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Can developing countries grasp the horn of Amalthea? The impacts of FDI on the development of host countries

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Abstract

By analyzing 150 articles published between 2010 and 2023, this systematic literature review explores the diverse effects of foreign direct investment (FDI) on developing countries across economic, social, environmental, and sustainability dimensions. The research underscores that the ability of FDI to stimulate growth largely depends on the host country's absorptive capacity, including factors such as human capital, financial institutions, and infrastructure. It highlights the complexities involved in evaluating FDI's economic impacts, given the varied findings across studies, and emphasizes the growing significance of environmental and social considerations aligned with sustainable development goals. The key contributions of this study include a comprehensive synthesis of the current literature on FDI impacts, critical analysis of host countries' absorptive capacities, exploration of discrepancies in economic impact assessments, a focus on environmental and social dimensions within FDI research, and policy recommendations aimed at harnessing FDI for sustainable and inclusive development in developing countries. These insights are crucial for comprehending the multifaceted role of FDI and devising strategies for its optimal utilization in emerging economies.

Keywords: Foreign direct investment, Sustainable economic development, Absorptive capacity, Inclusive growth

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1. Introduction

The horn of Amalthea is said to have belonged to a goat, a Cretan nymph, who nursed the infant Zeus. Whoever touches or possesses its horn will lack nothing, as it has the capacity to produce an endless supply of food and drink (Westall, 2017). Foreign direct investment (FDI) could be associated with this horn of Amalthea as they herald the development of economic projects, the influx of capital, and potential prosperity and development in host countries. Since the 1980s, we have observed a rapid growth in FDI, which has become a prominent aspect of the global economy, characterized by an amplified movement of capital and goods, especially under the influence of international organizations like the IMF, World Bank, and WTO. From 2000 to 2017, FDI flows to developing countries grew from 232 billion USD to 671 billion USD (Yergeau, 2019). FDI is typically a long-term investment where investors significantly influence company management (UNCTAD, 2009).

FDI analysis encompasses two distinct perspectives: the issuers and recipients, each with unique stakes, expectations, and impacts. Multinational corporations drive FDI issuance, seeking comparative advantages in countries that have liberalized their economies and reduced trade barriers. This trend underscores a new international division of labor, with developing countries often targeted for labor-intensive operations (Su, 2020). FDI also aims to secure access to essential raw materials and stimulate economic development in host countries by bringing in capital and technology (Wu and Chen, 2016; Sahu, 2020a; Sahu, 2020b).

However, the relationship between FDI and development remains contentious, primarily debated in terms of economic impact. While some studies suggest limited effects (Rizvi and Nishat, 2010; Nkechi and Okezie, 2013; Rana and Sharma, 2020), others highlight positive correlations with development and productivity (Sahu, 2020b; Sghaier and Abida, 2013; Tu and Tan, 2012; Zandile and Phiri, 2019; Zhu and Ye, 2018). The effectiveness of FDI crucially depends on the host country's "absorptive capacities", including human capital and institutional infrastructure (Anetor, 2020c; Gachino, 2011; Li and Tanna, 2019; Mamingi and Marti, 2018; Munemo, 2018; Negash *et al.*, 2020; Zhang, 2015).

Beyond economic impacts, the relevance of environmental and social factors in FDI research has grown, emphasizing sustainable investment practices (Ahmad *et al.*, 2018; Awodumi, 2020; Bokpin, 2017; Dang, 2019; Huang and Chang, 2019; Munir and Ameer, 2020; Rana and Sharma, 2020; Yu and Wong, 2011; Zhu *et al.*, 2016; Zhu and Ye, 2018; Bardy *et al.*, 2012; Cascante and Salazar, 2016; Chen, 2016; Gökmeneroğlu *et al.*, 2018; Majeed, 2017; Paczynska, 2016; Quinonez *et al.*, 2018). This broader perspective necessitates an updated literature review to comprehend the multifaceted impacts of FDI on developing countries, offering insights into policy formulation for economic growth and sustainable development.

Existing literature reviews have partially addressed the impact of FDI on developing countries. For instance, Nyoni and Garikai's (2017) systematic review highlighted the impact of foreign aid rather than FDI. Conversely, Saini and Sighania (2019) focused on the relationship between economic development and environmental impact, treating FDI as a secondary determinant. Almfraji and Almsafir (2014) have faced criticism for focusing exclusively on the economic effects of FDI, while Kodiyat (2009) examined outward FDI from developing countries, neglecting their role as recipients.

To bridge these gaps, this systematic review addresses two key questions: What are the impacts of FDI on developing countries, and how can states maximize positive FDI spillovers? By answering these questions, this study seeks to inform policy for economic growth and sustainable development in developing countries.

The remainder of this paper is organized as follows. Section 2 describes the systematic review methodology used. Then, section 3 addresses the question of the absorptive capacities necessary for the positive spillovers of FDI in developing countries. Subsequently, several considerations concerning the limitations of existing studies and potential directions for future research are discussed in section 4. Finally, section 5 concludes the study.

2. Systematic literature review method

2.1 Preliminary identification prior to defining a research strategy

An initial exploratory search on FDI in developing countries helped refine our research strategy and identify emerging impacts of FDI, namely economic, institutional, social, and environmental impacts, but also include works related to sustainable development. This initial identification helped observe mature literature and subsequently deploy a true systematic literature review.

2.2 Selection of a systematic review method

Given the maturity of literature on this topic, a systematic literature review is possible. This method identifies, evaluates, and analyzes published primary studies to address a research question (Staples and Niazi, 2007). This systematic literature review is inspired by the JBI mixed-method analysis approach (Lizarondo *et al.*, 2017). This design combines the strengths of quantitative and qualitative research and allows for a rich and in-depth understanding of complex phenomena.

The method used in this systematic literature review followed the PRISMA statement, characterized by a four-step process (Mateo, 2020): (I) querying one or more databases, then importing data into software for sorting and classification; (II) selecting references based on reading the title and summary after removing duplicates; (III) selecting articles by reading the full text; (IV) including additional studies (by contacting the most represented authors). The selection of articles (steps II and III) and the inclusion of additional studies (step IV) consider the initially defined inclusion and exclusion criteria determined by the research question.

2.3 Research strategy

A research strategy was developed and executed with the help of a librarian from Laval University to identify three databases that ensure the comparability of the research. The bibliographic search for articles published in English between 2010 and 2023 (by 31 December) was conducted in the following online databases: ABI/Inform Global, Business Source Premier, and Web of Science. The first two databases specialize in administrative sciences; the third is more general. Our research focus began in 2010 for two main reasons. Firstly, this period witnessed a growing interest in studies focusing on FDI and their influence on the economies of developing countries. Secondly, the year 2010 marked a significant turning point, as it signaled the moment when developing countries became the primary recipients of FDI globally (UNCTAD, 2010). However, this quantitative dominance also raises questions about the actual outcomes of these FDI. It raises the crucial question of whether this abundance of investments translates into beneficial impacts on the economies and societies of these developing countries.

The following generic keywords were tested and retained for querying the databases: **FDI OR Foreign Direct Investment AND Development (economic OR social OR institution* OR environment* OR sustainab*).**

The population, phenomenon of interest, and context approach (PICo framework criteria) (Rittenmeyer *et al.*, 2012) provided a framework to formulate two research questions and guide the selection process. This review only included studies seeking to determine the impacts of FDI on developing countries from economic, institutional, social, environmental, and sustainable perspectives. The inclusion and exclusion criteria are represented in Table 1.

Table 1. Inclusion and exclusion criteria

Research questions	Inclusion criteria		Exclusion criteria
	General	Specific	
1. What are the impacts of FDI on developing countries?	1. Peer-reviewed articles	1. Deals with at least one type of impact (economic, institutional, social, environmental, sustainable development)	1. Books, doctoral and master's theses, and conference presentation abstracts
2. How can states optimize the positive spillovers of FDI?	2. Addresses only FDI	2. Clearly defines a positive or negative effect on the categories mentioned above	2. Not in English
	3. Deals exclusively with the impact of FDI		3. Does not specifically address FDI
	4. Concerns only developing countries (list from the International Statistical Institute)		4. Does not concern developing countries
			5. Articles published before 2010
			6. Data collection years prior to 2000 or ending before 2000

Source: Authors' compilation

Population

The review focused solely on developing countries receiving FDI. Defining developing countries is challenging. These countries were initially distinguished from developed and industrialized nations; the United Nations first conceptualized this distinction (Res. GA, 52 (I) of 14 December 1946) to grant preferential treatment to less developed states (notably technical assistance). Different attempts have been made to distinguish developed and developing countries, considering GDP, GNP, GDP per capita, literacy rate, daily food ration rate, industrialization rate, etc. The World Bank's classification by gross national income (GNI) was chosen as a selection criterion. EU member countries and Russia were excluded due to their ambiguous nature (Benaroya, 2006).

Phenomenon of interest

The focus here is on the impacts of FDI on host countries. It involves identifying various impacts (economic, institutional, social, environmental, and sustainable), whether positive or negative, to observe how host countries manage this phenomenon.

Context

Globalization has led to a significant increase in cross-border capital flows, especially FDI, a crucial instrument in the economic development process of developing countries (Sahu, 2020b). Due to the positive externalities they generate, FDI is seen as a critical component of sustainable growth and economic development in developing countries (Anetor, 2020a, 2020b). However, the economic growth of host countries remains subject to determinants such as human development, infrastructure, financial and institutional development, etc. (Anwar and Nguyen, 2010; Gachino, 2011; Gungor *et al.*, 2014; Jun, 2015; Kaulihowa and Adjasi, 2019). These determinants represent the states' absorptive capacities (Li and Tanna, 2019; Mamingi and Martin, 2018; Munemo, 2018; Negash *et al.*, 2020; Salim *et al.*, 2017), i.e., their ability to assimilate FDI to generate growth. This context also raises questions about the relationship between FDI and social and environmental outcomes, making it relevant to question the impact of FDI on social inequalities (Bardy *et al.*, 2012; Cascante and Salazar, 2016; Chen, 2016; Majeed, 2017), the environment (Ali *et al.*, 2020; Zhu *et al.*, 2016; Zhu and Ye, 2018), and how states can act to promote the emergence of a sustainable development model (Giwa *et al.*, 2020; Mamingi and Martin, 2018; Salim *et al.*, 2017; Yu and Wong, 2011).

Types of studies

This review considers peer-reviewed quantitative/qualitative/mixed empirical studies, including all quantitative research methods (randomized controlled trials, cohort studies, case controls, cross-sectional, descriptive, longitudinal studies), as well as qualitative research models, as long as they meet the inclusion criteria (phenomenological, ethnographic, grounded theory, case study, narrative). The decision to conduct a mixed systematic literature review is motivated by the goal of combining the strengths of different methods to compensate for their respective limitations and benefit from their complementarity. Three determinants defined by Pluye and Hong (2014) can be advanced to explain this choice: (I) a need for qualitative methods to interpret quantitative results; (II) better generalization of qualitative results through quantitative methods; (III) a better understanding of the phenomenon under study (qualitative), its magnitude, trends, causes, and effects (quantitative).

2.4 Study selection and data extraction

After searching and exporting articles from the databases, all identified articles were loaded into EndNote version 20 (5,108 articles). The selection of articles occurred in two stages after automatic duplicate removal by the software (4,512 articles after duplicate removal). First, the titles and abstracts of scientific articles were examined for eligibility, and the remaining duplicates were eliminated (1,256 articles selected). Next, the full texts of articles deemed relevant to the review were retrieved and analyzed based on eligibility criteria (Table 1). The following information was extracted using a standardized form: economic, institutional, social, and environmental impact, sustainable development, key excerpts, methodology, country, year. Once completed, the selection process, transcribed as a diagram (Figure 1), resulted in 149 articles, to which one suggested article was added after soliciting expert authors (a total of 150). The suggested article was not indexed in the databases with the specifically employed keyword string. However, a full reading of the article allowed for its inclusion in our research scenario: foreign private capital investments, economic growth, and financial development within the context of Sub-Saharan Africa. This article did not appear because the title, the abstract, and the keywords in our string were not mentioned. However, the concepts borrowed, although generally, fit within our framework. Therefore, it was decided to include the suggested article due to its contribution.

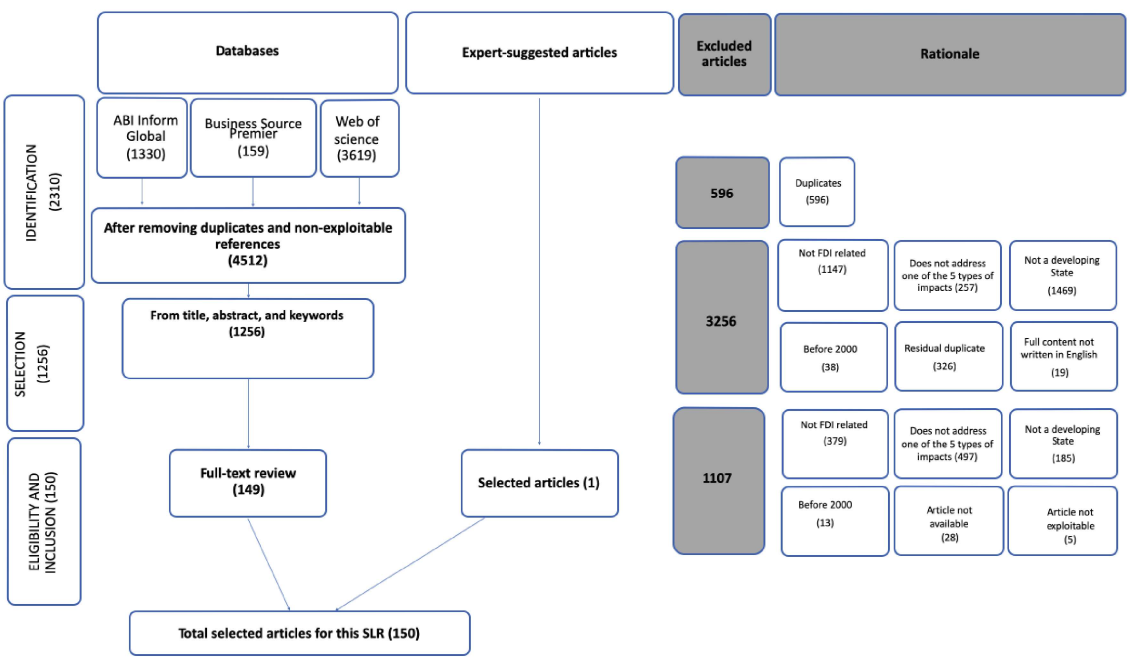

Figure 1. Diagram illustrating the article selection process

Source: Authors' compilation

2.5 General characteristics of the literature

The literature trends indicate a considerable increase in works related to the topic of FDI over a decade, rising from 7 articles in 2010 to 20 articles in 2020. The following year was marked by a significant decrease in studies on FDI (8 articles in 2021, 10 in 2022, and 6 in 2023), largely due to the unprecedented uncertainty generated by the outbreak of COVID-19, which itself reduced international investment flows while diverting research towards pandemic-related topics for nearly two years. Of the articles reviewed, 96% adopted a quantitative methodology, 2% were qualitative, 1.3% used a mixed methodology, and 0.7% were conceptual articles (retained for their significant understanding keys and the excellent empirical research leads they provide).

The distribution of countries also shows that African and Asian countries and regions are predominantly the subjects of analysis on this topic. China also occupies an important place in this ranking due to its significant position as a recipient of FDI. African countries are extensively covered in terms of the economic and institutional impacts of FDI. South Asia (India, Pakistan) is also widely represented in this corpus.

These 150 articles were manually classified[2]. This classification reveals that 104 articles deal exclusively with one type of impact of FDI on developing countries, while 46 articles address at least two types of impacts. Additionally, 109 articles discuss at least the economic impact of FDI on developing countries, and 38 articles address at least the institutional aspect, suggesting these themes are overrepresented compared to social, environmental, and sustainable impacts. However, since an article can deal with both economic and environmental or social impacts, it remains relevant to analyze them.

This manual categorization was then coupled with digital tools to further explore this corpus, adding another dimension to our analysis, maximizing our selection use, confirming or refuting our manual classification, and identifying key thematic points that may have been overlooked. For this purpose, the VOSViewer software was used to generate a network of key concepts (Van Eck and Waltman, 2017). This exercise identified several particularly important cluster concepts within this selection of articles (Figure 2). The first cluster (green) is related to capital, i.e., the purely financial concept of FDI. This concept is particularly associated with spillover effects, especially in the industry and technology of domestic firms, notably in the manufacturing sector. It is also closely linked to knowledge and innovation. It highlights the importance attributed by the literature to understanding the conditions allowing foreign investment capital to influence industry, technology, or innovation within developing countries (particularly absorption capacity). Two other clusters, particularly related to the first one, concern the impacts of FDI on host countries, whether positive or negative. The yellow cluster, for example, encompasses several concepts related to the impact of FDI on competitiveness or technology spillovers and tends to question how FDI becomes a lever for facilitating technological transfers within the host country. The gray cluster, on the other hand,

[2] Full information is available upon request.

is particularly marked by the negative externalities of FDI or the potential problems it can engender (income inequality, wage inequality, CO2 emissions, governance issues, regional investment inequalities, etc.). The red cluster, centered on the concept of "threshold", is more focused on contextual determinants that can influence the impact of FDI (institutional quality, financial market development, structural change, reform, economic freedom, etc.). Amidst these concepts, the key countries linked to these clusters emerge, which need to be explained. China is among the most important countries in this output. This is partly because China is both a preferred destination for foreign FDI and one of the largest sources of FDI in the world (World Population Review, 2022). African countries also appear strongly represented due to a large number of articles focusing on this destination for FDI (individually or regionally) and the challenges related to these capital inflows. Other countries and regions, particularly in Asia, also appear to a lesser extent. Given these classifications, it is now appropriate to proceed with an in-depth analysis of these concepts.

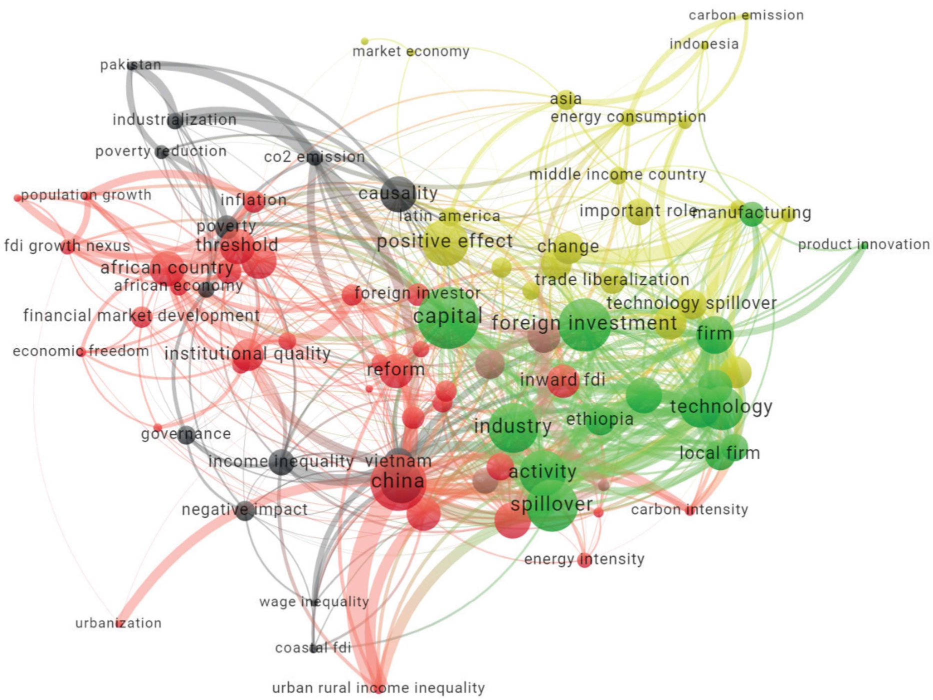

Figure 2. Network of key concepts

Source: Authors' compilation

3. Key insights from the literature

3.1 Foreign direct investment: a blessing for the development of host countries - Myth or reality?

3.1.1 A mythical economic impact, yet a conditional reality

Out of 150 articles reviewed, 109 examined FDI's economic impact on growth, industrial development, and actor productivity in developing countries (Anwar and Nguyen, 2010;

Jayaraman *et al.*, 2017; Sghaier and Abida, 2013; Yeboua, 2019). FDI facilitates crucial capital and technology transfers previously unavailable in host countries. However, understanding its economic impact remains complex (Anetor, 2020a; Sahu, 2020b; Yeboua, 2019). The contribution of FDI to economic growth depends on structural characteristics such as "absorptive capacity", which are crucial for harnessing FDI spillovers (Munemo, 2018). Recent literature has underscored the role of financial and institutional environments, human capital, and infrastructure in enhancing FDI's positive impact on economic growth. Recent studies highlighted these dynamics: Goswami and Goswami (2023) linked FDI inflows to economic growth at the subnational level, while Mwakabungu and Kauangal (2023) stressed the effectiveness of FDI-led growth policies contingent on host country conditions. Institutional quality emerges as critical for FDI absorption and positive externalities (Tran *et al.*, 2023; Yimer, 2023). Arogundade *et al.* (2022) discussed the bidirectional relationship between FDI and poverty rates in Sub-Saharan Africa, emphasizing absorptive capacity, human capital, and institutional quality. Asafo-Agye and Kodongo (2022) argued for a non-linear relationship in Sub-Saharan Africa, where sufficient FDI inflows and absorptive capacity are necessary for effective economic growth.

3.1.2 The financial environment: the legacy of Schumpeter

The literature recognizes the development of the financial sector as a critical determinant for positive spillovers of FDI in developing countries. A robust financial sector facilitates effective capital management and resource allocation, which is essential for fostering economic growth (Nasreen and Anwar, 2014; Sghaier and Abida, 2013; Sirag *et al.*, 2018). However, underdeveloped financial sectors relative to FDI inflows limit the realization of benefits such as technology transfers and modernization investments (Jayaraman *et al.*, 2017; Sghaier and Abida, 2013; Munemo, 2018), especially in African countries where access to credit and banking services is constrained by information asymmetry (Acquah and Ibrahim, 2020; Belloumi, 2014; Elmawazini and Nwankwo, 2012; Yeboua, 2020; Meniago and Lartey, 2020).

Recent studies have emphasized that a well-developed financial sector guides investments towards high-yield sectors, enhancing project efficiency and attracting FDI (Sghaier and Abida, 2013; Akisik *et al.*, 2020). However, the relationship between FDI, financial sector development, and economic growth remains debated. While some argue FDI stimulates financial sector growth, others stress the importance of a pre-existing robust financial system to effectively utilize FDI (Muruko-Jaezuruka and Gupta, 2020; Akisik *et al.*, 2020; Sghaier and Abida, 2013; Sirag *et al.*, 2018).

Recent literature has identified economic freedom and trade openness as critical moderating factors that enhance the positive impact of FDI on economic growth through a well-developed financial market (Aluko *et al.*, 2021; Hossain, 2022; Kwablah and Amoah, 2022). However, challenges such as the lack of skilled workforce, particularly in accounting, hinder the implementation of international financial standards and, thereby, the absorption of FDI (Akisik *et al.*, 2020). This interdependence between human capital and financial sector development underscores the complexity of leveraging FDI for economic growth, highlighting the need for developing countries to invest in both financial infrastructure and human capital to maximize the benefits of foreign investment.

3.1.3 The impact of FDI on human capital determined by the "threshold effect"

The literature emphasizes the critical nexus between FDI and human capital, with foreign investors favoring destinations offering skilled yet affordable labor in stable market environments (Anetor, 2020c; Anwar and Nguyen, 2010; Akisik *et al.*, 2020; Nkechi and Okezie, 2013). This positioning underscores human capital as pivotal for enhancing a host country's capacity to absorb and utilize FDI for economic growth. FDI is recognized for its role in bolstering human capital through mechanisms like knowledge transfer and employee training (Anwar and Nguyen, 2010; Kaulihowa and Adjasi, 2019).

The relationship between FDI, human capital, and economic growth is examined from two perspectives: FDI's influence on human capital and human capital's reciprocal impact on FDI's economic benefits. FDI enhances human capital primarily through technology transfers and spillover effects, contributing to improvements in local educational standards (Anwar and Nguyen, 2010; Goswami and Goswami, 2023; Kaulihowa and Adjasi, 2019). Tu and Tan (2012) noted that economic and educational thresholds enable countries to adopt advanced technologies introduced by FDI, enhancing their capacity for learning and knowledge application. Below these thresholds, there is a significant gap between foreign technology sophistication and national capabilities, hindering effective utilization.

This variability in human capital mobilization contributes to differing views on FDI's impact on economic growth. Studies emphasize aligning FDI with the developmental stage of host country human capital to maximize mutual benefits and sustainable economic advancement.

3.1.4 Institutional context and the impacts of foreign direct investments

The institutional context emerges as a crucial element in studying the positive externalities of FDI (Bokpin, 2017; Li and Tanna, 2019; Yeboua, 2020; Nguyen, 2021). Studies underscore that strong institutions are essential for maximizing FDI's positive impact on economic growth (Tran *et al.*, 2023; Kwablah and Amoah, 2022). For instance, Tran *et al.* (2023) demonstrated how institutional quality facilitates effective FDI absorption at the local government level in Vietnam, while Kwablah and Amoah (2022) highlighted the complementary role of economic freedom and financial market stability in Sub-Saharan Africa. Investing in effective institutions enhances investor confidence, promotes efficient resource allocation, and stimulates sustainable economic development (Nasreen and Anwar, 2014).

Conversely, countries characterized by failing institutional systems may be particularly vulnerable to the negative impacts of FDI (Yimer, 2023). In environments where institutions lack transparency, effective regulation, and accountability, FDI can lead to adverse effects such as corruption, the exploitation of natural resources without regard for the environment and the rights of local populations, as well as the creation of distortions in local markets. For example, Donaubauer *et al.* (2022) have highlighted a correlation between increased FDI and rising corruption at the local level in Sub-Saharan Africa. Similarly, Herrera-Echeverri *et al.* (2014) found that weak institutions can amplify corrupt practices associated with FDI, compromising the quality of public policies and hindering economic development. Moreover, in contexts where workers' rights are not protected, or environmental regulations are lax, FDI can result in harmful business practices such as labor exploitation, environmental pollution, and degradation of natural resources (Bokpin, 2017). This situation poses additional challenges for governments, who must attract FDI to stimulate economic growth and ensure that these investments positively contribute to social welfare and environmental sustainability. Thus, thorough consideration of institutional quality is essential for assessing potential risks and designing policies aimed at mitigating the negative impacts of FDI in contexts where institutions are fragile.

3.1.5 Enhancing FDI impact through infrastructure

States increasingly utilize special economic zones (SEZs) to attract FDI by offering incentives, such as tax exemptions, financial benefits, and specific labor regulations (Mugobo and Mutize, 2016). SEZs aim to attract industries lacking in the country due to insufficient financial, technological or human resources. However, SEZs often create industrial enclaves with uncertain benefits for the broader economy and technological advancement, questioning their inherent advantages for host countries (Mugobo and Mutize, 2016).

Infrastructure plays a crucial role in mediating the positive impacts of SEZs and FDI. Investment in infrastructure enhances a country's capacity to attract and utilize foreign capital (Zhang, 2021), facilitating the movement of people, goods and information, and integrating foreign economic activities into the national economy. Authors underscore the importance of infrastructure in developing countries receiving FDI (Anetor, 2020a; Quinonez *et al.*, 2018; Ayadi, 2010; Boakye-Gyasi and Li, 2016; Zandile and Phiri, 2019; Goswami and Goswami, 2023), advocating for increased state investment to accelerate FDI's beneficial effects. However, funding infrastructure remains a challenge, particularly in least developed countries (LDCs), which may seek external support due to limited financial resources or expertise. For instance, Boakye-Gyasi and Li (2016) highlighted China's role in financing infrastructure projects in Ghana, prompting scrutiny over the conditions of such financing amid China's expanding investments in multiple LDCs. This discussion also presents an avenue for exploring FDI's impact based on its origin, a factor increasingly relevant in the global investment landscape.

3.1.6 Beyond endogenous factors, the question of impact based on FDI origin

FDI's influence on states' economic and productive development is recognized, largely dependent on their absorptive capacity, including institutional, financial, and human capital elements (Li and Tanna, 2019). FDI brings significant technological spillovers, aiding trade development and enhancing national economic actors' productivity and competitiveness. The past decades have witnessed an increase in North-South FDI flows, accompanied by a growing trend in South-South FDI flows (Kim *et al.*, 2015). This rise in South-South FDI flows necessitates an examination of the differential impacts based on FDI origin.

Kim *et al.* (2015) studied FDI's effect on economic growth and technological spillovers, differentiating between North-South and South-South origins. Their research across 13 Asian countries indicated that FDIs from both origins positively affect total factor productivity, but North-South FDI flows have a more substantial impact. Kamal's (2014) study, comparing the performances of Chinese companies acquired by OECD investors versus those from Hong Kong, Taiwan, and Macao echoes these findings, with OECD-acquired companies showing higher productivity.

The findings of previous studies highlight the varying impacts of FDI based on its source, presenting a challenge for states in formulating FDI attraction strategies, as they must balance short-term needs with long-term developmental objectives. Therefore, while FDI can indeed be a boon for economic development, this benefit is contingent upon meeting certain institutional, financial, and human capital prerequisites. Moreover, FDI's role in economic development is not isolated; its social and environmental repercussions are also significant. Accordingly, recent literature has been paying increasing attention to these broader impacts of FDI.

3.2 Evolution of FDI: the wide gap between scorched earth and green, inclusive growth

3.2.1 Scorched earth: the environmental impact of FDI

Although not representative of the complete field of literature on the impacts of FDI over the past decade, we can observe the evolution of the presence or absence of the five main themes of our research in the selected articles (Figure 3). This figure allows us to make a few observations. Firstly, the economic impact of FDI is a primary and constant concern. While various conclusions have been drawn, the prevailing consensus suggests that FDI generally has a positive impact on economic growth (Goswami and Goswami, 2023). Secondly, institutional, social, and environmental impacts are also omnipresent. Lastly, two themes are becoming increasingly prevalent in literature over time. The first theme relates to the environmental impact of FDI on the host country. This theme of sustainable development emerged from 2016 onwards and remains increasingly prominent, following the United Nations' call to action and the proclamation of the Millennium Goals. However, as mentioned by some authors, little is known so far about the direct relationship between FDI and environmental sustainability (Dada and Akinlo, 2021).

The environmental impact of FDI is a critical consideration, with research highlighting both positive and negative effects. Bokpin (2017) questioned the value of wealth creation if environmental degradation undermined its benefits, echoing concerns about the "pollution haven" hypothesis, in which investors exploit regions with lax environmental regulations (Awodumi, 2020; Rana and Sharma, 2020). Elliot *et al.* (2013) found a negative correlation between FDI flows and city energy intensity in China, suggesting environmental concerns are significant (Ahmad *et al.*, 2018).

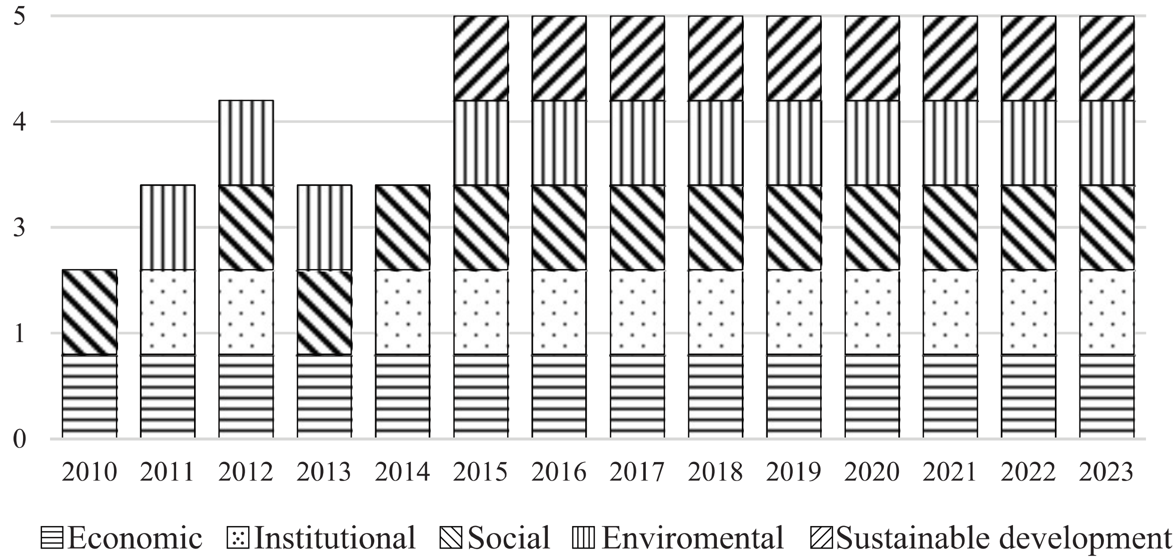

Figure 3. Evolution of topics within the corpus 2010-2023

Source: Authors' compilation

FDI often leads to negative environmental impacts due to polluting investments and increased CO2 emissions and pollution associated with economic growth (Awodumi, 2020; Ali *et al.*, 2020; Munir and Ameer, 2020; Rana and Sharma, 2020). This is exacerbated by weaker environmental regulations in developing countries, where FDI may contribute to environmental degradation and ecosystem disruption (Guess and McCollum, 2019).

However, FDI's environmental impact can vary. The environmental Kuznets curve hypothesis suggests that beyond a certain economic development level, FDI's negative environmental impact diminishes (Gökmenoğlu and Taspinar, 2016). For instance, Ali *et al.* (2020) found an inverted U-shaped relationship between economic development and CO2 emissions in Pakistan, indicating the potential for sustainable growth through improved energy efficiency and renewable technologies. In summary, these results underscore the importance of strong governance and quality institutions in enhancing the positive externalities of FDI in environmental matters and regulating environmentally detrimental activities financed by FDI (Bokpin, 2017).

3.2.2 Numerator or denominator? FDI and the social challenge

FDI can significantly impact social factors in host countries, triggering both direct and domino effects. Fowowe and Shuaibu (2014) found that FDI directly fosters poverty reduction and institutional quality improvement in developing countries. However, Kahn *et al.* (2015) observed that the impact on poverty reduction is more pronounced in countries with lower developmental levels, contradicting the notion that developing countries must achieve a certain human capital threshold to benefit from FDI's spillover effects (Su and Liu, 2016; Anetor, 2020c). Hence, human capital alone would not be the sole determinant to consider in the relationship between FDI and poverty but should also include variables related to absorptive capacity or institutional quality (Arogundade *et al.*, 2022; Huynh, 2021).

In some cases, FDI does not consistently reduce poverty despite fostering economic growth and substantial investment, as evidenced in Mozambique (Castel-Branco, 2014). Chen (2016) highlighted FDI's role in exacerbating income disparities between urban and rural areas, despite its positive impacts on job creation and economic growth. Meanwhile, Fortanier and van Wijk (2010) illustrated the tourism sector in Sub-Saharan Africa, where foreign hotels contribute positively to local economies but may overlook investing in local human capital development.

Corruption further complicates FDI's social impact. Lipsey and Sjoholm (2011) cited Indonesia's struggle with corruption, suggesting that improving institutional quality could enhance FDI benefits by reducing poverty and corruption. Bardy *et al.* (2012) discussed FDI's indirect role in raising living standards through improved human capital and institutions, underscoring the complex social dynamics influenced by FDI. The social impact, focusing solely on poverty reduction without considering environmental concerns, can be problematic. Dada and Akinlo (2021) argued that attempts to limit FDI to reduce environmental degradation may worsen poverty rates. Thus, understanding the social impact of FDI requires a balanced approach that considers economic, environmental, and institutional factors in order to maximize benefits while mitigating risks.

3.2.3 Towards a holistic framework of FDI determinants

FDI's positive influences on economic growth, human capital development and the amelioration of social and environmental conditions in host countries collectively forge a comprehensive framework of FDI determinants. The United Nations' Sustainable Development Goals (SDGs), introduced in 2016, function as both a motivator and a guideline for nations striving for a more equitable and inclusive global community (Suehrer, 2019). A study by Giwa *et al.* (2020) on Nigeria illustrates how FDI inflows contribute to real GDP growth and align with the SDGs, particularly the third goal of good health and well-being.

D'Amelio *et al.* (2016) highlighted FDI's role in improving access to electricity in developing countries with weak institutional structures, particularly when originating from countries with less developed institutions. Kutan *et al.* (2018) observed a simultaneous increase in pollution and economic growth in Brazil, India, China, and South Africa from 1990 to 2012, prompting substantial investments in renewable energy exceeding 103.8 billion USD in 2014. Dang (2019) advocated for enhancing institutions and governance in developing countries to maximize FDI benefits and foster effective investment.

However, not all developing countries have the resources or capabilities of Brazil, India, China, and South Africa. Suehrer (2019) proposed global alignment with the UN's SDGs to promote sustainable economic, social, and environmental progress through collaborative investment and development frameworks. This underscores FDI's multifaceted role in shaping a more sustainable future.

4. Considerations, limitations, and future research directions

4.1 Considerations

Essentially, FDI is not a panacea. Several determining factors and their impacts simultaneously interact to contribute to a country's economic development. Many answers have been provided by authors, but even more questions have been raised. As the examples illustrate, there are no simple questions regarding FDI, and the approaches to measuring them are endless. Moreover, the relationships between variables and determinants of FDI impacts are relative and evolving: dynamics are often relative and depend on other unidentified, unknown, or uncovered factors in studies. We thus find ourselves simultaneously in the presence of contradictions, complementarities, and a lack of information in the field of research. Finally, sustainable development considerations are increasingly part of the challenges targeted by investors and governments of host countries so that an increasing number of multinational enterprises (MNEs) and countries, developed or developing, respond to the call to action and pursue the millennium goals.

4.2 Limitations

There is a lack of consensus, especially between financial development, FDI, and economic development: terms can be used almost interchangeably or lose their meaning when translated in the context of research methodology development. Many studies compare the impacts of North-South and South-South FDI, but there is a lack of comparative studies on the impact of South-South FDI. The concept of developing countries is very broad and covers a range of developmental milestones that often do not equate.

We note a partial lack of consideration for absorptive capacities in this study, with the need to conceive all parameters (institutional, political, etc.) that can influence the impact of FDI on host countries. We also recognize a weak treatment of the debate on the economic orientation consequences for developing countries. The debate remains open: do countries develop thanks to FDI (blessing) or become dependent on it for development (curse)?

This study also cannot provide a definitive answer to the existential question of the chicken or the egg: which of FDI or the financial sector should precede the other to stimulate economic growth? Instead, the reader is invited to consider the simultaneous presence of both to spur economic growth, in a similar manner to Schrödinger's cat thought experiment whereby Austrian physicist Erwin Schrödinger devised a hypothetical situation about a cat sealed in a box with a device that could kill it, rendering the cat both dead or alive until the observer opens to box to confirm its status, to help picture the ambiguity of the concept of superposition in quantum mechanics whereas all states, or outcomes, exist at the same time until the observer "opens the box" to confirm it (Metwalli, 2023). In light of the many impacts discussed and existing in the research literature and their multiple relationships, the reader becomes the observer from Schrödinger's cat scientific allegory to confirm whether FDI or the financial sector is at times preceding the other, other times overlapping each other to produce economic impacts.

Finally, while this review helps identify a set of determinants that increase the positive externalities of FDI, it also highlights the challenges some developing countries face in transitioning from a sometimes-permissive model to an attractive system of sustainable and inclusive growth.

4.3 Implications for future research

For any research on the theme of FDI or its impacts on the development of host countries, it is important to identify causal links between several determinants as well as what we could call divergent impacts. Also, depending on countries and situations, economic development does not necessarily align with environmental protection (Rana and Sharma, 2020; Dada and Akinlo, 2021), or even with harmonious social development (Chen, 2016; Paczynska, 2016). Moreover, an influx of FDI does not necessarily guarantee spillovers for host countries. Therefore, we aim to propose several research avenues that can further empirical research, focusing on studying the relationships between FDI and the development of recipient developing countries.

The first research avenue to explore a better understanding of the economic impacts of FDI on host countries involves moving beyond simplistic views on investment and economic growth in developing countries. The impact of FDI depends significantly on contextual factors and the host country's capacity to absorb these investments. Researchers should therefore consider moderating variables such as human capital (Anwar and Nguyen, 2010; Goswami and Goswami, 2023; Kaulihowa and Adjasi, 2019), institutional quality (Tran *et al.*, 2023; Kwablah and Amoah, 2022), and infrastructure (Zhang, 2021) to precisely define their mutual influence on FDI externalities (Arogundade *et al.*, 2022; Huynh, 2021). Understanding the nuanced interaction between these factors and FDI outcomes can provide a comprehensive understanding of how FDI affects host economies. For instance, higher levels of human capital enhance a country's ability to absorb and utilize foreign technologies introduced by FDI, thereby amplifying positive spillover effects on productivity and innovation. Similarly, a favorable institutional environment characterized by transparent regulations and strong protection of property rights attracts higher-quality FDI and encourages greater reinvestment of profits, fostering sustainable economic growth. Quality infrastructure plays a crucial role in facilitating smooth FDI operations, increasing opportunities for local economic partnerships and spillovers, which contribute to long-term benefits (Mugobo and Mutize, 2016). Additionally, infrastructure investments can stimulate regional development and reduce rural-urban economic disparities (Chen, 2016). By integrating these moderating factors with FDI inflows, researchers can gain deeper insights into the specific impacts of FDI on host countries' economic and social development.

Some researchers underscore the significance of technology transfers and spillover effects of FDI by highlighting the potential benefits of enhancing local educational standards. Studies by Anwar and Nguyen (2010), Goswami and Goswami (2023), and Kaulihowa and Adjasi (2019) demonstrated that higher levels of local educational standards correlate with greater absorption capacity for foreign technologies and improved exploitation of FDI spillovers in developing economies. Robust educational systems can effectively facilitate the diffusion and assimilation of technological knowledge introduced by FDI, thereby stimulating innovation and economic growth. To advance understanding in this area, we propose conducting new longitudinal studies to explore the dynamic relationships between investment policies in developing countries' knowledge economies, technology transfers, and FDI spillover effects. Adopting a longitudinal approach would allow tracking the evolution of local educational standards, investment policies, and economic performance over an extended period. Such studies could provide deeper insights into causal relationships and underlying mechanisms, identifying both success factors and potential obstacles to realizing positive effects of FDI on economic and technological development in developing countries.

While extensive research has addressed the social impact of FDI (Castel-Branco, 2014; Chen, 2016; Fowowe and Shuaibu, 2014), there is a need for more comprehensive analyses that consider the complex interaction of various social factors. Current studies often focus narrowly on aspects like poverty reduction or income inequalities (Fowowe and Shuaibu, 2014; Kahn *et al.*, 2015), potentially overlooking broader social contexts in host countries. Future research should prioritize comparative analyses across diverse countries with varying historical, cultural, legal, economic, and institutional contexts to better understand how these factors influence the social outcomes of FDI.

Although FDI can have positive economic impacts under specific conditions, it also raises environmental concerns such as soil and water degradation, air pollution, and greenhouse gas emissions (Ali *et al.*, 2020; Awodumi, 2020; Munir and Ameer, 2020). Developing countries, facing resource constraints, struggle to regulate these polluting activities while viewing FDI as a tool to alleviate poverty (Dada and Akinlo, 2021). Future research should explore innovative strategies to balance economic imperatives with environmental protection in these contexts. This could involve incentivizing investments in clean technologies and strengthening environmental standards for foreign companies. Effective governance and robust institutions are crucial for monitoring the environmental impact of FDI and promoting sustainable practices (Huang and Chang, 2019; Kutan *et al.*, 2018; Sheng and Lü, 2012). Additionally, studying economic development models that foster growth while preserving local ecosystems and reducing carbon footprint is essential.

Finally, developing a uniform framework to evaluate FDI across similar developing countries or sectors, using consistent criteria such as economic objectives, returns, and contributions to human and sustainable development, is crucial. Multidisciplinary collaboration should be encouraged to enrich methodologies. This approach aims to establish universal metrics for assessing FDI impact uniformly and identifying key success factors and performance indicators.

5. Conclusions

This systematic review reveals that FDI generates various impacts on developing countries, including economic, social, environmental, and sustainable aspects. The magnitude and nature of these impacts hinge on the internal dynamics of the host country. For optimal outcomes, particularly in economic growth and industrial-technological development, host countries must develop key capabilities like robust financial institutions, human capital and infrastructure, ensuring FDI integration into the local economy and supporting national economic actors.

The interdependency between FDI and absorptive capacities necessitates strong institutions, skilled human capital, quality infrastructure, and favorable economic zones for FDI to realize its full potential in host countries. Acquiring these capacities poses challenges for resource-limited developing countries, often requiring external support with conditional access and reconsideration of FDI typologies. The evolving literature emphasizes the need to prioritize sustainable investment over short-term efficiency models, highlighting FDI's complex role in contemporary global development, particularly concerning social and environmental impacts.

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