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Determinants of Industrial Parks Performance in Ethiopia Emphasis on Bole Lemi Industrial Park

Bezawit Asfaw

Senior Associate, EAGate, Ethiopia
bezaasfaw.mamo@gmail.com

Kenenisa Lemi

Department of Accounting and Finance, Jimma University, Ethiopia
kenenisalemi@gmail.com

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Abstract. A recent phenomenon in Ethiopia, Industrial Parks (IPs) have been one of the pillars of industrialization in many East Asian and Latin American countries. This study aims at examining the determinants of Industrial parks short term operational performance in the Ethiopian context by taking the example of the first state run Bole Lemi Industrial Park. Although the determinants of short (static) and long (dynamic) term performance of Industrial Parks have already been identified world-wide, the same cannot be said in the context of Ethiopia. Hence, this study aims to fill in the literature gap by trying to identify the determinants of the operational performance of the first Public Industrial Park of Bole Lemi and study their effects on the overall short term operational performance of the Industrial Park. In order to do so, a cross-sectional study was conducted using both quantitative and qualitative methods where all eleven industrial units and all three government institutions found inside the IP have participated. Through a non-probabilistic purposive sampling thirty six participants with a 70% response rate have participated in this study. The triangulation of descriptive statistics, binary regression results and interviews have shown that in the case of Bole Lemi IP, the determinants of short term operational performance in Bole Lemi are related to Industrial Park and national business environment and more specifically the high level of labour turnover and the absence of adequately skilled labor force.

Keywords: Ethiopia; Industrial Park; determinants; short term operational performance; Bole Lemi.



1. Introduction

In the search for effective instruments to promote industrialization and structural transformation governments in different countries have been resorting to Special Economic Zones (SEZs) or Industrial Parks as one tool to advance the desired industrialization. However more than five decades long of modern SEZs or Industrial parks experiences have shown mixed results of success and failures (Zeng, 2016).

The very concept behind the development of these Industrial Parks is to achieve four policy objectives, as stated by FIAS (2008) which are attracting foreign direct investment; serving as “pressure valves” to alleviate large-scale unemployment; supporting a wider economic reform strategy and serving as experimental laboratories for the application of new policies and approaches. In general Industrial Parks are said to confer “static” and “dynamic” economic benefits. Zeng (2015) represented static economic benefits as employment generation, export growth, government revenues, and foreign exchange earnings while dynamic economic benefits were presented as skills upgrading, technology transfer and innovation, economic diversification, productivity enhancement of local firms among others.

The success and failures of Industrial Parks in reaching both “static” and “dynamic” economic benefits therefore their performance have been explored in different researches worldwide (Zeng, 2015; Farole, 2011; Yuan & Eden, 1992). Many of them were successful in boosting FDI, employment, export and inducing structural transformation in the context of different East Asian (Republic of Korea; Taiwan, China; Vietnam; Bangladesh) and Latin American countries (Dominican Republic; El Salvador, Costa Rica) (Farole, 2011). In the sub-Saharan Africa context these industrial parks have been launched in the 1970's but started to be operational only in the 1990s and 2000s and many are said to be underperformers with the exception of Mauritius and partial exception of Kenya. The challenges they face are among others “challenges of providing high-quality infrastructure,

government services, and human capital” as stated by Watson (2011) and cited in Farole (2011). In the context of Ethiopia, the Government has given emphasis to the development of Industrial Parks where they are seen “necessary to accelerate the economic transformation and development of the country through the establishment of Industrial Parks” (Industrial Parks proclamation no. 886/2015). For this purpose private and public industrial parks are being established in different corners of the country, in 2014 alone 3,537 hectares of land have been prepared for the erection of different industrial parks. The first operational government run Industrial Park Bole Lemi I has been inaugurated with an investment of USD 113 million and operating since 2014 (UNDP 2015).

Bole Lemi entertains eleven Apparel & Textiles and Leather and leather products (shoes) international industries creating 13,000 jobs (EIC, 2017). It has based its operational modalities on the Industrial Parks Proclamation No. 886/2015 following the enactment of the latter in April 2015.

However apart from these basic information’s provided regarding the Park, not much is known about the factors affecting its operation and thus determining its short term performance. Therefore this research has tried to take an in-depth look at this first public Park based on the factors determining its operational performance and study their effects on its short term performance measured in terms of static economic outcomes such as export, employment and FDI.

2. Statement of the Problem

Industrial parks offer a combination of world-class infrastructure, expedited customs and administrative procedures, and (usually) fiscal incentives that overcome barriers to investment in the wider economy (Brautigam, et al., 2010). These industrial parks have been used successfully mostly in East Asia to facilitate competitiveness, foster export-oriented production, and promote wider economic reforms. Although East Asian industrial parks have been performing well both in static (employment, export, FDI) and dynamic (wider economic reforms) measures of performance problems have been encountered by many African parks and the factors that have affected the performance of these industrial parks were also factors that troubled the wider investment environment in Africa.

In the overall, the problems that have been encountered by many African parks were problems related to important determinants for the success of an Industrial Park and described by Pakdeenurit et al. (2014) as location advantage; macroeconomics of the country; industrial investment support; investment cost; skilled labour; management and service; government policies; laws and regulations; stability and consistency of the government or regrouped under Yuan & Eden (1992) model of performance as determinant factors associated to zone and national business environment; international environment and role of the state.

In the Ethiopian context industrial parks are being developed with the same objective of accelerating the economic transformation and development of the country (Proclamation on Industrial Park Development in Ethiopia No. 886/2015). Prior to and following the enactment of this Proclamation several Industrial Parks are being developed country wide. Among these parks three are currently operational while Bole Lemi is the oldest public park operating since 2014.

Although Industrial Parks are recent phenomenon in Ethiopia the wave of Industrial Parks being developed and the high importance they have been given is unprecedented. Compared to the media coverage they are receiving and the potential contribution they are expected to bring to the broader economic transformation and development not much is known to the wider public about the short term performance of the operational parks and the factors determining their performance.

The researcher was able to identify limited number of research on Industrial Parks in Ethiopia. One research identified was conducted by Gizaw (2015) and focused on investigating achievements, problems and potential impacts of Chinese Eastern Industrial Zone and its contribution to the economic development of Ethiopia at large and surrounding community in particular. Apart from this research that has come up with meaningful findings regarding the establishment of the zone without prior legal policy framework, the absence of training centres within the zone and lack of linkage with local economy, and the significant employment, technology and knowledge transfer it can bring, only one very brief institutional research has been published by the UNDP (2015) on the Bole Lemi Industrial Park. In this very brief publication some of the early factors affecting the Park’s performance have been mentioned among which delays in the infrastructure and utility services developments, including access to power and water, lack of adequate labour for zone companies; lack of cooperation among involved government entities and the report was concluded with a hope that the adoption of the Industrial Park Proclamation would help resolve the coordination challenges.

In this regard, this research is intended to be useful in filling the literature gap on this very much mediatized and important Industrial Park phenomenon by giving a special focus to the oldest operational public park: Bole Lemi Industrial Park phase I. The study tried to identify the factors determining the operational performance of the Industrial Park and their effect on the overall short term operational performance of the park. Given the large investments and high outcomes expected from Industrial Park programs in Ethiopia a better understanding of the factors that contribute to their success is very important.

At the end of the study, the following basic research questions are expected to be answered:

1. What are the factors determining the short term operational performance of the Industrial Park?
2. What are their effects on the overall short term operational performance of the Industrial Park?

3. Objectives of the Study

The main objective of this study is to identify the factors determining the operational performance of Bole Lemi Industrial Park.

Specific Objectives

1. To identify which factors determine most the operational performance of Bole Lemi Industrial Park.
2. To study the effect of the major identified factors on the Park's overall short term operational Performance.

4. Significance of the Study

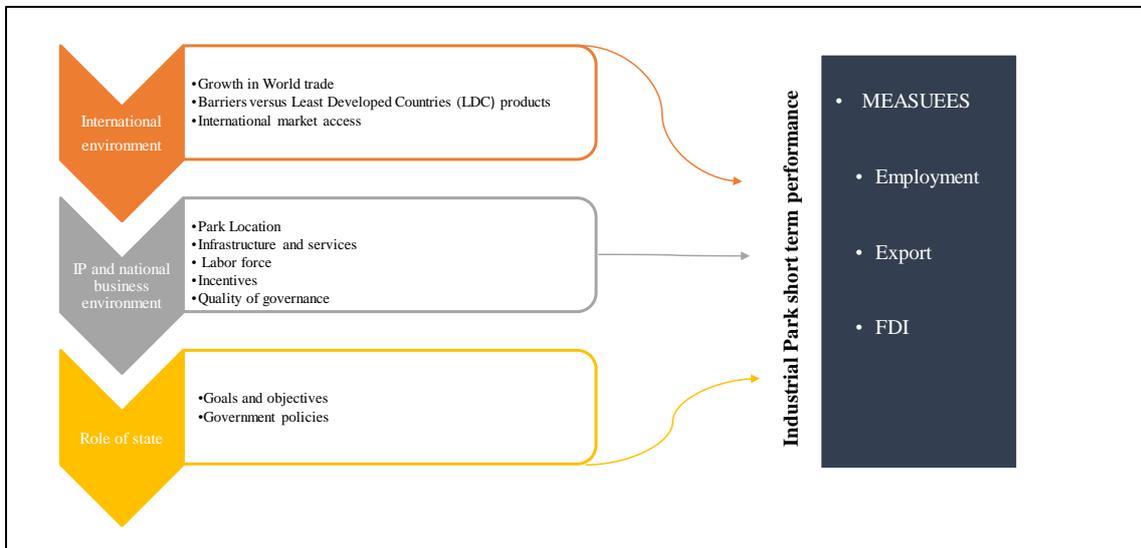
This study is expected to be significant at this time period where Ethiopia is aiming to become the hub of light manufacturing in Africa through the enhancement of Industrial Parks which are intended to accelerate the economic transformation and structural development of the country. To this end, identifying the factors determining the operational performance of the oldest public Industrial Park of the country (Bole Lemi Industrial Park I) and studying their effects on its overall short term performance can provide an insight on the most important factors affecting short term performance of IPs and overall serve as an input to academicians working on improving the performance of upcoming parks.

5. Literature Review

In his review of the role of Export Processing Zones in Africa Tekere (2004) explains that African zones are facing challenges in establishing successful zones and the factors affecting their performance are lack of government commitment; high cost of infrastructure development; government bureaucracy; poor selection of location. In her study entitled "Performance of Export Processing Zones: A comparative Analysis of India, Srilanka and Bangladesh" Aggarwal (2005) examines the performance of 3 South Asian countries and the factors that are crucial for the success of these zones. In identifying the factors determining the success of these zones the study uses both primary survey based technique (investors' perception) and secondary database analysis techniques. The findings of the study show that the overall improvement in the national investment climate; neutralization of dis-incentives, infrastructure and good governance are found to be contributors to the success of zones in South Asia. The World Bank study on Special Economic Zones in Africa authored by Farole (2011) compares the performance of selected African SEZs with Asian and Latin American countries. The research sets out to identify the factors that affect the outcome of SEZ programs: national investment climate and national competitiveness; transport and trade facilitation and infrastructure quality; business registration and licensing; of efficient import and export transactions are strongly correlated with SEZ performance. While fiscal incentives, low wages, and trade preferences are not found to be affecting the success of zones. For his part Zeng (2011) in his policy research working paper entitled "How Do Special Economic Zones and Industrial Clusters Drive China's Rapid Development?" looks at the major factors for the success of Chinese SEZs and puts the location advantages; conducive business environment; removal of bottlenecks; Fiscal and non-fiscal incentives; strong commitment to reform and pragmatism from top leadership as major determinants for their success. In a similar vein, Dobronogov & Farole (2012) discuss that the commitment of government is important for the performance of zones as its lack can be a challenge to the longer-term payoff horizons of the zone. In addition as cited in Pakdeenurit, et al., (2014) and stated by Dobronogov & Farole (2012) there are key criteria to consider when establishing IPs and these include the location advantage and macroeconomic of country, industrial investment support, investment cost and value of trade, skill levels and availability of human resource, management and service, government policy, laws and regulations, and stability and consistency of the government. Looking at the "Key Success Factor of Special Economic Zone for Thailand" as published by Pakdeenurit, et al., (2014) the study aims finding out the key factors of the SEZs success. Factors based on the review of literature and the research lists down the following factors as essential to the success of zones: 1) Location advantage 2) Macroeconomics of the country 3) Industrial investment support 4) Investment cost 5) Skilled labor 6) Management and service 7) Government policies 8) Laws and regulations 9) Stability and consistency of the government. The overall review of literature on which factors are crucial in determining the performance of IPs/SEZs have come across multiple variables presented as more or less important depending on the studies. The most frequently cited factors in determining zones outcomes (both short term and long term) are related to infrastructure; location advantage; labor; stability, commitment- consistency of the government, government policy; quality of governance, management and service, government bureaucracy; incentive packages: fiscal, non-fiscal incentives; market access; overall investment (business) environment. These presence or absence of these factors have been the

reason behind the underperformance of many African zones, Farole(2011). Therefore, identifying the factors determining the operational performance of Industrial Parks at this early stage of zones development in the Ethiopian context will be of high importance. The preliminary probe conducted by the researcher in Bole Lemi Industrial Park has shown the existence of challenges related to labor (quality & wage); infrastructure-utilities (internet). Thus, further identification of these factors was important to determine the current performance and tackle future challenges.

Based on adaptation from different literatures showing which factors determine the performance of a zone, the following model was developed.



Figure(1): Adapted Conceptual framework

6. Methodology

6.1. Research design

The main objective of this research was to identify the factors determining the short term performance of Bole Lemi Industrial Park I and afterwards study their effect on the overall short term performance of the Park. Therefore the present study can be categorized as an explanatory research design as it studied the cause and effect relationship between the determinants and the measures of short term performance. Furthermore, a cross-sectional study was conducted using both quantitative and qualitative methods. The quantitative method was used to identify the main factors determining the performance of Bole Lemi Industrial Park through stakeholder’s perception survey while complementary data was collected through qualitative approaches using interviews with concerned governmental institutions and the industrial units.

6.2. Study variables

Dependent variables: Industrial Park performance (as measured by short term success measures: export, employment, FDI) were the dependent variables used for the purpose of this research. The dependent variables were useful in measuring the short term performance of Bole Lemi Industrial Park. Although the outcome of zones is also measured using dynamic economic measures, the relatively young age of Bole Lemi Industrial Park has limited the researcher to these static economic measures (export, employment, FDI).

Independent variables: International environment; Industrial Park and national business environment with the Role of the state were the three categories of independent variables determining the performance of Bole Lemi Industrial Park.

- Industrial Park & national business environment: incorporated the factors internal to the IP environment and related to the national business environment that could determine the operational performance of Bole Lemi Industrial Park.

- Role of state: contained factors related to the Government policies, goals and objectives that could determine the operational performance of Bole Lemi Industrial Park.

- International environment: integrated factors external to the country environment and that could determine the operational performance of Bole Lemi Industrial Park. As presented in different Yuan & Eden (1992) framework, and Farole (2011) analysis: growth in World trade; barriers versus Least Developed Countries (LDC) products

and international market access were considered as factors of the international environment determining the operational performance of Bole Lemi Industrial Park.

6.3. Model specification

Binary logistic regression analysis was performed using the top 4 independent variables with the highest means and overall Industrial Park short term performance which is the mean of employment, export and FDI as dependent variable.

Although the overall performance is a function of all independent variables which translates into the below representation:

Overall IP short term performance = F (INF& Ser, PLOC, LAB, INC, GOB, POL, GOV, MKT, GWT, -----1

Where:

EMP: is the employment creation capacity and measured by a dummy variable of "1" if the industrial park has attained the set employment objectives in terms of generating employment opportunity and "0" otherwise.

EXP: is the export generation capacity and measured by a dummy variable of "1" if the industrial park has attained the set objectives in terms of enhancing export and "0" otherwise.

FDI: is the foreign direct investment attraction capacity and measured by a dummy variable of "1" if the industrial park has met the target FDI and "0" otherwise.

INF& Ser: related to the availability and quality of infrastructure and services in the Park

PLOC: Park location

LAB: related to the availability, quality and retention practice of labour force in the Park

INC: related to the availability and sufficiency of incentives to the Park

GOB: related to the availability of clear and attainable goals and objectives to the Park

POL: related to the availability of clear, implemented policies in the Park

GOV: is about the zonal and national governance practice

Mkt: Related to the IP access to international market

GWT: Related to Growth in World trade

BLDC: Related to barriers versus Least Developed Countries (LDC) product

Based on the top 3 independent variables, the independent variables which determined most the performance of the IP were INF& Ser, PLOC, and LAB. Therefore, the effects of PLOC, INF& Ser, LAB is analysed using the below representation:

Overall IP short term performance = F (INF& Ser, PLOC, LAB) -----2

Therefore the mathematical representation of the logistic equation is as follow:

Model - Logit (Overall PERF) = $b_0 + b_1 \text{INF\& Ser} + b_2 \text{PLOC} + b_3 \text{LAB}$

Where b_0 = the constant of the equation

b_1 = the coefficient of the predictor variable infrastructure & service

b_2 = the coefficient of the predictor variable park location

b_3 = the coefficient of the predictor variable labour force

Overall PERF = overall short term performance

The logistic regression gives each independent variable (predictor) a coefficient 'b' which measures its independent contribution to variations in the dependent variable. While the dependent variable can only take one of the two values: '0' or '1'.

7. Results and Discussion

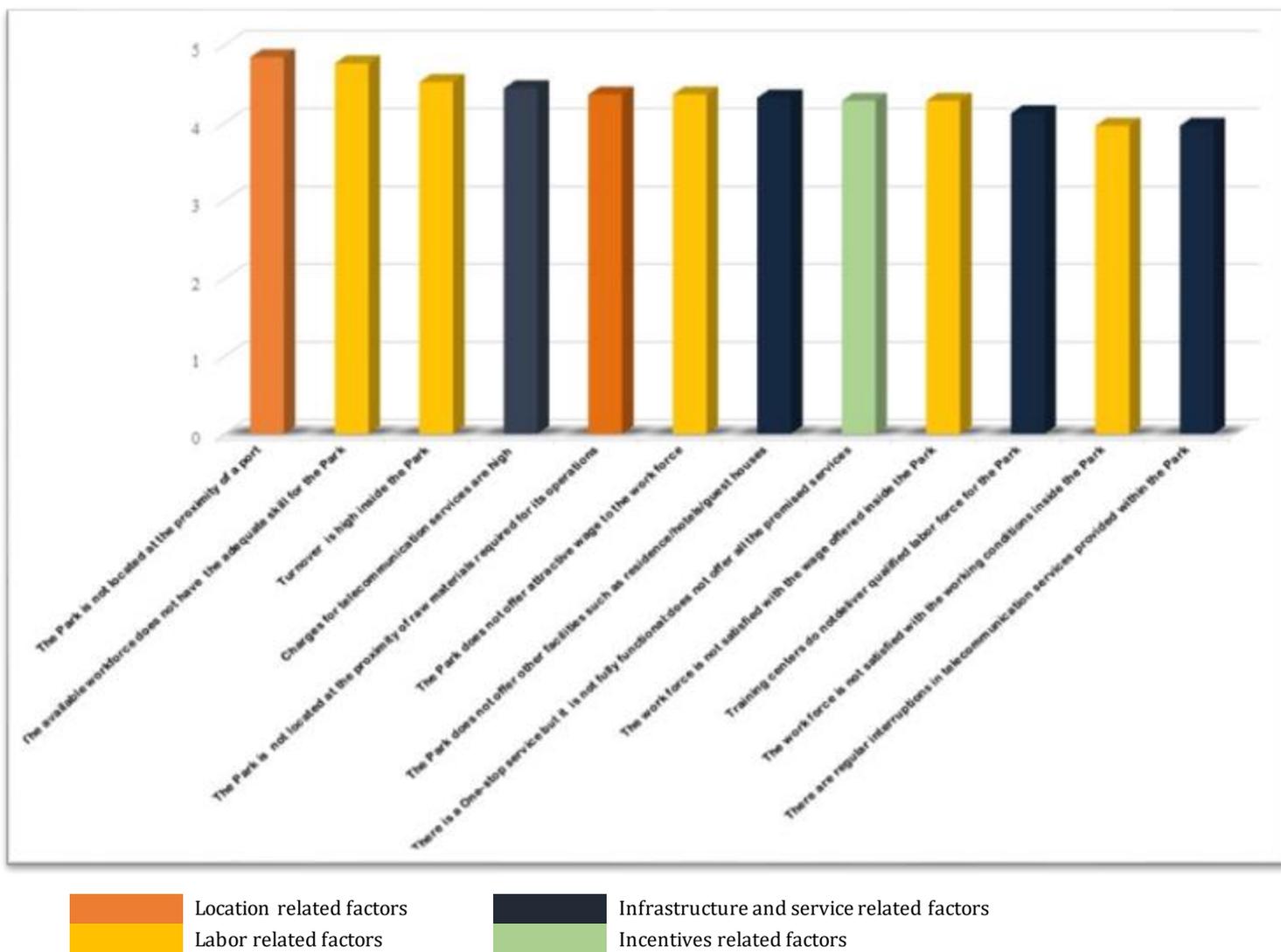
The respondents were asked to unveil their perceptions on each factor determining the performance of the Industrial Park and reveal their perception on the attainments of the set goals for employment, export and FDI which are the three dependent variables and measures of overall short term performance of the Industrial Park. The statement in the questionnaire were presented in a Likert scale for all predictor variables while responses to dependent variables were given in a categorical form ('yes' or 'no').

7.1. Descriptive statistics

In the first section of the descriptive statistics, factors categorized under park and national business environment and related to infrastructure and service, Park's location, incentives and labour were reviewed. The study has assessed their presence or absence, the quality of their provision and the challenges met with regard to them in order to identify which one of these factors determine most the operational performance of Bole Lemi IP.

To give sense to the results obtained and identify which factors were mostly determining the operational performance of Bole Lemi IP, the researcher made use of mean values to separate the most important ones. Among the 49 items considered to be determinants of the operational performance of the IP and categorized

under park and national business environment 12 factors had mean values greater than 3.5 and thus were considered to be the most important factors determining the performance of the IP.



Figure(2): shows the most important determinants among park and national business environment based on their mean values
Source: Author’s illustration based on SPSS output

The result shows that factors pertaining to location, labour and infrastructure & services were described to be the most important factors determining the operational performance of Bole Lemi IP. The factors that were affecting the most the operational performance of the IP were related to the labour force and location vis-a-vis the port and raw material. The very high turnover inside the Park, the lack of adequately skilled workforce, the significant distance between the IP and the port and the absence of raw material for production at the proximity of the Park.

The second section of the descriptive statistics reviews the results of the second determinant for the successful performance of an IP: the role of the State. This factor overviews the role played by the government in setting specific goals-objectives and policies to achieve the goals. The results reveals that the set goals and objectives in terms of employment to be generated and export to be made were considered to be unachievable respectively by 52 and 64 percent of the respondents. Agreements have only been reached on the attainability of the set goals and objectives in terms of desirable investment as the Park was able to attract FDI in the desired sectors of apparel & garment and leather and leather products. The significant level of disagreement on the attainability of the goals for employment and export were the results of the high level of labour turnover and the low level of export as explained by the respondents. In fact the Industrial Park was only able to attain 30 percent of the set export amount and a little above 50 percent of the desired employment opportunity. In general in the case of Bole Lemi Industrial Park the factor role of the State was in the overall less important in determining the IPs performance as compared to the factor Park and national business environment. Nonetheless, factors such as

unattainability of the set goals and objectives for export and employment to be generated by the IP and the lack of implementation of the policies were affecting the performance of the Industrial Park.

The last section of the descriptive statistics reviewed the last group of predictor variable: the International environment. In the context of Bole Lemi Industrial Park, the factor international environment was not found to be affecting its performance and thus the factor was not that much determinant.

Coming to the measures of IP short term performance, the overall short term performance of the Industrial park was computed as a mean of the three dependent variables and the results showed that the overall short term performance was rated as good by 48 percent of the respondents while 52 percent of the stakeholders rated the overall short term performance of Bole Lemi Industrial Park as poor.

7.2. Binary logistic regression analysis

Binary logistic regression is a type of regression analysis where the dependent variable is a dummy variable (coded 0, 1). Since the dependent variable is dichotomous it is not possible to predict a numerical value using logistic regression. Therefore, logistic regression forms a best fitting equation or function using the maximum likelihood method. (Burns & Burns, 2008).

The first set of outputs obtained are the Case Processing Summary and Variable Encoding for Model under the heading of Block 0: Beginning block. The Case Processing Summary output indicates how many cases are included and missing in the analysis. The result shows that 25 cases are included in the analysis and no missing cases are indicated.

Table(1): Case processing summary

Case Processing Summary			
Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	25	100.0
	Missing Cases	0	.0
	Total	25	100.0
Unselected Cases		0	.0
Total		25	100.0

a. If weight is in effect, see classification table for the total number of cases.

Source: Author's illustration based on SPSS output

While the Dependent Variable Encoding output indicates how the outcome variable is encoded: '0' for 'poor' and '1' for 'good'.

Table(2): Dependent variable encoding

Dependent Variable Encoding	
Original Value	Internal Value
POOR	0
GOOD	1

Source: Author's illustration based on SPSS output

The next set of output is under the heading of Block 0: Beginning Block. Under this section, the important output obtained is the Classification Table. This table is used to describe the baseline model which refers to a model that is not inclusive of the predictor (independent) variables.

Therefore, this baseline model predicts which category of dependent variable occurred most often in the data set. Consequently the model predicted 'poor' based on the answer of most participant (13 compared to 12). The overall percentage row shows that this approach to prediction is correct 52.0% of the time.

Table(3): Classification table

Classification Table ^{a,b}					
	Observed	Predicted			
		Overall short term performance of the industrial park		Percentage Correct	
		POOR	GOOD		
Step 0	Overall short term performance of the industrial park	POOR	13	0	100.0
		GOOD	12	0	.0
Overall Percentage					52.0
a. Constant is included in the model.					
b. The cut value is .500					

Source: Author's illustration based on SPSS output

The coming stage is the analysis of the regression model that includes the predictor (independent) variables. The following set of outputs begins with the heading of Block 1: Method = Enter.

The Omnibus Tests of Model Coefficients is the first table of the set. The Omnibus Tests of Model Coefficients checks that the new model with the predictor variables is an improvement of the baseline model provided in the Block 0: Beginning block. The model uses chi-square test to see if there is a significant difference between the -2Log-likelihoods of the baseline model and the new model with the predictor variables.

Table(4): Omnibus test of model coefficients

Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	12.090	4	.017
	Block	12.090	4	.017
	Model	12.090	4	.017

Source: Author’s illustration based on SPSS output

A highly significant chi-square suggests that the new model has a significantly reduced -2Log-likelihoods compared to the baseline and thus suggests that the new model is explaining more of the variance in the outcome and is an improvement. The result indicates a chi-square= 12.090, df=4, p<.005. Therefore, the chi-square is highly significant suggesting that the new model is significantly better. The ‘Model’ row in the Omnibus table compares the new model to the baseline. While the ‘Step’ and ‘Block’ rows are only important if the model was built up in stages. However as all predictor variables were added in one block, the chi-square values are the same for step, block and model. The Sig. values are p <.005, which indicates the accuracy of the model improves when explanatory variables are added.

The Model Summary table provides the -2Log-likelihoods and Nagelkerke R².

Table(5): Model summary

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelker R Square
1	22.527 ^a	.383	.512

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Source: Author’s illustration based on SPSS output

The -2Log-likelihoods value for this model (22.527) is what was compared to the -2Log-likelihoods for the previous null model in the ‘omnibus test of model coefficients’ which told us there was a significant decrease in the -2Log-likelihoods, thus the new model with predictor variables is significantly better fit than the null model.

The R² values indicates approximately how much variation in the outcome is explained by the model. Based on the Nagelkerke R² the model explains 51.2% of the variation in the outcome. However, the variation between, the Cox & Snell R² and Nagelkerke R² shows that these R² values are approximations and should not be overly emphasized.

The next important table to analyse is the Hosmer and Lemeshow Test.

Table(6): Result of Hosmer and Lemeshow

Hosmer and Lemeshow Test				
Step		Chi-square	df	Sig.
1		9.085	5	.106

Source: Author’s illustration based on SPSS output

The Hosmer and Lemeshow Test or test of the goodness of fit indicates if the model is a good fit to the data based on the p value >.05. The result of the test suggests the model is a good fit to the data as p=0.106 (>.05). The most important out of all is the Variables in the Equation table.

Table(7): Result of variables in the equation

		Variables in the Equation					
Step		B	S.E.	Wald	df	Sig.	Exp(B)
	Parkandnationalbusinessenviro nmentLabor2- The available workforce does not have the adequate skill for the Park	3.760	1.760	4.563	1	.033	42.939
	Parkandnationalbusinessenviro nmentLabor7- Turnover is high inside the Park	-2.766	1.331	4.322	1	.038	.063
	Parkandnationalbusinessenviro nmentInfrastructreser vices10- Charges for telecommunication services are high	-1.547	1.258	1.512	1	.219	.213
	Parkandnationalbusinessenviro nmentParkklocation2- The Park is NOT located at the proximity of a port	-2.188	1.634	1.792	1	.181	.112
	Constant	11.959	11.759	1.034	1	.309	156196.866

a. Variable(s) entered on step 1: ParkandnationalbusinessenvironmentLabor2, ParkandnationalbusinessenvironmentLabor7, ParkandnationalbusinessenvironmentInfrastructreservices 10, ParkandnationalbusinessenvironmentParkklocation2.

Source: Author’s illustration based on SPSS output

This table provides the regression coefficient (B) (to present the relationship between a given explanatory variable and the outcome variable), the Wald statistic (to test the statistical significance) and the important Odds Ratio (Exp (B)) for each variable category. The Odds Ratio tells how much the odds of an outcome occurring increase (or decrease) when there is a unit change in the associated explanatory variable.

Coming to the results of the variables in the equation and looking at the results for ‘ParkandnationalbusinessenvironmentLabor2’ which refers to the predictor under Park and national business environment and referring to ‘The skill of the available workforce’, the ‘B’ coefficient is significant and positive (**Wald=4.563, df=1, p<.005**) indicating there is a highly significant overall effect.

The Exp (B) column (the Odds Ratio) tells us that an increase by one unit in the skill of the available workforce increases the odds of an overall good performance of the Industrial Park by 42.9 times.

Therefore, increasing skilled labor force is associated with increased odds of achieving an overall good short term performance for the Industrial Park.

The effect of ‘Turnover’ is also significant (**Wald=4322, df=1, p<.005**). The Exp(B) column (the Odds Ratio) tell us that every unit decrease in turnover increases the odds of an overall good short term performance for the Industrial Park by $e^{-2.766} = .063$.

In other words, if we subtract 1 from this value ($.063-1= -0.937$) there is a 93.7% decrease in the odds of an overall good short term performance for the Industrial Park caused by a one unit increase in the factor ‘turnover’.

The remaining predictors ‘Charges for telecommunication services are high’ and ‘The Park is not located at the proximity of a port’ have a very high Sig value ($p>.005$) indicating that their overall effect is not significant.

In conclusion, the results of the binary logistic regression indicated that the two predictor variables related to the absence of skilled labor force and a high turnover inside the Industrial Park were statistically significance and therefore had an overall effect on the dependent variable.

8. Conclusion

The first aim of this study was to identify the factors determining the operational performance of Bole Lemi Industrial Park. The results have shown that factors pertaining to Industrial Park and national business environment and more specifically related to a high level of labour turnover and a lack of adequately skilled workforce among others are affecting the short term performance of the Industrial Park.

Secondly, the research aimed at studying the effect of these determinant factors on the overall short term operational performance of the Industrial Park and found that the effects of the high level of turnover and the absence of skilled labour force are very significant when compared to the other factors affecting the operational performance of the IP. As a result of these and several other factors mentioned in the findings the Industrial Park

is found to be underperforming and this based on the perception of the stakeholders who have participated in the study.

9. Recommendations

- [1] It is recommended from the Government' side to further develop TVET colleges that can provide skilled labour force and integrate them with the Industrial Park. Develop other training centres inside the Industrial Park like the existing one and make sure that these training centres acquaint the trainees with both soft and some hard skills. Therefore it is advised to equip these training centres with some of the basic machineries used by the industries in order to give some idea to the trainees on what type of tool they would be using and how they can be operating them. Furthermore these training centres could emphasis on giving their trainees a better understanding of their rights and duties based on the Ethiopian Labour Law in order to minimize conflicts once inside the industrial units.
- [2] In order to reduce the high level of labour turnover: it is advised that Industrial units offer wages that are considerate of the current leaving condition and wages offered by other industries outside the Industrial Park. From the Government side, it is advisable to avoid using the expression "cheap labour" to attract FDI and make sure that the workforce gets an adequate wage from the current average USD 30-40 offered. This however not to say that wages are the only reason behind the observed turnover.

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