0,37            |
| Senegal                  | 2,94                            | 9,14                                | 0,352           |
| South Sudan              | 5,73                            | 5,64                                | 0,348           |
| Central African Republic | 3,99                            | 7,44                                | 0,34            |
| Ethiopia                 | 2,4                             | 9,22                                | 0,336           |
| Burkina Faso             | 2,27                            | 8,73                                | 0,318           |
| Chad                     | 2,34                            | 8,35                                | 0,31            |
| Djibouti                 | 3,95                            | 6,21                                | 0,304           |
| Niger                    | 1,41                            | 8,31                                | 0,278           |
| Somalia                  | 1,9                             | 7,49                                | 0,271           |
| Mali                     | 1,63                            | 7,01                                | 0,249           |

- Adult Literacy Rate by Gender in selected Sub-Saharan Africa (Latest available year). Source: Author's elaboration based on World Bank Open Data

| Country                  | Year | Total Literacy rate | Male Literacy rate | Female Literacy rate | Gender Gap |
|--------------------------|------|---------------------|--------------------|----------------------|------------|
| Lesotho                  | 2024 | 90%                 | 83%                | 97%                  | 14%        |
| Botswana                 | 2003 | 81%                 | 80%                | 82%                  | 2%         |
| Seychelles               | 2010 | 94%                 | 93%                | 94%                  | 1%         |
| Zimbabwe                 | 2019 | 93%                 | 93%                | 93%                  | 0%         |
| Eswatini                 | 2022 | 91%                 | 91%                | 90%                  | -1%        |
| Namibia                  | 2023 | 88%                 | 88%                | 87%                  | -1%        |
| South Africa             | 2024 | 91%                 | 92%                | 91%                  | -1%        |
| Mauritius                | 2023 | 94%                 | 96%                | 93%                  | -3%        |
| Gabon                    | 2021 | 89%                 | 91%                | 87%                  | -4%        |
| Rwanda                   | 2022 | 79%                 | 81%                | 77%                  | -4%        |
| Madagascar               | 2021 | 75%                 | 78%                | 72%                  | -6%        |
| Comoros                  | 2021 | 76%                 | 80%                | 72%                  | -8%        |
| Uganda                   | 2024 | 77%                 | 81%                | 73%                  | -8%        |
| Kenya                    | 2000 | 82%                 | 87%                | 78%                  | -9%        |
| Cabo Verde               | 2024 | 88%                 | 93%                | 84%                  | -9%        |
| Ghana                    | 2021 | 76%                 | 81%                | 72%                  | -9%        |
| Sao Tome and Principe    | 2019 | 87%                 | 93%                | 83%                  | -10%       |
| Tanzania                 | 2022 | 78%                 | 84%                | 73%                  | -11%       |
| Burundi                  | 2020 | 71%                 | 78%                | 66%                  | -12%       |
| Burkina Faso             | 2023 | 42%                 | 49%                | 36%                  | -13%       |
| Equatorial Guinea        | 2000 | 88%                 | 95%                | 82%                  | -13%       |
| Sudan                    | 2008 | 54%                 | 60%                | 47%                  | -13%       |
| Cameroon                 | 2018 | 73%                 | 80%                | 66%                  | -14%       |
| South Sudan              | 2008 | 27%                 | 35%                | 19%                  | -16%       |
| Malawi                   | 2020 | 70%                 | 79%                | 63%                  | -16%       |
| Nigeria                  | 2024 | 70%                 | 78%                | 62%                  | -16%       |
| Mali                     | 2024 | 36%                 | 45%                | 28%                  | -17%       |
| Zambia                   | 2024 | 72%                 | 81%                | 64%                  | -17%       |
| Mauritania               | 2020 | 60%                 | 70%                | 52%                  | -18%       |
| Congo, Rep.              | 2005 | 76%                 | 86%                | 67%                  | -19%       |
| Togo                     | 2022 | 73%                 | 83%                | 64%                  | -19%       |
| Eritrea                  | 2008 | 65%                 | 75%                | 55%                  | -20%       |
| Senegal                  | 2023 | 50%                 | 61%                | 41%                  | -20%       |
| Ethiopia                 | 2022 | 60%                 | 71%                | 50%                  | -21%       |
| Benin                    | 2022 | 51%                 | 63%                | 42%                  | -21%       |
| Sierra Leone             | 2019 | 44%                 | 55%                | 34%                  | -21%       |
| Somalia, Fed. Rep.       | 2022 | 54%                 | 65%                | 44%                  | -21%       |
| Niger                    | 2022 | 36%                 | 48%                | 26%                  | -22%       |
| Mozambique               | 2022 | 62%                 | 74%                | 51%                  | -23%       |
| Liberia                  | 2010 | 59%                 | 72%                | 48%                  | -24%       |
| Gambia, The              | 2021 | 52%                 | 65%                | 40%                  | -25%       |
| Guinea-Bissau            | 2022 | 64%                 | 77%                | 52%                  | -25%       |
| Chad                     | 2019 | 31%                 | 45%                | 19%                  | -26%       |
| Guinea                   | 2018 | 40%                 | 54%                | 28%                  | -26%       |
| Cote d'Ivoire            | 2021 | 50%                 | 68%                | 40%                  | -28%       |
| Angola                   | 2023 | 68%                 | 84%                | 54%                  | -30%       |
| Congo, Dem. Rep.         | 2023 | 69%                 | 85%                | 54%                  | -31%       |
| Central African Republic | 2019 | 42%                 | 60%                | 27%                  | -33%       |

- Gross National Income Per Capita (2021 PPP\$) in Africa (2023). Source: United Nations Development Programme, Human Development Data Center, 2025

| Country                  | GNI Per Capita (2021 PPP\$) |
|--------------------------|-----------------------------|
| Seychelles               | 29195,04                    |
| Mauritius                | 27279,96                    |
| Lybia                    | 19831,43                    |
| Gabon                    | 18854,06                    |
| Botswana                 | 16983,77                    |
| Egypt                    | 16218,14                    |
| Algeria                  | 15114,17                    |
| South Africa             | 13693,99                    |
| Equatorial Guinea        | 12762,47                    |
| Tunisia                  | 12011,39                    |
| Namibia                  | 10916,61                    |
| Eswatini                 | 9919,09                     |
| Morocco                  | 8652,88                     |
| Cabo Verde               | 8165,38                     |
| Ghana                    | 6846,35                     |
| Côte d'Ivoire            | 6735,42                     |
| Angola                   | 6631,28                     |
| Djibouti                 | 6367,61                     |
| Mauritania               | 6267,47                     |
| Congo, Rep.              | 5902,60                     |
| Kenya                    | 5608,30                     |
| Sao Tome and Principe    | 5583,42                     |
| Nigeria                  | 5569,38                     |
| Cameroon                 | 4746,27                     |
| Senegal                  | 4202,03                     |
| Benin                    | 3805,53                     |
| Tanzania                 | 3514,63                     |
| Zimbabwe                 | 3511,46                     |
| Guinea                   | 3494,35                     |
| Comoros                  | 3481,12                     |
| Zambia                   | 3446,68                     |
| Lesotho                  | 3029,39                     |
| Rwanda                   | 2970,56                     |
| Togo                     | 2855,96                     |
| Gambia                   | 2812,02                     |
| Sudan                    | 2810,31                     |
| Ethiopia                 | 2795,51                     |
| Uganda                   | 2736,41                     |
| Guinea-Bissau            | 2403,06                     |
| Burkina Faso             | 2390,53                     |
| Mali                     | 2341,59                     |
| Eritrea                  | 2029,07                     |
| Chad                     | 1748,00                     |
| Sierra Leone             | 1713,73                     |
| Madagascar               | 1655,77                     |
| Malawi                   | 1633,69                     |
| Niger                    | 1590,19                     |
| Liberia                  | 1537,86                     |
| Somalia                  | 1474,74                     |
| Congo, Dem. Rep.         | 1431,05                     |
| Mozambique               | 1355,77                     |
| Central African Republic | 1099,86                     |
| Burundi                  | 858,92                      |
| South Sudan              | 688,35                      |