




ANALYSIS OF THE GOVERNANCE PRACTICES FOR PROMOTING SUSTAINABLE INDUSTRIAL PARKS DEVELOPMENT IN ETHIOPIA: CHALLENGES AND PROSPECTS

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ABSTRACT

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Because of emerging trends and global socioeconomic dynamism, various opportunities and challenges of industrialization have been experienced in both developed and developing countries. Understanding its vital role in alleviating the sustainability challenges of industrialization, Ethiopia has been undertaking the development of Industrial Parks over the past decade as the significant tool of its industrial policy. However, there is a huge research gap on how to select and implement appropriate governance approach for the process to promote sustainable industrialization in the country. Hence, the primary goal of this study to explore the current bottlenecks of governance practices hampering the Parks' sustainability, and the key success factors that could be customized and contextually used. It basically applied an exploratory qualitative method primarily based on extensive literature analysis, key informant interviews and observation; thus, revealed the main challenges that impede the sustainability objective of the Parks: political instability and security problems; lack of suitable policies and implementation strategy; inadequate knowledge; weak coordination and limited capacity of stakeholders; and poor information and technology management. It also identified the key success factors from the best practices of global experience. Suggestions have been given on the issues that need emphasis to select and implement effective governance approach for Sustainable Industrial Parks development and operation within the specific context of the country.

Contribution/Originality: The paper contributes in the literature by providing realistic understandings on the current challenges of governance practices and contextual factors for promoting sustainable Industrial Parks development in Ethiopia.

1. INTRODUCTION

Inclusive and sustainable industrialization can be seen as the driving force of a successful economic growth. Obviously, the experiences of successful countries demonstrate that it can play a significant role in efforts to realize the overall economic development objectives of a country. In line with this, the 2030 Agenda for SDGs might uplift the need to promote Sustainable Industrial Parks in order to strategically address the basic sustainability dimensions of industrialization (WIR, 2019). However, if not properly governed with feasible and contextual governance model, the Parks' development may fail to serve as effective industrial policy tool. That is, well governed Industrial Parks development can be a potential means of achieving Inclusive and Sustainable Industrialization. Since there is no one-size-fit-all governance approach for promoting Sustainable Industrial Parks

development and operation, the selection and implementation is determined by the anticipated strategic goals of the Parks within the specific contexts of countries undertaking them. Substantiating this, Little (2014a) highlighted that the success depends on the implementation of appropriate governance framework that can balance countries' strategic development objectives with the current and projected market trends. According to the International Guidelines for Industrial Parks (UNIDO, 2019) the term *Industrial Parks* have been defined in various ways and known by different names including “*Industrial Parks, Special Economic Zones, Eco-Industrial Parks, Industrial Zones, Free Trade Zones, Technology Parks, Industry Clusters, Export Processing Zones, Economic Development Zones, Innovation Districts, and Industrial Estates.*” In this study, the term ‘Industrial Park’ is used in its most general sense as defined under Ethiopian law by the Federal Democratic Republic of Ethiopia (FDRE) Industrial Parks Proclamation (FDRE, 2015) is “*a tract of land with the provision of common infrastructure to a group of industrial firms in the area established to develop comprehensive, integrated, multiple or selected function of industries involving special regulatory areas and instruments.*”

Ethiopia has embarked on the development of Industrial Parks since 2015 in different regions of the country as it is apparently better in all aspects than the forms of development that have come before for promoting sustainable industrialization in the country. Currently, there are a total of 24 Industrial Parks (IPs) in the country (Table 3), of which 17 are government-owned and 7 are privately-owned. Among the government owned Industrial Parks, 4 are Agro-processing Industrial Parks developed by regional governments and the remaining 13 are developed by Industrial Parks Development Corporation (IPDC). However, it has been noted that there are multiple socio-economic and environmental challenges that need to be addressed by selecting and implementing contextual governance approach for Sustainable Industrial Parks development and operation in the country. Among the previous studies so far conducted, few works have been undertaken regarding the issue of governance practices for sustainable Industrial Parks' development within the specific context of Ethiopia. Of these, the work of Azmach (2019) has identified the barriers of the country's legal frameworks, including a less focused restrictive objective and unclear rules regarding location decision; land acquisition procedures; attracting anchor investors; industrial disputes management and grievance handling; and, backward and forward linkages management to enhance local competitiveness. Another study conducted by Sime (2020) has come up with the findings that show the inefficiency of regulatory and institutional frameworks to properly address the existing environmental and socio-economic challenges of Industrial Parks in the country. So, it has been noted that, there is a huge research gap on how to design and implement appropriate governance approach. Based on this fact, this research aimed at scrutinizing the challenges of governance practices that are impeding the development of Industrial Parks in Ethiopia; and exploring the key success factors that could be considered to implement appropriate governance model for promoting sustainable development of Industrial Parks in Ethiopia. The subsequent part of the article is organized into four sections that the *first* discusses the overview of governance for sustainable development; the principles and key components of effective governance; and Sustainable Industrial Parks development, and the criteria for evaluating the success of relevant governance models. The *second section* presents location and description of the Industrial Parks status in Ethiopia; review of the selected countries with best governance practices for Industrial Parks development; and the methodological approaches used in the study. The *third section* presents the discussion of the major findings. The *final section* concludes by providing suggestions.

2. LITERATURE REVIEW

2.1. Governance and Sustainable Development

Without employing appropriate and feasible governance approach by considering the very specific situation of a country, it would be difficult trying to achieve the development objectives within the notion of sustainability in the complex and dynamic world trends. The frequently used definition of Sustainable

Development as quoted in (Monkelbaan, 2019a) is , “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” According to Glass and Newig (2019) effective governance arrangements should be in place and implemented to successfully achievement the goals of a country’s Sustainable Development plan. Nevertheless, there is a lack of sufficient clarity on which approaches and aspects of governance are essential and feasible for which specific goals and related targets of the process. That is, there is always real needs of feasible and contextual approaches within the area of governance for Sustainable Development Goals (SDGs). With this rationality, different scholars justify that governance is a key pillar and backbone for the successful implementation and achievement the goals. To this end, the significant associations between governance and the SDGs as cited in Monkelbaan (2019b) can be considered as: *firstly*, the successful achievement of all SDGs depends on the appropriate governance model used; and *secondly* governance is a central framework for effectively selecting and harmonizing all other means for implementing the SDGs. Hence, the absence of effective and contextual governance approach could lead to the failure and mismatch between the implemented and observed results in the process to achieve the goals of Sustainable Development.

2.2. The Principles and Key Components of Effective Governance for SDGs

Essentially, effective governance for sustainable development is central for successful SDGs implementation in a country. In this regard, there are common governance components that need to be defined and contextualized based on the specific situation of the respective country to develop realistic governance framework for achieving the SDGs. For the purpose of this study, the governance components for SDGs presented by the work of Gibson et al. (2005) cited in Selig (2016) and listed “; *Policy Integration; Shared Sustainability Objectives; Sustainability based Criteria for Planning & Approval of Significant Undertakings; Specified Rules for Managing Trade-offs & Compromises; Widely Accepted Indicators of the Needs for Action & Progress Towards Sustainability; Information & Incentives for Practical Implementation; and Programs for System Innovation,*” have been referred to investigate the current status of governance practices for Industrial Parks development in Ethiopia due to the suitability and relevance of the components. In line with these, the Principles of Effective Governance that have been recognized and endorsed by UNECOSOC (2018) for the success of SDGs implementation ,and used for this research are “*Competence; Sound Policy Making; Collaboration; Integrity;*

Transparency; Independent Oversight; Leaving No One Behind; Non-Discrimination; Participation; Subsidiary; and Intergenerational Equity.”

Accordingly, *the first three* principles focus on *Effectiveness*; *the second three* principles address *Accountability*; and *the last five* principles emphasizes on *Inclusiveness*.

2.3. Sustainable Industrial Parks Development

From sustainability concept, an Industrial Park can be defined when the *Three Pillars* (Economic, Social and Environmental) with effective governance framework are focused and balanced in all stages of their development process (GIZ, 2015). According to the United Nations Industrial Development Organization (UNIDO) expert meeting report of May 2017 (UNIDO, 2017) a Sustainable Industrial Park is defined as “ *a group of firms working together in a demarcated area with a strategic objectives of achieving economic, environmental and social benefits by taking advantage of business opportunities based on the notion of sustainable development both at the Park level and the resident companies.*” The definition implies that when planned and effectively implemented by using contextual and feasible governance model, Sustainable Industrial Parks can play a significant role in the process of building inclusive & sustainable industrialization. Moreover, as per the International Guidelines (UNIDO, 2019) they can shape the futurity of industrialization in any country, especially the developing ones amid the emerging trends of green industrial development. In line with this, the Agenda 2030 for Sustainable Development underlines *SDG-9* with

relevant target issues (UNO, 2018). Hence, Sustainable Industrial Parks development with proper governance approach could be an answer to the sustainability challenges of industrialization, especially in the developing countries. For this study, the 17 SDGs were considered; of which Table 1 describes the most relevant ones as follows.

Table 1. The SDGs directly related to sustainable industrial parks development.

Goals	Description
G4	<ul style="list-style-type: none"> To promote life-long learning opportunities for all by ensuring inclusive and equitable quality education.
G5	<ul style="list-style-type: none"> To empower all women and girls, and achieve gender equality.
G8	<ul style="list-style-type: none"> To promote inclusive & sustainable economic growth, and decent work & productive employment for all.
G9	<ul style="list-style-type: none"> To build resilient infrastructure, promote inclusive & sustainable industrialization, and foster innovation.
G12	<ul style="list-style-type: none"> To ensure sustainable consumption & production patterns.

Source: UNO (2018).

Table 2. Key characteristics, advantages & disadvantages of governance models for industrial parks.

Models	Description of Key Characteristics	Advantages	Disadvantages
Public	<ul style="list-style-type: none"> It is fully governments' responsibility to undertake the development & operation. The government may give incentives to investors. Infrastructure and utilities are either developed by government or outsourced. Revenues can be derived from land leasing. Budget is given annually; also it can get grants from government. 	<ul style="list-style-type: none"> Ownership can be decentralized. Priority is given to public objectives. Full autonomy to protect national interest. 	<ul style="list-style-type: none"> High investment cost with long term period of return. Lack of sufficient information on market uncertainty. Most countries don't implement the model as it can cause deficit of public finance. Inefficiency due to lack of technical know-how. Weak management of conflicting interests.
Private	<ul style="list-style-type: none"> It is the responsibility of a private entity to undertake the process, except Parks' regulation. Revenues from the Park's operation go to the private company. 	<ul style="list-style-type: none"> Feasible investment cost with high probability of fast return. Parks' development can be facilitated by private company. With strong regulatory capacity of governments, it can maximizes direct economic benefits. 	<ul style="list-style-type: none"> Focus on maximum return at the expense of public objectives of national economic development. Weak concern to environmental quality safeguards. Investors may lack commitment for Corporate Social Responsibility.
Hybrid	<ul style="list-style-type: none"> Agreement of government with another government or private company to undertake the process. It could be fully responsible to run Industrial Park's development and operation; or it can select and implement suitable PPP model for the process. 	<ul style="list-style-type: none"> High commitment of political leaders to support the process. Strict government regulation that enhances the use of private expertise. It is employed when governments want to control the ownership of strategic aspects of the process. 	<ul style="list-style-type: none"> There could be lack of efficient coordination. The problem cultural assimilation and poor communication. Conflicting interests of political ideology that could be against national interest may happen.

Source: Customized from UNCTAD (2021) and Little (2014a).

2.4. Governance for Industrial Parks Sustainability

Obviously, countries across the world undertake a critical assessment of their own specific context to select the best governance approach for the successful development of Industrial Parks. Regarding this, Little (2014a) has emphasized in his work that selecting the right and contextual governance approach is a fundamental step for the process. In support of this, Sulaiman, Santoso, and Guswandi (2016) underlines that effective governance becomes a backbone of successful Industrial Parks development by strengthening community bound industrial development; alliances, local community awareness, infrastructure and handling of environmental issues. Thus, selecting the most appropriate mode of governance is the fundamental step for a country to undertake Sustainable Industrial Parks development. To this end, there are basically three models (*Public, Private, and Public-Private Partnership/Hybrid*) of governance approach for Industrial Parks development; where the selection and implementation of a suitable model depends on the specific contexts of respective countries (Little, 2014a; UNCTAD, 2021).

Table 2 presents the summary of description, advantages and disadvantages of the models as reviewed based on the key defining characteristics that have been customized by scholars of the area. These include: framework; scope of function; source of funding; authorities; constitution of the boards of governance; and revenue allocation of the development and operation of Industrial Parks.

2.5. Selection of Effective Governance Model for Industrial Parks Sustainability

Though there are differences based on the specific contexts of countries in consideration, the scholars of the area suggest the basic and common criteria of selection and evaluation of governance models for Industrial Parks development within the notion of sustainability that can be customized to the best context of the respective country. For the purpose of this study, we used the set of criteria adapted from the work of Little (2014b) in pursuit of investigating the challenges in Ethiopia since the criteria are suitable and easily customized to the best context of the country in evaluating its current status. These include, “*Suitability for Investors; Alignment at Different Levels of Governments; Adequate Capital for Investment; Security & Political Stability; Effective & Efficient Park Operation; Transparent Institutional Set-up & Park Management System; Sustainable Financial Management; Effective Strategic Risk Management System; Ease of Doing Business; and Standard Environmental Quality Management System.*”

3. MATERIALS AND METHODS

3.1. Location Industrial Parks in Ethiopia

Ethiopia started the development of Industrial Parks in the year 2015 as a key policy instrument for the country's industrialization. Since then, 17 Public and 6 Private Industrial Parks have so far been developed, while also positioned Ethiopia as a key textile and apparel manufacturer country. In general, Industrial Parks development in Ethiopia has a significant role in manufacturing sector, investment, technology transfer, social and environmental sustainability, and national and regional development. Figure 1 depicts the location of existing Industrial Parks in Ethiopia.

3.2. Description of Industrial Parks in Ethiopia

According to the Industrial Parks Development Corporation (IPDC) report of the year 2021, Table 3 shows a total of 24 Industrial Parks (IPs) in the country, of which 17 are government-owned and 7 are privately-owned. Among the government owned Parks, 4 are Integrated Agro- Processing Industrial Parks developed by National Regional State Governments and the remaining 13 are developed by Federal Government through Industrial Parks Development Corporation of Ethiopia. Located in Addis Ababa (Bole Lemi I & II IPs, Kilinto IP and Information and Communication Technology Park); in Sidama (Hawassa); in Amhara (Debre Birhan IP, Kombolcha IP, Bahir Dar IP and Arerti IP); in Tigray (Mekelle IP); in Oromia (Adama IP and Jimma IP); in Dire Dawa (Dire Dawa IP);

and in Afar (Semera IP). The Industrial Parks are being developed and operational on 4.64 thousand hectares of land and had generated a sum of USD 311.5 million and 83 thousand jobs until the end of the 2020/21 fiscal year (FDRE, 2021).

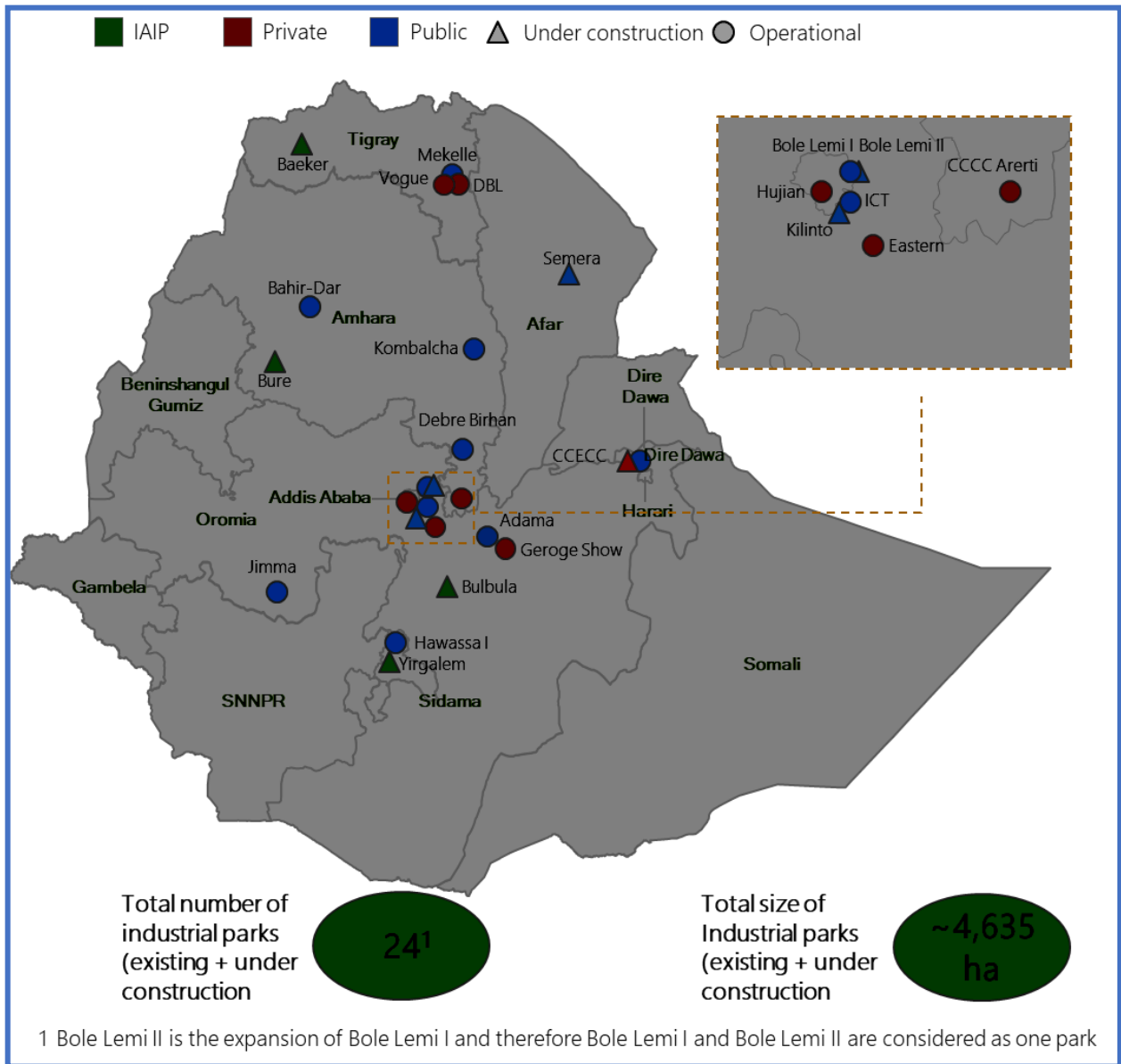


Figure 1. Location of industrial parks in Ethiopia.

Source: FDRE (2021).

The Privately-Owned Parks are the Eastern Industrial Zone (Chinese-Owned), Huajian Industrial Park (Chinese-Owned), George Shoe (Taiwanese-Owned), China Communications Construction Company (CCCC) (Chinese-Owned), and Vogue IP (Turkish-Owned). They are operational and currently generating nearly 35 thousand employments, and created a total of USD 43.7 million in the 2020/21 fiscal year. To promote modern and mechanized agriculture, the government has identified key potentials for Integrated Agro-Processing Parks development that can accelerate the effort to realize sustainable industrialization in the country. Currently, there are four Integrated Agro-Processing Industrial Parks (IAIPs) being developed and partly operational in four development corridors of Ethiopia: Bulbula IAIP in Oromia; Bure IAIP in South-West Amhara; Yirgalem IAIP in Sidama; and Baeker IAIP in Western Tigray.

Table 3. Description of the industrial parks.

Ownership	Industrial Park	Location	Main Industry	Size (hectares)	Status
Owned by Federal Government	Bole Lemi I & II	Addis Ababa	Textile, Apparel & Leather	353	Operational
	Hawassa I	Hawassa, Sidama	Textile & Apparel	140	Operational
	Kombolcha	Kombolcha, Amhara	Textile, Apparel & Leather	75	Operational
	Mekelle	Mekelle, Tigray	Textile & Apparel	75	Operational
	Adama	Adama, Oromia	Textile, Apparel & Machinery	120	Operational
	Jimma	Jimma, Oromia	Textile, Apparel & Leather	75	Operational
	Bahir Dar	Bahir Dar, Amhara	Textile & Apparel	75	Operational
	Debre Birhan	Debre Berhan, Amhara	Textile & Apparel	100	Operational
	Dire Dawa	Dire Dawa	Textile, Apparel & Machinery	150	Operational
	Addis Industry Village	Addis Ababa	Mixed	9	Operational
	ICT Park	Addis Ababa	ICT	200	Operational
	Kilinto	Addis Ababa	Pharmaceutical	279	Operational
	Semera	Semera, Afar	Mixed	50	Under Construction
Owned by National Regional State Governments	Bulbula Integrated Agro Processing	Oromia	Agro-processing	259	Partly Operational
	Yirgalem Integrated Agro Processing	Sidama	Agro-processing	176	Partly Operational
	Baeker Integrated Agro Processing	Tigray	Agro-processing	259	Partly Operational Construction
	Bure Integrated Agro Processing	Amhara	Agro-processing	260	Partly Operational
Privately Owned	Huajian	Addis Ababa	Textile, Apparel & Leather	138	Operational
	George Shoe	Modjo, Oromia	Leather	86	Operational
	Eastern	Dukam, Oromia	Mixed	400	Operational
	Vogue	Tigray	Textile & Apparel	178	Operational
	DBL Industries PLC	Tigray	Textile & Apparel	78	Operational
	CCCC	Amhara	Construction Materials	100	Operational
	China Civil Engineering Construction Corp. (CCECC)	Dire Dawa	Mixed	1000	Partly Operational

Source: FDRE (2021).

3.3. Review of Countries with Best Governance Practices for Industrial Parks Development

Central to the governance approach for Industrial Parks development, there is no universal blueprint that is common to all countries; instead, significant recommendations are derived from the best practices and key success factors of internationally recognized successful Industrial Parks. Though much has been researched and written by different scholars on the issues, the recent and timely works of Aggarwal (2019); Mugano (2021a) have been cited and used by the authors of this article to investigate best practice and key success factors regarding the governance model and institutional framework for Industrial Parks sustainability. Thus, the three integrated pillars

of effective governance and efficient institutional setup for Sustainable Industrial Parks that has been customized and for the purpose of this article are:

- A well-designed strategic framework for the development of Industrial Parks, that best fits a wider economic development strategy of a country.
- Dynamic system and institution to effectively manage the emerging challenges and opportunities.
- Effective strategic implementation to achieve the Parks' objectives within the notion of sustainability.

The central argument is that countries with the experience of successful governance practices have aligned the objectives of Industrial Parks with national development strategic goals by using selective and contextual approaches that can be effectively implemented within the strategic dynamism of internal and external factors regarding the emerging issues of Industrial Parks. The countries that have been proved to be most successful by effectively harmonizing and implementing the three pillars for the development of Industrial Park (Special Economic Zones) include *China; the Republic of Korea; United States of America; Japan; Denmark; Thailand; Vietnam; Honduras; Mexico; the United Arab Emirates; and Mauritius* (Aggarwal, 2019; Mugano, 2021a).

3.4. Methods

The study basically applied an exploratory research approach involving mixed methods of data collection, analysis and presentation to investigate the challenges of governance practices for sustainable Industrial Parks development in Ethiopia, and the key success factors that could be lessons for the country to promote the Parks' sustainability. Hence, secondary data were collected and analyzed by undertaking extensive analysis of the relevant documents. Whereas, the primary data were collected from the purposely selected key informants by interview and questionnaire.

3.4.1. Analysis of the Relevant Documents

With the aim of exploring the challenges of governance practices and the key success factors for sustainable Industrial Parks development in Ethiopia, the relevant documents were analyzed mainly on the issues like:

- Experiences and best practices of the selected successful countries with effective governance practices and efficient institutional framework in promoting sustainable Industrial Parks development and operation.
- The development trends and operational status of Industrial Parks in Ethiopia.

The secondary data collected by extensive review of the relevant documents were qualitatively analyzed and interpreted to explore the practical challenges in Ethiopia, and the key success factors of other successful countries concerning the governance approaches for Industrial Parks (Special Economic Zones) development. In line with this, the primary data collected by questionnaires and the key informants' interview were analyzed to triangulate the findings.

Table 4. Experience and professional mixes of the key informants interviewed.

No	Qualifications	Average Years of Experience	Number of Participants
1	Managers	13	6
2	Economists	11	5
3	Sociologists	9	3
4	Environmentalists	12	5
5	Engineers (Civil, Mechanical, Electrical & Architects)	10	4
Total		11	23

3.4.2. Key Informant Interview

Interviews were conducted with the Key Informants selected from the Ethiopian Government institutions (Ministry of Industry; Investment Commission; and Industrial Parks Development Corporation), and the Parks' Management Offices. Table 4 presents summary of the experiences and professional mixes of key informants interviewed. Accordingly, 23 Key Informants were purposively selected based on their role, experience and profession, and interviewed on the issues regarding the practical challenges of governance practices in Ethiopia for promoting Sustainable Industrial Parks development and operation.

3.4.3. Questionnaires

Structured questionnaires were used to collect data by engaging a total of 133 respondents from the purposively selected Industrial Parks and relevant government institutions. Thus, Table 5 exhibits the number and proportion of respondents involved in the process.

Table 5. Number and proportion of the respondents.

No	Institutions	No. of Respondents	Percentage
1	FDRE Ministry of Industry	11	8.26
2	Ethiopian Investment Commission	13	9.77
3	Industrial Parks Development Corporation of Ethiopia	16	12.03
4	Adama Industrial Park	26	19.54
5	Hawassa Industrial Park	23	17.29
6	Bole Lemmi-1 Industrial Park	27	20.33
7	Eastern Industry Zone	17	12.78
Total		133	100

The set of data collected by questionnaires was analyzed by employing the software Statistical Package for the Social Sciences (IBM SPSS version 20.3), and the results were critically interpreted by triangulating with the findings from key informants interviews and extensive review of relevant documents.

4. DISCUSSION OF THE MAIN FINDINGS

Industrial Parks development has been considered as an important policy instrument for promoting sustainable industrialization both in the developed and developing countries. Cognizant of this facts, Ethiopia has been engaged in the development of Industrial Parks since 2015 as per the FDRE Industrial Parks Proclamation (FDRE, 2015). Nevertheless, the current status in the country and the emerging trends across the world reveal that there are multiple challenges hampering the move towards realizing the objectives of sustainable Industrial Parks development. Suggestions from the scholars of the area by their works on global experiences have indicated that selecting and implementing the most appropriate governance approach and efficient institutional set-up within the specific context of the country in focus is the backbone of sustainable Industrial Parks development (Aaron, 2019; Aggarwal, 2019; Mugano, 2021b).

Hence, this research has tried to investigate the challenges of governance practices that are hampering the sustainability of Industrial Parks in Ethiopia, and the key success factors that can be used as lessons. In conclusion, suggestions have been given by the authors that could be considered to select and implement the most suitable governance approach for promoting Sustainable Industrial Parks in the country. To this end, Figure 2 presents the key challenges in Ethiopia, and the respondents' level of agreement in percent (%) on every item of the challenges explored by the survey conducted.

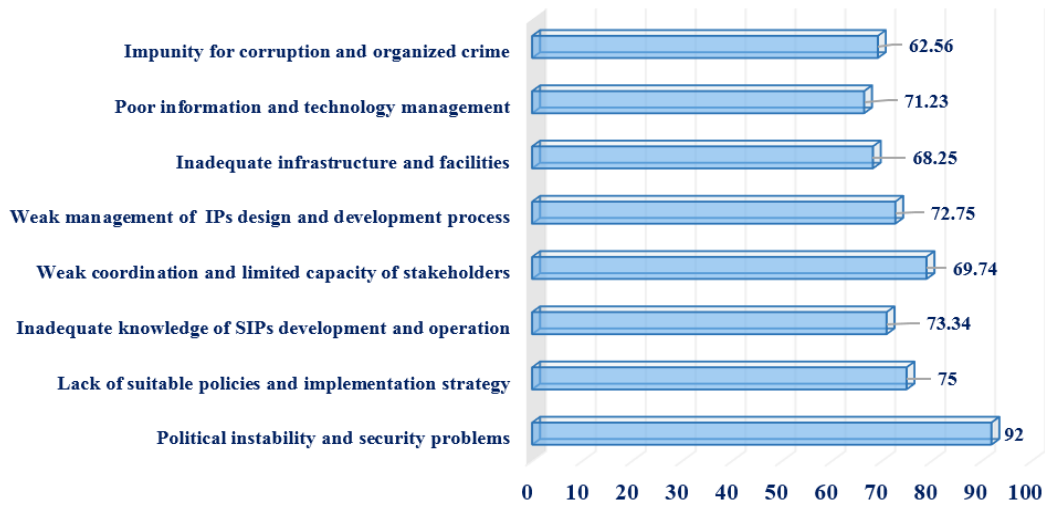


Figure 2. Challenges of governance practices for industrial parks in Ethiopia.

4.1. Key Challenges of Governance Practices for Industrial Parks Development in Ethiopia

The survey of data collected from the respondents by structured questionnaire that was triangulated with that of interviews and document analysis revealed the key pertinent governance challenges depicted by Figure 2. Accordingly, the analysis revealed that the respondents' levels of agreement on the identified challenges range from 68.25 % to 92%. Arguably, we can say that the challenges are seriously impeding the governance practices for prompting the sustainability of Industrial Parks in the country. Hence, the subsequent section briefly discusses the key challenges that have been investigated by the research.

Political Instability and Security Problems. Among the determinant factors of governance effectiveness for Sustainable Industrial Parks development, political robustness and leadership commitment (Aggarwal, 2019; Little, 2014c) are crucial. From the analysis we have undertaken, political instability and uncertainties associated with security problems have been found to be the key challenging issues currently obstructing the effort to promote Sustainable Industrial Parks in Ethiopia. Hence, investigation of the current status has identified the pertinent issues triggered by the prevailing political instability and security problems in the country. These include:

- Failure to competitively identify and prioritize the contextual sustainability factors (environmental, economic & social) in pursuit of selecting and implementing appropriate governance approach that can promote Sustainable Industrial Parks in the country.
- Lack of strategic focus and well-structured approach towards Industrial Parks sustainability; thus, fail to fully undertake contextual strategic situational analysis to gain competitiveness.
- Misallocation of resources and lack of feasible investment on the basic infrastructures.
- Distorted and misaligned flow of incentives such as the access to cheap land; minimum wages; minimum commitment for environmental protection; and other fiscal incentives assumed to attract and encourage foreign direct investment to get short term benefits at the expense of long term strategic and sustainability objectives of the Parks.

Lack of Suitable Policies and Implementation Strategy. Several studies have shown that suitable policies together with contextual implementation strategy are the main pillars of effective governance approach, especially for the countries where the practice and experience of Industrial Parks development is at its infant stage, like Ethiopia. The contemporary debates on the successful development of Industrial Parks as an essential tool of sustainable industrialization have been based on the policy issues to be considered and implemented in the process, which include *the need for strategic focus; experimentation and gradual approach; appropriate regulatory frameworks and governance structures; and the value proposition for investors* in the Parks

(Aaron, 2019). In this regard, it has been noted from the analysis of the current status in Ethiopia that lack of suitable policies and effective implementation strategy is one of the main challenges hampering the efforts to develop effective governance practices for promoting Sustainable Industrial Parks in the country. Elucidating the challenge, the following main points have been identified by this research:

- Frequent institutional changes that pose a challenge to strategically plan and implement Industrial Parks within the notion of sustainability.
- Weak policy coordination to integrate the sustainability objectives of Industrial Parks into the broader trade and industrial strategies.
- Lack of strategic planning and proper implementation framework that can promote Sustainable Industrial Parks within the specific context of the country.
- Potential conflicts between existing regulations and policy initiatives.
- Lack of clear strategy to lead backward and forward linkages; fail to create sustainable value chains.

Inadequate Knowledge of Sustainable Industrial Parks Development and Operation. Obviously, the availability of necessary and appropriate knowledge is one of the determining factors in an attempt to achieve the goals of any development program designed in pursuit of realizing an economy's structural transformation. Though countries afford to avail sufficient incentives with the best intentions of achieving successful industrialization that could transform their economy, empirical evidences show that most of them fail to succeed because of inadequate knowledge to design and implement proper policy and effective strategies (Farole & Moberg, 2014). It is the commonly observed case that has been obstructing the development and operation of Industrial Parks in developing countries where there is a huge knowledge gap; thus, fail to lead the planning and implementation phases of the Parks towards sustainability. This study has explored similar case that in Ethiopia there is lack of adequate knowledge on how to plan and implement Industrial Parks within the notion of sustainability based on the country's specific context. Besides, there is weak understanding and inadequate experience on how to identify and implement the basic issues including human capital management; technology transfer and development; identification of clusters in Industrial Parks' networking; and consideration of environmental and social aspects management including operations, forward-backward integration, and master planning elements.

Weak Coordination and Limited Capacity of Stakeholders. Since multiple stakeholders from both public and private sectors take part in the process, an Industrial Park's development governance model and institutional set-up are so complicated as far as the specific economic, environmental, political and other contextual factors of a county is considered (Mugano, 2021b). Thus, the failure to create strong coordination and adequate capacity of stakeholders is the key bottleneck of selecting and implementing effective governance model and institutional framework for Sustainable Industrial Parks development. We have scrutinized that the current governance practices and institutional set up for promoting Sustainable Industrial Parks in Ethiopia is being challenged by weak coordination and limited capacity of the stakeholders; thus, exacerbating the failure to balance the basic dimensions of sustainability in the development and operation of the Parks within the specific and competitive context of the country.

Poor Information and Technology Management. It has been argued that Industrial Parks should be 'pilots of innovation'. However, most of them lag behind in developing countries in terms of innovation and learning (Farole, 2011; Mugano, 2021b; Robinson, 2022). Supporting this fact, the observed evidences and survey from the key informants revealed that poor information and technology management is one of the key challenges of governance practices impeding the sustainability of Industrial Parks as far as the current specific context of Ethiopia is considered. That is, the present status in the country is being challenged by the lack of official and accurate information; lack of infrastructure for technology and ICT development; low level of technological readiness; highly exposed to cyber-attacks; and limited knowledge & technology transfer capacity.

Weak Management of Industrial Parks' Design and Implementation. As far as sustainability is concerned, strong and effective management system of Industrial Parks' design and implementation needs to be contextually formulated and emplaced for the successful development and operation of the Parks. Nevertheless, this study has investigated that one of the key challenges of governance practices for Industrial Parks in Ethiopia is weak management of the design and implementation of the Parks' development and operation based on the competitive context of the country.

4.2. Key Success Factors and Lessons for Ethiopia

There is no universal blueprint for all the types of Industrial Parks across the world; neither is a one-size-fits-all governance model and institutional set-up for the Parks' development. That is, the selection and implementation of effective governance approach and efficient institutional set-up for Sustainable Industrial Parks development and operation depends on the specific context of the country in focus to address the challenging issues that impede their success. Therefore, the following section summarizes the key success factors and lessons explored by this study from the global experiences and emerging trends that can be contextualized and implemented based on the specific situation of Ethiopia to alleviate the prevailing challenges of adopting effective governance approach and competent institutional set-up for promoting Sustainable Industrial Parks development in the country.

Strong Commitment of Top Leadership to Ensure High-level Political Support. Experiences of the successful countries show that political stability with strong leadership commitment is a critical success factor for promoting sustainable Industrial Parks. Accordingly, with proper frameworks and stable political situation, leadership plays central role in future-visioning, goal identification, policy design & implementation, performance monitoring, and policy adjustment practices of governance for Sustainable Development (Meadowcroft, Farrell, & Spangenberg, 2005; UNCTAD, 2021). It has been scrutinized by this research that the current local and regional political instability is seriously affecting the leadership role in selecting and implementing appropriate governance framework for promoting Industrial Parks sustainability in Ethiopia. Thus, harnessing strong commitment of top leadership for high-level political support is needed to alleviate the challenge in order to achieve the sustainability objectives of the Parks.

Alignment to the Broader National Development Objectives. To realize the sustainability objectives of Industrial Parks with in the specific context of a country, it needs effective governance model with efficient institutional set-up that can align the Parks' sustainability objectives to the broader national development objectives. Supporting this, (Aggarwal, 2019; Mugano, 2021b; Zeng, 2016) indicated that the development of any economic zone planned with special interest of a country should be part of the comprehensive national development agenda in the way that it can effectively support to successfully achieve the country's development objectives. That is, the development plan of Industrial Parks should be based on the detail feasibility studies of factors related to the basic components that should be addressed by aligning the plan to the country's broader development targets. Moreover, it has been noted that linking the strategic development framework with strategic governance approach for developing Industrial Parks could be a means to successfully enhance the Parks' sustainability. So, we can argue that the selection and implementation of effective governance model for Industrial Parks development in Ethiopia should align the process to the broader development objectives of the country within the view of sustainability.

Fostering Policy Coherence and Holistic Implementation Strategy. The issue of policy coherence and implementation strategy is central to the governance practices for Industrial Parks development. International best practices show that countries with successful Industrial Parks in achieving the sustainability objectives have strong policy coherence and holistic implementation strategy. In support of this, Mugano (2021b) highlighted that focusing on policy considerations and coherence and appropriate implementation strategy is

the essential step of successful Industrial Parks development within the notion of sustainability. Moreover, integrating Industrial Parks programs within the national economic growth policy framework could increase coherence and holistic implementation for the Parks' sustainability (UNCTAD, 2021). Hence, policymakers should aim at creating systematic coherence of national policies by designing holistic strategic implementation approach in order to promote Sustainable Industrial Parks development in Ethiopia.

4.3. Attractive Business Environment with Efficient and Transparent Institutional Set-Up

Creating an attractive business environment by employing appropriate governance practices and transparent institutional set-up is a crucial success factor for Industrial Parks. From the global best practices, it has been noted that almost all the successful Industrial Parks in the world are very attractive to investors, and other stakeholders involving in the Parks' development and operation process (Zeng, 2016). Hence, the selection and implementation of governance approach for Industrial Parks development in Ethiopia should aim to create attractive business environment and transparent institutional set-up that can boost the Parks' success towards sustainability.

4.4. Responsiveness and Willingness to Address the Potential Environmental Concerns

At the early stage, having paid less attention to the environmental protection, many of the successful countries including China have paid a high environmental price in their rapid industrialization (Kechichian & Jeong, 2016). Currently, the governments are spending billions of dollars to clean up the damages created in the process; and implementing strict policy measures for environmental quality management to foster inclusive and sustainable industrialization in the countries. So, Ethiopia should take lessons from the successful countries so as to adopt strict measures that can enhance responsiveness and willingness to address the potential environmental concerns including: the establishment and effective implementation of environmental management systems; awareness to biodiversity protection and the application of environmental technologies; sound environmental policy and implementation strategy; and a coherent and consistent approach to ensuring environmental sustainability in the process.

4.5. Robust Coordination for Enhanced Stakeholders' Capacity

One of the underlining targets of effective governance approach for Industrial Parks development is creating strong coordination of stakeholders with enhanced engagement capacity. Regarding this, the International Guidelines for Industrial Parks (UNIDO, 2019) suggest strategies for effective stakeholder engagement that can be contextualized and implemented by the countries, including Ethiopia, undertaking Industrial Parks development. Among the strategies are:

- Outlining and implementing clear binding agreement concerning the interests, roles, and responsibilities of all the stakeholders involving in the process.
- Creating an effective and contextual governance system that can facilitate the selection, involvement, and synergy of the stakeholders at all levels of the Parks' development and operation.
- Establishing effective communication and transparent system for the stakeholders' engagement that can build trust and loyalty.
- Strong and dynamic community engagement to actively facilitate and use the knowledge, suggestions, concerns and vision of the affected citizens and communities in the process of planning and implementing the Parks' development.

Since the process involves a wide range of stakeholders, their level of capacity and coordination can in turn determine the governance practices for promoting sustainability of Industrial Parks within the specific context of the country undertaking their development. Therefore, the governance approach for Sustainable Industrial Parks

development in Ethiopia needs to create enhanced capacity and robust coordination of stakeholders so as to achieve the sustainability objectives of the Parks.

Effective Strategic Risk Management. One of the main determining factors of the selection and implementation of contextual governance model for Industrial Parks development within the notion of sustainability is its suitability for effective strategic risk management. According to the International Guidelines (UNIDO, 2019) “Industrial Parks are inherently complex systems comprising numerous users, which all interact with an operator, a host community and various regulators, requiring compliance with a large number of protocols, rules and standards.” That is, there could be risks that can potentially affect and obstruct the process, including planning risks, strategic risks, financial risks, market & commercial risks, environmental risks, human resource & operational risks, and fixed asset risks. Therefore, to successfully manage the risks by identifying, prioritizing, and mitigating them, Ethiopia needs to design and implement a systematic risk management approach for successful development and operation of Inclusive and Sustainable Industrial Parks in the country.

Continuous Skills Training, and Technological Learning, Innovation & Upgrading. Sufficient knowledge is decisive for the success of Industrial Parks development and operation towards sustainability by competitively managing contextual factors of the countries undertaking them. To critically analyze and identify the prevailing challenges and success factors of any development program, including that of Industrial Parks, having the necessary skills and technology capacity is crucial (Monkelbaan, 2019b; Zeng, 2016). Best practices from countries with effective governance models and efficient institutional set-up reveal the fundamental role of sufficient knowledge, skill, and technology for successful development and operation of the Parks. Hence, continuous skill training; and technological learning, innovation and upgrading to address the challenge of adequate knowledge in the governance practices and institutional efficiency is a key takeaway for Ethiopia in an attempt to develop and operate Sustainable Industrial Parks based on the competitive contexts of the country.

Information & Technology Management. The Fourth Industrial Revolution is a rapidly progressing phenomenon, bringing substantial benefits in terms of productivity and competitiveness to those capable of effectively incorporating new technologies (Connelly, 2020). This represents an opportunity for Industrial Parks to join current trends and promote reductions in pollutant emissions, recycling, clean energy, security, and data to make decisions in real-time. To this effect, digitization and automation are revolutionizing the way goods and services are produced that every industry is investing in technology in pursuit of enhancing innovative ways of production to address the global challenges of Sustainable Development (GIZ, 2019). Without proper information management mechanisms, it would be difficult for promoting Sustainable Industrial Parks development and operation since the new technology trends operate based on massive amounts of data. That is, effective information and technology management can create efficient platform for a constant flow of information that could significantly foster suitable governance approach and efficient instructional framework for sustainability of the Parks in order to address the prevailing challenges by encouraging continuous improvement, making assertive decisions, and facilitating strong cooperation of the stakeholders. Thus, the issue of information and technology management needs special attention to select and implement effective governance model for Sustainable Industrial Parks development and operation in Ethiopia within the specific context of the country.

5. CONCLUSIONS

There are now widely accepted arguments that, since we are in complex and heterogeneous environments full of challenges and opportunities, effective governance approach and efficient institutional set-up is needed to successfully implement any development program within the framework of sustainable development. This article has aimed at investigating strategic challenges to governance approach for Sustainable Industrial Parks development and operation in Ethiopia; and; the key success factors for the development and operation of

Sustainable Industrial Parks in Ethiopia. On the basis of extensive analysis of the primary and secondary data collected, the study has explored the key challenges that hamper sustainability of Industrial Parks of the country in terms of the selection and implementation of contextual and suitable governance framework. To this end, key challenges that are obstructing the Parks' sustainability include Political Instability and Security Problems; Lack of Suitable Policies and Implementation Strategy; Inadequate Knowledge of Sustainable Industrial Parks Development and Operation; Weak Coordination and Limited Capacity of Stakeholders; Weak Management of Industrial Parks' Design and Implementation; and Poor Information and Technology Management. These are critically challenging the efforts to promote Sustainable Industrial Parks; thus, impeding the move to realize Sustainable Industrialization of the country. We have also scrutinized the key success factors from the best practices of international experience that could be lessons for Ethiopia in an attempt to lessen the challenges by tailoring them to the specific situation of the country. Hence, we suggest that the following measures can be taken to improve effectiveness of the governance practices for Sustainable Industrial Parks development and operation in Ethiopia:

- Without secured business environment and the presence of political stability, it would be difficult to undertake successful Industrial Parks' development that can fulfill the standards of sustainability in the process. So, Ethiopia needs to harness strong commitment of top leadership to ensure high-level support for creating political stability and reliable security.
- To realize the sustainability objectives of Industrial Parks development in the country, it needs to implement effective governance approach with efficient institutional framework that can align the objectives to the broader national development targets.
- The issue of policy coherence and implementation strategy is central to the governance practices for Industrial Parks development and operation. Hence, the country needs to give strong emphasis to the formulation and coherence policy, and design holistic strategic implementation approach.
- Successful development of Industrial Parks needs attractive business environment with institutional efficiency. Hence, it is highly recommendable that selecting and implementing effective governance approach for Industrial Parks development and operation in the country can essentially create attractive business environment and transparent institutional set-up for promoting the Parks' sustainability.
- One of the basic objectives of Sustainable Industrial Parks is to address the challenges of environmental sustainability and biodiversity protection. Thus, designing and implementing mechanisms that can effectively enhance the responsiveness and willingness to address the potential environmental concerns needs due emphasis.
- One of the underlining targets of effective governance for Industrial Parks is creating strong coordination of stakeholders with enhanced engagement capacity. Therefore, the governance approach for Industrial Parks development needs to create enhanced capacity and robust coordination of stakeholders so as to achieve the sustainability objectives of the Parks.
- Based on the specific context of the country, effective strategic risk management system should be designed and implemented to promote Industrial Parks sustainability.
- It should be noted that sufficient knowledge is a decisive element for the success of Industrial Parks towards sustainability to critically analyze both internal and external contextual factors of a country undertaking the Parks development. Hence, there should be appropriate program for continuous skill training, and technological learning, innovation and upgrading to competitively undertake Sustainable Industrial Parks development.
- Since it is the Fourth Industrial Revolution era, the development and operation of Industrial Parks need modern technology and information management system. To this end, the success of the Parks depends on the effective management of massive amounts of data and information flow. Thus, the study suggests the

need to design the mechanisms and proper implementation strategy for effective technology and information management.

In a nutshell, the success of Sustainable Industrial Parks mainly depends on the effectiveness governance and institutional efficiency. Ethiopia has been undertaking Industrial Parks development since 2015. However, the current status shows that there are multiple sustainability challenges that need to be addressed to promote the Parks' sustainability. This paper has investigated the key governance challenges that are obstructing the efforts for achieving the sustainability objectives of the Parks within the specific context of the country, and also identified the key success factors from the global best practices that could be taken as lessons for Ethiopia; thus, come up with the suggestions on the selection and implementation of effective governance model with efficient institutional set-up for the process. It also suggests further research on the relevant issues such as the influence of Foreign Direct Investment (FDI) on the governance approach; global value chain management; and technology and information management strategy for promoting Sustainable Industrial Parks development and operation in Ethiopia.

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