
**ADDIS ABABA UNIVERSITY**

**COLLEGE OF BUSINESS AND ECONOMICS**

**DEPARTMENT OF MBA IN MANAGEMENT**

# CHALLENGES AND PROSPECTS OF ETHIOPIAN CEMENT MARKET

**A THESIS SUBMITTED TO THE DEPARTMENT OF MANAGEMENT OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS OF MASTERS DEGREEE IN BUSINESS ADMINISTRATION (MBA)**

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## DECLARATION

I here under signed declare that the thesis entitled with **"challenges and prospects of Ethiopian cement market"** is my own work and the all sources I have been used have fully acknowledged in a form of reference. This paper has not been presented or submitted for any academic purpose previously.

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## CERTIFICATION

This is to certify that the research thesis entitled with **"challenges and prospects of Ethiopian cement market"** and done by W/giorgis H/yesus has been submitted for examination with my confirmation as Advisor to the candidate.

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This is to certify that the thesis prepared by W/Giorgis H/yesus entitled with:" ***Challenges and Prospects of Ethiopian cement market*** " and submitted in partial fulfillment of the requirements for the degree of Master of Business Administration in Management complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

**Approval of Board of Examiners**

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**Internal Examiner** **Signature & Date**

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**External Examiner** **Signature & Date**

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# LIST OF ACROYMNS

**CAGR:** Cement average growth rate

**CCIIDI:** Chemicals and construction input industry development institute

**ECDPM**:European Centre for development policy management

**FDRE**:Federal Democratic Republic of Ethiopia

**GDP:**Gross domestic product

**ICR:** International cement review

**IMF**: International Monetary Fund

**IRODAC**:Interview results of Dangote cement

**IRODEC:**Interview results of Derba cement

**IROHC:**Interview results of Habesha cement

**IRONC:**Interview results of National cement

**IROMEC:**Interview results of Messebo cement

**IROMUC:**Interview results of Mugher cement

**MoI:** Ministry of industry

**MoST:**Minister of science and technology

**OPC:**Ordinary Portland cement

**PPC:** Portland pozzolana cement

**SSA:** Sub-Saharan Africa

**SWOT**: Strength, weakness, opportunity and threat

**4P**: Price, promotion, product and place

***Abstract***

*The general objective of the study was to find out challenges and prospects of Ethiopian cement market. The study has employed exploratory research design since the subject understudy is novel in cement industry. Qualitative research method has been used to collect data. The sampling strategy for the study was non-probability (purposive)sampling based on criteria. Based on their market share and cement production capacity, six cement firms have been selected from the industry.Totally, 6 cement firms' marketing mangers and 9 whole sellers wereselected to conduct the study. The selected cement firms in the industry covers 69% of the total cement production capacity and 85% annual cement market share. In-depth interview has been done to collect data from the marketing managers and whole sellers of the cement firms' understudy. The data has analyzed by using content analysis method. Main findings of the study includes; imbalance between production capacity and cement demand due to enormous cement projection in the country, drop in cement demand due to slow construction boom, marketing mix strategies 4ps and market intermediaries. The prospects of Ethiopian cement market includes;huge number of population and countries fast growth rate, low cement per capita consumption, increased government spending on infrastructure, and availability of rural and urban housing projects. The study has recommended that, the cement market should be regulated in some extent to safeguard the small cement firms, government should plan and execute cement demand simulation mechanisms, and alternative energy sources should be practiced and utilized in cement firms to reduce cement production cost.*

*Key words; -cement per capita consumption, cement, prospects, production capacity, and marketing mix strategies.*

# CHAPTER ONE
# INTRODUCTION

## 1.1.Background of the study

According to Kolter and Armstrong (2012), Marketing is a societal process by which individuals and groups obtain what they need and want through creating, offering, and freely exchanging products and services of value with others. Hence, marketing is creating value for customers and build strong customer relationships in order to capture value from customers in return.

Cement is one of the basic ingredients for the construction industry and it is also a critical commodity for society's needs of housing and basic infrastructure such as bridges, roads, water treatment facilities, schools and hospitals. The ingredients required to make cement are limestone, shell and clay. These raw materials are crushed, and then heated at temperatures in excess of 1000ºC in a rotating kiln to become clinker Lasserre (2007). At the next level, clinker is mixed with gypsum and ground to a fine powder to produce the final grade of cement, Africa development bank group (2014).

Cement trade from total cement production is 5% to 7%; it means that most of cement production exists to satisfy local consumption, Tarek & Ahmed Salem (2010).

Global cement demand has been showing unstable growth for last five years 2014-2017.World cement demand is projected to rise 4.5% per year to 5.2 billion metric ton in 2019 World Cement (2015).Global cement production capacity reached 6,138Mta in 2016 while global demand was 4,133mt. China accounted for 58 %of global demand in 2016. The surplus capacity doubled from 1.06bnt in 2010, to 2.00bn ton per year. Global cement consumption declined by over 2% during 2015 to around 4b MT/year. It can be generalized that, cement demand is lagging behind supply and over production is looking either for export market or strategic demand simulation Global cement report (2016).

According to a research study by Transparency Market, the global cement market is anticipated to reach a value of USD38.10 b by 2024 and predicted to register a progressive 11.30% CAGR between 2016 and 2024. Multinational cement companies, which are now faced by uneven economic performance in the emerging markets, combined with a new era of global political uncertainty that could further destabilize markets, excess industrial capacity, huge unsold

housing inventory, a relatively sluggish economy, are challenging the cement market globally (www.globalcement.com/magazine).

The African cement, concrete and construction business is growing at rapid pace. The cement sales are expected to grow rapidly until 2050. Sub-Saharan Africa has only 3% share from the world cement consumption as of 2016 which shows attracting market region for the investor's global cement review (2016).

Sub-Saharan African countries cement Consumption per capita remains significantly below the world average of 563kg, averaging just 187kg in Ghana, 126kg in Nigeria, 80kg in Kenya and 62kg in Ethiopia, which gives considerable scope to expand consumption Eco bank, the Pan African bank (2015).

As World Bank, 2017 data, Ethiopia has a large domestic market of more than 108 million people, making it the second most populous country in Africa after Nigeria. Over the last decade, Ethiopia has had one of the fastest growing economies in the world, with average annual growth rates ranging from 7% to 12%. In 2016 IMF estimated Ethiopia's GDP growth at 6.5% and projected a 7.3 -7.5% growth rates over the medium term.

The first cement factory in Ethiopia was established in 1936 in the city of Dire-Dawa. In 1964

and 1965 cement factories in Addis Ababa and Massawa were established respectively with capacity of 70,000 tons each per year. Since then cement sector growth had remained sluggish for decades. In 1984 with establishment of Mugher cement, the industry had revived. Mugher cement's 1st, 2nd and 3rd line started operation in 1984, 1989/90 and 2011 respectively. As cement demand growth prospect appeared promising in 2001, Messebo cement becomes

operational with initial 600,000-ton clinker capacity. In the subsequent years Messebo had expanded its capacity to its current level (MoI, 2015).

Total cement production capacity of Ethiopia has reached 15 million metric tons. As of April, 2017 demand for cement has declined from 24-25% to 15-16% that made the annual cement consumption and sales to 6 million metric tons and 8-9 million tons respectively. The balance (surplus) is waiting for the market. The challenge of Ethiopian cement market challenges begins when market saturated and Demand falls, the reporter, Ethiopia, (2017).

Regardless of oversupply of cement production, new international and local investors are seeking to join the industry. Existing producers are also undertaking plant expansion projects. Country's current average cement production capacity utilization rate is 50% while Global average is 80-85%. Meanwhile, government has projected to raise production capacity utilization to 122% by 2025, production consumption to 19.97milion tones from current 6 million metric tons and per capital from current 62kg to 179kg, so in the future if the current new under construction and huge expansions cement factories produce to their maximum production capacity from current to projected; survival of small companies would be under question (MoI, 2015).

Marketing mix strategies of a cement industry has its own shadow light in challenging a market. Compared to global and regional context, price of the cement is still high in country; however it has dropped for the past few years. According to Ethiopian reporter March 2018 issue, retail price of cement has increased by 28 percent before cement firms adjust price increment.

Energy cost has significantly aggravated the cement price; globally energy cost accounts 30-40% of total operational cost while in Ethiopia it accounts 50-60%, (Global cement, 2013). Transporting bulk cement product on poor infrastructure facility in the country is challenging the marketing activity of the sector. Lack of alternative transportation availability like railway, and transporting cement to every corners of the country over hundreds of kilometers dragged the profit margin of the industry to 7-10 %.( MoI, 2015).

Currently, According to CCIIDI, 2010/2018, there are 20 cement factories in Ethiopia of which 15 factories are currently fully operating and the remaining factories are not operating due to their obsolesce technology and in efficiency. Total installed capacity in a county as of 2010 E.C was 17,370,000 tons. Top 6 cement firms in the country (cement factories under study) covers the industry with 11,920,000 tons or 69% of cement installed capacity and more than 86% market share (CCIIDI, 2010).

Almost all factories in the industry is owned either in the form of share company and private limited, while Mugher cement is only state owned cement factory in Ethiopia ,Addis fortune and reporter Ethiopia newspaper, (2017).

Types of cement products produces in Ethiopia according to the Ethiopian standardsES1177-1 are; Portland cement (CEMI), Portland pozzolana cement (CEMII/B-P), Portland lime stone cement (CEMII/B-L) and low heat hydration cement, cement technology road map, MoST (2009/2017).

**1.2. Statement of the problem**

Total cement production capacity of Ethiopia has reached 15 million metric tons in April, 2009/2017 while annual cement consumption was 6 million metric tons. The balance (surplus) is waiting for the market. But as of 2010 E.C cement installed capacity was 17,370,000 tons. The challenge of Ethiopian cement market begins as market saturates and Demand falls. There is a stiff competition among cement firms and the industry transformed from shortage to abundance, the reporter Ethiopia, (2017), (CCIIDI, 2010). Regardless of cement oversupply, considering the future prospects of market potentials, the new international and local investors are seeking to join the industry and existing producers are also undertaking plant expansion projects.

For instance, Abay Industrial Development S.C and Ambo-Gnemer Agro and integrated industry Share Companies have planned to build a new cement plant that would significantly leads to surplus cement product in the industry, reporter Ethiopia (April 2017).

Due to the mismatch between the cement demand and production capacity (supply), cement production surpassed the demand and cement factories are scrambling for market.

Meanwhile, government has projected to raise cement production capacity utilization from current 70% to 122% by 2025 and production consumption from current 6 million metric tons to 19.97milion tones and per capital from current 62kg to 179kg.

So in the future if the current new under construction and huge expansions cement factories produce to their maximum production to projected, survival of small cement companies would be under question (MoI, 2015).

Marketing mix strategies of a cement industry has its own shadow light in challenging cement market. Strategic document of F.D.R.E ministry of industry 2015 reveals that, Compared to global and regional context, price of the cement is still high in a country; however it has dropped for the past few years.

For example, price of one tone cement (10 quintal) in Ethiopia is $90 while same amount of cement is sold $25-30 in Iran. According to Ethiopian reporter March 2018 issue, while local cement factories are finalizing price increment due to rise in their production cost; the retail price of cement has already increased by 28 percent. For instance, Cement price was 210 birr per quintal, before price hike by 28% of the same month, and after retail price rise, cement was sold as high as 270- 300 birr in different regions of the country's retail market.

According to the Reporter Ethiopia newspaper (Jan, 2017) Ethiopian cement market operates in disintegrated fashion; there is a deviation in price settled by producers, whole sellers, retailers and on the other side artificial cement shortage occurs due to poor marker intermediaries involvements in the cement market regardless of cement oversupply.

Energy cost has aggravated the cement price; globally energy cost accounts 30-40% of total operational cost while in Ethiopia it accounts 50-60%. Global cement (2013) explored that, alternative energy source for cement in Ethiopia is untapped that would reduce costly imported coal and heavy fuel oil, reduce cement price, and promote environmental integrity of the industry. Cement transportation (distribution) is the major chunk cost in a cement industry causes other profitability constraints for the sector. Transporting bulk cement product on roads specially aged and poor infrastructure facility in the country is challenging the marketing activities of the sector. As identified by Mohammad Zarkesh (2008) feasible transportation radius for cement production is only 200km.

Lack of alternative transportation availability like railway is other challenge for the cement factories; instead transporting cement to every corners of the country over many hundreds of kilometers dragged the profit margin of the industry to7-10%. However government has projected to integrate cement transport by railway from present 0-50% by 2025. Moreover, geographically the factories concentration around capital city, Addis Ababa, made the cement distribution system more difficult, (MoI, 2015).

Now a day's cement companies are under relentless pressure to stay relevant in an increasingly crowded and competitive market place in a country. In order to be successful, company's need to carefully analyze industry market potential, market size and their market share so as to maintain their position in a market and to survive in highly dynamic market, Qualtrics (2017).

Source confirms that; Overcapacity, drop in demand, marketing mix strategies(4ps) and market intermediaries are among market challenges in Ethiopian cement industry.

In light of above statement of the problem, the study was intended to find out significant challenges in a cement market and its future prospects by focusing on the following research questions.

### 1.3. Research questions

1. What is the reason for mismatch between cement demand and production capacity in cement market?
2. How marketing mix strategies; price, product, place and promotion challenges the cement market?
3. What is the role of market intermediaries in shaping Ethiopian cement market?
4. What is the future market prospect of Ethiopian Cement Industry?

### 4.4.Objective of the study

#### 4.4.1. General objective

The general objective of the study was to assess the challenges and prospects of Ethiopian cement market. It has carried out by analyzing the current industry problems that hinders the

cement market and identifying the availing future cement market prospects in the cement industry.

#### 4.4.2. Specific objectives of the study

- To identify the reason for mismatch between cement demand and production capacity in Ethiopian cement market.
- To examine the role of marketing intermediaries in shaping Ethiopian cement market.
- To discover how the marketing mix strategies; price, product, place and promotion challenges cement market.
- To point out the future market prospects of Ethiopian Cement Industry

## 4.5. Significance of the study

The study would support the industry by providing information about cement market where cement market is not well studied yet however cement is by far the most crucial input for construction industry having no close substitution. Hence, the study point out the main constrains hindering the cement market and existing prospects as well.

Recommendations would use cement firms in making marketing decisions for the governments to shape up the challenging overcapacity with demand, limited market concentration; high energy cost, and maintains investment flow. Findings of the study can be used as a reference material for further study in the sector.

## 4.6. Scope and limitation of study

The study was limited to challenges and prospects of the Ethiopian cement market in which currently the cement market is suffering for and what prospects do the cement sector has in the future. As the study was employed exploratory research design and purposive sampling method, it could be difficult to generalize the study results to the whole cement factory, but to offset the problem research work has approached a kind of triangulation by doing in-depth interview with market intermediaries who has direct contact with cement market.

### 4.7.Definition of terms

**Market:** Marketing is exchanging of offering, products and services that having value with others, (Kotler and Keller, 2012).

**Cement**: is a binder, a substance used for construction that sets, hardens, and adheres to other materials to bind them together, (https://en.wikipedia.org/wiki/Cement).

**Marketing mix strategies:** Marketing mix strategy is a planned mix of the controllable elements of a product's marketing plan commonly termed 4ps – product, price, place and promotion, Ezekiel Tom Ebitu, (2014).

**Market intermediaries:** Marketing intermediaries are firms hired by the product manufacturer to promote, sell and distribute the products to the final consumer and include agents, marketing agencies, brokers wholesalers and retailers,(Kotler and Keller, 2012).

**Prospects:** The action of looking forward or the possibility of good events in near future in the market for the specific goods and service, (en.oxforddictionaries.com).

**Per capita consumption;** it is amount of cement that each individual shares from the total cement consumption of the cement in the country.

### 4.8.Organization of paper

The study paper has organized in five chapters.

The first chapter focuses on the background of the study, statement of the problem, research questions, general and specific objectives of the study, significance, scope and limitation of the study and organization of the paper.

The Second chapter mainly highlights the related literature review of the study. It comprises details about cement definition, manufacturing process and types of cement. In addition, the chapter presents cement market, installed capacity, cement production and consumption, cement market main challenges and prospects at global, regional and national level.

It also contains countries cement market detail with industry analysis by using Porter five force models and SWOT analysis.

The third chapter discusses about research methodology; research design, sampling techniques, data collection tools and data analyzing mechanisms.

The fourth chapter provides results and discussion of the study.

The final chapter includes summary, conclusion, recommendations and at the end references and appendixes were attached.

# CHAPTER TWO

# REVIEW OF RELATED LITERATURE

## 2.1. Introduction

The chapter highlights cement industry overview regarding to its installed capacity, cement production, cement and consumptions. As the basic, it focuses on cement marketing aspects, current market status, challenges, and prospects of cement market at global, regional and national level. Moreover it presents the industry's Environmental analysis by using SWOT analysis and Porters five force model at national level.

## 2.2. Definition of marketing

Marketing is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual (customer) and organizational objectives (www.opentextbooks.org).

According to Kolter and Armstrong; marketing is Marketing is about identifying and meeting human and social needs. One of the shortest good definitions of marketing is "meeting needs profitably."

The American Marketing Association offers the following formal definition: Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large. Kolter and Armstrong (2012).

## 2.3. Global cement production and consumption outlook

There were 159 countries and territories that produced cement, either in integrated cement facilities or via grinding imported clinker, in 2017, according to the Beta (digital pre-print) version of the Global Cement Directory2018. From the159 cement and clinker producing countries, 141 produce clinker and 18 countries only grind imported clinker, Global Cement Magazine December, (2017).

This shows that globally there are countries those do not produce clinker (the most and last processed material of cement and ready to change to every types of cement) and use to import and process to different types of cement based on their need. Global cement production capacity reached 6138Mta in 2016 and Consumption growth is lagging capacity growth. Consumption increased by 25 per cent between 2010 and 2016, while capacity increased by 40 per cent the surplus capacity doubled from 1.06bnt in 2010, to 2.00bn ton per annum. Worldwide capacity utilization rate dropped from 76% in 2010 to 67% in 2016.

Cement capacity Utilization rates outside of China fell from 70% to 61%. China represents the single largest producer of cement with 57% of global cement production followed by India (6%), USA (1.7%). In the backdrop of slowdown in global growth forecast, geopolitical, commodity, and fiscal risks, cement is projected to grow at a lower average growth rate of 2.4%over the next five years (JCR-VIS, 2016).

**Table 1. Top cement producing countries from 2011- 2017**

| Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|
| **China** | 2,100 | 2,210 | 2,420 | 2,480 | 2,350 | 2,410 | 2,400 |
| **India** | 240 | 270 | 280 | 260 | 270 | 290 | 280 |
| **USA** | 68.6 | 74.9 | 77.4 | 83.2 | 83.4 | 85.9 | 86.3 |
| **Turkey** | 63.4 | 63.9 | 71.3 | 75 | 77 | 77 | 77 |
| **Brazil** | 64.1 | 68.8 | 70 | 72 | 72 | 60 | 54 |
| **Russia** | 55.6 | 61.5 | 66.4 | 68.4 | 69 | 56 | 58 |
| **Iran** | 61 | 70 | 72 | 65 | 65 | 53 | 56 |
| **Indonesia** | 30 | 32 | 56 | 65 | 65 | 63 | 66 |
| **S. Korea** | 48.3 | 48 | 47.3 | 63.2 | 63 | 55 | 59 |
| **Vietnam** | 59 | 60 | 58 | 60.5 | 61 | 70 | 78 |
| **S. Arabia** | 48.4 | 50 | 57 | 55 | 55 | 61 | 63 |
| **Japan** | 51.3 | 51.3 | 57.4 | 53.8 | 55 | 56 | 53 |
| **Egypt** | 44 | 46.1 | 50 | 50 | 55 | 55 | 58 |
| **Mexico** | 35.4 | 35.4 | 34.6 | 35 | 35 | NA | NA |

Source; US geological survey, statista, (2017)

China is the largest cement production producer in 2017 and leader of the productions for the last seven consecutive years as presented in above table. During Fiscal year of the year 2017 China, India, USA, Vietnam, and Turkey were the top five cement producers. It's possible to notice that Egypt is the only Africa region leader by the cement production for the specified year. Global Cement Directory 2018 lists 804 integrated plants and 57 grinding plants, with a combined capacity in excess of 1.5Bnt/yr. However, the sheer scale of the industry and the apparent unreliability of Chinese statistics mean that the true capacity is likely to be far higher.

According to United States Geological Survey (USGS) China has a capacity of 2.5Bnt/yrand some sources place Chinese cement production capacity as high as 3.5Bnt/yr. However large it may be, the Chinese cement market is almost entirely dominated by large domestic suppliers, with little influence from established multinational players, Global Cement Magazine (2017).

**Global Cement consumption**

Growth in Gross Domestic Product (GDP) per capita, a measurement of the average national standard of living, can be a contributing factor to cement demand. Increased industrialization caused by economic expansion has a tendency to drive corresponding increases in cement consumption. This relationship is well known and has been widely used in the past to both judge the relative economic growth between nations and forecast likely cement consumption rates as a given nation's GDP increases. Global cement consumption declined by over 2% during 2015 to around 4b MT/annum. Decline in consumption is attributable to lower consumption in China, Russia, Europe and parts of Latin America. In the backdrop of slowdown in global growth forecast, geopolitical, commodity, and fiscal risks, cement consumption is projected to grow at a lower average growth rate of 2.4% next five years.

**Table 2 Top cement consuming nation in the world in 2016**

| Rank | Country | Cement (mt) |
|---|---|---|
| **1** | China | 2,395 |
| **2** | India | 288 |
| **3** | United States | 95 |
| **4** | Turkey | 67 |
| **5** | Indonesia | 62 |
| **6** | Egypt | 59 |
| **7** | Brazil | 57 |
| **8** | Vietnam | 56 |
| **9** | South Korea | 56 |
| **10** | Russia | 56 |
| **11** | Saudi Arabia | 55 |
| **12** | Iran | 50 |

Source, ICR, 2016

From the above table 2, it can be drawn that china is the leader in the cement consumption(2395mt), India(288mt), and by far as for the many years the China is the leader for the world cement demand, production and installed capacity whereas only Egypt is the only

leader Africa continent as presented in the study above. Average world cement per capital consumption has been raised from 500kg to 563kg as of 2016 based on international cement review. Both cement demand and consumption probably increased or dropped due to the cement driving factors like; GDP growth of the nation, housing need, infrastructure sending's, commercial constructions, population growth rate and urbanization.

### 2.4. Global Cement market overview

The international cement market is one of the least regulated markets on an international scale whereas international cement trade has been growing intensively in recent decades. While the amount of cement traded has increased, the percentage of internationally traded cement to total cement production remains in single percent digits (5% to 7%). This means that most of cement production exists to satisfy local consumption, Tarek and Ahmed (2010).

According to statista.com 2016, the global cement market was sized at about 395 billion U.S. dollars and market research reports in 2016 has predicted a global Concrete and Cement Market to grow at a CAGR of 7.85% during the period 2016-2020.

Cement market operates under marketing arrangement whereby there is understanding on pricing between cement players and a quota is assigned to each player based on installed capacity. The marketing arrangement has matured considerably and has been a key element of cement sector profitability. The market arrangement based on quota should be in place to benefit small cement firms JCR-VIS, (2016).

#### 2.4.1. Global cement demand and supply scenario

Global cement demand has been showing unstable growth for last five years 2014-2017.World demand for cement is projected to rise 4.5% per year to 5.2 billion metric ton in 2019.(World Cement, 2015) During the fiscal year of 2014 the world cement demand was 4,155mt showing the reduction of 3 % change from the year before and for the year 2015 it goes down to 4,056 mt with -2.4% change and for 2016 cement demand has a bit increased from the 2015 by 1.8% change to 4,129mt and finally global demand was 4,133mt in the 2017. China accounted for 58 per cent of global demand in 2016emerging markets represent 35 per cent of demand. Global

cement production capacity reached 6,138Mta in 2016; the real global cement demand was not more than 4,129mt. The surplus capacity doubled from 1.06bnt in 2010, to 2.00bn ton per annum. It can be generalized that, cement demand is lagging behind supply and over production is looking either for export market or strategic demand simulation, Global cement report, (2016).

**Determinants of demand and supply in cement industry**

**Supply-side determinants;**

- **Economic scenario** – Phases of growth in the economy are positively linked to cement company growth. Thus high economic growth results in high cement supply.
- **Raw material and competitiveness** – Cost advantages are usually due to companies having access to a cheaper power source, a quality limestone reserve, and being close to bigger markets.
- **Legal, regulatory, and environmental scenario** – The cement industry is affected by regulatory norms. This is prominent in developed countries where environmental issues are more stringent. This adds to the companies' costs.
- **Technological advancement** – A disruptive innovation can give the innovating company an advantage. For example, when producers (supply side) moved from the wet manufacturing process to the dry manufacturing process, there was a cost savings of 5%–10% of the overall cost structure.
- **Geographic location and Logistics-** it's an advantage for companies to be near limestone mines or waterways. Ease of transportation is an advantage.
- **Access of loan/finance**-due to its capital intensive, the cement producers globally face substantial financial shortage for their operation, having access to finance and loan can determine the cement producers to use their maximum capacity.

Source; (https://marketrealist.com/2014/08/must-know-factors-influence-cement-industry)

**Demand side determinants;**

- **High correlation with GDP:**

Cement demand is directly linked to economic activity. Since infrastructure investments and construction activity, which are the main drivers of cement demand, are key components of GDP, cement demand growth has high correlation to GDP growth. Further, housing (both rural and urban), agricultural productivity and income levels, which are a key components of GDP.

- **population growth rate:**

  Continued growth in population and change in population profile also has effect on the demand of cement. Based on decline in average age of home purchasers coupled with higher income levels, believed that the population within the 25-44 years age group is critical to the growth in housing demand as well as the cement demand will also increase.

- **Income Level:**

  Strong economic growth helps boost disposable income. This coupled with easy availability of finance enables households to deserve better life, results increase in demand for larger houses, thereby raising average size of dwelling units. Thus it will also increase the demand of cement as it is the main component of building houses.

- **Infrastructure development:**

  The demand of cement industry depends on infrastructure facilities in the field of coal & power supply and rail transportation for its sustainable development. The increased government spending and commitment to raise the development of its countries infrastructure creates million ton of cement demand.

- **Urbanization:**

  Migration of population towards urban areas due to better job opportunities coupled with rapid urban infrastructure development would affect the increase in demand of cement.

- **Incentives and development plans:**

Fiscal incentives and development plans helps to continue boosting cement demand. Fiscal incentives granted by the Government have provided boost to housing demand. Annual Development Plan which includes developing the roads and constructions, schools, hospitals etc, which will increase the demand for cement.

Source; (http://www.answers.com/Q/What_are_the_Determinants_of_demand_for_cement)

**2.4.2. Cement sales for selected multinational cement producers**

According to a research study by Transparency Market Research, the global market is anticipated to reach a value of US$38.10 billion by 2024. The market is predicted to register a progressive 11.30% CAGR between 2016 and 2024.According to the global cement sales August 2017 issues, Cement sales volumes are down at the larger multinational cement producers so far in 2017. As the first half-year results emerge, a picture seems to be appearing of sluggish growth at best for the major internationals.

Reduced working days and poor weather have been blamed for the underwhelming performance. LafargeHolcim's sales rose by 0.4% year-on-year on a like-for-like basis, probably due to the assets the group has been sloughing off since the merger, but this is hardly the dynamic growth shareholders may have hoped for. Meanwhile, Heidelberg Cement, following its acquisition of Italcementi in late 2016, has only been able to increase its cement and clinker sales by 1% for the first half of 2017 once consolidation effects were excluded. Here the problem appears to be reduced sales in both the US and Indonesia at the same time. This then leaves cemex with a 2% drop in sales volumes to 33.9Mt with a big drop in the US despite a promising construction market otherwise. It blamed the decline on a high comparison base in 2016 and the weather.

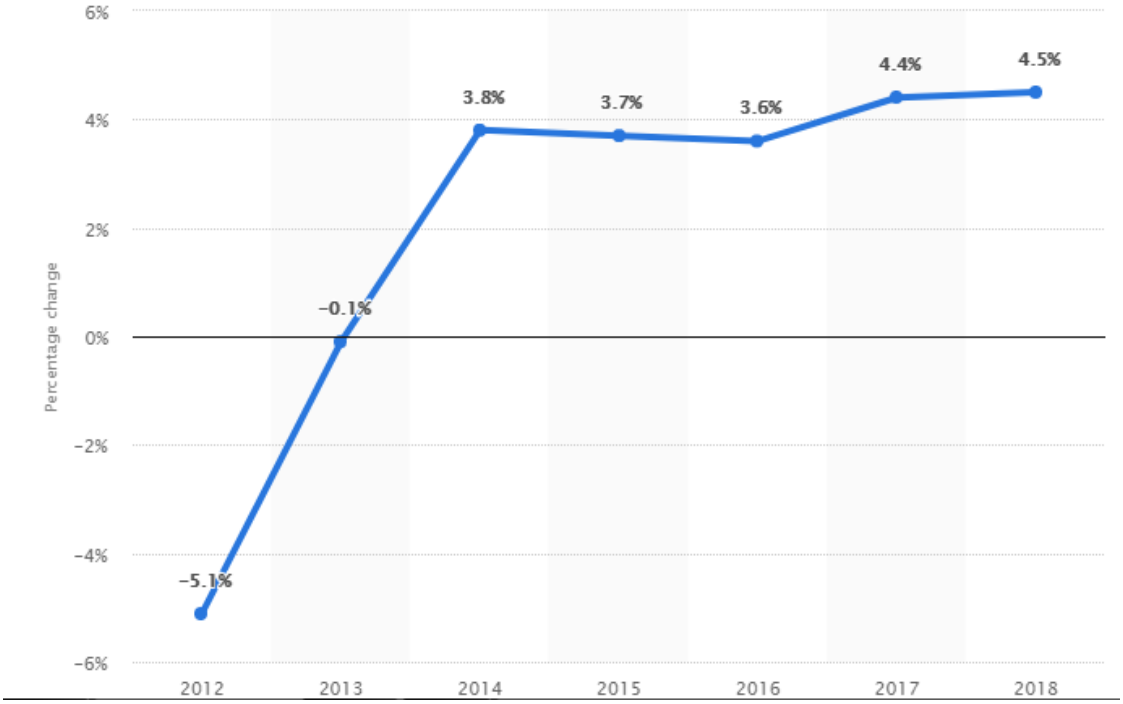
Both UltraTech Cement in India and Dangote in sub-Saharan Africa reported flat or falling sales volumes. However, delve a little deeper and there's more going on. UltraTech didn't offer any reason for the decline although it was likely focused on its acquisition of assets from Jaiprakash Associates and the knock-on from the demonetization process last year. That purchase increased its cement production capacity by nearly 40% to 91.4Mt/yr from 66.3Mt/yr and it seems keen, to investors at least, that it will be able to rocket up the capacity utilization rate at the new plants. Dangote meanwhile has taken a blow from the poor economic situation in Nigeria, where it still produces most of its cement. Here, sales fell by 21.8% to 6.86Mt from 8.77Mt, causing its overall sales to fall by 11.3% to 11.5Mt. Almost incredibly, Dangote upped its sales revenue by a whopping 41.2% to US$1.13bn off the back of improved efficiencies and a much better fuel mix in Nigeria. The turnaround is impressive considering the pressure the company faced in 2016.
Source ;( http://www.globalcement.com/news/item/6407- )

### 2.5. Global cement market challenges and prospects

#### 2.5.1 Global Challenges

Today, the biggest challenge for the top-ranking global cement companies is to keep up with rapid growth in demand in developing markets, while taking steps to forge a more sustainable global cement industry for the future. Multinational cement companies, which are now faced by uneven economic performance in the emerging markets, combined with a new era of global political uncertainty that could further destabilize markets. On balance, however, global growth looks set to be anchored by positive trends in the major markets of China, India and the US, more than offsetting the poor performance elsewhere. However, while the fundamentals of high population growth and development needs provide the foundations for long-term cement demand growth in emerging markets, the economic and political realities do not always permit this potential to be realized.

**Fig 1, Global cement price trend from 2012 to 2018**




Source; (statista, 2018)

The above graph shows that the cement price is at increasing stage. During the year between 2012 and 2013 the global cement price has dropped or has negative percentage change -5% from the earlier price and goes up to -0.1% for two years respectively due to world cement consumption, world economic condition and construction booms. The 2014 -2016 it increased steadily and reached to 4.5% in 2018. This show cement price is expected to rise across the globe near in future due to transportation cost, energy, and raw material cost fluctuations.

Since globally, cement demand/consumption and cement production is not balanced, the cement price increment as presented in above graph might be challenging the cement market. But according to International Cement Review 2016, High exportable surpluses, reduced import demand, resulting in lower prices and average world cement prices felled from $62/t in 2015 to $56/t in 2016.A number of factors, such as excess industrial capacity, huge unsold housing inventory, a relatively sluggish economy and Chinese households' investment diversification from the housing market are affecting the country's construction industry. Moreover cement production transportation costs, global warming 5 percent share from the industry and government's enforcements to reduce emission by replacing new cement technologies will be challenging the overall industry performance in the future.

It is clear that GDP/capita and cement consumption per capita do not operate in sole conjunction with the other. There are many situations in which growth in GDP facilitates an increase in cement consumption; the strong correlation between the two in emerging nations like China and Vietnam are evidence of this. Infrastructural investments in these nations are necessary to facilitate increases in industrialization, which in turn increase GDP and facilitate progress (Source; http://www.globalcement.com/magazine)

**2.5.2. Global cement market prospects**

In the future the development of the global cement industry is expected to continue. Sufficient raw material availability and various incentives provided by the state governments make this region lucrative for investments. Numerous domestic and international cement companies are striving to establish their production base in this region, although numerous local producers currently hold sway in the market. The global market for Green Cement is expected to more than

double between 2016 and 2024 as sustainability becomes a priority for the construction industry. The rising demand of commercial constructions including infrastructure, industrial, residential and non-residential buildings like shopping malls, office spaces, theatres and museums, hospitals and governmental buildings will drive green cement market growth towards 2025.

According to a research study by Transparency, the global market is anticipated to reach a value of US$38.10 bn by 2024. The market is predicted to register a progressive 11.30% CAGR between 2016 and 2024, (https://www.betterworldsolutions.eu/).

Most multinational cement market players expects the global cement market demand to grow by 4.6% CAGR, while assuming a total GDP world growth of 3.4% CAGR as per IMF predictions and no further major economic shocks in the global economy. Although there have been some concerning trends evident in the performance of certain emerging markets in 2016, there are grounds for optimism going forward. Overall volumes was modestly positive in 2017, while on a global level the supply-demand balance is slowly correcting, as argued by HSBC in the January issue of International Cement Review, Global cement, (2012).

Having very low cement consumption below the world average, Africa and most of Asian countries in the future will have promising continents for the cement market. Generally, as long run prospect for cement market According to UNPF, global population is projected to rise from current 7.2 billion to 9.6 billion by 2050. In the future 60% of world population is expected to live in urban areas from 47% in 2000 (IMARA, 2014).

### 2.6. Africa cement market overview

The region's real GDP growth slowed down to 2.2% in 2016, mainly due to the continued fall in commodity prices and weak global economic growth. East Africa was the fastest growing region at 5.3% real GDP growth, followed by North Africa at 3%. Growth in other regions was anemic, ranging from a low of 0.4% in West Africa, dragged down by the recession in Nigeria, to 1.1% in

Southern Africa, with South Africa, the region's largest economy, posting only 0.3% growth. Foreign direct investment inflows are expected to reach over USD 57 billion in the continent at the end of 2017, African economic outlook, (2017).

The African cement, concrete and construction business is growing at rapid pace. The cement sales are expected to grow rapidly until 2050. The number of newly built cement plants increases dramatically and in addition, more cements are being imported from outside the continent, e.g. from Turkey, Pakistan, Indonesia, and China, driven by overcapacities in the countries of origin. This causes a high number of Potentials and challenges at the same time (MATEC Web Conferences, 2018).

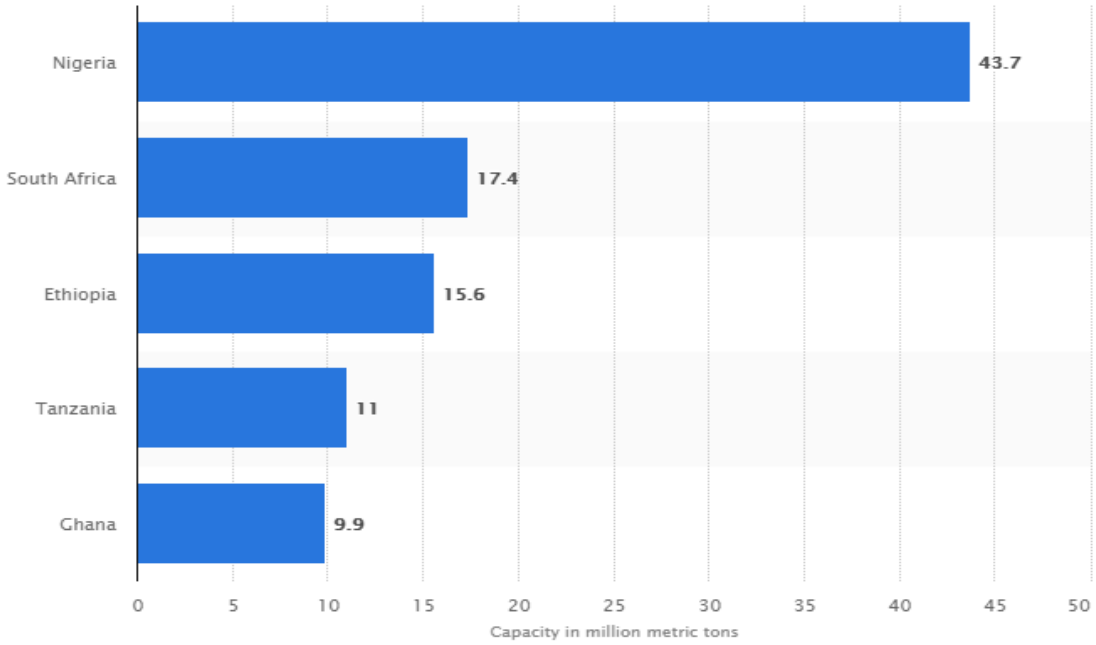
Sub-Saharan Africa has only 3% share from the world cement consumption as of 2016 global cement review, which shows attracting market region for the investors. Consumption per capita remains significantly below the world average of 563kg, averaging just 187kg in Ghana, 126kg in Nigeria, 80kg in Kenya and 62kg in Ethiopia, which gives considerable scope to expand consumption. This makes Sub-Saharan Africa immensely attractive to cement companies, who are seeking to establish first mover advantage in high potential markets, such as Ethiopia, country under study, or to build up capacity and squeeze out rivals in the region's largest markets, notably Nigeria (Eco bank, the Pan African bank 2015).

Approximately 54% of Sub-Saharan Africa's cement capacity is owned (including minority shares) by nine pan-regional firms, among which the two major African firms are Pretoria Portland Cement (PPC) and Dangote.

According to World Bank, 2016, in sub-Saharan Africa, the markets enjoyed largely positive growth rates, but significant supply-side developments mean that demand is not expanding at the same rate as capacity, resulting in tough competition and pricing pressures, notably in Senegal, Nigeria, Ethiopia and Tanzania where Dangote has launched large-scale operations. This situation is good for the African consumer, who is increasingly benefitting from more plentiful supply of cement at affordable prices, but less positive for producers, including LafargeHolcim, Heidelberg Cement and Dangote with high exposure to the region. (Global Cement, 2016)

Some selected and top sub-Saharan countries installed cement capacity in 2017 (million metric tons)

Fig 2. Cement installed capacity in Sub-Saharan countries




Source; (Statista, 2018)

Installed capacity in sub-Saharan African countries as presented above fig 2.3, Nigeria with its international and regional leader producer (Dangote) have capacity of 43.7 m mt, South Africa 17.4m mt, Ethiopia, country under study, 15.6m mt, Tanzania 11 m mt and Ghana 9.9 m mt. The all countries cement capacity shows that the regions market still looking more opportunities.

### 2.6.1. East Africa cement market

The East African region is one of the Cement frontiers in SSA attracting international cement companies looking to offset the slowed growth in other countries. AIB, 2016 reports, the region with a population of 160 million people is the least urbanized in SSA yet the fastest growing region in urbanization. It's projected that up to 50% of the population will be living in urban areas by 2030. Population living in urban areas is currently below 30%. Cement consumption has been growing faster than production on average in the region. Main demand driver has been housing, however infrastructure demand is significantly increasing as the region plugs its infrastructural gap. As consumption grows, competition is also ramping up, eating into the industry's margins. Meanwhile, the industry's net profit margin averaged 10 per cent in 2015 down from 15 percent in 2011. Cement prices have fallen from an average of $140 per ton in 2011 to the current average of $100 per ton, (AIB, 2016).

### 2.6.2. East Africa cement market challenges

While Africa is now the world's fastest growing cement market, the expected price reduction from rising supplies may be dampened by high energy and transport costs, but also by lack of competition within the sector. In Sub-Saharan Africa the volume outlook is not changing materially. Strong population growth, urbanization and improvement in the raw materials cycle should allow for progressive demand acceleration. However with Dangote Cement, another low cost player with an aggressive pricing policy, opening more capacity in the region, competition is getting worse and price cost balance remains one of the worst globally at this stage.. Congo, Ghana, Kenya, Sierra Leone, South Africa and Tanzania all saw a materially negative price cost balance with expected margin erosion, before any cost efficiencies, in 2017 & 2018 together. On the positive side, Nigeria margins are likely to bounce sharply, by 15% to 20% percentage points from its trough in 2016, (Ecdpm, 2017).

### 2.6.3. East Africa cement market prospects

A population is increasing at a rapid rate in the region hence; increase the demand for housing and infrastructure. Increased investment in housing's positive for the construction sector. East Africa's population currently stands at approximately 160 million people. Low per capita cement consumption, average consumption is 96.7Kg while563kg is global average, high population growth rate, increased governments spending in infrastructure increased to USD 61.97Band least urbanization below 30%, are among the East African cement market prospects DYER and BLAIR investment bank, 2017.

## 2.7. Ethiopian cement market overview

Cement is one of the basic ingredients for the construction industry and it is also a critical commodity for society's needs of housing and basic infrastructure such as bridges, roads, water treatment facilities, schools and hospitals (Lasserre, 2007). Construction has emerged as one of the most rapidly-expanding sectors in Ethiopia and it shares 9.4% of the total GDP growth in the country.

Demand for cement is a derived demand and it is dictated by the state of the construction industry's performance which in turn is related to the country's GDP growth, population growth, and rate of urbanization, African development bank group, (2014).

As World Bank, 2017 data, Ethiopia has a large domestic market of more than 108million people, making it the second most populous country in Africa after Nigeria. Over the last decade, Ethiopia has had one of the fastest growing economies in the world, with average annual growth rates ranging from 7% to 12%. In 2016, International Monetary Fund (IMF) estimated Ethiopia's GDP growth at 6.5% and projected a 7.3 -7.5% growth rates over the medium term.

The first cement factory in Ethiopia was established in 1936 in the city of Dire-Dawa at the eastern part of the Ethiopia and it has capacity of 40,000 tons per year. In 1964 and 1965 cement factories in Addis Ababa and Massawa were established respectively with capacity of 70,000 tons each per year. Since then cement sector growth had remained sluggish for decades. In 1984 with establishment of Mugher cement, the industry had revived. Mugher cement's 1st, 2nd and 3rd line started operation in 1984, 1989/90 and 2011 respectively.

As cement demand growth prospect appeared promising in 2001, Messebo cement becomes operational with initial 600,000-ton clinker capacity. In the subsequent years Messebo had expanded its capacity to its current level. As constructions emerge in 2004, severe shortage of cement is observed. In 2004 shortage of cement supply resulted in price raised to$ 24 per quintal around 2008/09 in history. From 2008 to 2011 acute shortages forced the government to rely on import. For instance in 2008/9 alone, Ethiopia imported around 1.2 million ton of cement, (MoI, 2015).

There are 20 cement factories in Ethiopia of which 15 factories are currently fully functioning and the rest of 5 factories are not operating due to its obsolesce technology and in efficiency. In addition, Abay Industrial Development S.C, Ambo- Gnemer Agro and integrated industries S.C and Mengistab Industrial & Commercial PLC. Mengistab Industrial & Commercial PLC Will commerce its production in 2010 E.C with capacity of 650,000 tons (CCIDII, 2009 E.C).

Almost all factories in the industry is owned either in the form of share company and private limited, while Mugher cement is only state owned cement factory in Ethiopia ,Addis fortune and reporter Ethiopia newspaper, (2017). Types of cement products produces in Ethiopia according to the Ethiopian standardsES1177-1 are; Portland cement (CEMI), Portland pozzolana cement (CEMII/B-P), Portland lime stone cement (CEMII/B-L) and low heat hydration cement, cement technology road map, MoST (2009/2017).

Reviews of literatures and source confirms that; Overcapacity, drop in quantity demand, marketing mix strategies(4ps) and market intermediaries are the most market challenging factors in the in Ethiopian cement industry.

### 2.7.1. Cement production, Demand and consumption trend in Ethiopia

Total cement production capacity of Ethiopia has reached 15 million metric tons, but the real cement consumption is not more than 6 million metric in fiscal year of 2009E.C/2017

Table 3, Ethiopian cement production, import and consumption (In Million Ton)

| Year | Domestic production (Mta) | Import (Mta) | Total consumption (Mta) |
|---|---|---|---|
| 2003/4 | 1.42 | 0.00 | 1.42 |
| 2004/5 | 1.25 | 5.47 | 1.31 |
| 2005/6 | 2.75 | 0.89 | 3.64 |
| 2006/7 | 1.72 | 0.89 | 2.57 |
| 2007/8 | 1.66 | 1.24 | 2.90 |
| 2008/9 | 1.69 | 0.10 | 1.79 |
| 2009/10 | 1.62 | 0.49 | 2.11 |
| 2010/11 | 2.72 | 0.29 | 3.01 |
| 2011/12 | 3.77 | 0.01 | 3.77 |
| 2012/13EYE | 4.73 | 0.00 | 4.73 |
| 2013/14 F | 5.47 | 0.00 | 5.48 |

Source: (MoI, 2015)

Total cement production capacity of Ethiopia has reached 15 million metric tons in 2017. The demand for cement in the country has increased through the years. It was 4.44 million tons in 2012, 5.28 million in 2013, and 6.28 million tons in 2014 and 7.47 million tons in 2015 Addis Fortune (2015).

Regardless of oversupply of cement production, considering the future prospects of market potentials, the new international and local investors are seeking to join the industry and Existing producers are also undertaking plant expansion projects. Dangote cement the giant cement company in West Africa and had cement plants in 14 countries and production commenced in Ethiopia with 2.5 Mta has expansion project to produce additional2.5Mta cement, DerbaMedroc cement which was market leader before the entrance of Dangote cement in the industry, has expansion project of 25 million quintal cement, Addis Fortune (2017), the reporter Ethiopia (2016). Cement import except for the special cement that does not produced in the country has banned as of 2012.

Due to excess capacity, the firms are exporting the cement product to Kenya, South Sudan and Djibouti. For instance, according to Ethiopian news Agency August 2017, in the last Ethiopian fiscal year, Ethiopia has earned 19.6 million USD from the export of construction inputs, of which 17.2 million USD was earned from cement. Finally, in the future government has planned to raise production utilization capacity rate from current 50% to 122% in 2025, and cement production would surge and the market completion become tougher. (MoI, 2015)

### 2.7.2. Current installed capacity and marketing activities of cement in Ethiopia

Table 4, Cement installed capacity in 2010/2018 for top cement producing firms in Ethiopia (tons)

| S.N | Cement companies | Production capacity | Plant location | Remarks |
|---|---|---|---|---|
| 1 | Dangote Cement plc. | 2,500,000 | Near Mugher | |
| 2 | Derbamedroc Cement plc. | 2,300,000 | Derba | |
| 3 | Mugher Cement | 2,260,000 | Mugher | |

| | | | | |
|---|---|---|---|---|
| 4 | Messebo Cement Factory Plc. | 2,260,000 | Mekele | |
| 5 | Habesha Cement S.C | 1,400,000 | Holeta | |
| 6 | National Cement S.C | 1,200,000 | Dire dawa | |
| 7 | Ethio-Cement plc. | 850,000 | Chancho | |
| 8 | East Cement Plc. | 750,000 | Fitche | |
| 9 | Pioneer Cement Plc. | 450,000 | Dire dawa | |
| 10 | Feng Huang Cement Plc. | 435,0000 | Modjo | |
| 11 | Capital Milling and packing Plc. | 300,000 | Sebeta | |
| 12 | InchiniBedroc Cement Plc. | 300,000 | Inchini near Mugher | |
| 13 | Ture Dire Dawa Cement S.C | 300,000 | Diredawa | |
| 14 | Zhongeshan Cement Plc. | 250,000 | Dukem | |
| 15 | Dashen Cement PLC | 90,0000 | Dejen | |
| 16 | Mengistab Industrial& Commercial Plc. | 650,000 | GebreGuracha | On pipeline |
| Total | | **16,295,000** | | |

Source; (CCIIDI, 2010)

As depicted in above table, cement installed capacity from 16 factories was 16, 295, 000 ton and total installed capacity in a county as of 2010 E.C was 17,370,000 tons. It means than the rest of cement companies those does not presented in above table constitutes the balance (17,370,000-16, 295, 000) =1,075,000 tons or 6% of total capacity, and the above 16 firms covers the 94%of the country's cement capacity. From the total installed capacity, top four cement firms in the industry; Dangote, Derba, Mugher, and Messebo covers 54% of the total capacity. Top cement firms in the country whose production capacity is more than 1 million tons per annum including Habesha and national cement S.C together covers the industry with 11,920,000 tons or 69%. Individually, the Dangote cement is leader in 2.5 million tons cement installed capacity in the industry.

Table, 5 Cement production, sales and market share for the selected cement firms in Ethiopia in 2008/2016 and 2009/2017 in tons.

| S.N | Cement firms | Year | Production | Sales | Change in Sales (ton) | Market share in % | Remarks |
|---|---|---|---|---|---|---|---|
| 1 | Dangote Cement | 2008/2016 | 1,850,897.38 | 1,854,985.04 | +186,536.39 | 24 | |
| | | 2009/2017 | 2,055,622.53 | 2,041,521.43 | | 24 | |
| 2 | Messebo Cement | 2008/2016 | 1,784,977.72 | 1,724,997 | +78,223.07 | 22.7 | |
| | | 2009/2017 | 1,794,472.52 | 1,803,220.07 | | 21 | |
| 3 | DerbaMedroc cement | 2008/2016 | 1,818,820 | 1,358,305 | +212,667 | 18 | |
| | | 2009/2017 | 1,544,257 | 1,570,972 | | 18.6 | |
| 4 | Mugher cement | 2008/2016 | 710,579 | 673,982 | +399,331.45 | 9 | |
| | | 2009/2017 | 880,512.70 | 1,073,313.45 | | 12.7 | |
| 5 | National Cement | 2008/2016 | 602,053 | 631,981 | +165,863.4 | 8 | |
| | | 2009/2017 | 814,007 | 797,844.4 | | 9 | |
| 6 | Pioneer Cement | 2008/2016 | 349,985.37 | 298,620.29 | -282,908.79 | 4 | |
| | | 2009/2017 | 19,166.4 | 15,711.5 | | 0.18 | Sold 318,347.85 tons of clinker |
| 7 | Capital Cement | 2008/2016 | 167,327.39 | 167,327.39 | +121,691.71 | 2 | |
| | | 2009/2017 | 289,019.1 | 289,019.1 | | 3 | |
| 8 | Inchini Bedrock | 2008/2016 | 89,001.02 | 86,826.02 | +15,223.98 | 1 | |
| | | 2009/2017 | 102,050 | 102,050 | | 1 | |
| 9 | Dashen Cement Plc. | 2008/2016 | 134,687.3 | 134,687.3 | -50,851.6 | 2 | |
| | | 2009/2017 | 83,835.70 | 83,835.7 | | 1 | |
| 10 | East Cement | 2008/2016 | 218,905.13 | 225,668.51 | +28,880.73 | 3 | |
| | | 2009/2017 | 238, 761.7 | 254,549.24 | | 3 | |
| 11 | Zhongshun Cement | 2008/2016 | 206,623.62 | 195,098.78 | -30,215.61 | 2.5 | |
| | | 2009/2017 | 194,847.73 | 164,883.17 | | 2 | |
| 12 | Abyssinia Cement | 2008/2016 | 33,959 | 33,634 | -13,644.68 | 0.4 | |
| | | 2009/2017 | 20,158 | 19,989.32 | | 0.2 | 6 months |
| 13 | Ture Dire Dawa Cement S.C | 2008/2016 | 195,639.06 | 189,144.89 | +20,700.01 | 2 | |
| | | 2009/2017 | 216,814.50 | 209,844.90 | | 2 | |
| | **Total** | **2008/2016** | **8,163,454.99** | **7,575,257.22** | | | |
| | | **2009/2017** | **8,253,524.88** | **8,426,754.28** | | | |

Source; computed from sales data of 2008&2009 as obtained from CCIIDI, 2010

**Note**; market share has been computed by dividing individual cement firms cement sales by total cement sales in a year times 100. For example, Dangote cement market shares for 2008=1,854,985.04/7,575,257.22=0.244x100=24%.Change in sales= 2009 sales-2008 sales. Table 2.7, Shows the 13 cement companies cement production, sales and market shares for the year 2008/2016 and 2009/2017 in the industry.

Cement production and sales for the companies listed in table shows significant changes for two years. As shown in change in sales column in table, almost all firms increased both production and sales in 2009 (those with +signs) and four cement companies sales has been decreased (those with –signs). In 2009/2017 total cement sales from 13 firms was 8,426,754.28 tons, of which 6,489,026.95 tons (77.4%) of market share in a country is controlled by top four cement producing firms; namely; Dangote 24%, Derba Medroc18%, Muhger 12.7% and Messebo cement 22.7%. Generally, including Habesha cement, whose sales data was not found in the above table and hence market share was not determined and National cement with 9% market share and together with four market leaders with 77%, six firms in the industry cover more than 86% of the cement market. Dangote cement is alone the market leader with 24% for both two consecutive years. Cement sales has been raised with 851,497.06 tons in 2009 from the 2008 sales. In 2009/2017, actual cement production in the country was 8,477,406.18 tons, but Top four cement producing factories Dangote, Derba, Mugher, and Messebo Cements produced 6,274,864.75 tons or 74% of total production.

### 2.7.3. Market intermediaries

Marketing intermediaries are firms hired by the product manufacturer to promote, sell and distribute the products to the final consumer. Intermediaries on the other hand consists those financial intermediaries who are in charge to facilitate the financial roles in the marketing environment such as loan provision. Basic types of marketing intermediaries include agents, marketing agencies, brokers wholesalers and retailers and distribution companies. Agents and marketing agencies assist with product promotion, while wholesalers, retailers and distribution companies sell the product to customers.

Unless customers are buying a product directly from the company that makes it, sales are always facilitated by one or more marketing intermediaries, also known as middlemen. Marketing intermediaries do much more than simply take a slice of the pie with each transaction. Not only do they give customers easier access to products, they can also streamline a manufacturer's processes. Four types of traditional intermediaries include agents and brokers, wholesalers, distributors and retailers, (Kotler and Keller, 2012).

**Types of marketing intermediaries**

1. **Wholesalers**

Merchant wholesalers, which are also simply called wholesalers, buy products from manufacturers in bulk and then resell them, usually to retailers or other businesses. Some carry an extensive range of different products, while others specialize in a few products but carry a large assortment. They may operate cash-and-carry outlets, warehouses, mail order businesses or online sales, or they may simply keep their inventories in trucks, and travel to their customers.

2. **Agents and Brokers**

Agents and brokers are nearly synonymous in their roles as intermediaries. In most cases, however, agents serve as an intermediary on a permanent basis between buyers and sellers, while brokers do this on a temporary basis only. Both are paid in commission for each sale and do not take ownership of the goods being sold. Companies routinely use agents and brokers when importing or exporting products across the border.

3. **Distributors**

Also called functional wholesalers, distributors do not buy products from the producers. Instead, they expedite sales between the manufacturer and retailers or other businesses. Like agents and brokers, they can be paid by commission, or they can be paid in fees from the manufacturer.

4. **Retailers**

Whenever a consumer buys a product from anyone other than the company that makes it, the consumer is dealing with a retailer. This includes corner stores, shopping malls and e-commerce website. Retailers may buy directly from the producers or from another intermediary. In some

markets, they may stock items and pay for them only after they make a sale, which is common for most bookstores today.

Today's the market scenario has been shifting to E-commerce and M-commerce; M stands for mobile, through the help of internet in which cement industries are benefit. Companies use a Web site to transact or facilitate the sale of products and services online. Online retail sales have exploded in recent years, and it is easy to see why. Online retailers can predictably provide convenient, informative, and personalized experiences for vastly different types of consumers and businesses. By saving the cost of retail floor space, staff, and inventory, online retailers can profitably sell low-volume products to niche markets.

Source; (http://smallbusiness.chron.com/4-types-marketing-)

In Ethiopia, the powers of intermediaries are influencing the cement industry in many ways. Companies are suffering shortage of foreign currency to import spare parts. Cement companies like Habesha cement Share Company took seven years to collect share for initial capital because of in efficient financial intermediaries. Cement price hikes due to the negative influence of the marketing intermediaries (whole sales and retailors) without uneconomic ways affects the cement market in the industry (the reporter Ethiopia, 2017 &March 2018).

The disadvantage of distributing cement through large dealer is that negotiation power for discounts/incentives would be shifted to the distributors. Any strain in the relationship between the producer and major dealers would lead to huge loss of sale. This could delay supply of cement to customers and involve high inventory costs (Nebiyu, 2011

### 2.7 4. Marketing mix strategies and Ethiopian cement industry

**Focus on 4ps (price, product, promotion and place)**

Marketing mix strategy is a planned mix of the controllable elements of a product's marketing plan commonly termed 4ps – product, price, place and promotion. Marketing mix was offered by McCarthy in 1964 as a conceptual framework that identifies the principal decisions making managers make in configuring their products or services to satisfy consumers' needs. The tools are used to develop long term strategies and short term tactical programmes Ezekiel Tom Ebitu, (2014).

**Price trend**

Cement price in Ethiopia has declined compared to the price few years before. However, it is still high compared to global price. High energy cost, high inbound and outbound logistic cost, high initial investment cost, and lower level of production capacity utilization rate, are among reason for cement price hikes. In 2004 shortage of cement supply resulted in the country and price of cement raised to$ 24 per quintal in 2008/09in cement history. Price of the cement is still high in country; however it has dropped for the past few years. For instance, price of one tone cement (10 quintal) in Ethiopia is $90 while same amount of cement is sold $25-30 in Iran. (MoI, 2015)

Energy cost has influenced the cement price in the industry, (global cement, 2013) the energy cost for Ethiopian cement firm's accounts 50 – 60 per cent of the total production cost structures compared to 30 - 40 per cent of global standards.

The average price of cement reached around Br, 320 depending on their brand in 2015and but this price has gradually fallen back and average price of cement was between Br, 200-250 based on their brands (Addis fortune 2015, reporter, Ethiopia, 2017).

According to Ethiopian reporter March 2018 issue, whilelocal cement factories are finalizing price increment due to rise in their production cost; the retail price of cement has already increased by 28 percent. Cement price was 210 birr per quintal, in the past two weeks of the same month, is sold as high as 270- 300 birr in different regions of the country retail market. Many reasons contributed for the Cement price hikes.

Firstly, political instability in some parts of country, especially in Oromia regions made frequent interruption in the transport of cement from factories to the market. Secondly, the 15 percent currency devaluation increased 25-30 percent production cost for the factories. The cement price will further soar if the factories make the adjustment they are undertaking; this intern might decrease the cement demand in the market.

Source; (https://www.thereporterethiopia.com/article/cement-price-hikes)

**Product-**the product portion of marketing mix can be described by product variety, quality, characteristics, brand, and image. As retailers around Addis Ababa, who were approached by the reporter 2017, there are cement products in a country with lowest price but lower demand. Cement with better quality is in demand, especially for large scale constructions. Another feature for a winning cement brand is its packaging; companies fail because of their messy paper sack. In the country the customers pay due attention for the quality of cement and related packages as well. Types of cement products produces in Ethiopia according to the Ethiopian standardsES1177-1 are; ordinary Portland cement (CEMI), Portland pozzolana cement (CEMII/B-P), Portland lime stone cement (CEMII/B-L) and low heat hydration cement, cement technology road map, MoST (2009/2017).

Other challenge in the industry that falls under product is energy cost. Energy cost accounts for 50-60 percent of the total production cost while 30-40 percent is global average (Global cement, 2013).

Cement producers worldwide are striving to lower their production costs. (Moses P.M. Chin Yama, 2011), One effective method of achieving this end is the use of alternative fuels. Use of low-grade alternative fuels such as waste coal, tiers, sewage sludge, and biomass fuels (such as wood products, agricultural wastes, etc.)

Precalciner is a viable option because combustion in a precalciner vessel takes place at a lower temperature and to slowdown the cement production cost, emissions and cement price as well. It is known that globally 5% of carbon emission is caused by cement production.

Alternative energy use for the cement sectors in a country is untapped that would replace costly imported source of energy for factories such as; heavy fuel and a coal. Switching to biomass fuels will have financial benefits arising from the reduced cost of fuels. Biomass can substitute for approximately 20% of process heat requirements without the need for major capital investment, Tadele Assefa Aragaw, (2016).

**Promotion-**is one significant component of marketing mix. However it is used to inform about the product and putting good image on target customers. Promotion is moderate in the industry and merely attracting customer, the primary customer focus mostly depend on quality and price.

**Distribution-**The ability to transport goods quickly, safely, economically and reliably (logistics) is seen as vital to success of businesses and nation's prosperity and capacity to compete in globalized economy. Cement distribution in a country is major chunk cost in the industry market globally. Feasible transportation radius for cement production is 200km as identified by Mohammad Zarkesh (2008).Transporting more than the above distance would not be economical for the factories. In a country factories used only trucks to transport their products. Having no alternative transportation system like railways and transporting the products over long distance on poor and aged infrastructure are challenging the industry market.

Ethiopian logistics system is characterized by poor logistics management system and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and age, damage and quality deterioration of goods while handling, transporting and in storage , **(**Fekadu M. Debela, 2013).

Due to this, industry profit margin is limited to 7-10 percent. However; government has projected to integrate cement transport by railway from current 0-50% by 2025. Geographically, the industries concentration around capital of the country is other constraints of the distribution. (MoI, 2015)

### 2.7.6 Cement Industry analysis

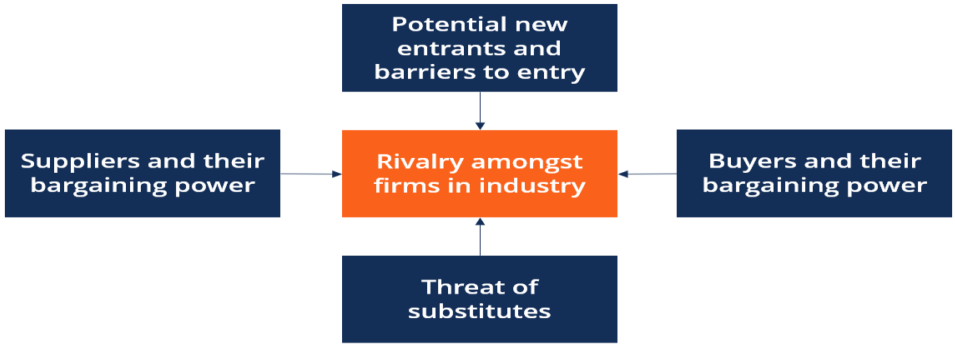
Corporate finance institution, (2018) defines industry analysis as; it is a market assessment tool used by business and analysts to understand the complexity of an industry. It helps them get a sense of what is happening in an industry, demand- supply statistics, degree of competition within the industry, future prospects of the industry taking into account technological changes,

and the influence of external factors on the industry. Industry analysis helps the industry players to understand its position relative to other participants and allow them to identify both the opportunities and threats coming their way and gives them a strong idea of the present and future scenario of the industry.

1. **Porters five force model for Ethiopian cement industry**

   Porter's 5 Forces, was introduced by Michael Porter in his 1980 book "Competitive Strategy: Techniques for Analyzing Industries and Competitors. According to Porter, analysis of the following five forces gives an accurate impression of the industry and makes analysis easier.

   Fig 3. Porters five force model




   Source ;( corporatefinanceinstitute.com/ressources).

- **New entrants** - though the industry is highly capital intensive barrier is high. Government is promoting investors for the sartorial growth and to its own infrastructural sector requirements as well. Economies of scale are very high as it is homogenous product that is produced in an integrated process.

  Currently, the industry is facing with overcapacity and falling demand and/or the cement product is abundant than from its shortage in 2008, here granting of new entrants for the industry would not be primary activity for the government, rather demand simulation projects schemes. Until Dangote joined the industry two years ago, Messebo Cement Factory PLC was used to control much of the northern and north eastern cement markets of the country, and Derba, owned by Mohammed Hussein Al Amoudi, was a major player

in the central parts of the nation. After Dangote joined the country, the industry experienced a surge in supply and price stabilization, (Addis fortune, 2017).

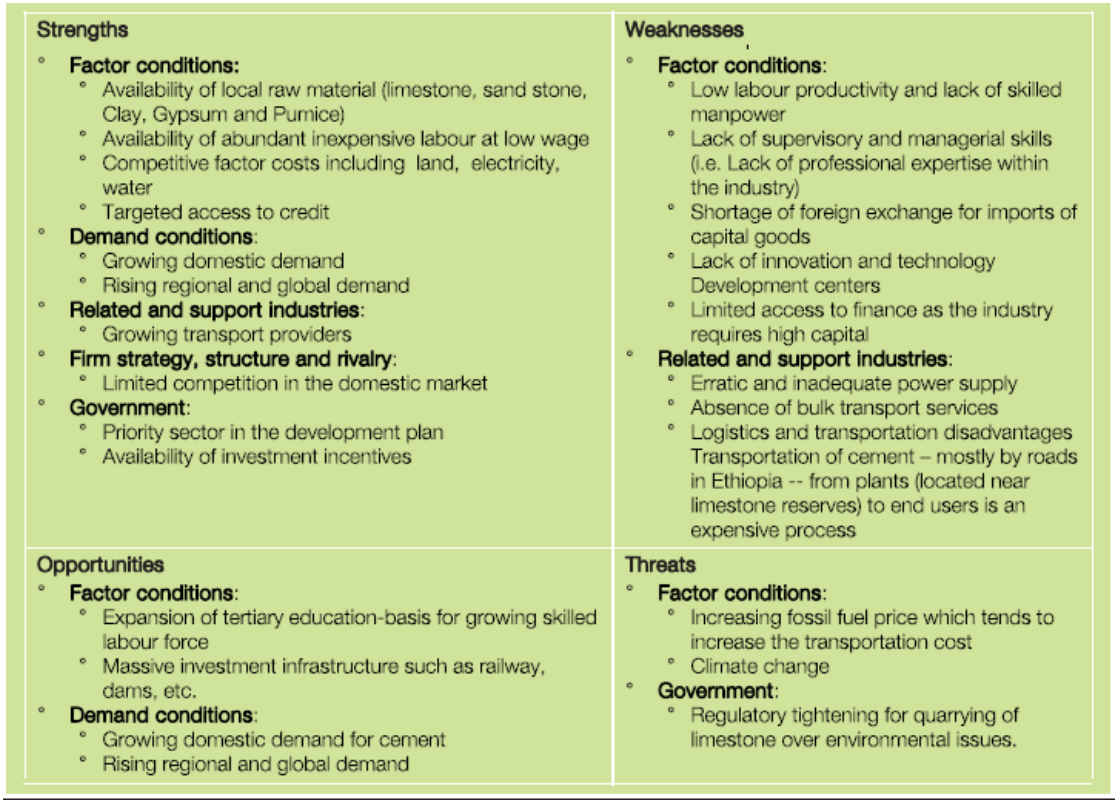
- **Rivalries among firms–there are** more than 20 cement factories in the industry which 15 is operating. All are competing for price, quality and image. Competition among firms is stiff, and the companies especially with limited efficiency and technology are struggling for survival in the market.

- **Bargaining power of supplier –** there is oversupply of cement in the market. Because of abundant product in the market the bargaining power of supplier is considered to be low. Bargaining power of the suppliers regarding the main raw materials like lime stone, gypsum and pumice are found in the local market and most of the cement factories own the mining fields, but in the future it might be not as easy as current as companies are staring to pay for raw materials. However, spare parts, components, fuel, packing materials and main utilities are mostly owned by few or at times with sole suppliers where most of the time the suppliers do have a strong bargaining powers.
- **Bargaining power of buyers**–cement products from the more than 15 companies gave more flexibility for the buyers to opt what type and brand of cement products to purchase. The bargaining power of the buyer in industry is high, due to surge in supply.
- **Threat for substitute products** – cement as such does not have perfect substitute. The enterprise has also identified the key success factors which are all relevant to the whole country cement industry; the threat for substitute product is low. Belay Mengistu (2011).

2. **SWOT analysis** (Stands for company's strength and weakness internally and opportunity and threats externally)

   The industry SWOT analysis generally has been presented below in figure.

Fig; 4, Ethiopian cement market SWOT analysis



| Strengths | Weaknesses |
|---|---|
| ° **Factor conditions:**<br>° Availability of local raw material (limestone, sand stone, Clay, Gypsum and Pumice)<br>° Availability of abundant inexpensive labour at low wage<br>° Competitive factor costs including land, electricity, water<br>° Targeted access to credit<br>° **Demand conditions**:<br>° Growing domestic demand<br>° Rising regional and global demand<br>° **Related and support industries**:<br>° Growing transport providers<br>° **Firm strategy, structure and rivalry**:<br>° Limited competition in the domestic market<br>° **Government**:<br>° Priority sector in the development plan<br>° Availability of investment incentives | ° **Factor conditions**:<br>° Low labour productivity and lack of skilled manpower<br>° Lack of supervisory and managerial skills (i.e. Lack of professional expertise within the industry)<br>° Shortage of foreign exchange for imports of capital goods<br>° Lack of innovation and technology Development centers<br>° Limited access to finance as the industry requires high capital<br>° **Related and support industries**:<br>° Erratic and inadequate power supply<br>° Absence of bulk transport services<br>° Logistics and transportation disadvantages Transportation of cement – mostly by roads in Ethiopia -- from plants (located near limestone reserves) to end users is an expensive process |
| **Opportunities** | **Threats** |
| ° **Factor conditions**:<br>° Expansion of tertiary education-basis for growing skilled labour force<br>° Massive investment infrastructure such as railway, dams, etc.<br>° **Demand conditions**:<br>° Growing domestic demand for cement<br>° Rising regional and global demand | ° **Factor conditions**:<br>° Increasing fossil fuel price which tends to increase the transportation cost<br>° Climate change<br>° **Government**:<br>° Regulatory tightening for quarrying of limestone over environmental issues. |

Source ;( the African development bank group, 2014)

## 2.8. Summary of main Challenges and prospects of Ethiopian cement market

### 2.8.1. Market Challenges

Highly Rising and exaggerated production cost due to energy cost 50-60 percent of total production which the industry is incurring while globally the same industries are incurring only 30-40percent of total production cost. Cement price in the country is high compared to other regions and globally. For instance, price of one tone cement (10 quintal) in Ethiopia is $90 while same amount of cement is sold $25-30 in Iran (MoI, 2015). Slowdown in demand and overcapacity is challenging the market in industry. Total cement production in the country was 15 million metric ton in 2017, while demand is stood at 8-9 m mt. cement consumption is only 6 m ton; high correlation between GDP growth and cement consumption challenges the industry. (The reporter Ethiopia, 2017, global cement, 2013)

On the other hand, Poor, insufficient and an uneconomical logistics in the industry dragging the profit margin to 7-10 percent. Transporting cement more than 200km is not economically feasible. According to Fekadu M. Debela, (2013) Ethiopian logistics system is characterized by poor logistics management system and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and age, damage and quality deterioration of goods while handling, transporting and in storage.

Lack of alternative transportation, factories concentration to center of country made transportation difficult. Depending on asphalt road constructions that imported costly than promoting and using cement concrete reduced cement demand (MoI, 2015).

Market Intermediaries assist the cement industry by readily making products available for customer and value addition. On the contrary, Existence of many players like middle men made the cement marketing difficult, due to the cement whole sellers and retailers the price of cement

goes up and down. As industry is capital intensive, the role of financial intermediaries is minimal in supporting the cement firms to address their financial shortage (the reporter Ethiopia, 2017).

The cement producers associations in East Africa and other continents provide the cement factories with updated market information, offer tools on human capital and production efficiency and overall global issues and innovative supports for their firm's competitiveness. In our countries case, cement associations are not fully functioning and it is at a formation stage that would consolidate the industry's structure in all aspects. For instance, East Africa Cement Producers Association (EACPA) formed by seven cement manufacturing companies from Kenya, Uganda and Tanzania serving their respective firms in any aspects (World Bank, 2009).

### 2.8.2. Market Prospects

Low per capita cement consumption 62kg, while Sub-Saharan African countries is 165kg, will boost cement demand and attract new market players in the industry. The announcement of a nationwide cement roadmap will enhance domestic capability and meet the country's cement demand. The roadmap to be implemented for the coming 25 years has incorporated best practices from other countries that would enable the country to meet local demands and also export to foreign markets, (MoI, 2017).

The economic ace that Ethiopia has up its sleeve is one of the second largest populations in Africa, currently around 108 million people in a country (world bank, 2017) this is forecast by the UN to increase drastically to 120 million in 2020 and to 178 million in 2050.With a workforce of this size and strong growth, the country will have the potential to become a major regional economy in east Africa, (Global cement, 2013).

Ethiopia has greater potential for higher cement consumption at least for a decade to come mainly due to continued and robust GDP growth which is also estimated to sustain, improving political stability; increasing per capita income and emergence of middle class; increasing government capital budget expenditure; rapid urbanization (4.3 %); high rate of population

growth (2.6%); significant housing deficit; large infrastructural gap and development of industrial parks (29.37 million) square meters. More over government has planned to construct4, 900,000 urban and rural houses in 2008-2017 E.C. The number of houses and industrial parks needs million tons of cements, (MoI, 2015).

There is huge construction boom in the capital Addis Ababa and other parts of the nation. Several roads, railways, condominium houses, commercial centers, governmental and private offices, continental and international headquarters have taken shape in an incredible pace and quality in a country will stimulate high demand of cement currently and near future, Tsegay Hagos (2017).

# CHAPTER THREE
# RESEARCH METHODOLOGY

## 2.1. Introduction

This chapter addresses the methodology that the researcher used to carry out the study. It explains in details regards to the research method, research design employed, the study population and sampling techniques, reliability and validity of the study, data collection and analysis techniques.

## 2.2. Research method

Researchers consider the use of different research methods including qualitative, quantitative, and/or mixed methods. Quantitative research presents statistical results represented by numerical or statistical data; while qualitative research presents data as descriptive narration with words and attempts to understand phenomena in their natural settings Denzin and Lincoln, (2000).

In this particular study, qualitative research method has been used to collect data. The logic behind using qualitative method was to obtain relevant data that would able to answer the research question and explore the Ethiopian cement market challenge and prospects because the subject under study has no prior study and enough literatures.

## 2.3. Research design

According to Churchill (2002), a research design is a master plan specifying methods and procedures for collecting and analyzing the required data.

Exploratory research design is termed as formulate research design. The main purpose of such studies is to formulate a problem for more precise investigation. Exploratory research design is conducted for a research problem when the researcher has no past data or only a few studies for reference. It serves as a tool for initial research that provides theoretical idea of the research problem. The major emphasis in such design is on the discovery of ideas and insights. As such the research design appropriate for such studies must be flexible enough to provide opportunity for considering different aspects of a problem under study, C.R. KOTHARI (1990).

The study has employed exploratory research design as the subject understudy is new in cement industry so as to explore the new insight of problems in Ethiopian cement market.

## 2.4.Population and sampling

Population is set of all groups of individuals, objects, items, cases or things with common attributes or characteristics. Sample is representative subset of the population from which generalizations are made about the population. Robert S. Michael, (2015).

Sampling methods are classified as either probability or non probability. In probability sampling, each member of the population has equal probability of being selected. Probability sampling includes; random sampling, systematic sampling, stratified, and cluster sampling, Andale (2015). In non probability sampling, members are selected from the population in some non-random sampling manner, and they includes; convenience sampling, judgmental (Purposive) sampling, quota sampling, and snowball sampling. Purposive sampling techniques involve selecting certain units or cases based on a specific purpose/criteria rather than randomly, Tashakkori &Teddlie (2003). As noted by Onwuegbuzie and Leech (2005), random sampling tends to be associated with quantitative research, whereas non-random sampling typically linked to qualitative and/or exploratory research.

According to CCIIDI, 2010/2018, there are 15 cement factories currently operating in the industry. From total installed cement production capacity (17.37 million tons) in 2010/2018 top cement manufacturing firms under study (Dangote, Derba, Mugher, Messebo, Habesha, and National cement S.C) covers 69% of total installed capacity. In terms of market share as presented in literature review of the study, 6 cement firms in the industry constitutes a market share for more than 85%.

The sampling strategy of the study was non- probability (purposive sampling) based on two criteria's; cement installed capacity and the market share of the firms. Based on the criteria, one marketing manager from each cement firms under study has been selected. Totally six marketing

managers have included in sample because they have been involving in routine marketing activity and have experience in Ethiopian cement market environment.

In order to explore new in sight of the problem and to triangulate the results, two whole sellers (market intermediaries) from each cement firms understudy have been selected.

The criteria to select whole sellers was having more than three year of experience in distributing cement products in Ethiopia as suggested by their respective cement firms. Totally six marketing mangers and 9 whole sellers were selected to conduct interview.

**3.5. Source of data**

The source of data for the study has both primary and secondary data. Primary data includes semi-structure interview of cement whole sellers, and marketing managers of the selected cement firms and interviews from chemicals, construction inputs industry development institute (CCIIDI). Secondary sources include; review of relevant literatures regarding the study from published articles, international journals, internet sources, global cement directories, MoI, Ethiopian cement industry development strategic document, and other related sources.

**3.6. Data collection methods**

The in-depth semi -structured face to face interview has conducted with selected marketing managers of cement firms' understudy and their respective wholes sellers. Before conducting the interview, the interviewees have informed and the right time and place has been fixed to conduct the interview. The interview has done on pre-formulated research questions at the beginning of the study and other emerged questions.

Semi-structured interviews are helpful in aiding the study with lengthy a conversation appears to be with occasional prompts by the researcher that helps to gain more insights about the research problem and provide a good balance between richness and reliability, Patton (2002).

**3.7. Data analyzing techniques**

There are many ways of analyzing qualitative data such as, content analysis and semiotics analysis, thematic analysis and phonological Denzin, et al (2011).

Content analysis is systematic research analysis technique of making inferences from text and other forms of qualitative data such as; interview, focus group, open ended survey questionnaires,

document and video through developing categories/themes, and codes to summarize and interprets the data GAO (2013).

Based on the purpose of study, content analysis involves both deductive and inductive approach. The inductive approach is recommended when there is no enough former knowledge and sufficient study about the phenomenon and a deductive approach is based on previous knowledge/theory and its purpose is to retest existing concepts, categories and hypothesis in new context (Lauri&Kyngas, 2005)

GAO (2013) has identified the following steps in content analysis; data is collected through qualitative means like interviews, then data is transcribed to text from field note, tape record and video, next code the data, which mean looking for similar words or phrases mentioned by the interviewees while reading the data and open code can be used, after coding, codes will transformed in to category/themes, then materials are sorted by prior established categories to identify similar patterns, relationships, commonalties and disparities, finally sorted materials are examined to isolate patterns analysis based on research question to conclude and generalize data.

In this study, content analysis has been applied to analyze the semi structured interviews that has conducted with selected cement firms marketing managers and their whole sellers. Percentages, frequencies and tables have been used to present the data.

### 3.8. Ethical Considerations

All the research participants those included in this study were appropriately informed and communicated about the purpose of the research and their interest had been maintained before conducting formal interview questions.

# CHAPTER FOUR

# DATA ANALYSIS AND PRESENTATION

## 4.1. Introduction

This chapter presents analysis and discussion section of the study. It was designed to answer the three pre-formulated research questions as they mentioned in chapter one. The data analysis section has two phases. The first phase discusses and presents the interview results of 6 cement firms marketing departments' responses regarding the challenges and prospects of Ethiopian cement market and the second phase presents interview results of market intermediaries (whole sellers) of each cement companies through emerged question from pre-formulated research questions. All interview response from the six cement marketing departments has been coded so as to identify the patterns and relationships among responses.

The meaning of the codes for the interview results of marketing managers of each cement firms are as follows;

**IRODAC=** interview results of Dangote cement

**IRODEC=**interview results of Derba cement

**IROHC=** interview results of Habesha cement

**IRONC=**interview results of National cement

**IROMEC=**interview results of Messebo cement

**IROMUC=**interview results of Mugher cement

## 2.2. Demography of respondents

There were six cement firms the study covered, one marketing mangers from each cement firms has selected for interview.

### 4.2.1. Gender of respondents

**Table 6 Gender of respondent**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | Male | 4 | 66.7 | 66.7 |
| | Female | 2 | 33.3 | 33.3 |
| | Total | 6 | 100.0 | 100.0 |

Source; own survey, 2018

Based on the above table 66.7 %, 4 out of the total respondents were male and the remaining 33.3%, 2 were females. The figures in above shows that the majority of the respondent involved in filling questionnaires were males.

### 2.2.2. Marital status of respondent

**Table 7. Marital status of respondent**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | Single | 2 | 33.3 | 33.3 |
| | Married | 4 | 66.7 | 66.7 |
| | Total | 6 | 100.0 | 100.0 |

Source; own survey, 2018

Based on table 7; 66.7% of respondents were married, and 33.3% of respondents were single.

### 2.2.3. Age distribution of respondents

**Table 8. Age of respondent**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | 20-30 years | 1 | 16.7 | 16.7 |
| | 31-40 years | 4 | 66.7 | 66.7 |

| | | | | |
|---|---|---|---|---|
| | 41-50 years | 1 | 16.7 | 16.7 |
| | Total | 6 | 100.0 | 100.0 |

Source; own survey, 2018

As presented in above table the majority (66.7%) of the respondents found between the ages of 31-40, 16.7% found 41-50 age class and the remaining 16.7% was the found between the ages of 20-30 years.

### 2.2.4. Educational level of respondents

**Table 9. Education level of respondent**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | degree holder | 4 | 66.7 | 66.7 |
| | masters holder | 2 | 33.3 | 33.3 |
| | Total | 6 | 100.0 | 100.0 |

Source; own survey, 2018

Depending on the table above, 66.7%, 4 respondents out of the six marketing managers in cement factories under study have first degree and 33.3%, 2 hold their masters of degree.

### 2.2.5. Respondents Year of experience in a company

**Table 10. work experience of respondent**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | less than 2 years | 1 | 16.7 | 16.7 |
| | 2-5 years | 2 | 33.3 | 33.3 |
| | 6-10 years | 1 | 16.7 | 16.7 |
| | 16-20 years | 1 | 16.7 | 16.7 |

| | | | |
|---|---|---|---|
| more than 21 years | 1 | 16.7 | 16.7 |
| Total | 6 | 100.0 | 100.0 |

Source; own survey, 2018

The year of work experience in the cement as depicted in above; 16.7% or 1 respondent has less than two years of working experience in a cement firm, 33.3% or 2 have 2-5 years of experience, 16.7% or 1 has 6-10 years of experience, 16.7% or 1 has 16-20 years of work experience and remaining 16.7% has more than 21 years of experience working in cement industry as marketing manager. The more experience being as marketing manager in the industry helps to have good insight in marketing of cement and to know the challenges and prospects in the cement industry.

The following four research questions have forwarded to the marketing managers of each cement firms as it appeared in research question section of the study.

1. What is the reason for the mismatch between cement demand and production capacity in cement market?
2. How marketing mix strategies; price, product, place and promotion challenges the cement market?
3. What is the role of market intermediaries in shaping Ethiopian cement market?
4. What is the future market prospect of Ethiopian Cement Industry?

### 4.3. Respondent's perception towards 'What is the reason for mismatch between cement demand and production capacity in Ethiopian cement market?'

Currently, the cement industry is shifted from shortage to abundant; the cement market seems saturated and looking for strategic demand simulation like exporting to neighbor countries. (IROMEC)

According to IRODAC, the imbalance cement production capacity and cement demand is because of the slow economic development of the country and weak performance of the

construction industry that could consume huge tons of cement products. The cement capacity in the cement industry is increasing while the cement demand is lagging, it is because governments enormous projection to raise cement production instead of balancing with countries construction speed. In 2010 E.C total cement production capacity was reached 17.37 million tons while real cement consumption is only 6 million metric ton.

On the other hand, according to IRODEC, Slowdown in construction boom in the country and Absence of rural housing development projects while cement productions are extremely increasing are the reason for the mismatch in cement demand and production capacity.

Low cement per capita due to slow GDP growth of the country made the huge cement production availability and low cement demand in the market. (IROHC)

Majority of the respondents agreed with cement overcapacity and drop in demand in the industry. So the cement firm in the cement market is suffering due to mismatch between the cement production capacity and the cement demand. From the six cement firms under study, only two cement firms were successfully exporting their cement products to the neighbor countries while others are not.

Matching the cement production capacity with the calculated cement demand can mitigate the problem

But according to the IROMUC, "currently cement market is in highly competitive marketing environment in which all cement firms are striving to increase their sales volume to survive in cement market, and on the contrary there is no constantly increasing demand with the same fate as cement production, however there is still demand for cement in a market".

The other reason that respondents raised for the mismatch between cement demand and supply was lack of calculated demand for the cement firms to consider while producing the cement product.

### 4.4. Respondent's perception towards 'How marketing mix strategies; price, product, place and promotion challenges the cement market?

The traditional marketing mix strategies or which shortly known as 4ps in cement market have their own impact individually.

All respondents of cement firms agreed on the negative impact of place or distribution. A type of existing logistics for cement in the country is poor and inefficient.

The logistic system in the cement market affects the place or distribution of cement products to the end users or retail market from the factory. Cement factories concentration in capital city (Addis Ababa) made the cement transportation more difficult. In this chain, cement firms which have their own transport service have more advantageous than those have not.

Regarding to price, respondents agreed that inefficient logistic system in the industry increases the price of cement which includes; lack of alternative transport system and poor road facility.

In the process of transporting cement products from cement factory to the retail market, it takes long distance that costs high fuel and logistics. In most cases the price of cement is set by the distance it covered from factory to the end user.

Regarding to the promotion, IRODAC, IRODEC, IROHC, and IROMUC do not agree on the necessity of intensive promotion for cement selling and the balance respondents agree on the necessity of intensive promotion for cement selling. In the cement market, instead of intensive promotion, quality of product and building good image attracts the customer.

Regarding production, only three cement firms (50%) were engaged in diversifying cement product in the form of ready mix concrete (RMC) .

The six cement firms disclosed that their production cost is high due to the cost they incur on emery. It is evident that in Ethiopia cement firms 50-60% total production cost goes to energy cost. Alternative energy source which minimizes the cost of production is at infant stage in industry; and only two cement firms have started using of alternative energy for the cement production.

Based on IROMUC, while talking about product" diversifying the cement product in the form of ready mix concrete (RMC) can easily increase sales volume, but the customers do not have experience in using RMC for construction which saves time and speed up construction instead of using bulk cement". On the other hand according to IRODAC, regarding the distribution (place) "while distribution distributing cement products we face security problems that lead our cement trucks for burn and destructions".

### 4.5. Respondent's perception towards 'what is the role of market intermediaries in shaping Ethiopian cement market?'

Cement firms forwarded that keeping positive relationship among their firms and their whole sellers has yardstick on smoothing cement market.

On the other hand, 50% (three firms) agreed on the cement price deference in retail market and price charged by their cement firms, which finally leads to cement price hike and decrease the cement demand.

IROMEC, IRODEC, IRONC, and IROMUC Disclosed that existence of many intermediaries in cement market leads to seasonal cement price increment and artificial shortage.

According to IROMUC and IRONC, in cement market which involves more than three middle men's would result in high cement price for end users and disintegrated market.

So, the market intermediaries in the cement industry are negatively affecting the market which leads to uneconomic cement price increment and artificial shortage. But when the intermediaries has good relationship with cement firms through different motivational schemes they play positive role in cement market by delivering cement products on time for reasonable price to the end users.

But according to the IROMUC and IROMEC, there is a treat that wholesalers could create artificial cement shortage and price increment.

### 4.6. Respondent's perception towards 'what is the future market prospect of Ethiopian Cement Industry?'

All cement factories proudly replied as Ethiopia is big country having more than one hundred million peoples demanding many housing and infrastructure schemes. Moreover, 85% of the countries nation is rural dweller needs rural housing projects. As country is growing rapidly, it needs many infrastructure, mega projects, private and corporate construction to go in hand with the growth of the country. So in the future due to the infrastructure development, product availability and market accessibility will be improved, hence the construction sector will be escalated.

In addition, IROMC and INTODC pointed out that as the country's population is growing with 2.6% rate, rapid urbanization and low cement per capita is (62kg) while 165kg is average for sub-Saharan Africa, has the major market prospects for Ethiopian cement industry.

### 4.7. Data analysis of Market intermediaries (Whole sellers)

The following section deals with the analysis of in-depth interviews that conducted with whole sellers of the selected cement firms' understudy. The rationale behind doing this interview was to obtain additional outlooks regarding challenges and prospects in Ethiopian cement market, because the whole sellers in cement market has direct contact with the customers and retailers. The codes that have used for the analysis of marketing mangers interview have been also applied to the interviews of whole seller's except (IRODEC), because Derba cement has no whole sellers and the cement company itself distributes its product to customers and retailers.

#### 4.7.1. Demography of Whole sellers

From the selected six cement firms under study, five cement firms' whole sellers have been involved in the interviews in order to address challenges and prospects of Ethiopian cement market. Totally nine (9) whole sellers from five cement firms have attained interviews, because

Derba cement has no whole seller and Messebo cement has only one authorized whole seller in the country.

**Table 11. Demography of whole sellers**

| Attributes | Categories | No of employees | Percent (%) |
|---|---|---|---|
| **Gender** | Male | 6 | 67 |
| | Female | 3 | 33 |
| | **Total** | 9 | 100 |
| **Age** | Below 30 years | 1 | 11 |
| | Between 31-40 | 5 | 56 |
| | Between 41-50 | 2 | 22 |
| | Above 51 years | 1 | 11 |
| | **Total** | 9 | 100 |
| **Educational level** | Diploma holder | - | - |
| | Degree holder | 7 | 78 |
| | Masters holder | 2 | 22 |
| | **Total** | 9 | 100 |

Source; own survey, 2018

In table 4.1, the majority of respondents are male (6) or 67% and the remaining 33% are females, this shows that of those engaged in cement business as whole sellers are males.

Regarding to age, young groups are between 31-40 years comprising 56% of the sample, below 30 years constitutes 1%, between 41-50 years comprises 22% and the remaining above 51 years covers 1% of the total interviewees.

Educational level of the interviewees shows, 7out of 9 or (78%) of interviewees have first degree, and the rest of 22% have masters of degree holders.

The following three interview questions that emerged from main research questions have forwarded to the selected cement whole sellers.

1. Why cement demand is dropping in cement market?
2. What is a challenge in transporting cement to different corners of the country?
3. What would be promising cement demand simulation mechanisms to be implemented?

### 3.7.2. The responses of the whole sellers towards why cement demand is dropping in cement market?

The 66 %, (6) of the respondents agreed that over capacity in the cement market is contributed for drop in cement demand. In reality overcapacity means, inequality between actual cement demand and the existing cement production capacity.

Most of the whole sellers (70%) of total participants noted that, cement demand is highly linked with the country's economic growth and speed of the construction. The construction activity in a country is not as speedy as needed and it leads to decrease in cement demand. The other factor they stated was the political instability in a country.

The security problem that occurred in different parts of the country has challenged the cement demand and construction boom, and due to this many constructions companies have hold back their construction plans. The remaining whole sellers disagree with the drop in cement demand, and replied that currently there is increment in cement demand, as the country is bringing structural change, construction and economic activities are promising, however the cement demand and production capacity is not equal, there is still cement demand in cement market.

It can be generalized from the interview that demand for cement is at decreasing stage due to the slow construction activity in a country.

### 3.7.3. The responses of whole sellers' towards what is a challenge in transporting cement to different corners of the country?

The 80% respondents of (IRODAC, IROMEC, IRONC and IROMUC) point out that, the poor road facility in the country is challenging their cement distribution activity, and the others raised

lack of their own transport facility to deliver their cement product to their customers. Cement firms like; Derba and Dangote having their own transport have good opportunity to reach customers and penetrate market. A 20% of interviewees talked about the lack of alternative transport systems like railways in the country that made their marketing of cement difficult and slow their profit margin.

According to Mohammad Zarkesh (2008) feasible transportation radius for cement production is only 200km. Any movement and transportation more than 200km could drag down the profit of the companies.

### 3.7.4. The responses of whole sellers' towards what would be promising cement demand simulation mechanisms to be implemented?

The respondents noted that, government should launch intensive rural and urban housing projects; replace concrete based roads instead of importing ingredients of asphalt from aboard. As a country is growing it needs high infrastructure development, so the government should plan and execute projects that demands high tons of cement. (IRODAC, IROMEC, IRONC, IROMUC, IROHC).

On the other side, they forwarded about the regulation in the industry. There should be restrictions on new entrants; price should be intervened to some extent in order to make consistency among revivals.

## CHAPYER FIVE

## SUMMARY, CONCLUSION AND RECOMMENDATIONS.

### 5.1. SUMMARY

The study has mainly designed to find out the market challenges and availing prospects in Ethiopian cement market.

From the demographic characteristics of the respondents it can be summarize that majority of the individuals who engaged in the cement industry as a marketing manager positions and whole seller in Ethiopian cement market are male.

Majority of the respondents agreed with cement overcapacity and drop in demand in the industry.

The reason for mismatch between cement production capacity and cement demand was slow economic development of the country and weak performance of the construction industry which is one of major challenge for the cement industry. The cement capacity is increased because government's enormous projection to raise cement production and slow countries construction speeds.

Regarding to 4ps, all respondents of cement firms agreed on the difficulty of place or distribution. A type of existing logistics for cement in the country is poor and inefficient. Respondents agreed that inefficient logistic system aggravated cement price which includes; lack of alternative transport system and poor road facility. About promotion, majority of the firms do not agree up on the necessity of intensive promotion for cement selling, instead, quality of product and building good image attracts the customer. From the marketing mix strategies (4ps), cement distribution (place) and price has lion share in challenging the cement market.

Keeping positive relationship among firms and their whole sellers has yardstick on smoothing cement market. On the other hand, 50% (three firms) agreed on the cement price deference in retail market and price charged by their cement firms.

The market intermediaries in Ethiopian cement industry negatively affect the market which leads to uneconomic cement price increment and artificial cement shortage.

Regarding to the future prospects of Ethiopian cement market, all cement factories proudly replied as Ethiopia is big country having more than one hundred million peoples demanding many housing and infrastructure schemes. Moreover, 85% of the countries nation is rural dweller

needs rural housing projects. As country is growing rapidly, it needs many infrastructure, mega projects, private and corporate construction to go in hand with the growth of the country.

Over capacity in the cement market is contributed for drop in cement demand. Most of the whole sellers noted that, cement demand is highly linked with the country's economic growth and speed of the construction. The construction activity in a country is not as fast as needed which leads to decrease in cement demand. The other factor was the political instability in a country.

The 80% of whole sellers point out that, the poor road facility in the country is challenging their cement distribution activity and the others raised lack of their own transport facility to deliver their cement product to their customers.

## 5.2. CONCLUSIONS

Based on the data analysis and summary of the findings, the following conclusion has drawn;

- One of the main challenges in Ethiopian cement market was mismatch between cement demand and production capacity because of slow construction boom and weak economic development in the country. Cement production in the country transformed from shortage to abundant (overcapacity) and drop in demand.
- Marketing mix strategies challenge the cement market through its price fluctuation; (price), quality of existing logistic systems to easily deliver the cement products, (distribution), the logistic system in the cement market affects the place or distribution of cement products to the end users.
- Over capacity in the cement market is one of the reasons for dropping in cement demand. Because cement demand is highly linked with the country's economic growth and speed of the construction. The construction activity in a country is not as fast as needed and as result it leads to decrease in cement demand.
- The future prospects of Ethiopian cement market includes; rapid growth of population and urbanization, low cement per capita consumption and huge government investment spending on infrastructure development that consume million tons of cement.

## 5.3. RECOMMENDATIONS

The following recommendations was fully drawn from the study and made for those individuals/or institutions who has part in the mitigating the problems in Ethiopian cement market.

- The country government should plan and execute rural housing projects to boost the construction industry and to increase cement demand.
- The all cement firms in the industry should work together for their mutual benefit with their exclusive whole sellers since disatisfied market intermediaries would result in disturbing cement market by increasing uneconomic cement price seasonally.
- The Ethiopian cement association must organized and fully equipped to support the cement firms with cement technology, and any updated information regarding the cement from regional and international.
- The F.D.R.E Ministry of industry should establish and/or facilitate the formation of the alternative energy source for cement firms' that substitutes costly imported fuel oil in order to minimize the cement production cost.

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# APPENDIX
# ADDIS ABABA UNIVERSITY
# COLLEGE OF BUSINESS AND ECONOMICS
# DEPARTMENT OF MBA IN MANAGEMENT

**Dear Sir/Madam,**

My name is Woldegiorgis H/yesus and I am second year Masters of business administration student in Addis Ababa University. This year I am conducting thesis entitled with "***challenges and prospects of Ethiopian cement market***" as requirement for the award of master's in business administration. As no prior sound works undertaken on the title in the cement sector, the study would assist the industry in identifying the real industry challenges and future prospects in marketing perspective. The companies under study are Dangote, Derba, Mugher, Messebo, Habesha, and National cement S.C. The data will be gathered from cement factories marketing and sales departments, and their respective whole sellers. The information you provide will be strict confidential and used for academic purpose only. I am grateful for your cooperation and kindly request you to answer the following questions based on the instructions.

## Part one; Demography of Respondent and their firms

1. Your position in the company_____

2. Sex

    a. Male b. Female

3. Marital status

    a. Single

    b. Married

    c. Divorced

4. Age composition (years)

    a. 20-30

b. 31-40

c. 41-50

d. More than 51

5. Education level

| | |
|---|---|
| Diploma holder | |
| Degree holder | |
| Master degree holder | |
| P hD holder | |

6. Year of experience in the company

a. Less than 2 years

b. 2-5 years

c. 6-10 years

d. 11-15 years

e. 16-20 years

f. More than 21 years

7. Current total Number of Employees within the organization.

   Male_____ Female_____ Total_____

8. Form of business (ownership);

   a. Private limited company (PLC) b. Share Company (S.C) c. State owned

9. Types of products produce in your company. (Many options are possible)

   a. OPC (ordinary pozzolana cement)

   b. PPC (Portland pozzolana cement)

   c. RMC (Ready mix concrete)

   d. Prefabricated concrete

   If any please specify,_____

10. Do you have cement plant expansion plan?

    a. Yes b. No

11. If yes in above, what is its projected production capacity and when it to be started and completed?

    Projected production capacity; _____Tons or _____Quintals.
    Start year_____E.C or G.C complete year_____E.C or G.C

12. What cement manufacturing process you use to produce cement?

    a. Dry process b. wet process

    If any please specify,_____

13. Who is your potential buyer? (Many options are possible)

    a. Government

    b. Real estate and large constructions based investors.

    c. Self-constructions (household)

    If any, please specify_____

14. How many registered whole sellers do you have as a country level, those which have more than three years marketing experience in selling (distributing) your cement product?_____

15. What is your marketing strategy to be market leader and/or to survive in the industry?

    (Only one choice is allowed)

    a. We are currently leading the market by providing quality products with low price (penetration pricing).

    b. We provide variety of cements products such as ready mix concrete (RMC), and prefabricated concretes.(Product diversification)

    c. We offer discounts, high product availability and holistic supply chain management in place.

    d. We are trusted by customers for our recognized brand and high quality cement products.

16. Where is your market concentration area, in terms of geographical segmentation?

    (Only one choice is allowed)

    a. Around capital city (Addis Ababa)
    b. Amhara region
    c. Afar region
    d. S/N/N/P region
    g. Gambela region
    h. Harari region
    i. Ethiopia Somalia region
    j. Oromia region

e. Benshangul Gumuz region

f. Tigray region

k. Diredawa area (administrative city)

17. If your response for the question number 16 is "a" (around capital city, Addis Ababa), what is the reason to concentrate in Addis Ababa, please specify.

_____

_____

_____

_____

## Part two; Interview questions for marketing mangers

1. What is the reason for the mismatch between cement demand and production capacity in cement market?
2. How marketing mix strategies; price, product, place and promotion challenges the cement market?
3. What is the role of market intermediaries in shaping Ethiopian cement market?
4. What is the future market prospect of Ethiopian Cement Industry?

## Part three; Interview questions for whole sellers

1. Why cement demand is dropping in cement market?
2. What is a challenge in transporting cement to different corners of the country?
3. What would be promising cement demand simulation mechanisms to be implemented?

**I THANK YOU FOR YOUR COOPERATION!**

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