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Research Paper

Effect of Value Chain Management Practices on Manufacturing Firm's Performance: the Case of Ethiopian Industrial Parks

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Abstract

Even though Ethiopia recently adopted industrial park development as a policy instrument for fostering economic transformation, the effects of value chain management practices on firm performance has not been well researched. Thus, the study examined the effect of value chain management practices on the performance of manufacturing firms operating in Ethiopian industrial parks by using an explanatory research design. Employees of the industrial parks were considered as the target population and to select suitable respondents, a non-probability sampling technique was employed. The sample size was determined to be 382, which comprised of senior and middle managers. The study purified and validated scales for data collection by using Confirmatory Factor Analysis (CFA) and to test the hypothesis, Structural Equation Modeling (SEM) was used. The result of the study revealed that outbound logistics and marketing capabilities, statistically positively and significantly, affected financial and marketing performances. However, both inbound logistics and operations management capabilities did not significantly affect financial and marketing performance. Enhancing backward and forward linkage along the value chain and improving the efficiency of value chain management practices are paramount strategies. From the empirical evidence, the result of this study adds value to the existing knowledge of value chain management in industrial park contexts. Further, the paper significantly contributes to the field of industrial parks economic sustainability, in which the findings and suggestions can provide scientific knowledge to managers, practitioners, stakeholders, and policymakers.

1. Introduction

In all types of businesses, the productivity of firms in the market has been radically increasing (Akingbade, 2020). Furthermore, linkages among value chain activities, starting from raw materials to finished products that firms offer to customers (Porter, 1985), are considered a determinant of competitiveness. Value chain management provides relevant information for organizations and stakeholders involved in making products from inputs to finished goods that are connected to create consumer value (Linkov et al., 2020; Barua et al., 2021). The robustness of value chain management depends on how its activities are improving the firm's operational efficiencies (Arthur et al., 2018). Value chain management must attain a firm's competitiveness via efficient value addition that is recognized by consumers along the chain of production to distribution (Quarshie et al., 2016). It plays a pivotal role in creating customer value, improving firm productivity, and increasing global competitiveness and performance (Opazo-Basaez et al., 2021).

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Moreover, value chain management design and redesign determine the core competencies of firms, which in turn influences overall organizational achievement (Awan et al., 2022). Value chain management activities are highly flexible and require firms to adapt themselves to the dynamic business environment (Li et al., 2021). In line with this, Strakova et al. (2020) argued that recently firm's value creation has shifted towards consumers' driven value rather than being only financial-oriented. The authors discussed that these days, being competent is not among companies; it is between the successes of components across the whole supply chain management strategy deployed. Furthermore, in a hyperactive business environment in which reasonable consumers are increasing, companies can only be successful if they are creating and delivering superior value, involving five capabilities: knowing, producing, distributing, capturing and retaining customer value (Fikri-Aulawi & Ririn, 2020). Thus, effective value chain management consists of the necessity of good product design, cost-efficient production, and marketing capability, through which it creates customer value and a competitive advantage (Purnomo et al., 2022).

In value chain management practices, components are mainly categorized as primary activities based on inbound and outbound logistics, operation management capabilities, marketing and sales capabilities, and supportive activities like human resources management, technological development, purchasing, infrastructure, and services (Porter, 1985). Accordingly, the way firms perform each value chain activity highly determines their costs and profits (Flanagan et al., 2018). Consequently, both inbound and outbound logistics management practices promote operational cost minimization for firms because they enable them to deliver the right products to the right customers with the right quality and quantity at the right time and place (Kabale et al., 2019). In addition to logistics activities, operational management activities, marketing and sales, services, and secondary value chain activities in combination influence the success of value chain performance (Thuku & Kombo, 2019; Sriphong et al., 2022). Thus, in the manufacturing industry, business firms become profitable if the value obtained is greater than the costs incurred for all value chain activities.

Besides, in economic structural transformation, the manufacturing sector is considered a driver of economic development (Tenaw et al., 2022) and one of the pillars of economic and structural transformation (Selamawit & Almas, 2023), which creates job opportunities, generates export earnings, and contributes to the GDP of a country. However, the pace of manufacturing industries' development is not as expected, particularly in developing countries. Consequently, Haraguchi et al. (2017) stated that the manufacturing sector in many developing countries is characterized by low value-added products, which is primarily caused by the failure to produce value-added products of superior quality in the global market. In developing countries, due to the ineffectiveness of high value creation across the chain coupled with stiff competition from developed countries, the capability of using the manufacturing sector as an engine of economic development seems questionable across the countries (UNIDO, 2018). This indicates that despite the availability of potential, firms have failed to compete in the global market, where stiff competition exists. Specifically, Africa's manufacturing sectors are characterized by low-value addition, which is linked to the failure of firms to generate competitive advantage and outperform their contenders, weak market linkage, and poor exploitation of market information (Abdi, 2020).

Likewise, Ethiopia has a high potential of raw materials for the manufacturing sector (FAO, 2017). The country has a good potential resource that gives a pool of active labor force; as well as the availability of the consumer market locally (UNDP, 2019); and the availability of the government's investment support for priority manufacturing industries, such as building specialized industrial parks that are designed as a plug-and-play model (World Bank, 2022). Despite the all-immense opportunities, the performance of the manufacturing industry has been facing challenges in terms of significant value addition on the global market. In addition, the Logistics Performance Index (LPI) of Ethiopia indicates that the country is one of the lowest-performing countries in trade logistics in terms of efficiency, reducing lead time and service reliability, and ranking 126th out of 160 countries (Arvis et al., 2016). Based on the Global Competitiveness Index (GCI) performance, Ethiopia was rated as a low

performer and far from competitive at the global level and ranked 109th out of 140 countries (Schwab & Salai-Martin, 2016). Mishra (2018) revealed that in Ethiopia, manufacturing firms' low level of value-adding on products is directly connected to the inefficiency of the value chain management practices. Moreover, as Zerabruk and Abdurazak (2022) stated, despite the available potential, the manufacturing industry in Ethiopia has been relying on costly imported raw materials for its infant industries where the country has a comparative advantage. This evidence provides insight into the scale of practical problems the country's manufacturing sector is facing.

Recently, Ethiopia launched an industrial parks (IP) development policy, expecting that it can accelerate economic transformation and can enable the manufacturing sector's development (Ermias, 2019). However, achievements so far in industrial parks indicate both failures and success (Zeng, 2016). They have limited ability to extend benefits outside their enclaves. Moreover, IP's good achievements depend on situations within a limited time boundary (Newman & Sage, 2017).

In Ethiopia, despite the ambitious development policy, the IPs are facing challenges in value chain management practices such as limited local linkages, a concentration of Cut-Make-Trim (CMT) production, inefficient logistics between product order and delivery (long lead time), low production flexibility, limited access to skilled human power, and limited skill transfer (UNIDO, 2018). Even though the IP's development strategy's prioritized integrated value chain approach, backward linkages between local or domestic suppliers and international park investors are weak. For instance, according to the World Bank (2022), raw materials and intermediates needed in apparel, textiles, and cotton, are sourced or imported through investors' own networks, with local purchasing representing less than 5% of all intermediate inputs. Besides, it is argued that, the nature of inputs or intermediate products demanded by IPs misfits with local suppliers' capacity. Similarly, in their analysis of global value chains, Whitfield et al. (2020) also argue that Ethiopia's industrial policy is not effective in making local firms competent enough in international exports because of weak domestic manufacturing organizational cultures coupled with the international market, which has led to a supplier squeeze. This justifies that industrial parks are practically facing problems connected to value chain management practices.

Specifically, Bezawit and Kenenisa (2019) found employee turnover and a lack of trained human power to be the main determinants in the case of Bole Lemi-I IP. Fesseha and Bizuayehu (2019) conducted an exploratory study on Bole Lemi-I, Eastern Industry Zone, and Hawassa IPs, focusing only on qualitative data. Worku et al. (2023) assessed the mediating effect of competitive advantage in the relationship between marketing strategy and firm performance in the case of Bole Lemi-I and Adama IP. They found that competitive advantage partially mediates relationships. Desta (2023) found that Ethiopian IPs have a statistically significant effect on export earnings, job creation, and Foreign Direct Investment attraction. Moreover, Gemechis and Hailu (2023) stated inadequate systems for enhancing IPs' economic sustainability weak capacity to adapt to emerging global dynamisms; weak institutional linkages; and inadequate infrastructural development and accessibility as constraints for sustainable IP development in Ethiopia. In conclusion, in terms of their design, selected variables, depth, coverage of the number of firms incorporated, statistical tools used, and methods applied, there have been limitations. From the review of the existing literatures, the researchers did not find any empirical study focused on the effect of value chain management practices on the performance of manufacturing firms operating in the Ethiopian IP context.

Therefore, in order to address the dearth of knowledge on the topic, the current study examined the effect of value chain management practices on the performance of manufacturing firms operating in Ethiopian IPs. To examine the relationship between value chain management practices and firm performance, the study adopted a resource-based view and dynamic capability theory. Thus, the conceptual model that considers the relationship between the constructs was developed and empirically tested based on resource-based views and dynamic capability theory.

2. Materials and Methods

2.1. Research Design and Sample

This study employed the quantitative research approach using the cross-sectional survey method of data collection. An explanatory research design was also applied to explain the influence of the predictor variable on the response variable. The study covered manufacturing firms operating in Ethiopian public IPs by targeting employees of the manufacturing firms operating in them. Accordingly, the researcher purposefully selected Bole Lemi-1, Hawassa, and Adama IPs. These are chosen for the study because they are similar from perspective of ownership (management of IPs), operating experience, actual performance, types of products, and the market strategy they follow. They, are all publicly developed and administered, have at least more than five years of manufacturing experience, are among the top-performing publicly owned IPs (Fesseha & Bizuayehu, 2019), are mainly engaged in textiles, apparel, and garments and are mainly export-oriented. Thus, the study is about publicly owned light manufacturing firm's performance in IPs.

According to the data from EIC (2023), there are 11 firms in Bole Lemi-1, 10 firms in Adama and 20 firms in Hawassa IPs; thus, 41 firms in total. Some of the firms were recently registered, and some others had not started operation yet. Accordingly, nine firms from Bole Lami-I, 15 firms from Hawassa IP, and four firms from Adama IP were selected; thus, 28 firms were considered for the study, excluding those with less than five years of operating practice. During the study period, the numbers of employees were 20319, 5027 and 29908, in Bole Lemi, Adama, and Hawass IPs, respectively; making the total 55,254 employees.

The sample size was determined using the statistical approach proposed by Krejcie and Morgan (1970) for a finite target population. Thus, the sample size was determined (using the following equation) to be 382.

$$S = \frac{Z^2 NP(1-P)}{d^2(N-1) + Z^2 P(1-P)}$$

where, S is sample size, Z value is 1.96 for 95% confidence level, N is Population Size, P is population proportion (assumed to be 0.5 to get the maximum sample size) and d is margin of error (0.05).

Since the variables of study focused on the effect of value chain management practices on a firm's performance, all employees may not give adequate information concerning the industrial parks. Thus, by applying non-probability and purposive sampling techniques, the study targeted managers (firm, assistant, marketing, operation, logistics, research and development, human resource, finance, quality assurance), warehouse and inventory control departments, team leaders, and other supervisors for the survey from each firm, proportionally. Based on the corresponding number of employees of each IPs, 141, 206 and 35 respondents were contacted from Bole Lemi-I IP, Hawassa IP and Adama IP, respectively.

To provide a clear direction for the study and data collection, the following hypothesis were formulated, by making connection between variables and the research question.

H1a: Inbound logistics has an effect on a manufacturing firm's financial performance.

H1b: Inbound logistics has an effect on a manufacturing firm's marketing performance.

H2a: Outbound logistics has an effect on manufacturing firm's financial performance.

H2b: Outbound logistics has an effect on manufacturing firm's marketing performance.

H3a: Operations management capabilities have an effect on a manufacturing firm's financial performance.

H3b: Operations management capabilities have an effect on a manufacturing firm's marketing performance.

H4a: Marketing capabilities have an effect on a manufacturing firm's financial performance.

H4b: Marketing capabilities have an effect on a manufacturing firm's financial performance.

2.2. Measurement Instrument

The measurement scales used in this study were adopted from previously validated scales. To measure Value chain Management Practices (VCMP), five-item scales for each indicator were adopted; namely, inbound logistics activities, operational activities, outbound logistics and marketing capability items (Porter, 1985; Jepherson et al., 2021; James and Inyang, 2022). Firm financial and non-financial performance was measured using five-item scales adopted from Hooley et al.

(2005). To measure value chain management practices, all response options were represented by a five-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree) to express the degree of agreement. To measure firm performance, all responses were also represented by a five-point scale that ranged from 1 (much lower than competitors) to 5 (much higher than competitors). The data collection was carried out between April and August 2023.

Prior to the main survey, five academics who have specialty in value chain or supply chain management practices were requested to review the questionnaire, to ensure that the questionnaire can capture the required information. A pilot study of the questionnaire was conducted to make sure that all the questionnaires were relevant. The pilot study included 35 conveniently selected top- and middle-level manufacturing managers. Based on their feedback, the items were modified. Based on the pilot study, a scale reliability test was conducted. The scale reliability test revealed that all the items used to measure VCMP and Firm Performance (FP) were found to be acceptable. Further, to reduce the common method variance, more than a respondent from each firm was participated in the study. Then, the questionnaires were disseminated to the targeted respondents. After questionnaire distribution, to maximize the response rate, the researchers continuously followed up on the progress of data collection by exchanging information personally with the contact person.

2.3. Reliability Test

The internal consistency reliability was tested using the Cronbach alpha coefficient, which measures the extent to which the items for each construct are related to one another. But, the Cronbach alpha value underestimates scale reliability since it relies on a number of items used to measure the constructs. Thus, the study additionally used the Composite Reliability (CR) measure for each construct to offer more evidence of internal consistency and reliability. Cronbach alpha assumes all indicator items have equal outer loadings on the construct, whereas *CR* assumes different outer loadings of the indicator variables (Hair et al., 2014). The *CR* for a construct (Fornell and Larcker, 1981) is defined as:

$$CR = \frac{\left(\sum_{k=1}^{K_j} \lambda_{jk}\right)^2}{\left(\sum_{k=1}^{K_j} \lambda_{jk}\right)^2 + \theta_{yi}}$$

where, *Kj* is the number of indicators of construct; *λjk* are factor loadings; *Θjk* is the error variance of the k^{th} indicator (k = 1, ..., Kj) of the construct.

CR is a less biased estimate of reliability than Cronbach Alpha and the acceptable value of *CR* is 0.7 and above. The higher *CR* value indicates higher reliability and if the value of *CR* is below 0.60, it lacks internal reliability.

The criterion of Fornell-Larcker (1981) was used to assess the degree of shared variance between the latent variables of the model. According to this criterion, the convergent validity of the measurement model can be assessed by the Average Variance Extracted (*AVE*), in addition to *CR*. *AVE* measures the level of variance captured by a construct versus the level due to measurement error, values above 0.7 are considered very good, whereas, the level of 0.5 is acceptable.

2.4. Data Analysis Methods

Descriptive statistics were analyzed using the Statistical Package for Social Science (SPSS) version 24.0 and the inferential statistics were analyzed with the Analysis of Moment Structure (AMOS version 23.0) satirical software. In this study, two phases, the 1st Confirmatory Factor Analysis (CFA) method for testing the psychometric properties of measurement scales and the path analysis technique for hypothesis testing, were applied. CFA was conducted to examine the association among the latent constructs and their respective observed constructs (Hair et al., 2014). This relationship determines the construct's reliability and validity.

3. Results and Discussion

3.1. Measurement Analysis

Table 1 shows that the Cronbach alpha and *CR* values of all the constructs exceeded or fulfilled the recommended minimum threshold of 0.7 and greater. Thus, it is confirmed that there is good internal reliability in the research constructs. Hence, this data is appropriate for further data analysis. Table 1 also shows that all standardized factor loadings associated with each item evaluating each construct were greater than

the recommended *AVE* threshold of 0.5, implying that each construct explains greater than 50% of the variance of its indicators.

Discriminant validity assumes that each construct is uniquely different from other contracts in the model. This means a construct captures a phenomenon not captured by another one. Fornell & Larcker (1981) compared the square root of the *AVE* values of each construct's correlation with other constructs. If the square root of each construct's *AVE* is greater than its correlation with any other construct, then discriminant validity is established. To test discriminant validity, an inter-factor correlation was conducted. The matrix result (Table 2) shows a positive correlation across the individual paired constructs, which confirmed the presence or adequacy of the discriminant validity of the scale items in the study. Further, the square roots of the AVE of constructs are generally greater than the correlations among the constructs. This implies that all the constructs share more variance with their measures than with other constructs in the model, which offered evidence of the existence of discriminant validity.

Table 1: Psychometric properties of measurement scale

Research Constructs		Factor Loadings	Cronbach Alpha	CR	AVE	Square root of AVE
Value chain Management Practices						
Inbound Logistics	IL1	0.82	0.911	0.8657	0.5683	0.7538
	IL2	0.87				
	IL3	0.80				
	IL4	0.66				
	IL5	0.58				
Outbound Logistics	OL1	0.86	0.929	0.8920	0.6261	0.7913
	OL2	0.87				
	IIL3	0.85				
	OL4	0.69				
	OL5	0.66				
Operation Management Capability	OMC1	0.73	0.945	0.9151	0.6850	0.8276
	OMC2	0.75				
	OMC3	0.82				
	OMC4	0.93				
	OMC5	0.89				
Marketing Capability	MC1	0.64	0.904	0.8580	0.5494	0.7412
	MC2	0.67				
	MC3	0.79				
	MC4	0.81				
	MC5	0.78				
Firm Performance						
Financial Performance	FP1	0.85	0.905	0.8386	0.5699	0.7549
	FP2	0.85				
	FP3	0.68				
	FP4	0.61				
Marketing Performance	MP1	0.90	0.967	0.9363	0.8309	0.9115
	MP2	0.98				
	MP3	0.85				

Table 2: Discriminant validity test

Constructs	IL	OL	OMC	MC	FINPER	MKTPER
IL	**0.7538**					
OL	0.488**	**0.7913**				
OMC	0.369**	0.331**	**0.8276**			
MC	0.446**	0.348**	0.376**	**0.7412**		
FINPER	0.374**	0.395**	0.308**	0.360**	**0.7549**	
MKTPER	0.307**	0.302**	0.253**	0.347**	0.515**	**0.9115**

**. Correlation is significant at the 0.01 level (2-tailed). N=326;
IL, OL, OMC, MC, FINPER and MKTPER stand for Inbound Logistics, Outbound Logistics, Operation Management Capability, Marketing Capability, Financial Performance and Marketing Performance, respectively.

The off-diagonal values in the Fornell and Larcker correlation matrix are the correlation between the latent constructs, and the diagonal bolded values are square root of AVE values.

3.2. Structural Analysis and Hypothesis Test

In the analysis of the hypothesis test, the study used second-order latent variables (value chain management practices and the firm's performance), which were developed from first-order indicators; namely, inbound logistics, outbound logistics, operations management capability, marketing capability, financial performance, and marketing performance. To test the hypothesis, the direct effect of variance on value chain management practices was examined. In order to examine the direct effect, the model provides the critical ratio (C.R.) and a p-value that checks whether the estimated parameter deviates statistically from zero. The reason behind using regression weights is that they show which independent variables have a significant effect on firm performance. Thus, the regression weight for outbound logistics and marketing capability in the prediction of financial and marketing performance is significantly different from zero at the 0.001 level (two-tailed).

Table 3 presents a positive and significant association between outbound logistics and financial performance (β=0.206, p=0.000) and market performance (β=0.148, p=0.009). This indicates that when outbound logistics increases by 1 %, financial performance increases by 20.6 %, and marketing performance increases by 14.8 %. This finding supports hypotheses H2a and H2b.

Table 3: Regression weights (Path estimates) output from SEM model

Relationship between the constructs			Estimate	S.E.	C.R.	P-value
FINPER.	<---	INBOUNDL.	0.160	0.115	1.390	0.165
MKTPER.	<---	INBOUNDL.	0.124	0.113	1.098	0.272
FINPER.	<---	OUTBOUNDL.	0.206	0.058	3.521	***
MKTPER.	<---	OUTBOUNDL.	0.148	0.057	2.610	0.009
FINPER.	<---	OPERATIONMC.	0.062	0.045	1.382	0.167
MKTPER.	<---	OPERATIONMC.	0.055	0.044	1.257	0.209
FINPER.	<---	MARKETINGC.	0.204	0.066	3.096	0.002
MKTPER.	<---	MARKETINGC.	0.226	0.065	3.472	***

***-is significant at p, 0.001 (2-tailed), n=326;
FINPER and MKTPER represent Financial Performance and Marketing Performance, respectively.

Additionally, marketing capabilities have a positive and significant effect on financial performance (β=0.204, p=0.002) and market performance (β=0.226, p=0.000). This reveals that when marketing capability increases by 1 %, financial performance increases by 20.4 % and marketing performance by 22.6 %. This finding supports hypotheses H4a and H4b. However, the study found that inbound logistics did not significantly affect both financial performance (β=0.160, p=0.165) and market performance (β=0.124, p=0.272). Similarly, operations management capability did not significantly affect both financial performance (β=0.062, p=0.167) and market performance (β=0.055, p=0.209). Thus, hypotheses H1a and H1b and H3a and H3b were empirically not supported in this study. Generally, the result revealed that both outbound logistics and marketing capability have a positive and significant effect on a firm's performance.

3.3. Interpretation from AMOS Graphics

In order to interpret the results of the study, standardized regression estimates, which were derived from AMOS software and AMOS graphics outputs, were used. The result of the structural equation model (SEM), which links exogenous variables with latent variables, revealed that all the dimensions of value chain management practices have a positive link with both financial and market performance (Table 4). Moreover, both outbound logistics practices and marketing capabilities have a positive and significant effect on both financial and market performance. However, in the case of inbound logistics and operations management capabilities, despite their positive link with firm performance, the statistical value revealed that they have no significant effect on financial and market performance.

The study found that outbound logistics has a significant positive effect on financial performance (β=0.25) and market performance (β=0.18). This corroborates that a one-standard deviation increase in outbound logistics results in an approximate 0.25 standard deviation improvement in financial performance and a 0.18 standard deviation improvement in marketing performance. Thus, H2a and H2b, which dealt with outbound logistics, had a positive and significant effect on firm financial and marketing performance, as supported by empirical evidence.

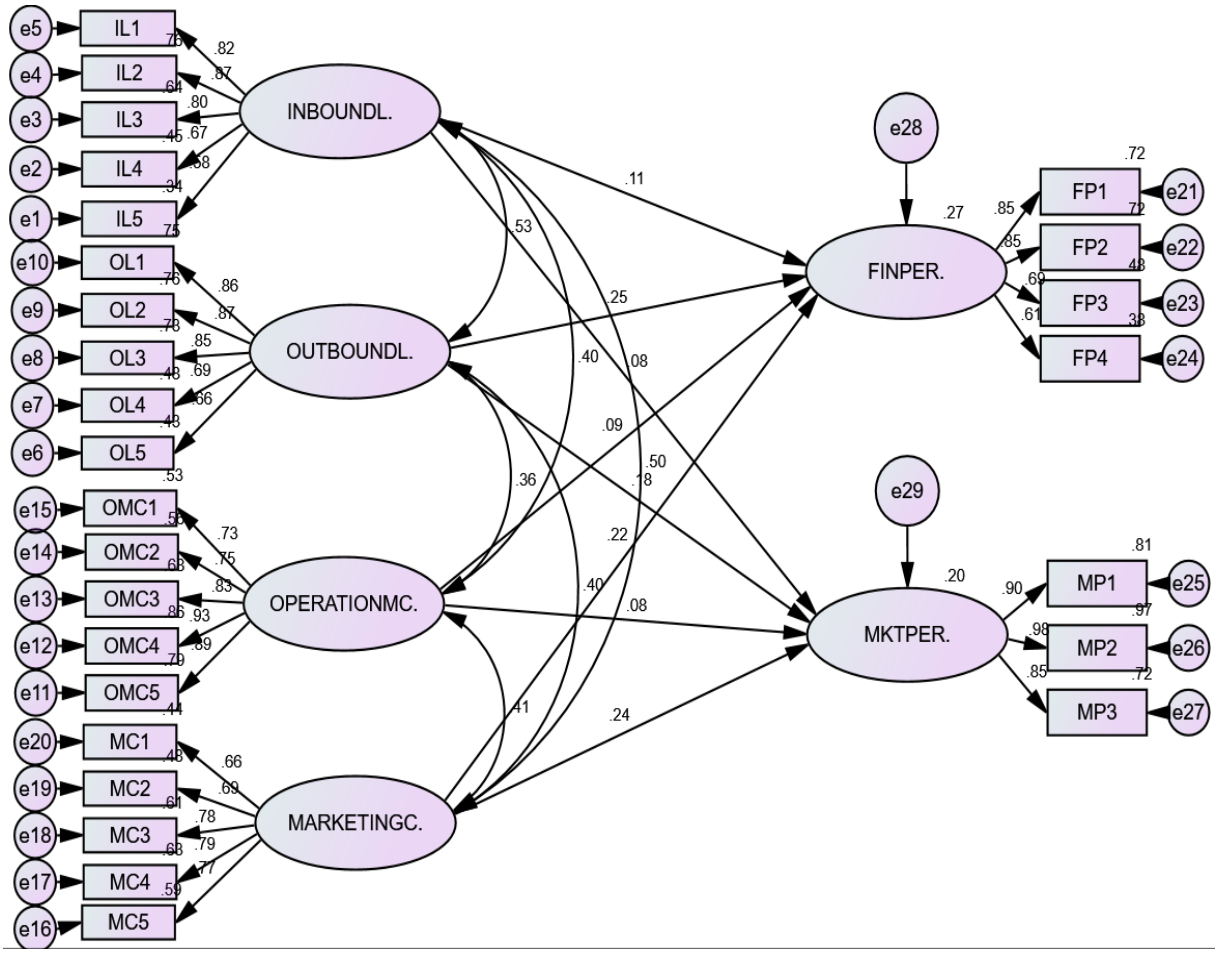
Table 4: Standardized Regression Weights

Relationship between the constructs			Estimate
FINPER.	<---	INBOUNDL.	0.106
MKTPER.	<---	INBOUNDL.	0.081
FINPER.	<---	OUTBOUNDL.	0.253
MKTPER.	<---	OUTBOUNDL.	0.178
FINPER.	<---	OPERATIONMC.	0.088
MKTPER.	<---	OPERATIONMC.	0.077
FINPER.	<---	MARKETINGC.	0.224
MKTPER.	<---	MARKETINGC.	0.243

***-is significant at p, 0.001 (2-tailed), n=326;
FINPER and MKTPER represent Financial Performance and marketing performance, respectively.

Additionally, marketing capabilities have a positive and significant effect on financial performance (β=0.224) and market performance (β=0.243). This confirms that a one-standard deviation increase in marketing capabilities results in an approximate 0.222 standard deviation improvement in financial performance and a 0.243 standard deviation improvement in marketing performance. Thus, H4a and H4b, which hypothesized that marketing capabilities have a positive and significant effect on firm financial and marketing performance, were supported by empirical evidence. However, the study found that the hypothesis that inbound logistics has a significant effect on both financial performance (β = 0.106) and marketing performance (β = 0.081) was not supported. Similarly, operations management capability did not significantly affect both financial performance (β = 0.088) and market performance (β = 0.077). Thus, hypotheses H1a, H1b, and H3a and H3b were empirically not supported in this study.

The results of standardized estimates reveal that all independent variables have a positive relationship with dependent variables. To interpret the relationship between the independent variables and dependent variables, this study used the path value from the AMOS graphics that coincides with the standardized estimate value depicted in Table 4. Accordingly, Figure 1 presented AMOS Graphics output.



e, IL, OL, OMC, MC, FP, MP represent error terms, Inbound Logistics, Outbound Logistics, Operation Management Capability, Marketing Capability, Financial Performance and Marketing Performance, respectively.

Figure 1: Effect of value chain management practices on firm's performance

The structural model fit indices result revealed that all evaluation indices are within the prescribed standard. The values are Chi-square = 9.196; DF = 8; P = 0.326; Chi-square/DF = 0.150; RMR = 0.007; GFI = 0.991; NFI = 0.980; TLI = 0.995; CFI = 0.995; RMSEA= 0.021 with PCLOSE 0.784, in which DF, RMR, GFI, NFI, RFI, IFI, TLI, CFI and RMSEA represent degree of freedom, root mean square Residual, goodness of fit index, Normed Fit Index, relative fit index, incremental fit index, trucker Lewis index, comparative fit index and root mean square error of approximation, respectively.

Overall, the findings of this study are consistent with some studies that have been conducted on the performance of IPs in Ethiopia. Previous studies found that industrial parks have contributed to both financial and marketing performance, such as increasing government revenue, export earnings, and Foreign Direct Investment (Desta, 2023; Zeng, 2021; Gemechis & Hailu, 2023). The findings of this study support previous studies' results, which claimed that success in value chain management increased business revenue (Nauhria et al., 2018) and increased profits (Prasetyo & Dzaki, 2020). Further, the current study partially coincides with the findings of Suharman et al. (2023), which revealed primary value chain activities had direct positive effects on firm performance. Specifically, focusing on marketing capabilities (Al Asheq & Hossain, 2019) and logistics functions (Ayantoyinbo & Gbadegesin, 2021) enabled firms to boost their performance. Consequently, outbound logistics activities that emphasize on the appropriate delivery of final products determine firm performance (Sriphong et al., 2022). Thus, firms can reduce their costs by increasing the efficiency of their logistics, improving their production processes, and managing their labor costs at the lowest possible prices (Saribanon et al.,

2024). Consequently, firms can set competitive prices for customers as well as increase their profit margins.

4. Conclusion and Recommendation

This study examined the relationship between value chain management practices and manufacturing firm's performance. From the results of the study, dimensions of value chain management practices partially have a significant positive effect on a firm's performance. Furthermore, there are lack of quality local raw materials or semi-finished products; high cost and delay of both inbound and outbound logistics; weak coordination between investors, Ethiopian Investment Commission (EIC), Industrial Parks Development Corporation (IPDC), and Ministry of Trade (MoT); and weak marketing communication, particularly in terms of promoting Ethiopian products in the international market; and weak backward and forward linkage between the domestic economy (market) and investors.

This study confirmed that an improvement in outbound and marketing capabilities boosts a firm's performance. Moreover, effectively managing the efficiency of logistics, operations management capabilities, and marketing capabilities contribute to a firm's performance. Accordingly, value chain management in manufacturing industries allows firms to minimize costs, produce quality products, and be responsive to their service delivery.

To sustain the operation of IPs in the long run, it needs to re-emphasize the benevolent industrialization strategy that gives priority to the areas where the country has a competitive advantage. Moreover, since the participation of local companies is limited in numbers and weak in capacity, for the sustainability of IPs, local firms' linkages or embeddedness are highly important in industrial parks. Thus, concerned bodies have to encourage, support, and promote local firms to invest in their country and foster a competitive business environment.

Despite it being claimed that the country has manufacturing potential, especially for light manufacturing industries such as cotton production, the study shows that the backward linkages from cotton to textiles, garments, and apparel are very limited in mobilizing local resources. Thus, to improve Ethiopia's integration into the global value chain in areas where the country has potential, the government is expected to promote a strategy to optimize local raw materials for export-oriented standards. Further, as Ethiopia is a landlocked country, longer lead times and higher logistics costs can erode the cost advantage the country has from low-cost labor-intensive firms, including light manufacturing firms operating in industrial parks. Thus, it is suggested to make logistics activities more efficient.

Moreover, the forward linkage between local producers and producers in IPs is weak; thus, there are no such products supplied to the local market. To strengthen the forward linkage between investors and the local market and to improve the economic impact of IPs, government needs to create a conducive working environment. Therefore, to ensure the sustainability of IPs and generate more hard currency, the government, in collaboration with investors, has to create a strategy to use local raw materials for the production of export-oriented products that makes effective import substitution with diversified products. Moreover, the country has to appropriately use the growing domestic economy or domestic market. In terms of operations management, firms operating in IPs are mainly engaged on a "cut-and-make" basis, indicating that firms are focusing on more labor-intensive activities with less value added. And the main design and value-adding operations are handled by parent companies. Thus, in addition to "cut-and-make," it is better if the government develops a strategy in cooperation with investors that encourages value-adding operations that generate more hard currency.

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