

## ASSESSMENT OF THE CHALLENGES OF VALUE CHAIN PROCESS IN THE CASE OF ETHIOPIA, TIGRAY MANUFACTURING SECTOR

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### **Abstract**

The study assesses the challenges of value chain process in Ethiopia manufacturing sectors. The objective of the study was to provide an insight on the principles of value chain and its activities, the linkage between partners and actors of the value chain and the major challenges that hinder the efficient, transparent and effective process of the value chain in the manufacturing sector. The methods used for the study were the questionnaires, semi structure interview and field visit observation in the study area. The finding shows that though different efforts were done by the government companies could not bring the required change in the value chain process due to lack of skilled manpower, poor linkage of stakeholders, and poor infrastructure and information diffusion by the actors result in weak market share and poverty reduction, starting from raw materials to customer that include from supplier producer, wholesalers, retailers, and consumers that create various problems for the whole value chain operations like lack of demand forecasts, poor customer handling and production to prevent high cost and minimize risk in the process. Therefore, decision makers and partners should be work closely together enable firms to achieve their intended objectives. Develop market infrastructure and other measures to reduce marketing costs in reducing transaction costs and producing competitive products, incentivized business schemes to attract investors, open and develop transport roads and market infrastructure with facilitate access to affordable and quality inputs and technology.

Key words: Value chain, Relationship, infrastructure, competitiveness, resource

### **1. Introduction**

Value chain is an approach which is used in formulating competitive strategies, understand the source of competitive advantage, and develop the linkage and interrelationship between activities that create product's value in the manufacturing sector (Porter, 1995). The value creating in business profitability equals to the difference between the value of the customer that the price willing to pay for the product and the total cost of producing the product in the value chain. Ethiopia has been designed an integrated home-grown policies and strategies and implementing to bring sustainable development in the country. However, push on competitiveness, the status of the manufacturing industries and the existence of available resources and enabling socio-political situation, demand to design and implement applicable manufacturing strategy (MoI, 2013).

Consequently, the Ethiopian Government has promoted both domestic and foreign direct investment with the objective of enhancing the economic growth of the country through own local design development home grown paths and unique industrial policy to support manufacturing sector

(Arekeb,2015). The investment code has been revised to make it more transparent, more attractive to invite local and foreign investments and competitiveness. These was focusing on developing polices and strategies, shifting towards building manufacturing industrial capability to sustain broad based, rapid and equitable economic growth which is required human capital, procurement process, production capacity, coordination and relationship between partners as well as various actors in the value chain. Moreover, the government is encouraging both the farmers and the private sectors to focus on production capacity with high value added and demand products in the market(Tsegay,2018). However, enhance and expand infrastructure, and logistic facilities is very important in the value of a product. Incurring high cost in infrastructure and logistic facilities contribute to undermine the performance of the companies' value chain, hinder in creating conducive environment and promote business linkage to facilitate the value chain process. That is why the firm's value added 19.2% and average growth rate of 20 % have registered in the period of Growth and Transformation Plan II are low (MoI,2013 and MoFED,2015 ).The production of goods using various input (machine tools and labour) in the manufacturing sector is below 5%.Those produced goods of the firms may be are ready for consumption or they may be semi processed to become input for other establishment engaged in further manufacturing and then sold to which sales, retailers and consumers (Alemzewud, 2018,p.2). Manufacturing is the core engine and foundation to enhance economic growth and structural transformation in the industry sectors providing new technology through forward and back ward linkage managerial knowledge to others (singer et al, 2014).

### **1.2 Problem statement**

Ethiopia is today at the meddle of practicing the industrialization process in various business sectors. Agriculture being a primary source of income 50% of the GDP and now transforming into more dynamic and new manufacturing sectors(Khurana,2018).

Further, one of the strategic tools of the value chain is information and communication technologies to improve firm's competitiveness by increasing the value creation in the production process. However, in developing country like Ethiopia the nature of the business shows lack of efficiency and networking within the value chain, Lack of experience to create value and assess the factors that increases transaction costs and limit efficiency of the chain (Shuvo II.2018).

The growth of product value chain is important for high opportunities for increased yield through intensification of production, availability of technological and institutional support. Good institutional environment and the availability of a relatively well-trained labor force are important factors in attracting foreign investors and create local linkages with domestic suppliers. Evidences shows that there is high customer dissatisfaction, shortage of supplies, lack of market support services. and production factors ,low employment opportunity and poor-quality product in the market and low export items constraints the development of production capacity and boost product's' competitiveness of the value chain in the manufacturing sector. So, need serious attention and priority intervention for the value chain development in the countries .

The general objective of the study assesses the challenge of value chain in manufacturing sector in Ethiopia, Tigray regional State.

The specific objectives of this study are :

- To assess the value chain process in the manufacturing sector
- To identify the factors that affect the performance of value chain the manufacturing sector
- To analyze the relationship among stakeholders towards the value chain in the manufacturing sector

**It answers the basic question of the study**

- How value chain activities are carried out in the manufacturing sector
- To what extent the stakeholders and their activities are linked to each other in the value chain?
- What are the main challenges facing in the value chain process?

## **2. Literature Review**

### **2.1 Concept and Definition of Value Chain**

The concept of value chain is coming through business management and was first introduced by Michael S. Porter in 1985 in the book of Competitive Advantage. A value chain is a set of activities that a firm operating in a specific industry performs to deliver a valuable product for the market. Value chain is a flow of valued adding activities from utilization of input to the product deliver to customers at what value the business added to each link under the cover of company's competitiveness.

The value chain is creating value in the business profitability equal to the difference between the value of the customer that the price willing to pay for the product and the total cost of producing the product in the value chain. These are primary and supporting activities in the value chain. Primary activities are including the main activities involve directly in the production and selling of the actual product whereas supporting activities are activity which support the main activities.

According the USAID, Briefing Paper cited by Kumar. et al,2004. "Enterprises collaboration and coordination helps the value chain to become efficient to achieve its objectives. Enterprises are connected from the primary activities supply inputs by the supplier, technical, managerial and financial up to supportive production process at each stage of the products to increases value for the customer. These value chains are effective if the supply chain by different stakeholders are properly supported, coordinated in every stage vertically and horizontally to satisfying consumers. These to minimize risk , provide quality products which is demanded by consumer and get firms competitive advantages to differentiate its goods and services in the market.

If we take the example of North East Asia countries particularly Korea Chemical Value Chain how to improve the export of textile to Synthetic Fibers and then to Petrochemical .These was done with the support of the government took action on support on waste allowance, tariff free, reduce interest rate and tax exception, provision of loan and training to work by workable planning to become create competitive companies produce on Economic scale to become competitive in the global market (SIDTT,2019)

## 2.2 Review Literature

According to the OECD Secretary-General (Gurría 2012) the emergence of global value chains in the late 1990s provided a catalyst for accelerated change in the landscape of international investment and trade, with major, far-reaching consequences on governments as well as enterprises (Gurría 2012). Value chain is for example in the agriculture production aligned from supply of raw materials by the agriculture sector towards to market that is the customer through the producer and distributor. (WB, 2010). Because one of the key elements in value chain process is market which is the basic driver of all value chain. However, government regulation, quality of services, industry requirements, trade union activities play major roles in shaping the structure, functions, and efficiencies of value chain to enhance their market power and profitability.

The UNCTAD data shows that strategies are a top important factor give attention in the value chain in the manufacturing sector to eradicate the tendency of dependency, gaps in balancing participation and power, networking, infrastructure, clustering and linkage development, business development service, and access to finance and technology that domestic firms naturally have fewer opportunities to be effective in value chain. Adequate infrastructure

### 2.2.1 Principles of Value chain

The principles of value chain are classified into two categories. 1) strategic management and 2) operational managing value chain. Each category of the principles has their own importance role to play in managing and coordinating efficient and effectively.

#### 2.2.1.1 Strategic Management

The factors of strategic management focus on creating an enabling environment for the achievement of value chain objectives. These activities related with developing and maintaining strong relationships between the partners (Wilson, 1995). However, these principles were not fully applied in the manufacturing sector due to lack of knowledge and expertise of human power in forecasting, innovation and capabilities in the value chain process.

#### 2.2.1.2. Operations Management

Operational management system focuses on enhancing efficiency and effectiveness in the value chain processes. These includes the study of consumer demand and forecasting the unforeseen factors, ensuring effective communications among actors, establishing horizontal relationship and, applying the assurance of quality product, efficient transportation and distribution process, ensure consumer satisfaction, and evaluating overall performance.

### 2.2.2 Classification of value chain activities

The value activities are divided into two which is primary and supporting activities.

**2.2.2.1 Primary activities** are an activity main involved directly in the production and selling of the actual product. This includes the interact and relationship of input supplier with processor, outgoing logistics, which involve relationships between the producer and distributors and then provide to customer.

**2.2.2.2 Support activities** are activities involve in relationship of purchasing of materials and managing of human aspects with the application of technology and transport, power and water utilities that support the

primary activities in the value chain. Effective relationship in value chain always showed a strong vertical and horizontal, backward and forward linkage among actors. However, establishing such strategic coalition determine the existence of firm's capability. Additionally, shared vision and strategic thinking, mutual respect between the employer and the workers, leadership commitment, compatible culture and collaboration are the most important factor in value chain effectiveness. (Gooch, 2005; Min et al., 2005) cited by Martin Gooch and Abdel Felfel(nd).

Min et al. (2005) argue that value chain has an important factor to increase the revenue and reduce cost stemming from collaboration and interrelationship stakeholders that enables the firm mutual benefits and synergies; its efficiency and effectiveness to gain the expected profit. But some of the firms were failed responding to the market demand which affect competitiveness and customer's satisfaction.

### **2.2.3 Challenges of value chain**

Though there is an opportunity a firm to achieve its objective through efficient and effective implementation of the strategic and operational process, the external and internal factors existing in the company those hinder the process of value chain that affects the business competitiveness and profitability.

**2.2.3.1** External factors :These factors are affecting the alignment of actors in the value chain. This in turn leads the companies to limit the opportunity in the changing market to adapt successfully. Thus, applicable policies and strategies should be designed strategically and proactively address to have access business organization opportunities in the emerging market. (Mason, 2008). Policies should support strongly to interact local suppliers, their upgrading, and the raising highly involved labor-intensive process in the production process and attract and access unrestricted investments opportunity offered to foreign investors at low cost inputs and other export incentives. This initiative was practiced in Ghana, Nigeria, Mozambique, Ethiopia, and Rwanda that aim to foster the use of local inputs by foreign investors, by improving infrastructures and boosting education and training standards to build a skilled labor force and to meet the more sophisticated demand of global markets (AfDB et al. 2014).

The other factors that affect the value chain are industrial structure that prevent the ability and motivation of stakeholders in relation to market demand and industrial culture which is enabled to develop and manage strong alignment of process. Unfavorable structural framework and cultural environment creates distrust and lack of mutual respect among partners. In addition, lack of communications system, failure to efficient utilization of information technology, and to design workable strategic planning also other problems about external factors.

**2.2.3.2** The other factors that affect the process of value chain is the internal factors existing in the company. The internal factors include the attitude of the employees and employer to create new ideas and concepts to achieve the intended objective through the value chain, incentive scheme provided by the government and the company which is determined the successful of any value chain initiative and focusing on productivity and value that needs its target consumer.

The manufacturing sector is relatively small in Ethiopia and accounts for less than 5% of GDP. Basic livelihood is based on agriculture (mainly

smallholder farming and livestock production). However, the services sector has recently outstripped agriculture in terms of its share of GDP estimated at 46% with agriculture being at about 42% of GDP (80% of employment and 85% of Ethiopia 's export earnings).

According to World Bank's Investment Climate Report, the lack of infrastructure ,the quality and coverage of infrastructure is low. The inadequacy of Ethiopia 's infrastructure stems largely from resource and capacity constraints , the Ethiopian's financial sector remains small, fragmented. The other problem that affect the manufacturing sector is land, low productivity and resource allocation inefficiencies pose a major hindrance to Ethiopia's competitiveness. This is a major impediment to the expansion of production, and development of export capacity (CBC,2013).

CBC,2013 suggested that Ethiopia needs to invest in infrastructure development through partnerships with development partners and other investors. This includes initiating frameworks and incentives that allow great investment for the development of infrastructure. This all contributed poor availability of input supplier, limited in fragmented market which affect the manufacturer to supply the produced goods .This needs a coordinated strategy designed by the manufacturing industry. The private sector also calls for greater participation in Regional Economic Communities to acquire gains in trade plus be able in aid for trade programs that promote infrastructure, legislative and policy development.

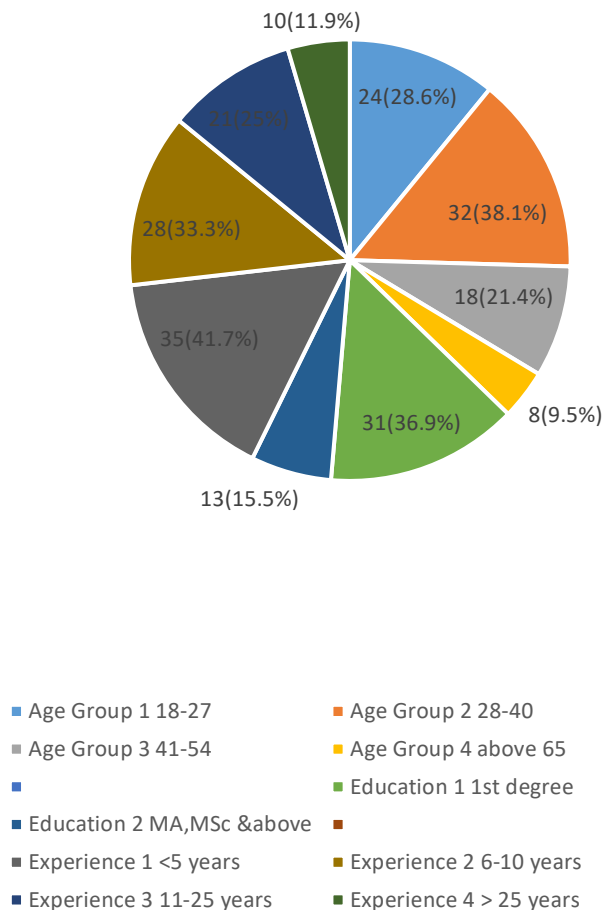
### **3.Methodology**

This study has employed descriptive research design to identify the value chain process in manufacturing sector in Ethiopia, Tigray Regional State. The rationale for choosing this design is to describe in-depth understanding of the existing situation of the operations and identify the factors that affect the linkage among actors of the value chain .The study used a case study research design which is mixed approach method in nature. it employed a qualitative and quantitative to supplement data obtained in one approach with that of another. The study populations of this paper were stakeholders and employees which are 1168 in number purposively selected from 5 sub sector of manufacturing industry. To carry out this study, 84 respondents were selected through stratified sampling method. For interview purpose, 8 leaders and stakeholder were selected purposively. The researcher used both questionnaire (for quantitative data) and semi- structured interview questions for qualitative data. The data collected from primary sources were recorded, edited organized, analyzed, interpreted, and presented in relation to research questions. The quantitative data were analyzed by using descriptive statistical tools SPSS version 25 such as percentage, mean, standard deviations and were presented by tables, figures, graphs .

#### 4. Finding and Discussions

**Figure 1. Demographic characteristics of the respondents**

Demographic Characteristics

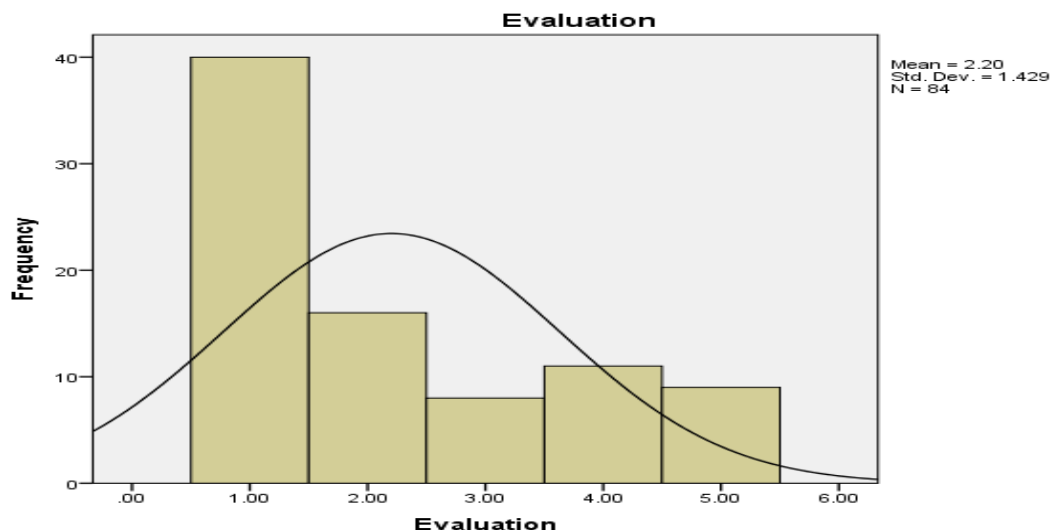


From the above figure 1, reveal that 24(28.6%) of the respondents are between 18 to 27 years old, 32(38.1%) are 28 to 40 years where as 18(21.4%) are 41 to 53 whereas, 8(9.5%) are above 53 years old. This shows that majority of the respondents are at the age of 28 to 40 years who are the productive age and could be understand the strategy and operation of the value chain process if they have get access to education and training.

Coming to the educational background of the respondents. majority 40(47.6%) are diploma holders, 31(36.9%) are first degree holders and 13(15.47%) are MA/MSc and above. This implies that the value chain operations are running by the low level educational background who may not easily adapt with the new sophisticated technology which is required to the firms competitiveness.

With regards to the working experience of the respondents showed that Majority 35(41.67%) of the have less than 5-year,28(33.33%) between 6 to 10 years and 21( 25% ) have 11 to 15 years. The remaining 10(11.9%) have an experience of above 15 years. This shows the value chain process may not efficient and effective to solve the challenges that face in each step of the product's value in the value chain process.

**Figure 2. Assess the value chain process in the manufacturing sector**



NB: SDA=Strongly Disagree DA= Disagree UD= Undecide A= Agree SA=Strongly Agree

As it is indicated in Table 1 the mean scores of all the items are below 2.20 which are sided on the negative side. All the scores are lied on disagree and strongly disagree position but there is no item above the mean. This means, most of them agreed that there is no shard vision in the value chain. Majority (77.4 percent) of the respondents agreed that there is no shared vision among the stakeholders to word the value chain in the manufacturing sector; 86.9 percent of them agreed that the relationship among the supplier, processer and distributors in the value chain not strong; 59.5 percent of them agreed that they do not have knowhow to create a linkage with partners and communicate for the effective process of the value chain; whereas 50 percent of the respondents agreed that there is a conducive enabling environment for the value chain in the firm. But ,66.6 percent of them argued that the performance evaluation in the value chain process is very weak .Moreover, the qualitative result indicated that no shared vision among suppliers , producers ,and distributors for effective and efficient process of the value chain rather they want to work separately that leads from weak effort to create strong relationship among them. These emanates from lack of know how to organize the system to bring them together and work for common benefit. Though there is a conducive environment to work, the manufacture sector does not improve its progress in the value chain to satisfy its customers. This implies the value chain processes are implementing without understanding and identifying the objectives and its outcomes in the sector due to lack of relationship and communication to evaluate the performance of the value chain process.



**Table 1. Identify the factors that affect the performance of value chain in manufacturing sector**

No	Statements	Responses										Total		mean
		SD		DA		N		A		SA		Frequency	Percent	
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	There is adequate capability in creating linkage among stakeholders	23	27.4	24	28.6	20	23.8	13	15.5	4	4.8	84	100	2.42
2	There is effective way of communication technology among stakeholders	30	35.7	19	22.6	10	11.9	18	21.4	13	17	84	100	2.44
3	There is an enabling working culture throughout the value chain	34	40.5	23	27.4	16	19	4	4.8	22	29	84	100	2.13
4	There are effective interrelationships and interactive among supplier, processor, and distributor	31	36.9	25	29.8	3	3.6	16	19	21	28	84	100	2.31
5	There is strong commitment of the leader to manage the value chain	21	25	25	29.8	12	14.3	15	17.9	10	13	83	100	2.62

NB: SDA=Strongly Disagree DA= Disagree UN= Undecide A= Agree  
SA=Strongly Agree

As it is indicated in Table 2 above, the mean scores of an enabling working culture throughout the value chain and effective interrelationships and interactive among supplier, processor, and distributor are below the averages (2.384) which are sided on the negative side .additionally, majority the scores are lied on disagree and strongly disagree position but item such linkage(2.42) ; effective way of communication technology among stakeholders (2.44) and strong commitment of the leader to manage the value chain (2.62) are above the mean (2.384). This means, an enabling working culture throughout the value chain and effective interrelationships and interactive among supplier, processor, and distributor in the value chain is very weak. Additionally, majority (68.3 percent) of the respondents agreed that lack of effective interrelationships and interactive among supplier, processor, and distributor is the main problems of the value chain ;67.9 percent of them agreed that an enabling working culture throughout the value chain very poor; 58.3 percent of the respondents agreed that lack of effective way of communication technology among stakeholders that facilitate the value chain process; 56 percent of them agreed that lack adequate capability in creating linkage among stakeholders, and 55.4 percent of them agreed that there is no strong commitment of the leader to manage the value chain.

Additionally. the key informants also assured that forward and back word linkage among actors of the value chain is very weak which is require to improve in all steps of the value chain and lack of commitment to communicate and interact among supplier, processor and distributes to assess the market and information dissemination to add value that satisfy the required quality still existing in the manufacturing sector resulted in weak market share that delayed the effectiveness of value chain

**Table 2. To analyze the relationship among stakeholders towards the value chain in the manufacturing sector**

No	Statements	Responses										Total			
		SD		DA		N		A		SA		Frequency	missing	Percent	mean
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent				
1	The firm is proactively forecasting for customer demand	30	35.7	10	11.9	10	11.9	18	21.4	13	15.15	81	3	100	2.679
2	There are applicable government regulations to support the value chain operation	37	44	13	15.5	5	6	6	7.1	19	22.5	80	4	100	2.46
3	There is a good system of conducting market assessment in the value chain	21	25	34	40.5	6	7.1	5	6	18	21.4	84	-	100	2.58
4	There is an effective teamwork in the value chain	13	15.5	36	42.9	5	6	10	11.9	20	23.8	84	-	100	2.86
5	There is an effective logistic and transportation service	30	35.5	26	31	12	14.3	16	19	-	-	84	-	100	2.50
6	There is efficient of utilization of resources	21	25	17	20.2	10	11.9	18	21.4	17	20.2	84	-	100	2.92
7	There is strong vertical integration with partners	37	44	22	26.2	2	2.4	18	21.4	5	6	84	-	100	2.19

NB: SDA=Strongly Disagree DA= Disagree UN= Undecide A= Agree  
SA=Strongly Agree

Manufacturing industry has gained greater recognitions in the development planning all over the world including Ethiopia. The government is working jointly with its development stakeholders has made great efforts to address the critical concerns of relationship among stakeholders in value

Table 3 above shows that the mean score of firms is proactively forecasting for customer demand(2.67); there is a system of conducting market assessment in the value chain (2.58) ; There is an effective logistic and transportation service (2.50), and strong vertical integration with partners (2.19) are below mean average(2.59) whereas, applicable government regulations to support the value operation (2.68); an effective teamwork existing the value chain(2.86) and efficient utilization of resources within the value (2.92) are above the averages (2.59) which is agree in the process .However, all the scale scores are lied on disagree and strongly disagree

position which is 62.6 percent of the respondents agreed that proactively forecasting for customer demand is poor ;majority 49.3 percent of them agreed that government regulations is not much applicable to support the value chain operation; 65.5 percent of the respondents agreed that there is not a good system of conducting market assessment in the value chain; 58.4 percent of them agreed that an efficient an effective logistic and transportation service manage by the value chain ;majority 45.9 percent of them agreed that there is not efficient utilization of resources in the operation and transportation and function of the value chain ,and 70.2 percent of them agree that one of the critical problem of value chain is a weak vertical and horizontal partners integration of the value chain. This implies that serious attention is given to strategically and proactively forecast for customer demand, conducting market assessment, effective logistic and transportation service, and strong vertical integration with partners in the value chain to prevent the challenges hinder the effective and efficient operation of the value chain.

### **5. Conclusion**

The concern of manufacturing sectors is producing quality product and sale to the final users. But the issue is how customers willing to pay for that product and minimize the cost and maximize the profitability of the firms. The findings of the study show that though different efforts were done by the government and jobs are created to the productive forces majority of the respondents are at the age of 28 to 40 years who are the productive age and could be understand the strategy and operation of the value chain process if they have get access to education and training .

Furthermore, the value chain respondents are operating by the low level educational background who may not easily adapt with the new sophisticated technology which is significant to the firms competitiveness .In addition, the process may not efficient and effective to solve the problem arising in each step of the product's value in the value chain process due to lack of sufficient experiences by the operators.

The value chain processes are implementing without understanding the outcomes demand in the sector due to lack of relationship and communication to evaluate the performance and customer satisfaction. On the other hand , forward and back word linkage among actors of the value chain is very weak and lack of commitment to communicate and interact among supplier, processor and distributes to assess the market and add value that satisfy the required quality.

The other very important in the manufacturing sector is serious attention is given strategically and proactively forecast for customer demand, conducting market assessment, effective logistic and transportation service, and strong vertical integration with partners in the value chain to prevent the challenges that hinder the effective and efficient operation of the value chain.

The respondents underlined that poor linkage of stakeholders, and poor infrastructure facilities and information dissemination still existing in the manufacturing sector resulted in weak market share that delayed the effectiveness of value chain. Unpredictability effect throughout the value chain starting from raw materials supply to customer provision that create various problems for the whole value chain operations like lack of demand forecasts, poor customer handling and production to prevent high cost and

minimize risk in the process. Firms need to focus on those issues that require attention in vertical and horizontal linkage and update information of the market. Because information flows between stakeholders and their partners is one key initiative and sharing market information that create smooth and effective co-coordination within the value chain ,enhances the market share ,firms competitiveness and maximize the revenue through a means of back and forward linkage among supplier, producer and distributors satisfying the desire customers.

### **Recommendation**

The following recommendations are offered based on the findings of the studies:

Policy makers and partners need to work together closely to enable firms to achieve their intended objectives and helping them to design a coordinating and market strategy to forecast the unseen features that affect the effectiveness of value chain

The management of the sector should build the capacity of the operators and the stakeholders to have a common vision and adapt the new technology to operate efficiently in the process

The government should support the sector in efficient market infrastructure to reduce marketing costs and transaction costs to produce competitive products,

The government should create enabling environment for smooth flow of logistics and information in the value chain.

The firm should be evaluating each step associated with the product's value and customer satisfaction during the value chain process.

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