The Effect of Organizational Structure on Entrepreneurial Orientation: The Mediating Role of Organizational Culture in the Basic Metals Industry of Ethiopia

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Declaration

*I, Dawit Getachew, hereby declare that this thesis entitled "**The Effect of Organizational Structure on Entrepreneurial Orientation: The Mediating Role of Organizational Culture in the Basic Metals Industry of Ethiopia**" submitted by me for the award of the degree of Master of science in Management, Addis Ababa University at Addis Ababa, Ethiopia, is my original work and it has never been presented in any university. All sources and materials used for this thesis have been duly acknowledged.*

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This is to certify that the thesis entitled, *"**The Effect of Organizational Structure on Entrepreneurial Orientation: The Mediating Role of Organizational Culture in the Basic Metals Industry of Ethiopia**"* was carried out by ***Dawit Getachew*** under the supervision of ***Ethiopia Legesse (D.Sc.)***, submitted in partial fulfillment of the requirements for the degree of Master of Science in Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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List of Abbreviations /Acronyms

AMOS - Analysis of Moment Structures

AVE - Average Variance Extracted

CSA - Central Statistics Agency

EO - Entrepreneurial Orientation

EFA - Exploratory Factor Analysis

FDRE - Federal Democratic Republic of Ethiopia

GTP - Growth and Transformation Plan

MIDI - Metal and Industry Development Institute

MOI - Ministry of Industry

OC - Organizational Culture

OS - Organizational Structure

PCFI - Parsimony Fit Indices

SEM - Structural Equation Modeling

SMEs - Micro and Small Enterprises

SPSS - Statistical Package for Social Science

VIF - Variance Inflation Factor Analysis

Abstract

The Study examines the Effect of Organizational structure on Entrepreneurial Orientation with the mediating role of Organizational Culture in the Basic Metals Industry of Ethiopia. The research used Organizational theory to evaluate its effect on Entrepreneurial Orientation and in doing so it integrates Organizational Culture to investigate its mediating role robustly. Primary data were used on 19 Basic Metals manufacturing companies to solicit response of 95 respondents. Out of questionnaires that have been distributed, all were usable. An exploratory factor analysis was conducted and structural equation modeling techniques that fulfills measurement construct validity and reliability through AMOS, version 23 software was used. The Result showed OS has a statistically significant negative effect on EO. However, the mediating variable OC have no mediation role between OS and EO. Similarly, Centralization and Formalization individually does not exhibit a significant effect on EO. In terms of testing second order variables, the result indicates that out of three variables that make out OS construct complexity and formalization have significant positive association with second order variable OS. Likewise, autonomy and innovativeness are first order variables and have significant positive association with second order variable EO. This study suggests the importance for rethinking and reviewing the current organizational structure. Also, since the companies rely on employees for their mass production, employees need to be regularly updated and build their capacity on regular bases that would address the strategic orientation elements gap.

Keywords: *Organizational structure, Entrepreneurial orientation, Organizational culture, Metal Industry*

CHAPTER ONE

INTRODUCTION

This chapter deals with the introductory part of the study. It includes background of the study, problem statement, basic research questions, objectives, significance, Scope, Limitation of the study and organization of the study

1.1 Background of the Study

In recent years, instability of the environmental conditions and increasing competition due to trade liberalization, new inventions in terms of enhanced process and product has kept firms at the age. Hence, whether in response to the environmental conditions reactively or proactively, organizations which promote in addition to raise both entrepreneurship and employees' capacity are deemed to stay in business being competent. In addition, the rapid spread of globalization and economic regionalism paved a way for competition all over the globe between firms both to improve competitiveness and performance (Rutashobya & Jaensson, 2004).

One of the organizational factors which found affecting the job performance of employees is organizational structure (Alipoor, Ahmadi, Pouya, Ahmadi & Mowlaie, 2017). According to Pinto (2016, p47), Organizational structure "designates formal reporting relationships, including the number of levels in the hierarchy and the span of control of managers and supervisors, identifies the grouping together of individuals into departments and departments into the total organization, and also it includes the design of systems to ensure effective communication, coordination, and integration of effort across departments". Organizational structure needs to be responsive in environmental conditions as well as facilitate the pursuing of opportunities.

Organizational structure has a great role in an organization's success, and it intervenes between goals and organizational accomplishments hence, influences organizational effectiveness. It can be an integrating mechanism and a tool for strategy implementation for organizations. In order to achieve an organization's target and goal, its structure should be responsive to various environmental conditions as well as it should fit with those planned or implemented organizational strategies. Hence as a means of strategy implementation, structures are required to be flexible

balancing the need for division of tasks into meaningful groupings and the need to integrate such groupings the way efficiency and effectiveness ensured (Dess *et al.*, 2005).

It is also revealed that, nowadays, organizations are in situations that require them to be inclined toward the entrepreneurial activities (Shepherd, et al., 2008). An entrepreneurial organization is always able to adjust itself with the changes occurring in its external environment and makes its programs compatible with the environmental changes. Entrepreneurship is considered as an important tool for the development because the entrepreneurial persons can create the grounds of the successfulness. Naman and Slevin (1993) believe that in turbulent and instable environments the companies are more willing to be innovative, risk-taker, autonomous, proactive and compete aggressively.

Literatures revealed that, for the appearance of EO of employees, different factors have essential roles which include the management and resources of the organization, organizational structure, and organizational culture (Caruana, et al, 2002; Yao, et al, 2009; Learner and Shaker, 2007). The studies on the successful organizations also show that one of the most effective factors on the establishment of different dimensions of entrepreneurial orientation in organizations is the organizational structures of those organizations (Johnson & Van de Ven, 2002, Shoghi & safieepoor, 2013 and Gargari & Asadollahi, 2014). Thus, the organizational structure has to make a suitable basement for the creation & appearance of the entrepreneurial activities.

In addition to the role of OS, firms which wish to incorporate EO in their businesses shall adapt, change and align their organizational culture to the prevailing business environment (Adelekan, 2016). It was reported that more supportive organizational cultures yield high levels of EO, (Khalid, Pahi and Abdullah 2016). Organizational culture is a set of beliefs, values, and assumptions that identifies organizations & their members (Cameron and Quinn, 2006). Culture influences an organization's various aspects; products, processes & thus performance (Ankrah and Proverbs, 2004). Given the same strategies, due to the difference in organizational culture, two organizations in the same industry react differently which leads to different yields (Kandula, 2006). Culture further helps to understand why some companies are more successful than others (Smith, 2003). A strong culture has been viewed as a key to good performance (Kandula, 2006), and a strong relationship between culture and innovativeness was reported (Dobni, 2008).

The study at hand mainly focuses on the basic metal industry of Ethiopia. According to the International Standard Industrial Classification of All Economic Activities, Rev.3.1 and Div. 28-35, "Basic Metal Industries are industries engaged in production of metal from ore, scrap and conversion of billet, slab etc, into primary metal products, while Engineering Industries manufacture fabricated metal products."Hence, a discussion in this paper mainly focuses on "Basic Metal Industry".

Metal and metal products industry plays a big role in enhancing the economic development of both developing and developed countries. This industry enhances foreign exchange earnings by promoting standard quality export products, create jobs, increase income, and give an opportunity to technology transfer. Over the years, the success of Ethiopian basic metals industries to achieve these objectives was limited. The country has benefited little; the industry is fraught with low productivity and slow growth both in output and employment.

In this study the effects of various dimensions of organizational structure on the entrepreneurial orientations of the employees in the basic metals industry as well as, the mediating role of organizational culture between organizational structure and Entrepreneurial orientation are examined.

1.2 Statement of the Problem

In today's world, business activities and environmental factors have been highly volatile which requires organizations' to tend toward the entrepreneurial activities (Shepherd, et al., 2008), to come across an efficient, responsive and productive way of organizing as well as an effective match between employees and jobs. Organizations, manufacturing firms should find a method of integrating their activities, factors of production, techniques, procedures and over all resources to maximize their returns, to survive in the market and/or to stay competitive in the business.

Studies revealed that, organizational structure has a great role as it is one of the most effective factors on the establishment of different dimensions of entrepreneurial orientation in organizations (Johnson & Van de Ven, 2002; Shoghi & safieepoor, 2013 and Gargari & Asadollahi, 2014). The concept of entrepreneurial orientation generally refers to the practices, processes and decision making activities which lead to the fundamental practice of entrepreneurship (Lumpkin & Dess, 1996: 136).These practice or processes (including innovation, risk-taking, pro-activeness,

aggressive approach and autonomy) usually work together to improve the entrepreneurial performance of the organization (Shoghi & Safieepoor, 2013).

The organizational structure should be appropriate and make the basement for the appearance of required supports in the creation of suitable conditions for entrepreneurial activities (Johnson & Van de Ven, 2002 and Gargari & Asadollahi, 2014). It should also fit with organizational plan, implemented strategies &environmental requirements for the organizations' success.

This is true for manufacturing industries as well which are the backbone of a nation's economy. They need to have an integrating mechanism in their activities as well as processes to have efficient and effective use of resources to increase their competitiveness. Their structure should be responsive to support the environmental conditions as well as should fit with the planned and implemented strategies.

In Ethiopia, since the metal industry sector is the foundation for the development of other downstream industries and due to an increased demand for metal products, in the past five years, the government has given a strategic focus to this industry. But this industry has not been appreciated in its national supply, import substitution and competitiveness (Tadiyos, 2018). According to a capacity utilization and productivity survey conducted by the government, though the metal manufacturing industry is the base for other sub sectors, its' minimum level of local production output resulted nearly all (95%) import of equipments & machineries which led the development of other sectors to low level. The export performance of this industry is also the least with respect to the other subsectors [MOI GTP II -2015]. In addition, the industry is in low level of per capita consumption which is 20.36 kg/year and even below the level of African consumption 42 kg/year with 54% capacity utilization [CSA, GTP II]. There is also low level of value addition in the industry [MIDI annual report].These problems made the export performance, national supply, import substitution and competitiveness of the industry to the least level and led the development of other sectors to low level. Hence, this industry requires various mechanisms and evaluations to improve its efficiency, effectiveness, productivity, competitiveness and other measurements of industry.

Entrepreneurial orientation is an essential component to keep companies stay on their competitive edge; thus the extent of organizations' formality, complexity and centralization should be

supportive for instance; towards capturing opportunities, increasing innovativeness, and responding to environmental requirements which would benefit to maximize the companies' wealth and consecutively benefit the economy of the country. Organizational culture also affects the way organizations operates, influences decisions as well as performance (Wu et al., 2011).The culture of the organization has essential role in order to get the responsiveness and agility required from structural dimensions.

Therefore, this study evaluates the effect of organizational structure on entrepreneurial orientation with the mediating role of organizational culture in the basic metals industries of Ethiopia.

In addition to contributing for the development of the industry, the study provides insights for those companies at pre-implementation stage. In assessing the elements of organizational structure, entrepreneurial orientation and organizational culture, thus fills the gap in the industry in developing countries specifically in Sub-Saharan African countries context. As per the researcher's knowledge, the scope and dimension of this research has neither been attempted in Ethiopia nor in Sub-Saharan African countries. Hence, this research has great contributions in terms of those stated gaps.

1.3 Research Questions

This study attempts to answer mainly the following research questions;

1. What is the effect of organizational structure on the entrepreneurial orientation of employees?
2. What is the effect of complexity in organization on the entrepreneurial orientation of employees?
3. What is the effect of formality in organization on the entrepreneurial orientation of employees?
4. What is the effect of centralization in organization on the entrepreneurial orientation of employees?
5. Does organizational culture mediate between Organizational structure and entrepreneurial orientation of employees?
6. Does the element of organizational structure make up the latent variable?
7. Does the element of entrepreneurial orientation make up the latent variable?

1.4 Objectives of the study

1.4.1 General objective

The general objective of conducting this research is to examine the effect of Organizational structure on Entrepreneurial Orientation with the mediating role of Organizational Culture in the Basic Metals Industry of Ethiopia.

1.4.2 Specific objective

The specific objectives of the study are;

- To determine the effect of organizational structure on entrepreneurial orientation of the employees in the basic metals industry of Ethiopia.
- To investigate the effect of organizational complexity on entrepreneurial orientation of the employees in the basic metals industry of Ethiopia.
- To investigate the effect of organizational formalization on entrepreneurial orientation of the employees in the basic metals industry of Ethiopia.
- To investigate the effect of centralization on entrepreneurial orientation of the employees in the basic metals industry of Ethiopia.
- To investigate the mediating role of organizational culture between organizational structure and entrepreneurial orientation of the employees in the basic metals industry of Ethiopia.
- To examine whether the element of organizational structure would make up the latent construct.
- To examine whether the element of entrepreneurial orientation would make up the latent construct.

1.5 Hypotheses of the study

Based on the objective and review of literature, the study tests the following hypothesis:

H1: *OS has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.*

H1a: *Complexity has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.*

H2b: *Formalization has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.*

H3c: *Centralization has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.*

H2*: OC has a mediating role between OS and EO of employees in the basic metals industry of Ethiopia.*

H3.*OS is a second order factor of three elements.*

H3a.*OS has positive significant influence on Complexity.*

H3b.*OS has positive significant influence on Formalization.*

H3c. *OS has positive significant on Centralization.*

H4. *EO is a second order factor of five elements.*

H4a.*EO has positive significant influence on Autonomy*

H4b. *EO has positive significant influence on Innovativeness.*

H4c. *EO has positive significant influence on Pro-activeness.*

H4d. *EO has positive significant influence on Competitive Aggression.*

H4e. *EO has positive significant influence on Risk Taking.*

1.6 Scope of the Study

Based on the [Ethiopian Ministry of Industry road map data 2016] and [CSA 2015], among the stated sectors of the industry, the Ethiopian metal industry sector constitutes more than 243 medium and high capacity manufacturing industries (38 basic metal industries, 194 fabrications of machineries and equipment, 11 automotive and body carriers) that employee more than 22,697 workers.

Even though there are thirty-eight basic metal industries in Ethiopia, the study took a sample of half of these companies established in the outskirt and nearest of the capital city Addis Ababa (see Appendix A). In addition, these selected companies constitute the lion share of basic metals industry in Ethiopia and the tenure of more than five years' operating until the data collection period December 31, 2019.

1.7 Significance of the Study

Entrepreneurial orientation is a relatively new subject to discuss in developing country. Specifically, in relation to organizational structure as well as regarding the mediating role of

organizational culture, it is a very hard subject to find in Ethiopia as there is only few researches exist which deal with the issue.

Yet, entrepreneurial orientation is an essential component to keep companies stay on their competitive edge; thus the extent of their formality, complexity, centralization as well as culture should be supportive for instance; towards capturing opportunities, increasing innovativeness, and responding to environmental requirements which would benefit to maximize the companies' wealth & consecutively benefit the economy of the country. Hence, the result of this study generally will maximize value &specifically will be practical and helpful for;

Policy Makers: It will give significant direction to review the current government policy and future proposed ones in the metal industry to consider policies which denture entrepreneurial orientation in relation to organizational structure.

Practical: It will provide a road map for the metal industry to consider their organizational structure, decision making, formality and complexity of the organization on the entrepreneurial orientation by studying which component has significant effect. Thus, the emphases on entrepreneurial orientation as strategy requires tuning of the overall organizational structure and understand its gap (if any) and act upon it so that it meets its original purpose or reason of starting business& maximizing wealth by providing a valuable product to the customers.

Theoretical: Finally, it will also serve as a reference material in a good basis to carry out for subsequent research activities on entrepreneurial orientation, organizational structure and related topics.

1.8 Limitation of the Study

Though the study area is limited to outskirts and nearest towns of Addis Ababa and hasn't found exhaustive list or data of basic metals industries in all concerned offices, those sample industries' size and tenure compensate and help generalize the study to other companies in basic metals manufacturing industry with lesser tenure as the basic operation of the companies and trend of the firms are similar.

The second limitation would be lack of sufficient and recent references in Ethiopian context due to the idea of entrepreneurial orientation, organizational structure and organizational culture has been viewed as an important element only recently as the vital element to keep the organization.

The mediating role of organizational culture on organizational structure and entrepreneurial orientation hasn't references as well.

Thus, to minimize the effect of the limitations, the researcher defined the scope properly, and the unavailability of adequate scholarly work dealt through the use of classic and relevant literatures as well as consultation of the industry specialists in Ethiopia.

1.9 Organization of the Study

This study comprises of five chapters. In the first chapter, the back ground of the study, statement of the problem, significance of the study, scope and limitations of the study, general and specific objectives, research questions, hypothesis of the study and operational definitions included. In the second chapter, reviews of theoretical and empirical literatures incorporated. In the third chapter, the methodology part of the study clearly detailed and in the fourth and fifth chapters the result, discussion, summary, conclusion and recommendations of the study presented consecutively.

CHAPTER TWO
LITERATURE REVIEW

This chapter deals with some of the related literature which may have direct or indirect significance with the study. The researcher describes and explains the concepts, models and theories that are relevant to Organizational structure, Entrepreneurial Orientation and Organization culture that are necessary to facilitate a comprehensive analysis and understanding of the research question. Specific theories that led to the development of the hypotheses will also be examined briefly, with the different concepts and discussion point's justification shall be given for the final research model used. The literature review is based on authoritative and original sources such as journals, books, thesis and dissertations.

2.1. THEORETICAL LITERATURE REVIEW

2.1.1 Concepts of Organizational structure

Organizations are the deliberate arrangement of peoples to accomplish a certain stated goal & structured the way it facilitates a successful implementation of its strategy & plan.

Since the word *structure* implies organization, peoples or employees who work in an organization are grouped the way their efforts could be channeled for maximum efficiency.

Organizational structure is about how power & responsibilities are distributed, and work procedures are carried out in the organization. It also designates a formal reporting relationship & the groupings of individuals for the best of the organization (Randall & Jackson, 1996). According to Minterzberg (1979:2), Organizational structure is the framework of operating processes, job relations, systems, people and groups that make effort to achieve both coordination among them & organizational goals.

In rapidly changing and dynamic environments, traditional organizational designs may not be supportive to get the required flexibility & agility (Child and McGrath, 2001), and also may do not support cooperation & knowledge sharing between employees. In the contrary, the organizational structures which promote knowledge sharing, job rotation & problem solving are capable of promoting innovation as well (Salerno, 2009; Asif, 2017). Creation of an organizational design which promotes employees' innovativeness is critical challenge (Tidd et al., 2005). In organizations which have favorable environment for innovation, employees are likely to be

interactive to develop their potential & to create knowledge (Teece et al., 2016) and also to solve problems optimally (Hoegl et al., 2003; Joseph et al., 2016).

During the 1960s and 1970s a contingency theory came into sight arguing that organizational design should be depend on the specific context & no single approach could be set. Researchers adopting the contingency perspective focus on the need for flexible responses and on this basis suggest that there are particularly appropriate strategy-structure combinations. Contingency theorists believe that the effectiveness of a given strategy or structure is contingent up on the conditions in place (Miller, 1991), thus it is the appropriate alignment of structure & strategy which may result a successful performance (Powell, 1992). Therefore, in order to align the business with its environmental context, flexible strategic and structural responses are required (Dess et al., 1997).

In the contrary, scholars such as (Garud et al., 2002 & Kenis et al., 2009) emphasized & calls shifts in organizational structure from functional or specialized department to a temporary project group, from vertical lines to lateral communication, and from hierarchies to networks.

Organizations that operate in unstable environments require flexibility & smooth work flows (Dunford et al, 2007), and also must be able to recognize themselves to be responsive for environmental conditions (Král and Králová, 2016). Similarly, Jensen et al. (2007) conceptualized that, the required level of flexibility to sustain competitiveness, may not be available in Static and hierarchical organizational structures. Hence, organizations need flexibility and innovative strategies to keep their competitiveness (Schreyögg and Sydow, 2010).

Organizational structure has a great role in an organization's success. It intervenes between goals and organizational accomplishments hence, influences organizational effectiveness. The second management function, organizing, is how an organization's structure is created & has various purposes which includes; divides work to be done into specific jobs and departments, assigns tasks and responsibilities associated with individual jobs, coordinates diverse organizational tasks, clusters jobs into units, establishes relationships among individuals, groups, and departments, establishes formal lines of authority and allocates and deploys organizational resources (Robbins, 1996).

In order to achieve an organization's target and goal, its structure should be responsive to various environmental conditions. In today's world, Business activities and environmental factors have been highly volatile; it is difficult to determine which strategy would last long being successful.

Hence as a means of strategy implementation, structures are required to be flexible balancing the need for division of tasks into meaningful groupings and the need to integrate such groupings the way efficiency and effectiveness ensured (Dess *et al.*, 2005).

2.1.1.1 Organization Theories

Understanding how organizations work has been the focus of scientists and scholars until the early part of the 20th century. Since organizations have evolved, it is just to have the theories explaining them. According to Nicholson (1995), Organization theories are a serious of academic viewpoints which attempt to explain the multiplicities of organizational structure and operating process. They are knowledge systems that explain and study organization structure, operation and function, and behaviors (Zhu, 1999).

2.1.1.1.1 Classical Organization Theories

In the early twentieth century, Taylor, Fayol and Webb by defining research objects related with efficiency, they established the building and the development selection of classical organization theory (Guo, 2003).

For classical organization theories, organizational structure is regarded as the basic media to attain the bounded rationality thus the core objective of the study is the rationalization of organizational structure. During 1911, Taylor hoping to replace the arbitrary managers with scientific and rational procedures, he encouraged the bottom-up rational administrant methods by changing the way to carry individual tasks out. In the same period, Fayol was adopted the top-bottom rational administrant methods. Furthermore, Weber regarded authorities as the core concept of administrative systems at the same time background with Taylor & Fayol. Weber studied on traditional authority and considered the legal one could keep the enduring bureaucratic structure, which is better at dealing complex affairs than the traditional ones, because its structure has the pure technology superiority than the other forms (Weber, 1964).

Classical organization theories emphasize the organizational characteristics are impersonal and rational and focus on the design of organizational structure, the basic principle and the basic administration function of organizations (Liu, 2010). The classical organization theories are the typical philosophy on human-machine relationship, basing on economic-man hypothesis. In this

period, the metaphors of an organization and individuals were ‘machines’ and ‘gears’ ‘screws’. People lost their humanity in society, into a machine and lost initiative in the work (Luo, 2009).

2.1.1.1.2 Neoclassical Organization Theory

Due to the developments of productivity as well as the education level of employees, new administrative theories that focused on human factor & humanize management were demanded. Thus, Elton Mayo (1933) finished Hawthorne experiments and proved that a social group is one of the basic forces which could decide the organizational operation. At the same time, the important role of the informal organization on the organizational infrastructure was proved by Hawthorne experimental results (Scott and Davis, 2006). New research fields are inspired, organizational scholars paid more attention to the human factor and the humanize management. The major achievements, except for Mayo’s Human Relations Theory, include Maslow’s Hierarchy of Needs (1943), Herzberg’s Motivator-Hygiene Theory (1959, 1966, 1968), Mcgregor’s Theory X and Theory Y (1970, 1974). To discover human nature, psychology, sociology and other disciplines knowledge were integrated into the research field during the development times of neoclassical organization theories. For the reason of there are still plenty of drawback for classical organization theories, which are based on human-machine relationship perspective, i.e. the limiting the freedom of staffs and stifling their creativities in the work, neoclassical organization theories compensate for above deficiencies. The theories basing on human-human relationship perspective substitute the mechanical, static, structural and physiological researches for humanized, dynamic, functional, physiological researches (Liu, 2007).

2.1.1.1.3 Modern Organization Theories

In the mid-twentieth century, the third technical revolution stimulated the speedily progress of economics, it brought lots of new economic phenomena and influenced organizational environments deeply. The knowledge of classical and neoclassical organization theories cannot explain such organizational changes in such dynamic circumstances; it called for the transformation of theories and brought organization theories into a new development phase. On the human-environment relationship perspective, modern organization theories treat organizations as open systems, emphasize the influence from their environments and borrow new views and new methods from complexity science, the research paradigm shift to complexity one.

2.1.1.1.4 Contemporary Organization Theories

Those organizational conceptions and principles that deal with the human aspects within the organization are inappropriate to the contemporary organizations of associated labor.

Among the different approaches in the contemporary organization theory are the most characteristically the System Theory (system approach) in the investigating into organization, and the Human Resources Theory.

A) Human Resources Theory

The numerous criticisms of the human relation theory and the qualitative changes involved by this criticism in the investigation into organization developed a new school or direction in the investigating into the scientific organization, known as Human Resources. It was developed in the USA about 1960's. The fundamental basis of the human resource theory was the human relations theory treating the organization as a simple social system consisting of small working groups. It central areas of the investigation were the working conditions, the work relation and methods and the techniques of the cooperation of the employed in decision-making on the less important aspects of their work. These forms of participation of the employed were aiming at creating favorable relationships to satisfy and make happy the worker. The promoters of human relation theory presumed that the satisfaction of the social needs of the employed would solve all the problems within the organization.

The human resource theory deals with the organization as with a socio-technical system in which the human elements are the most important ones. By such a definition of the organization it integrates the result of the classical theory of organization conceiving of the organization only as a technical system and the results of the human relations theory treated the organization as a simple social system. From this point of view it is also in agreement with the system theory.

The central problem of the investigation into the human resources theory are the human aspects of the organization-The basic assumption of this theory in that the efficiency of the organization depends upon, first of all, the organization of people or upon the use of human abilities being inexhaustible potentials of an improvement of the origination efficiency.

The human resources theory is based upon the motivation theory. But it is interested only in those conceptions that related to the satisfaction of human needs of the highest level, of the so called ego

needs. The satisfaction of these needs integrates the objectives of the individual with those of the organization. And these exert its influence upon a high realization of the organizational objectives. According to Likert (1967), the most investigated areas of the human resource theory are; Management philosophy, Managerial behavior, Communication processes, Motivation, Mutual interacting, Decision-making, Goals setting, Team building, Supervisory processes, and Performance.

The representatives of the human resource theory have so far created a series of interesting organizational conceptions. The most significant among them are the Likert's system of management, in particular the system 4. Finding of Likert's investigation had and still have a great influence upon the further development of modern organization theories.

B) System Theory of the Organization

It is a characteristically of the organizational theories of the individual school within the common development of the scientific organization up to the cybernetics was that they in part treated the organizational phenomena. The classical theories of organization were, in the first place, interested in the material and financial aspects of the organization, and the human relations and human resources theories in the psychological aspects of the organization. The common characteristically feature of the organization theories up to the cybernetics in that that they do not take into consideration the system approach in treating the organization as a system whole and its parts as subsystems. The observation of the individual phenomena and of the partial results is also characteristically feature of theirs. The system method of treatment is relating to the investigating into the component part of the organizational systems in the multidirectional connections between the causes and effects in the organization. It is conceived of the feed forward and feedback information.

By a system approach we deal with the organization as a system whole consisting of the mutually connected parts. The system approach means dealing with these parts in their mutual connection as a part of the whole. A no system approach in the investigating into the organization, however, means dealing with the parts of a whole, irrespective of the mutual connection. It is just for this reason that the no system dealing with the organization is only a partial one and cannot explain the organizational phenomena in their totality. The totality of the organization and of its phenomena can be explained only by the system approach. The organizational theory must be, therefore,

system one. All the other scientific disciplines dealing only with some aspects of the organization, however, should not be called the organization theory. But we are sorry to recognize that there still is a lot of obscurities in the system approach of the investigating into the organization. The achievement made so far, however, already call our attention to the fact that the system approach in the investigating into the organization will assert itself for it makes possible a better understanding of the totality of the organization. The trends in the development of the organizations are reflected in their complexity of operations. Only the complex system can carry out the complex processes. And for treating the complex system and their processes it is necessary to use the same method. We can state that the future development of the organization science will use the system method, irrespective of the possible different approaches and the development of the scientific organization.

With the emergence in the 1960s of the **open systems perspective**, human relations concerns related to employee satisfaction and development broadened to include a focus on organizational growth and survival. According to the open systems perspective, every organization is a *system*a unified structu of interrelated subsystems and it is *open* subject to the influence of the surrounding environment. Together, these two ideas formed the central tenet of the open systems approach, which states that organizations whose subsystems can cope with the surrounding environment can continue to do business, whereas organizations whose subsystems cannot cope will not survive.

2.1.1.2 Dimensions of organizational structure

Organizational structure has various dimensions which helps us in understanding and comparing. Structural dimensions mainly reflect the internal features of the organization, hence these dimensions provide the basis at which organizations will be measured and helps for comparison of their features (Arabi, 2003:16).

Though different organizational theorists mentioned many dimensions of organizational structure, three dimensions of organizational structure which got acceptance and agreement on most theorists, have been identified and used consistently in the literature (Fry & Slocum, 1984:225). These dimensions are; complexity, centralization, and formalization which Robbins calls the main dimensions and believes in their important function in creating organizational structure and managing the organization effectively (Robbins, 2008:58; Najaf Beigi, 2010:88). Thus, these dimensions are deemed relevant for the study at hand and discussed as follows.

A. Complexity

Complexity or Specialization indicates the number of administrative levels, hierarchy and distribution of jobs within the organization (Daft, 2006). In other words, complexity refers the differentiation or the number of tasks which exist within an organization. It can also be measured by vertical, horizontal, and spatial resolution (Robbins, 2002:871). Geographical/Spatial complexity refers a grouping made based on geographic location. Vertical complexity refers the number of hierarchies or organizational levels, whereas, complexity of horizontal resolution refers both specialization and organization division into different sessions and the increase in either of these two will result an increase the complexity (Robbins, 2008:56-58).

Complexity increases problems, for instance lack of control and coordination; thus organizations must create a way which helps to maintain their position not in favor of competitors (Damanpour, 2007:695). The need of a lot of knowledge or skills in an organization also increases the complexity therein and communication as well as coordination will become difficult.

B. Formalization

Formalization or Standardization refers regulations, rules, procedures, training advice and communications and the extent to which jobs are standardized as well as the degree to which employee behavior is guided by rules and procedures within an organization. When an organization is said to be highly formalized, employees have little discretion, and it is expected to have a consistent and uniform output. Such organizations have detail and clear job descriptions, hordes of organizational rules, and clearly mentioned work procedures. Whereas, in organizations with less-formalization, it is difficult to imagine there would be clear standard or procedure (Robbins, 2008:235). In large organizations high level of formalization is common since they have to control the behavior of employees by reducing variation, predicting and controlling their actions (Mintzberg, 1983).

However, excessive formalization of communication can restrict innovative problem solving which needs the collaboration among different units (Martinez-Leon, 2011). Thus organizations which are innovative must have activities that can pass the boundary set in the organizations' structure.

Theories of organizational literature indicate two levels of formalization which are high or low levels of formalization. Mechanistic structure is associated with a high level of formalization,

whereas organic structure is associated with a low level of formalization (Burns and Stalker, 1961). Since flexible rules would make easy for innovation, in general, literatures of innovation mostly assume that when the level of formalization is high, a negative relationship with innovation exist (Burns and Stalker, 1961; Hage and Aiken,1967; and Kanter, 1983). Another studies, for instance, Damanpour (1991) in the meta-analysis of the innovation literature, shows that formalization is negatively but statistically insignificant with the implementation of innovation.

C. Centralization

Centralization or hierarchy of authority refers the level of authorities that have the decision-making power (Daft, 2007). It determines who are in the authority having the right to make decisions (Fry & Slocum, 1984:225). In other words, Centralization implies the level or degree to which decision making is concentrated on a specific part, usually top level of the organization (Robbins, 2002:868). Decentralization is delegation of decision making authority to lower levels in an organization (Daft, 2004:30). Employee empowerment is the increasing of the decision making maturity of employees and a trend toward decentralizing decision making in order to make organizations more flexible and responsive.

The necessity of concentration would be determined based on the situational or contingency factors (Robbins, 2008:73-78). Depending on the situations faced, there could be a time where centralization or decentralization could be necessary or not. For instance, when a comprehensive viewpoint is needed to make decisions, managers would be better to examine the created condition (Hall, 1383 and Robbins, 1387). It should be noted that correct decisions on time should be in place for achieving the organization's goals.

Centralization has inverse relationship with delegation, which is the assignment of authority to another person to carry out specific duties, or allowing employees to make some of the decisions. It should be noted that when there is more delegation, it implies the existence of decentralization which can increase the accuracy of decision making, because to make effective decisions lower level employees while delegated, they would assess deeply about the problem. The more the detail and nature of the problem known, the most accurate decision will be made.

According to Martinez-Garcia (2011), decentralization indicates the extent to which the authority of decision making shared and has various benefits to the organization.

For instance, Fiol & Lyles, (1985) indicated that decentralization allows a change in employees' behavior and actions, and provides employees a more decision-making capacity. It is also argued that decentralization improves social interaction and interpersonal relation (Chen and Huang, 2007), and facilitates the integration as well as association of new partners (Fiol and Lyles, 1985). Low level of centralization implies high level of participation in decision making as well as high level autonomy which are vital towards innovativeness and pursuing opportunities. The high level autonomy may also make employees feel more responsible for their work role and context (Janz et al., 1997). Thus, the organization can improve its extent of creativity, development of new ideas and knowledge sharing in more innovative and efficient way (Lloria, 2007).

In an organization, the levels of hierarchy, the type of departmentalization as well as the extent to which an organization is formalized and centralized are major components of its structure which can affect an organization's extent of effectiveness, innovativeness, and also the attitudes and behaviors of employees at work. A continuum where the structure of an organization can be classified as mechanistic (rigid) versus organic (flexible) was developed by Burns and Stalker (1961). Hence, the organization structure's level of complexity, formalization and centralization, positions the structure between mechanistic and organic along the continuum.

Mechanistic structures are characterized by high formalization, centralized authority, formal communication, rigidity and are those which resemble a bureaucracy. These features make them not to be suitable for innovativeness as well as to take quick action which inhibit entrepreneurial action and discourage employees' creativity. In addition, these structures restrict employees' autonomy and self-determination which is likely result to lower level motivation on the job.

Though the business environment is becoming increasingly dynamic and complex (Jogaratnam et al., 1999), in stable and predictable environment where the organization tries to maximize efficiency and minimize cost, mechanistic structures enhance control and are advantageous. Since new businesses often faced uncertainty, lack of structure and role clarity, mechanistic structures can be advantageous when the organization is new.

In contrast to, **organic structures** are characterized by low levels of formalization, fluid communications, flexibility and decentralized decision making, with low levels of formalization. This type of structures is conducive for entrepreneurial behavior, and fosters opportunities through facilitation and motivation, support the systematic discovery of innovative opportunities (Drucker,

1985; Covin and Slevin, 1990), and enhance higher level of job satisfaction to employees. Organic structures seek to maximize satisfaction, development and innovativeness. The higher performance achievement of many entrepreneurial firms with non-bureaucratic and flexible structural design may imply; firms to be effective, alignment between their organizational structure and entrepreneurial orientation is crucial.

According to Dalton et al. (1980) organizational structure can be categorized as high performance organization and traditional hierarchical organization. High performance organization refers organic organization designed to bring and create a very high level capacity to deliver best results (Dalton, 2000). On the other hand, traditional hierarchical organization is a complex and long administrative structure with complex hierarchies, rules and procedures (Machinsky, 1990).

Table 1 Summary of Characteristics of Mechanistic and Organic structures

Mechanistic Organization(Bureaucratic)	**Organic Organization(Professional)**
Low complexity	High complexity
High centralization	Low centralization
High formalization	Low formalization
High stratification	Low stratification
Low adaptiveness	High adaptiveness
High production	Low production
High efficiency	Low efficiency
Low job satisfaction	High job satisfaction

Characteristics of Mechanistic and Organic Organizational Forms Source; *Fred C. Lunenburg, (2012)*

Since an organization's each structural dimensions have its own advantages and disadvantages, it is necessary to choose, develop, modify or even change designs the way it could be supportive for achieving organizational goals. Thus, this study aimed in determining the effect of organizational structure on Entrepreneurial orientation with the mediating role of organizational culture in the basic metals industry of Ethiopia.

2.1.1.3 Structure and Strategy

Whaterman et al. (1980) introduced one of the major frameworks for explanation the effective factors for strategy implementation. His team, based on a consulting research project, concluded that 7 factors of strategies are essential for its effective implementation; structure, systems,

management style, staff, skills, and mutual values (Rezaeian, 2003). Structure of a firm clarifies the responsibilities and tasks, and builds a behavioral links among them.

Any strategy is executed within a firm. According to Amirkabiri (2010), Organizational structure is the skeleton that organization's regenerative power depends on and there is a strong relationship between structure and strategy in institutions. Top managers in organizations should make sure that organization is organized for executing strategic plans (Hunger & Wheelen, 2008).

Structures follow strategy, and strategy is the foundation for inter-organizational distinctions. David (2001) mentioned the two primary reasons on why changes in organizational strategies force changes in organizational structure: first, structure is a primary factor determining how long term objectives and policies are built. Second, structure determines how resources are allocated. Thus, changes in strategies cause changes in organizational structure.

Structure should be designed to facilitate strategy implementation. Without strategy or organizational mission, it is not possible to plan a successful structure. While organizational are growing, they link and merge several major strategies, which increase the structural complexity.

When strategies are subject to change, existing organizational structure loses its effectiveness. Structural changes might facilitate the activities of strategy implementation. There is no doubt that structure influences strategies. However, we cannot expect structural changes to lead to good or weak strategies, transform weak managers to suitable managers, or make unqualified products sell. Compiled strategies should be practical and effective, thus, if new strategies require many changes in the structure, it is not an attractive enough option. However, the most important issue is to make changes in the organizational structure and how, to better execute the strategy (David, 2001).

2.1.1.4 Effects of Organizational structure

According to Hold and Antony (1991), organizational structure is not a method of coordination and it has an effect on the whole organizational process. Organizations are required to adjust their structures in line with other planned or implemented organizational strategies (Miller 1977, and Friesen 1978). Organizational design is the process of developing, modifying or changing an organization's structure. According to Robbins (2008), there are four contingency variables discussed in which the appropriate organizational structure or design depends mainly on;

1. Strategy and Structure. Organizational design is influenced by the organization's strategy. The organization's structure should be aligned with its strategy for successfully achieving an

organization's goal. (Mintzberg 1979, Chandler 1962) conceptualized that structure follows strategy and Miles & Snow (1984) indicated that firms which aligned their strategy and structure could achieve a significant competitive advantage. Miller (1987) also discussed that strategy making process and organization structure are highly inter-reliant and in order to ensure good performance, both must be paired in many ways. Therefore, poorly configured structure may result poor performance.

2. Size and Structure. There are ample findings that an organization's size significantly affects its structure. Larger organizations tend to have more specialization, centralization, and formalization although the size-structure relationship is not linear. Organization size is an important indicator of job performance, and various studies revealed an inverse association between size and performance (Thomas, 1959; Parker, 1961; Indik& Seashore, 1961). On the other hand, there were some studies which found a systematic relationship (Conwin, 1970; Bidwell & Kasarda, 1975). The relationship between working turnovers and organization size also has been studied by various researchers, and got a result which indicates positive relationship between them (Metzner & Mann, 1953; Hewitt & Parfitt, 1953; Baumgartel & Sobol, 1959; Indik & Seashore, 1961; Revans, Koppelmeier, & Sullivan, 1951), on the other hand, some studies revealed as there is no association between turnover and size (Argyle, Gardner, & Cioffi, 1958). However, size may have a negative effect on organization's performance unless it is channeled to the way it could be supportive for the organization's strategies and goals.

3. Technology. The use of technology, for instance, the process used to transform inputs to outputs, also affects an organization's choice of structure. In order to get the planned result, the structure should be supportive for the efficient and effective use of technology in place.

4. Degree of environmental uncertainty. As mentioned earlier, in stable environments where the organization tries to maximize efficiency and minimize cost, mechanistic structures are advantageous whereas, dynamic environments favor organic structures and promote innovativeness.

2.1.2 The Concept of Entrepreneurial Orientation

The concept of entrepreneurial orientation along with entrepreneurship has been defined and examined in various studies. Within the field of strategic management and Entrepreneurship, EO

is a most popular concept. Entrepreneurship is taken to reflect the motivation; behavior or characteristics of what entrepreneurs do. According to Shane and Venkataraman (2000), "the pursuit of opportunity" is the main feature of defining entrepreneurship. Entrepreneurial orientation is defined as the process of taking and pursuing opportunity. In other words, EO is the dimension of an entrepreneurial behavior or process along which opportunity is pursued. The process of entrepreneurial behavior as developed by Lumpkin and Dess (1996), includes proactiveness, innovativeness, competitive aggressiveness, autonomy and risk taking.

An entrepreneurial orientation involves actions and intentions, and also refers to the practices, processes and decision making activities which lead to the fundamental practice of entrepreneurship (Lumpkin and Dess, 1996: 136).

According to Lumpkin and Dess, (1996), the formation of EO construct is a demonstration of a conception of entrepreneurship as a firm behavior. Taking a firm-behavior perspective represents both action and measurability thus a firm's behavior can be managed (Covin and Slevin, 1991).

It is also argued that, EO construct settles varied point of views especially in the measurement of the roles of entrepreneurship as a firm behavior to performance, reconciled through positing EO dimensions as an entrepreneurial behavior used to pursue opportunity (Lumpkin and Dess, 1996). Dess & Lumpkin (2005), explained relating EO with Corporate entrepreneurship, the former indicates the process and the later is about content of entrepreneurship.

Entrepreneurial orientation refers strategic decision-making process and it is a firm level, multidimensional and process construct (Richard et al, 2004), which mainly concerned with the methods, practices and decisions that support firms to be effective (Lumpkin and Dess, 1995: 136). Regarding the dimensions used to measure entrepreneurial orientation, research indicates that from innovativeness, autonomy, proactiveness, competitive aggressiveness, and risk-taking, three to five dimensions have been used by various researchers and authors such as, Venkatraman, (1989); Covin and Slevin, (1991); Naman and Slevin, (1993); Miller & Friesen, (1978); Lumpkin and Dess, (1995), Richard et al, (2004); and Slater et al, (2006). Since these dimensions vary independently, it is essential to examine the level of each dimension as exhibited in the organizations (Richard et al, 2004). Hence, this study employed all the five dimensions of EO, it is discussed under the following section.

2.1.2.1 Dimensions of Entrepreneurial Orientation

According to Lumpkin and Dess (1996:162), an entrepreneurial enterprise is the one that engages in an effective mix of EO's dimensions of autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness. Measuring the dimensions, it is indicated that taking contextual factors or environment in to account is necessary as certain environments might be more or less suited to behaviors (Lumpkin and Dess, 1996). The five dimensions of EO which are widely researched as well as tested for validity (Lumpkin and Dess, 1996; Covin and Lumpkin, 2011; Anderson et al., 2009) employed for this study. These are;

A) Innovativeness

Based on Lumpkin and Dess, (1996: 142), Innovativeness is conceptualized as a firm's tendency to engage in and support new ideas, experimentation, novelty, and creative processes which may result in something new; product, service, or process. It is indicated that innovation is a useful way of pursuing opportunities; hence it is an important dimension of EO (Lumpkin and Dess, 1996).

According to Maslow's hierarchy of needs (1987), it is conceptualized that when individuals reached at the level he called "self-actualization" they desire innovative and creative work which implies a desire for work process associated with an EO. This indicates that, Maslow (1987) conceived innovativeness might be associated with needs at a higher level of the hierarchy of needs.

According to this conception, self-actualization is the higher level and, other lower order needs such as security or psychological needs must be served well first to reach to the top level of hierarchy of needs, as well as to be innovative. This implies that, for the study at hand, individuals in metal manufacturing companies should be at least well paid which lets them to start fulfilling lower level needs, and progress to the highest level in the hierarchy; self-actualization level where they would desire innovative and creative work or a work process associated with EO. However, in our country's context, since the income level of hired individuals is difficult to be said fulfilling, EO is predicted not to be evident at innovativeness dimension in accordance with Maslow's conception. Therefore, in this study, taking innovativeness as one of a tested dimension of EO, learned behaviors in the pursuit of opportunities as reflected in the processes carried out by individuals along with the effects organizational structure will be examined.

B) Proactiveness

Proactiveness is associated with first-mover advantage and initiative. It is conceptualized as forward-looking and opportunity-seeking behavior that is through new entry and innovation (Ardichvili et al., 2003). It is also a taking of initiative and action ahead of competition through anticipating and pursuing new opportunities. According to Lumpkin and Dess (2001), an important variables associated with this dimension includes; alertness, anticipating demand, Information search, prior knowledge of products and markets and social networking.

Proactiveness can be described as seizing initiative and opportunity, influencing existing trends and shaping the environment, as well as creating demand (Miller and Friesen, 1978, p. 92). It is also conceptualized as "proactive innovations" (Miller 1983, p. 923).

However, being a first entrant into a market or increased earnings by itself might not necessarily guarantee a robust competitive advantage and a result of higher level of proactiveness, thus it is contingent on whether the actual specific context is fitting proactiveness as a measure of EO (Cahill; Lumpkin and Dess, 1996). Hence, the contribution of proactiveness to performance is differently based on context (Lumpkin and Dess, 1996).

Lumpkin and Dess (1996: 147), conceptualized proactiveness as a "seizing initiative and acting opportunistically to shape the environment, hence to influence trends"

According to Davidsson (1989), depending on the level in which growth willingness (a measure of the extent to which the intention to augment demand exists) is used as a measure of proactiveness, it is expected to be education and its' related factors positively associated with proactiveness. It implies that an educated entrepreneur is likely to have higher ambition and self confidence in managing as well as in capturing growth opportunities. Based on this conception, it can be said, any factor that motivate or reward a behavior, for instance growth willingness, expected to increase the manifestation of the rewarded behavior.

C) Risk-taking propensity

Various literatures indicate that, Risk taking in the context of EO refers to an organizational risk which resulted from innovation and new entry.

Risk taking entails making bold decisions and taking major actions whether investing into the unknown, employing significant resources to ventures or borrowing heavily being in the face of uncertainty on the outcomes.

According to Miller and Friesen (1978, p.923), organizational risk is defined as the extent in which managers are willing to commit large resource that may have a potential costly failure. Being even in the face of uncertainty, It is a willingness to commit resources in ways that are perceived best though the outcomes are unknown as well as the probability of failure is high (Wiklund and Shepherd 2008, p. 701).

Lumpkin and Dess, (1996) conceptualized that, management styles that are associated with risk taking are considered as an indicator of EO and, Risk taking tendency considered as an EO's behavioral dimension in which opportunity is pursued.

D) Competitive aggressiveness

Competitive aggressiveness refers to the tendency of firms to directly and intensely challenge their rivals whether to achieve entry or improve position by which they outperform industry competitors in the marketplace (Lumpkin and Dess, 1996: 148). The indication of this conceptualization is more related to aggressively and forcefully reacting to the rivals' actions in an attempt to eliminate them from the market by using various tactics such as; sharply cutting costs and sacrificing profits (Stambaugh et al, 2011), through speed and multiplicity of competitive attacks (Ferrier et al., 2002) and forming strategic alliances and mergers (Harrison et al., 1991 & King et al. 2004).

Lumpkin and Dess (1996) also explained that the required strategies for this aggressive reaction are unconventional devices than agreed ones.

Covin and Covin (1990), argued that high level of competitive hostility may relate with aggressive behavior in high performing enterprises whereas, passive behavior in low performing enterprises. This implies that, in environments where competitive hostility exists, it is expected higher levels of competitive aggressiveness to be associated with higher performance.

However, it is noted that a competitive aggressiveness dimension holds an element of intensity which involved in entrepreneurial competition (Lumpkin and Dess, 1996).

E) Autonomy

Autonomy refers to individuals' or teams' action in developing new concepts or visions (Lyon et al, 2000). It is a propensity toward an independent and autonomous action, including free decision making (Lumpkin & Dess, 1996; 140).

According to Burns (2013), autonomy is defined as the independent action or freedom without being held by organizational constraints in bringing a vision or an idea and carrying it through to completion.

The dimensions of EO focuses mostly on the external factors of the firm, whereas, Autonomy is different from other dimensions because it focused inwards within the organization.

It improves and related with an ability and freedom to make decisions, take actions and work independently; which is a key to unpack entrepreneurial potential (Lumpkin and Dess, 1996). The existence of autonomy supports firms to innovate, exercise creativity, take risks, pursue opportunities and compete aggressively to outperform rivals.

When top managers give autonomy to middle and lower level managers, as well as empowering employees and delegation, supports firms' innovativeness and better performance (Monsen 2005, Jeoren Hartog 2007, Ireland et al 2006).

It was also argued that, giving autonomy to employees improves creativity and innovation (Burns, 2013, Eder 2007).

2.1.3 Organizational culture

Organizational culture can be defined as "how we do things around here to succeed" (Schneider, 2000). According to Hofstede (1997), Culture is defined as the collective programming of the mind that differentiates one group members from another. It refers the pattern of development reflected in a society's system of knowledge, ideology, values, laws and day-to-day rituals (Morgan, 2002). Organizational culture is a set of beliefs, values, and assumptions that identifies organizations and their members (Cameron and Quinn, 2006).

Organizational culture is rooted in the basic and universally shared dilemmas (Trompenaars and Hampden-Turner, 1999), contradictions (Quinn, 1988) or problems (Schein, 1985; Hofstede, 2001) that all organizations or groups faced with. Organizational culture has tangible impacts, and it requires fundamental knowledge to understand how to run or improve organizations as well as to know what is going on in them (Schein, 1985).

Thus in order to improve organizations' performance, culture is an essential consideration and organizations need to evaluate and understand their orientation.

Two basic questions emerge in measuring of organizational culture; "why" and "how".

The necessity or the "why" of measuring culture has been discussed in various literatures. Culture influences an organization's various aspects; products, processes and thus performance (Ankrah and Proverbs, 2004). Organizational culture affects the way organizations operates, influences decisions as well as performance (Wu et al., 2011). As indicated above, Organizations are a collection of people with a common mission, and hence, every organization has its own identification based on nature, core culture and character. These characteristics are existed and lived in the hierarchy being more powerful than strategies, processes, structures, systems, plans, team behaviour and governance (Schneider, 2000).

Culture defines behavior and governs the way a company processes information, its values and internal relations. It also influences the success or failure of strategy, socialization and communications in face-to-face relationships (Deal and Kennedy, 1982; Peters and Waterman, 1982; Graves, 1986; Thompson, 1993; Mullins, 2005).

Culture further helps to understand why some companies are more successful than others (Smith, 2003). Organizational culture influences the degree of participation and openness, approaches to decision-making, the quality of communications and working relationships (Low and Shi, 2001; Skitmore et al., 2004).

These influences may lead to either positive or negative outcome (Hampden-Turner, 1994; Handy, 1995). Therefore, measuring of organizations' culture is found necessary.

Regarding the "how", various literatures demonstrated the assessments of organizational culture. For instance, how organizational culture can be measured is discussed in Hofstede et al.(1990), Cooke and Szumal (2000), Ashkanasy et al. (2000), and Delobbe et al. (2002) among others. Based on these, the study on hand uses Santos, et al., (2014) five questionnaire to measure the mediating role of organizational culture in the basic metals industry of Ethiopia.

Given the same strategies, due to the difference in organizational culture, two organizations in the same industry react differently which leads to different yields (Kandula, 2006). Dobni (2008), indicated that there is a strong relationship between culture and innovativeness. The level of organizational innovativeness is linked with participative decision making focused cultures. A strong culture has been viewed as a key to good performance (Kandula, 2006).

Dynamic and changeable conditions require work environment that would encourage new ideas, innovation, pro-active behavior, risk-taking, autonomy, readiness to change and open-mindedness. All are essential for an organization's development (Karyotakis & Moustakis, 2015).

Dzomonda & Fatoki (2019), calling for a strong need to improve an organizational culture factors as they are good predictors of EO in firms, they concluded that organizational culture is significantly linked to EO of SMEs.

Maher (2014) indicated that an organizational culture that provides enough resources to employees and rewards new ideas tend to promote EO. According to Puri and Bharti (2015), organizational culture can act as a guideline which can be used to align employee behaviour towards achieving innovation and flexibility. Shihab *et al*. (2011), indicated that organizational culture is a determinant of EO in that it inspires employees to surpass their expectations and to come up with creative and innovative ways to improve customer satisfaction and competitiveness. Adelekan (2016) noted that firms which wish to incorporate EO in their businesses shall adapt, change and align their organizational culture to the prevailing business environment. It is also indicated that more supportive organizational cultures yield high levels of EO, (Khalid, Pahi and Abdullah 2016). Empirical studies like, (Shihab *et al*., 2011; Chadwick, et al., 2015) indicated a significant relationship between organizational culture and EO.

Hence, examining the effect of organizational structure on the EO of employees, it is found necessary to evaluate the role of organizational culture.

2.2 EMPIRICAL LITERATURE REVIEW

2.2.1 Organizational Structure

The study of Organizational structure has got significant consideration by the researchers. Hence various studies measured organizational structure independently as well as linking with other variables and put many findings. In earlier studies, researchers have been trying to understand and examine the type of structures implemented in various organizations, their appropriateness, relationship, effect and impact, their characteristics and determining factor (e.g., Burns & Stalker, 1966; Lawrence & Lorsch, 1967; Leifer & Huber, 1977; Ford & Slocum, 1977). Nowadays, researchers viewed organizational structure as a major source of organizational competitiveness. The following section presents previous studies and results.

Among the factors that play a great role for the appearance of EO of employees, it was reported that organizational structure is the one (Learner and Shaker, 2007; Yao, et al, 2009).

The study conducted by Al-Qatawneh, (2014), three dimensions of organizational structure; formalization, centralization and standardization was used found related to organizational commitment in both private and public sector firms, whereas position in either sector wasn't found moderating the relationship between organizational structure and organizational commitment. In the study conducted by Jogartnam, et a1 (2006), Zahara and Covin (1995) reported that organizational structure has a significant role on organizational entrepreneurship.

Basol & Dogerlioglu (2014), on their study of Structural Determinants of Organizational Effectiveness, Formalization and complexity has been found increasing organizational effectiveness. They also reported that increasing the organizational size decreases the organizational effectiveness. Latifi and Shooshtarian (2014), investigating the effects of organizational structure on organizational trust and effectiveness, on the effectiveness dimensions, they found a significant relationship between organic structure and effectiveness, and no significant relationship between mechanistic structure and effectiveness dimensions. This finding implies that the more an organization flexible is, it is likely to move toward more effectiveness and was consistent with other findings (Casaszar, 2008; and Alirahmani (2009).

A significant relationship between organizational structure and employee creativity has found; which indicate a significant relationship between the level of formalization, complexity, centralization and creativity of employee (Aghajani and colleagues, 2013). It was also revealed that informal structure can improve employees' creativity (Slatten et al, 2002).
An organization's productivity and innovativeness is also influenced by its' structural attributes (Germain, 1996). Similarly, a significant meaningful relationship between organizational structure and the organization's amount of creativity and innovation was found (Santis et al., 2003). A significant relationship exists between organizational structure and trust (Demman, 2001; Vineburgh, 2010; and Powley 2012) and a definite connection between structure and effectiveness Ledbetter (2003).

Organizational structure directly affects organizational performance (Fang et al., 2007). Hence, considering the structural factor, the organizational performance has been examined and resulted that, among the dimensions of organizational structure such as, specialization (Baldridge & Burnham, 1975; Beck & Betz, 1975; Hage & Dewar, 1973) and formalization (Hage & Dewar, 1973; Schuler, 1975; Vredenburgh & Alutto, 1977) found weakly related with organizations'

performance. On the other hand, centralization was found negatively relatively strongly associated with the performance of organizations (Harrison, 1974; McMahon, 1976; Miller, 1967; Beck & Betz, 1975; Luke, Block, Davey, & Averch, 1973; Pennings, 1976; Sorensen &Baum, 1975; Tannenbaum, 1961). Hao (2007) studied about the relationship between organizational structure and performance through organizational learning and innovation, and found that in a hi-technology or knowledge intensive industry, organizational performance is affected by structure mainly through innovation and organizational learning. Other studies examined performance based on the organizational size and found various results. For instance, organizational size was found inversely related with performance (Marriott, 1949; Thomas, 1959; and Indik & Seashore, 1961), it was found a curvilinear association between size & performance (Revan, 1958) and also found no systematic association between them (Bidwell & Kasarda, 1975). Hence, there may be another factors or behaviors affecting performance.

Shorter and Tilley (1971) illustrated a positive relationship between organizations' size and incidence of protests; similarly, it is also reported large companies are more likely to face such strikes than small companies (Cleland, 1955). Organizational size is found positively related with turnovers (Revans, 1958; Baumgartel & Sobol, 1959; Indik & Seashore, 1961), on the other hand, no relationship between size & turnover is found (Argyle, Gardner, & Cioffi, 1958).Structural dimensions such as the levels of centralization, formalization (Cater and Puko, 2010) and the level of centralization (Teixeira et al., 2008)affects performance.

According to Alipoor, Ahmadi, Pouya, K.Ahmadi &Mowlaie (2017), structural aspects of organizational structure are resulted a significant negative effect on job performance of employees.

Shahriari, Maleki, Koolivand, &Meyvand (2013), in their study of the relationship between organizational structure and psychological empowerment among employees in their selected public office, all the three dimensions of organizational structure resulted significant and reverse relationship with psychological empowerment. For instance, if we look the centralization dimension, as much as the centralization of organizational structure in the office increases, the extent of employees' psychological empowerment decreases and vice versa.

Various researchers examined and reported that organizational structure has a significant role in determining learning processes (Dodgson, 1993; Bapuji and Crossan, 2004). Among the structural dimensions, the extent of centralization resulted different impacts on the learning ability of

organizations (Fiol and Lyles, 1985). It was also found that a high level of formalization resulted a high level of organizational learning process (Alavi and Leidner, 2001), as well as it produces more knowledge creation (Vivas and Peris, 2004). In another study, Shoa'i (2011) reported the association between knowledge creation and structural dimensions of formality, complexity and focus. Bozbora (2007) argued that decentralized structure provides an environment in which employees may involve in the process of knowledge creation.

In a research conducted to examine the relationship between organizational structure and organizational entrepreneurship, the result showed a weak inverse significant relationship between them (Naziri, 2012). In this study, among the structural dimensions he used, it was only the recognition dimension found related with organizational entrepreneurship and the other dimensions; complexity and concentration found with no significant relationship with organizational entrepreneurship. According to Khalifasoltani (2008) a meaningful relationship between organizational entrepreneurship and organizational structure with complexity, formalization and concentration dimensions whereas, no relationship found between educational level and organizational entrepreneurship. Rezazadeh (2002) concluded that there is association between organizational entrepreneurship and structural dimensions of complexity, formalization and concentration.

As indicated in our theoretical review, In organizations which have favorable environment for innovation, employees are likely to be interactive to develop their potential and to create knowledge (Teece et al., 2016) and also to solve problems optimally (Hoegl et al., 2003; Joseph et al., 2016).Organizations need to have an alignment between their structure and strategy (Mintzberg 1979, Chandler 1962) as well as create favorable conditions to promote entrepreneurial spirit (Robbins, 2002).For instance, creating conditions that place appropriate reward system, that improve team working and that support creative and risk taking employees (Aarabi , 2002). Hence, in order to promote entrepreneurship, the existence of such supportive conditions is crucial (Zare, 2006).

Therefore, the configuration and appearance of structure is crucial and have to support the innovativeness, competitiveness and creativity of the firm.

2.2.2 Empirical Studies on Structural dimensions

Among the structural dimensions, regarding "complexity", organizations with high level of work complexity (high level of unit and task differentiation) resulted lower level of organizational satisfaction and high extent of conflict (Lawrence and Lorsch, 1967).Thompson (1967) supports this idea asserting that work complexity has a negative effect on the organizational members' work attitude. The increase in either of the two types of horizontal resolution; i.e., the increase either on specialization or organization division in to different units, results an increment in the level of complexity (Robbins, 2008:56-58). This implies, as regulations and complexity in the level (vertical, horizontal, geographical), formality and organizational concentration increase, employees' job performance diminishes. Though hierarchies are better for optimal level of coordination, Jimenez and Lockheed (1995) argued that high formalization of structures fails to provide the required level of agility.

Regarding the formalization dimension of organizational structure, it was indicated that when there is higher level of formalization, it restricts the freedom to decide what should be done in a particular situation (Agarwal, 1999; Aiken & Hage, 1966). Supporting this idea, Johari (2009) noted that formalized rules and centralized decision making hold back employees to take initiative or to see various alternatives for improving their work process. A study by Holohan et al., (2014) reported that handling complex and uncertain new product development works in a more structured and less flexible manner might be a means of mitigating the project's increased level of risk (Holahan et al., 2014).

It should be noted that formalization refers to the extent to which an organization brings in to operation rules and procedures to determine required behavior (Lin and Germain, 2003; Olson et al., 2005). In other study, Evangelia, et al, (2011) concluded that the formalization is a factor that has a negative effect on the job independence and job diversity. Though some studies stated that the restrictive and supportiveness of "formalization" depends on its nature (Nahm *et al*. 2003), high level of formalization also found being negatively related with innovation (Hage and Aiken, 1967; Kanter, 1983; and Damanpour, 1991), as well as being associated with lower motivation and lack of agility in decision making (Fredrickson, 1986). It narrows the decision making authority of individuals, but high formalization avoids ambiguity (Fredrickson, 2007:283). Classifying formality by the employees position, Robbins (2008:235) noted that employees positioned in higher level and dealing with non-scheduled works have lower level formality whereas, lower level employees have high formality. The required level of formalization also found varied on the size

of organizations. Small organizations with little formalization and large organizations with formalized structures are found being more effective (Dalton et al., 1980).
In another study, Formalization and trust may complement each other and the right combination between the two might help to deal with the dysfunctions of formalization and to improve all the dimensions of new product development collaboration performance (Pematrin and Escudro, 2020). In low trust relationships, executives might act cautiously in order to guard themselves against the behavior of untrustworthy peers which may involve making requests more formally than they would normally do (Massey & Kyriazis, 2007).

Regarding the "Centralization" dimension of organizational structure, it is noted that low level of centralization implies high level of participation in decision making as well as high level autonomy which are vital towards innovativeness and pursuing opportunities. Basically, Centralization refers and is concerned with the extent of authority distributed in decision-making process, evaluation of tasks, and employees' autonomy (Lee & Grover, 2000; Olson et al., 2005).Dewar & Werbel (1979) contend that employees have to get involved in job-related decision-making and if not, they will likely have a negative attitude about their job. It is also suggested that autonomy in decision making is essential for the effectiveness of organizations (Sparrow and Hiltrop, 1997), in addition autonomy makes smooth the innovation process and creation of ideas (Kanter, 1988). Centralization has been mentioned as the one which has a negative effect on innovation (Hage and Aiken, 1967).

According to Shadur et al. (1999) and Strauss et al. (1998), in decentralized organizations, there is greater commitment, more involvement and integration of workers as well as speed up in the decision making process. Supportively, decentralized structure is found having positive motivational effect on employees (Khandwalla, 1995). Likewise, an Innovative behavior at the work place is influenced by the empowerment of employees mainly those at the bottom level of the organization (Samaratunge, 2003). Holagh, Noubar & Bahador (2014), in a study of analyzing the effect of organizational structure on organizational creativity and commitment, among the dimensions of OS, Centralization is found having a positive meaningful effect on organizational creativity, whereas, sophistication and formality didn't have a significant effect on organizational creativity. This suggests managers to have dynamic structure to minimize formality and sophistication to enhance flexibility as well as to be adaptive with the environment.

Some of the findings in previous studies and the structural dimensions used in previous studies are summarized below.

No	Authors' names and publication date	Title of the research/study	Dimensions used to measure OS	Name of the journal article /Source	Findings
1	Behzad Shoghi and Aboulfazl Safieepoor (2013)	The Effects of OS on the EO of the Employees	Complexity, Formalization & Centralization	International Journal of Academic Research in Business and Social Sciences	The OS found having positive effect on EO of employees.
2	Jamshid Edalatian Shahriari, Jamshid Maleki, Pirhossein Koolivand and Mehdi Meyvand (2013)	The study of the r/ship between organizational structure & psychological empowerment among the staffs in Ministry of Economic Affairs and Finance	Complexity, Formalization and Centralization	European Online Journal of Natural and Social Sciences	A significant relationship between the dimensions of organizational structure and psychological empowerment of staff employees found.
3	Hadis Alipoor, Keyvan Ahmadi, Salah Pouya, Khabat Ahmadi &Soran Mowlaie (2017)	The Effect of Organizational Structure on Employees' Job Performance in Private Hospitals of Ahvaz	Complexity, Formalization and Centralization	Journal of Ecophysiology & occupational health	OS (structural aspects) has a significant negative effect on job performance of employees which means, as regulations and complexity in the level (vertical, horizontal, geographical), formality and organizational concentration is more, employees' job performance reduces.
4	Manar Ibrahim Al-Qatawneh, (2014)	The Impact of Organizational Structure on Organizational Commitment	Standardization, Formalization & Centralization	European Journal of Business and Management	The results indicated that the structural dimensions, formalization, standardization, and participation do not differ between employees from private and public firms. These firms had moderate levels of formalization, standardization, and hierarchy of authority and lower levels of participation.
5	Eva M. Pertusa-Ortega, Patrocinio Zaragoza-Sáez & Claver-Cortés (2009)	Can formalization, complexity, and centralization influence knowledge performance?	Complexity, Formalization and Centralization	Journal of Business Research	The results show that organizational complexity and centralization exert a positive & a negative influence, respectively, on knowledge performance.
6	Mahsa Rayat & Hamid Reza Rezaei Kelidbari, (2017)	The Effects of Business Intelligence on the Effectiveness of the Organization	Complexity, Formalization and Concentration	Canadian Center of Science and Education	Organizational structure has a significant positive impact on organizational effectiveness in Iran's airlines. Organizational structure has an impact on effectiveness of Business Intelligence systems in Iran's airlines

7	Sam RahimzadehHolagh,Hossein Bodaghi Khajeh Noubar&Babak Valizadeh Bahador (2014)	The effect of organizational structure on organizational creativity and commitment	Complexity, Formalization and Sophistication	Kaunas University of Technology published by Elsilver ltd	Among the dimensions of OS, Centralization has the highest Beta value & has a positive meaning full effect on organizational creativity. The rest of the element has no meaningful effect on organizational creativity.
8	AnnickWillem & Marc Buelens (2009)	Knowledge sharing in inter-unit cooperative episodes: The impact of OS dimensions	Centralization, Formalization & Specialization	International Journal of Information Management	Expected relationships, such as the negative effect of centralization or the positive effect of lower formalization, were not found.
9	Esra Basol & Ozgur Dogerlioglu(2014)	Structural Determinants of Organizational Effectiveness	Centralization, Formalization & Specialization	Journal of Organizational Management Studies	Formalization & specialization increases effectiveness. On the other hand, increasing the organizational size decreases the organizational effectiveness.
10	Farahirad K. (2016)	A Review on the Effect of Organizational Structure on Organizational Forgetting	Formalization Complexity, and Centralization	International Journal of Humanities and Cultural studies	A significant negative relation between OS and organizational forgetting found. Complexity also had direct relation with intentional and accidental forgetting.
11	George John and John Martin (2014)	Effects of OS of Marketing Planning on Credibility &Utilization of Plan Output	Centralization, Formalization & structural differentiation	Journal of Marketing Research	The results indicate that a bureaucratized planning structure with formal rules and procedures and departmental specialization can enhance both plan credibility and utilization.
12	Inocencia Maria Martı´nez-Leo´n & Jose A. Martı´nez-Garcı´a(2011)	The influence of organizational structure on organizational Learning	Centralization, Specialization & Autonomy	International Journal of Manpower	Organic structural profiles favor organizational learning &greater knowledge creation rather than mechanics profile.
13	ESTALAKI, Kamran Ghorbannejad(2017)	On the impact of OS on organizational efficiency in industrial units	Complexity, Formalization & Concentration	International Journal of Information Management	There is significant relationship between efficiency in industrial units with organizational structure and its components including complexity, formality &concentration. The findings also show that organizational complexity has negative and significant impact on organization efficiency.

14	Farashi Marjan &Reshadatjoo Hamiedh (2017)	A Framework for Evaluating the Impact of Organizational Structure on Knowledge Management	Formality, Complexity & Decentralization	Int. J. Advanced Networking and Applications	Among the structural dimensions, formality & centralization result a meaningful and inverse relation with Knowledge Management. And a meaningful & direct relation between Complexity &Knowledge Management found.
15	Safoura Niknahad, Asieh Ghorbanian Rajabi & Zahra Rezaei (2014)	The Relationship between Organizational Structure and Entrepreneurial Characteristics of Managers of Iran Sports Organizations	Centralization, Formality & Complexity	Int. Journal of sport studies	There is no significant relationship between organizational structure and Sports Organizations managers' need of achievement. There is no relationship between OS and managers' personality trait, i.e. need of achievement, creativity, & risk-taking. Therefore, it can be concluded that managers can improve their entrepreneurial characteristics more in active and less-structured environments, that is to say, they have more opportunity to show their entrepreneurial characteristics. It was revealed that there is a significantly negative relationship between organizational structure and the level of managers' perseverance and determination.

Source: own summary from literature reviews, 2019/2020

2.2.3 Effects of Organizational structure

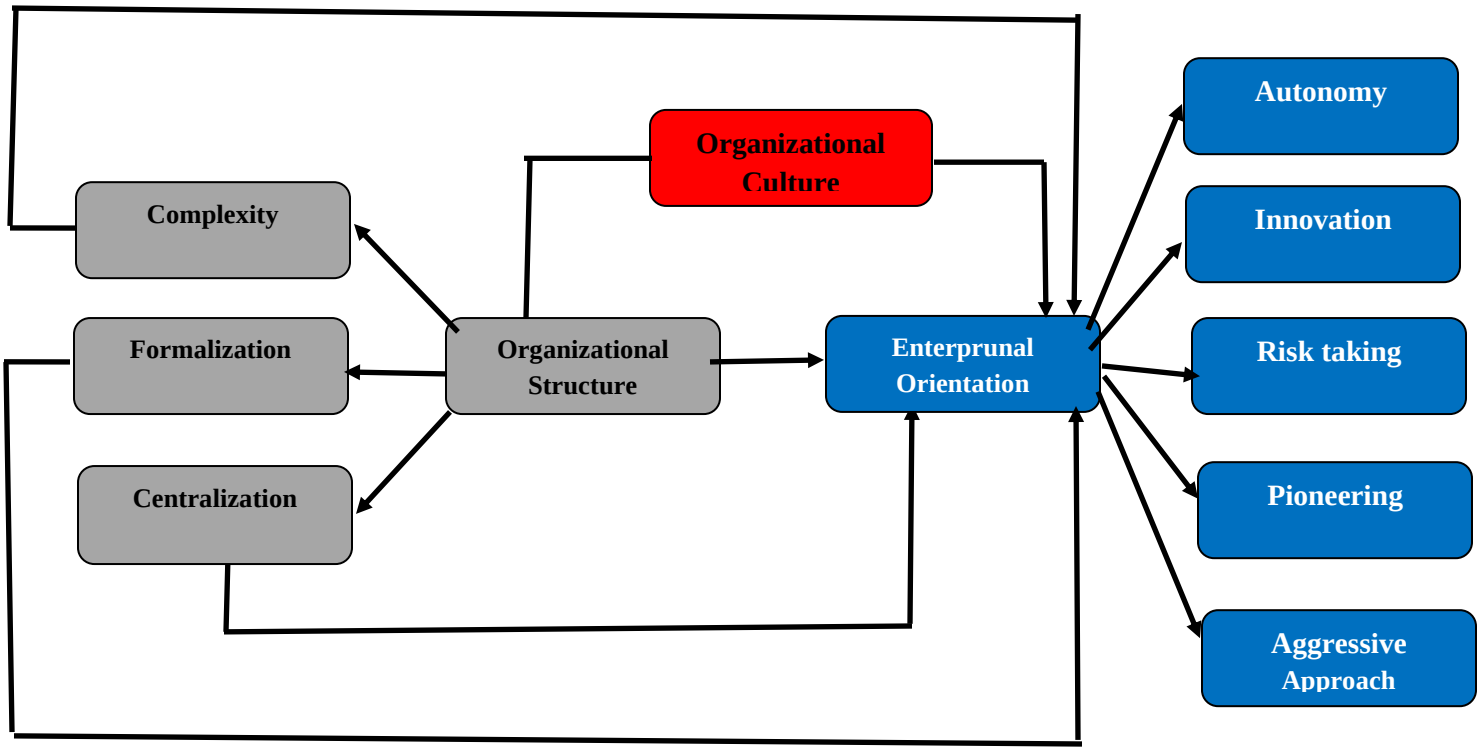
It was indicated that, organization structure has a major effect on the performance of organizations, as well as the review of related literatures shows that the EO of employees is affected by the Organizational structure. Among such literatures; Shoghi and Safieepoor (2013), on their study of the effects of organizational structure on Entrepreneurial orientation of employees, found that the organizational structure has a positive significant effect on the entrepreneurial orientation of the employees of an organization. This implies that, the extent of an organization's structural dimensions such as the level of complexity, formality and centralization will have an effect on the employees' orientation towards entrepreneurship.

It is argued and found that, organic structure increases the innovativeness of employees (Jogartnam et.al, 2006). In order to improve the organizational entrepreneurship, organizational structure needs not be complex (Learner & Shaker, 2007). Formalization was found having negative effect on the independence and diversity of job (Evangelia, et al, 2011). Regarding centralization, when there is decentralization in the organization, it was found being supportive to get higher levels of creativity (Caruana, et al, 2002). As stated earlier, Lumpkin, et al, (2010) argued that among the dimensions of EO, autonomy is the most effective and important dimension which leads to better organizational performance. The structural configuration of an organization must be supportive to promote employees' innovativeness, creativity, autonomy and competitiveness in addition to entrepreneurial orientation of the organization.

2.3. Conceptual Framework

Based on theoretical and empirical literature reviews, it is hypothesized that organizational structure has a significant negative effect on entrepreneurial orientation of the employees in the basic metals industry of Ethiopia. It is also hypothesized that, organizational culture has a mediating role between OS and EO of employees in the basic metal industry of Ethiopia. Thus, the conceptual framework for this study is presented as follows;

Figure 1Conceptual Framework



Source: Shoghi &Safieepoor (2013), modified by author

CHAPTER THREE

RESEARCH DESIGN AND APPROACH

This chapter outlines the methodology and techniques used to fulfill the objectives of the research set out in the introduction. It contained the research design, the research type, data collection techniques, population and sampling techniques, research instrument and data analysis method.

3.1Research Design

Research Design refers to the framework into which the research fits based on theory and nature of the research problem. This will underpin all of the research activities (Walliman, 2006). According to Creswell (2009), there are three research designs. These are – Qualitative, Quantitative, and Mixed designs. Quantitative research approach has two types of research design – Survey and Experimental (Creswell, 2009). A survey design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. From sample results, the researcher generalizes or makes claims about the population (Creswell, 2009, p. 137). Moreover, qualitative data is collected through interviews. This study aims to find out and analyze the effects of structural factors on entrepreneurial orientation as well as the mediating role of OC between OS & EO in the employees of selected companies of the basic metals industry, on sample basis so that the results can be generalized to the population i.e. to the basic metals industry of Ethiopia. Therefore, this study used quantitative research design.

In order to ensure that the research design is consistent with the research objectives, the first step is selecting metal manufacturing firms as a sample to examine the stated factors. Secondly, exploratory research implemented to understand the problem and the subject matter. Thirdly, a self-administered questionnaire and interviews took place to collect data for this research. Finally, pretesting of the questionnaire done prior to the questionnaire distributed to the sample respondents. Due to the nature of the research which has to be studied at one specific time, the researcher used a cross sectional approach.

3.2 Data Source

Basically there are two sources of information used for research purposes – primary and secondary sources. Primary sources are those in which require to conduct a new survey for gathering information at different levels with regard to the inquiry. Secondary sources are those which are made available or have been collected for other research purposes (Adams, Khan, Raeside, and white, 2007).

In order to meet the objective of this study, the researcher used various secondary sources in a bid to understand afore stated determinants including books, journal articles, various postgraduate studies, academic conference proceedings, the web particularly Google Scholar, Emerald, and Science Direct jstor.

To analyze the identified factors, primary data is collected from selected employees and managers of basic metal industry.

3.3 Target population

The study's target population is constituted of the employees and management of sample companies in the basic metals industry. Employees and management are targeted because they are the main stakeholders regarding the organizational structure, entrepreneurial orientation and culture in organizations; therefore, they are considered as sample frame of proposed research.

3.4 Sampling methods and sample size

The study used purposive sampling which takes in to consideration location of nearest & in the outskirts of Addis Ababa, and most importantly since organizational structure mostly is revised every 5 years, a minimum of 5-year tenure considered to assess the effect on the selected strategic orientation. The selection of one manager, two supervisors and two outstanding employees from which have direct role on the areas of this study, for instance, from strategic planning, research & development as well as operation management are selected from the 19 manufacturing companies that fulfills the five-year tenure have drawn as respondent in this study.

3.5 Data Analysis

Data Analysis, particularly in case of survey or experimental design, involves estimating the values of unknown parameters of the population and testing of hypotheses for drawing inference.

Analysis may be categorized as descriptive analysis and inferential analysis (statistical analysis). Descriptive analysis is largely the study and description of one variable (Kothari, 2004). Inferential analysis is used to analyze the relationship between two or more variables and to assess how the independent variables explain the dependent variable (Bisrat, 2015). Unlike descriptive analysis, with inferential statistics, conclusions to be reached extend beyond the immediate data alone (Trochim, 2000).

Data analysis of the study involves several stages. The first stage involves data screening process and tests to satisfy multivariate assumption. The purpose of this stage is to test whether the data is suitable to be used for the purpose of statistical analysis. After passing the first stage, the second stage is to do exploratory factor analysis to identify the underlying structure of the variables involved (Hair, et al, 2006). In the third stage, the data runs using structural equation model (SEM). SEM is a well-known method to analyze a survey data. It is a statistical methodology that takes a confirmatory approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001) and a comprehensive statistical approach to testing hypotheses about relations among observed and latent variables (Hoyle, 1996). Nowadays, SEM is used by social, behavioral and educational scientists as well as biologists, economists, marketing and medical researchers. The advantage of this approach is that it is able to estimate both measurement model and structural model simultaneously. The measurement model is done using validity factor analysis in order to validate measurement scale of a construct (Hair et al., 2006). Variables that pass this analysis test are then applied to structural model analysis in order to examine the relationships between the endogenous variables and the exogenous variables of the study. To examine the effect of independent variable on dependent variable of the study, an inferential analysis which involved SEM is used through AMOS 23 software.

3.6 Measurement of Constructs

The main goal of this study is to examine the effects of structural factors on entrepreneurial orientation of the employees in the basic metals industry of Ethiopia as well as to examine the mediating role of OC between OS & EO. As mentioned earlier, survey would be the strategy of this research. Based on extended literature review, prior studies validate appropriate research

constructs; hence for measuring organizational structure the study employed *Robbin's* (1998) Standard Questionnaire, in order to measure the entrepreneurial orientations *Dess and Lumpkin's* (2005;153) standard questionnaire of entrepreneurial orientation and for the mediating variable constructed using Santos, et al., (2014) questionnaire.

TABLE 2*THE SCALE OF ORGANIZATION STRUCTURE;*

Complexity
Our firm has large number of employees
Our firm have complicated condition of administrative organization's setup
Centralization
Our firm use Strict hierarchy and centralized
Our firm's decision-making process highly concentrated; question bottom-up reflection
Our firm responsibility of each post is fixed;
Our firm have perfect regulations and procedures to guide employees' behavior
Formalization
Our firm communicate through formal channels
Our firm has many transverse cooperation relationship
Our firm has more attention paid to exerting its whole advantage
Our firm has more attention paid to each department's performance

TABLE 3*THE SCALE OF ENTREPRENEURIAL ORIENTATION;*

Autonomy
Our firm consider developing independent work units such as "skunk works" to enhance creative thinking
When using autonomous work units, our firm ensure adequate coordination to minimize inefficiencies and duplication of efforts
our firm have a proper balance between patience and tolerance for autonomous groups and the forbearance to reduce or eliminate initiatives that are not succeeding
our firm implement necessary structural changes such as small, autonomous groups to stimulate new ideas
our firm foster the necessary culture, rewards, and processes to support product champions
Innovativeness
our firm encourage and stimulate technological, product-market, and administrative innovation

our firm stimulate creativity and experimentation
our firm properly invest in new technology, R&D, and continuous improvement
our firm's innovative initiatives hard for competitors to successfully imitate
our firm "safeguard" investments in R&D during difficult economic periods or are they generally the first area where significant cuts are made
Proactiveness
our firm continuously monitor trends and identify future needs of customers and/or anticipate future demand conditions
our firm strive to be a "first mover" to capture the benefits of being an industry pioneer
our firm aware of the downside of being a first mover, such as customer resistance to novel ideas and bearing the costs associated with unforeseen technological problems
our firm effectively use the following methods to act proactively: introducing new products and technologies ahead of the competition and continuously seeking out new product or service offerings
Competitive Aggressiveness
our firm effectively use an aggressive posture to combat industry trends that may threaten your survival or competitive position
our firm enhance its competitive position by entering markets with drastically lower prices, copying the business practices or techniques of successful competitors, or making timely announcements of new products or technologies
our firm know when it is in danger of acting overly aggressive and avoid such actions which can lead to erosion of firm reputation and retaliation by competitors
Risk-taking
our firm foster and encourage a proper level of business, financial, and personal risk-taking
our firm enhance its competitive risk position by researching and assessing risk factors in order to minimize uncertainty
our firm enhance its competitive risk position by applying techniques and processes that have worked in other domains
Overall, our firm carefully manage risks and avoid taking actions without sufficient forethought, research, and planning

TABLE 4*THE SCALE OF ORGANIZATION CULTURE;*

Organizational Culture

Concepts such as process orientation and excellence in performing processes are discussed by management at periodic meetings
In general, the employees understand the nature of the business as a series of interconnected processes
The company is able to suitably manage conflicts between functions (or departments) and minimize resistance to changes in processes, when necessary.
Alignment exists in the company between the strategic objectives of its functional areas (marketing, sales, production and finance, among others).
Managers hold meetings with the aim of improving the integration of the flows of activities associated with the various functional areas of the business (marketing, sales, production, finance, others).

3.7 Ethical Considerations

As suggested by (Trochim, 2000; Sekaran, 2006), the researcher ensured the strict adherence of the following ethical conducts:

- Respondents took part in the research voluntarily and data collected based on the consent of the individual.
- The purpose of the research clearly explained to respondents.
- Information provided by respondents is treated with strict confidentiality and the researcher ensured that participants remained anonymous throughout the study.
- There was no misrepresentation or distortion of the actual data collected from respondents.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

In this chapter, the data was collected from respondents to analyze and interpreted using quantitative analysis which involves analysis of the demographical information of respondents in descriptive statistics while inferential statistics was employed to test the hypothesis and to investigate the influence of independent variables on dependent variable. To analyze the collected data in line with the overall objective of the research undertaking, statistical procedures were carried out using SPSS (version 23) and AMOS.

The researcher distributed a total of 95 questionnaires to 19 companies. The selection of one manager, two supervisors and two outstanding employees from the 19 manufacturing companies that fulfill the five-year tenure was made and the questionnaire specifically was distributed to those selected.

Because of the work relations the researcher has with the industry and the purposive sampling technique, the questionnaire distributed were all usable to enable a meaningful analysis of the data with 100% response rate which indicate that the respondents were committed to give a relevant data for the analysis. The data presented is quantitatively analyzed; and discussions of the results are presented in a convenient manner.

4.1. Demographic Characteristics of Respondents

This section provides a profile of respondents who involved in the study and data collection. The primary data was collected from the selected employees and managers through standardized questionnaires. Hence, this section describes the demographic characteristics of the respondents that focused on gender, age and level of education. The basic characteristic of the sample population is described in Table below.

Table 5 Summarized Demographic Characteristics of Respondents

Variables	Categories	Frequency	Percentage
Gender of Respondent	**Male**	**64**	**67.4%**
	Female	**31**	**32.6%**
Age of Respondent	**Under 26 years**	**52**	**54.7%**
	26- 35 years	**35**	**36.9%**
	36- 45 years	**8**	**8.4%**
Educational level Respondent	**BA/BSC (Under graduate)**	**79**	**83.2%**
	MA/MSC/MBA (Graduate)	**16**	**16.8%**

Source: Analysis of Survey data 2020, using SPSS 23

The demographic result depicts that 67.4% of the respondents are male respondents whereas 32.6%are female. This data indicates male have higher number from the employees in the basic metals industry of Ethiopia.

The age of respondents under 26 Years of age is **54.7%**indicates that majority of the employees are quite young. Those who are between the ages of 26 - 35 years accounts for **36.9%** which make up this set a second largest set of respondents. Those who are within the age group between36-45 years are **8.4%**. The education level of the majority of the respondents indicates **83.2%** are Bachelor's degree holders and **16.8%** held a master's degree. The result shows that majority of the respondents are young and have a resent encounter in the higher academic institutions, their qualification and age is expected to render more understanding of the questionnaires forwarded and accurately fill and return that enable the study to portray the reality more accurately.

4.2. Structural and Measurement Model

4.2.1. Measurement of Reliability

Reliability is known as to what extent the research findings can be replicated, if another study is undertaken using the same research methods. They asserted that "the reliability of the findings depends on the likely recurrence of the original data and the way they are interpreted" in other word (Stability, Equivalence, Homogeneity) of the data (Ritchie & Lewis,2003).

Dunn (2001) also defines reliability as a measure's stability or consistency across time. The data reliability test is measured by using Cronbach's Alpha. Cronbach's Alpha was also calculated as part of the reliability test to assess how valid the results were and should produce similar generalized results if the sample size were increase Field (2006). The Alpha value is ranges from a maximum of 1.0 for a perfect score to minimum of zero, good measure of the alpha should be 0.70 or higher Neuman (2007). According to William and Barry (2010) scales exhibiting a coefficient alpha between 0.80 and 0.96 are considered to have very good reliability, between 0.70 and 0.80 are considered to have good reliability, and alpha value between 0.60 and 0.70 indicates fair reliability and when the coefficient alpha is below 0.60, the scale has poor reliability. Accordingly, the Cronbach's Alpha values of the survey indicate good reliability and the result are presented in table below.

Table 6 Reliability Test (Cronbach's Alpha)

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Autonomy1	133.97	255.499	.515	.894
Autonomy2	133.66	256.587	.422	.895
Autonomy3	133.96	254.892	.486	.894
Autonomy4	134.47	251.677	.515	.894
Autonomy5	134.06	250.443	.607	.892
Innovativeness1	134.27	251.435	.454	.895
Innovativeness2	134.26	253.217	.501	.894
Innovativeness3	134.28	250.993	.502	.894
Innovativeness4	134.32	251.282	.540	.893
Innovativeness5	134.28	250.503	.506	.894
Proactiveness1	134.12	253.423	.488	.894
Proactiveness2	134.29	252.551	.507	.894
Proactiveness3	134.25	252.255	.534	.894
Proactiveness4	134.21	251.487	.546	.893
Competitive Aggressiveness1	134.02	257.510	.344	.897
Competitive Aggressiveness2	134.15	254.595	.410	.896
Competitive Aggressiveness3	134.06	257.868	.326	.897
Risk-taking1	133.89	258.521	.371	.896
Risk-taking2	133.91	256.831	.398	.896
Risk-taking3	134.03	258.988	.325	.897
Risk-taking4	134.00	257.043	.372	.896
Complexity1	134.39	260.559	.259	.898
Complexity2	134.17	259.631	.296	.897
Centralization1	133.97	259.095	.351	.896
Centralization2	133.93	258.495	.392	.896
Centralization3	133.88	259.572	.353	.896
Centralization4	133.85	260.191	.317	.897
Formalization1	134.06	261.932	.272	.897
Formalization2	134.01	261.457	.297	.897
Formalization3	134.18	259.404	.316	.897
Formalization4	134.12	262.125	.227	.898
Organizational Culture1	134.44	256.100	.412	.896
Organizational Culture2	134.65	250.740	.485	.894
Organizational Culture3	134.46	253.719	.415	.896
Organizational Culture4	134.32	251.176	.525	.894
Organizational Culture5	133.98	254.085	.481	.894

Source: Analysis of Survey data using SPSS 23

The Cronbach's Alpha range value is greater than 0.60. Therefore, all variables are acceptable for further analysis.

4.2.2. Validity of Major Constructs

Validity refers to the extent to which the scale measures the theoretical construct. It is the degree to which a test measures what it purports to measure Creswell (2009). Hammersley (1987) asserted that "an account is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theories". In so far, validity is concerned with two main issues: whether the instruments used for measurement are accurate and whether they are actually measuring what they want to measure Winter (2000). Ritchie & Lewis (2003), indicated that the validity of research is conceived as the precision or correctness of the research finding. Checking the validity of data collecting instruments before providing to the actual study subject is the core to assure the quality of the data Yalew (1998).

To ensure validity of Instruments, the instruments were developed using measurements adopted from *Dess & Lumpkin's* (2005) to construct entrepreneurial orientations while the organizational structure constructs were adopted from *Robbin's* (1998) and lastly the mediating variable organizational culture was constructed using Santos, et al., (2014) as well as under close guidance of the advisor and also a pilot survey was carried out on 5 respondents to pre-test the instrument. The pre-test was providing an advance opportunity for the investigator to check the questionnaires and to minimize errors due to improper design elements, such as question, wording or sequence (Adams et al. 2007). After the dispatched questionnaires were returned, necessary modification on 4 items were done. Finally, the improved version of the questionnaires was printed, duplicated and dispatched to the targeted respondents

4.2.3. Normality Test

A critically important assumption when conducting structural Equation modeling in general and using AMOS software for data analysis in particular is that data are multivariate normal (Byren,2010). A common rule of thumb test for normality is to get skewness and kurtosis within range of +2 to -2 when data is normally distributed (Hair et al, 2006). For SEM analysis data that are kurtotic are problematic (Byren, 2010). Thus normality analysis for the 9 variables was

conducted. As shown in the table, all variables are within +2 to -2 range that means the data is normally distributed.

Table 7Normality Test Skewness and Kurtosis

Constructs	N	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
Autonomy	95	-1.160	.247	1.650	.490
INNOVATION	95	-1.131	.247	1.377	.490
Pro-activeness	95	-.743	.247	1.212	.490
CompetitiveAggressiveness	95	-.795	.247	.518	.490
Risktaking	95	-1.300	.247	2.356	.490
Complexity	95	-.725	.247	.847	.490
Centralization	95	-.729	.247	.613	.490
Formalization	95	-.060	.247	-.156	.490
Organizationculture	95	-.527	.247	.550	.490

Source: Analysis of Survey data using SPSS 23

4.2.4. Exploratory Factor Analysis (EFA)

EFA aims to obtain a set of dimensions (factors) which explain the structure of the interrelationships (correlations) between items which should relate to each other for the purpose of producing an appropriate structure model (Hair et al., 2010). The EFA's primary objectives are to find the factors, which consist of a set of measures; to discover the strength of the relationship between each factor and each observed measure; and to reduce a data set to a more manageable size whilst retaining as much of the original information as possible (Field, 2009). Using SPSS version 23.00, this study performed EFA and reliability analysis.

According to the results of the univariate analysis, which mentioned all univariate kurtosis and skewness values and supported the univariate normality, the researcher used the principal components method for factor extraction and used variamax rotation to carry out factor interpretation.

There are also two SPSS generated statistical measures to evaluate the factorability of the data. These were: Kaiser-Meyer-Olkin (KMO); and Bartlett's test of Sphericity (Pallant, 2003). The KMO measure of overall sampling adequacy assesses the degree to which indicators are valid or

appropriate for factor analysis. A KMO value is between 0 (Factor analysis is likely to be inappropriate) and 1 (Factor analysis yield reliable factors).

Kaiser (1974) recommended that the KMO value might be excellent, great, good, middling and unacceptable (above 0.9, between 0.8 and 0.9, between 0.7 and 0.8, between 0.5 and 0.7 and less 0.5, respectively). In this study, Table 4.5 showed that KMO was 0.825 (great) indicating that this data is suitable for conducting factor analysis or this sample was factorable. Moreover, Bartlett's test of Sphericity tests a null hypothesis; this supposed that the population correlation matrix was an identity matrix. This test depended on the assumption of normality which was proved above. Table 8 reported that Chi-Square is 2770.690with (df = 630, p<0.000) which means that variables were related to one another. Therefore, the study was able to continue to complete the remaining steps of the factor analysis.

Table 8 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.825
Bartlett's Test of Sphericity	Approx. Chi-Square	2770.690
	Df	630
	Sig.	.000

Source: Analysis of Survey data using SPSS 23

4.2.5. Indicator Reliability

Indicator reliability measures to what extent a variable or set of variables is consistent regarding what it intends to measure. It measures how much of the indicators variance is explained by the corresponding LV. In PLS approach, reflective indicators loading should be inspected for determining of the appropriateness of the indicator as it is essentially representing the correlation between the indicator and the LV (Chin, 1998). The reliability of one construct is independent of the other and calculated separately. In general, the larger the lodgings indicate the more reliable that LV. However, the preferred level is above 0.7 which is the level at which about half the variance in the indicator is explained by its factor and is also the level at which explained variance must be greater than error variance (Chin, 1998; Garson, 2016; Henseler et al., 2009; Wong, 2013).

4.2.6. Convergent Validity AND Discriminant Validity

Convergent validity involves the degree to which individual items reflecting a construct converge in comparison to items measuring different constructs. A commonly applied criterion of convergent validity is the Average Variance Extracted (AVE) which reflects the average communality for each latent factor in a reflective model. Chin (1998) as well as Fornell and Larcker (1981) (as cited in Garson, 2016) suggested that AVE values should be greater than 0.5 that confirms at least half the variance of indicators are explained by the respective factor.

As it is shown in ***Table 9***, the outer loadings for most of reflective indicators are far from the preferred level. However, Henseler et al. (2009) suggest that lower loadings should be removed if the loading factors are smaller than 0.4 and eliminating that item goes to a substantial increase of composite reliability. Hence, all values of AVEs were greater than the threshold (i.e. <0.5) this requirement also met by the data to confirm well established discriminant validity.

Discriminant validity refers to the principle that the indicators for different constructs should not be so highly correlated as to lead one conclude that they measure the same thing. A demonstration of discriminant validity used in this study is provided through the comparison of the squared factor correlation outputs of Amos measurement model and AVE scores for each of the pair-wise constructs. Since the AVEs are greater than the values of the Squared Correlation (r^2), the model does not violate the assumption of discriminant validity, as in detail shown below in ***Table 9*** the AVE are greater than valued Squared Correlation.

Table 9 Indicator Reliability and Validity measures

Variable	Indicator	Indicator Reliability Outer Loading (λ)	(λ^2)	ε	Convergent Validity (AVE)	Composite Reliability (ICR)	Discriminant ValiditySquare Roots of (AVE)	Correlation
Autonomy	Autonomy1	0.691	.477	.523	0.515	0.841	0.718	0.515
	Autonomy2	0.708	.501	.499				
	Autonomy3	0.681	.464	.536				
	Autonomy4	0.715	.511	.489				
	Autonomy5	0.788	.621	.379				
		3.583	**2.575**	**2.425**				
Innovativeness	Innovativeness1	0.744	.554	.446	0.558	0.863	0.747	0.558
	Innovativeness2	0.757	.573	.427				
	Innovativeness3	0.715	.511	.489				
	Innovativeness4	0.791	.626	.374				
	Innovativeness5	0.724	.524	.476				
		3.731	**2.788**	**2.212**				
Proactiveness	Proactiveness1	0.77	.593	.407	0.650	0.799	0.806	0.6505
	Proactiveness2	0.855	.731	.269				
	Proactiveness3	0.773	.598	.402				
	Proactiveness4	0.824	.679	.321				
		3.222	**2.600**	**1.400**				
Competitive Aggressiveness	Competitive Aggressiveness1	0.949	.901	.099	0.873	0.799	0.934	0.874
	Competitive Aggressiveness2	0.939	.882	.118				
	Competitive Aggressiveness3	0.915	.837	.163				
		2.803	**2.620**	**.380**				
Risk-taking	Risk-taking1	0.840	.706	.294	0.800	0.799	0.895	0.800
	Risk-taking2	0.890	.792	.208				
	Risk-taking3	0.947	.897	.103				
	Risk-taking4	0.898	.806	.194				
		3.575	**3.201**	**.799**				
Complexity	Complexity1	0.949	.901	.099	0.891	0.799	0.894	0.6145
	Complexity2	0.939	.882	.118				
		1.888	**1.782**	**.218**				
Centralization	Centralization1	0.892	.796	.204	0.786	0.799	0.894	0.7853
	Centralization2	0.950	.903	.098				
	Centralization3	0.893	.797	.203				
	Centralization4	0.804	.646	.354				
		3.539	**3.142**	**.858**				
Formalization	Formalization1	0.89	.792	.208	0.7258515	0.799	0.894	0.4755
	Formalization2	0.865	.748	.252				
	Formalization3	0.835	.697	.303				
	Formalization4	0.816	.666	.334				
		3.406	2.903	1.097				
Organizational Culture	Organizational Culture1	0.77	.593	.407	0.543618	0.856	0.925	0.3858
	Organizational Culture2	0.667	.445	.555				
	Organizational Culture3	0.708	.501	.499				
	Organizational Culture4	0.746	.557	.443				
	Organizational Culture5	0.789	.623	.377				
		3.680	2.718	2.282				

***Source**:Authors computation from Amos 23*

4.2.7. Multi- Collinearity / Collinearity Test

Multi-collinearity (also Collinearity) is a phenomenon in which two or more predictor variables in a multiple regression model are highly correlated. It is a phenomenon in which two or more predictor variables in a multiple regression model are highly correlated, meaning that one can be linearly predicted from the others with a substantial degree of accuracy. Commonly, the Variance Inflation Factor (VIF) and tolerance are both widely used measures of the degree of multi-collinearity.

The rule of thumb, a tolerance of less than 0.20 or 0.10 and/or a VIF of 5 or 10 and above indicates a multicollinearity problem. The below SPSS output clearly shows that the VIF of all corresponding variables are below 5. Therefore, the assumption of multi-Collinearity \ Collinearity holds true.

Table 10 VIF and Tolerance Statistics for Collinearity test

Variables	Collinearity Statistics	
	Tolerance	VIF
Complexity	.664	1.505
Centralization	.685	1.460
Formalization	.699	1.431
Organization culture	.968	1.033
Autonomy	.377	2.656
Innovation	.199	4.018
Pro-activeness	.332	3.016
Competitive Aggressiveness	.872	1.147
Risktaking	.783	1.277

Source: Analysis of Survey data using SPSS 23

4.3. Structural Model and Hypothesis Testing

The structural model shown in Figure 2, shows the relationship between constructs or latent variables or unobserved variables that are easy to understand. Support for and the acceptability of

the structural model is evaluated based on the three criteria outlined previously. First, the structural model's fit statistics are evaluated. The model fit statistics of the structural model are shown in Table 11 below.

TABLE 11Table Model Fit Statistics for Structural Model with and without Mediating variable

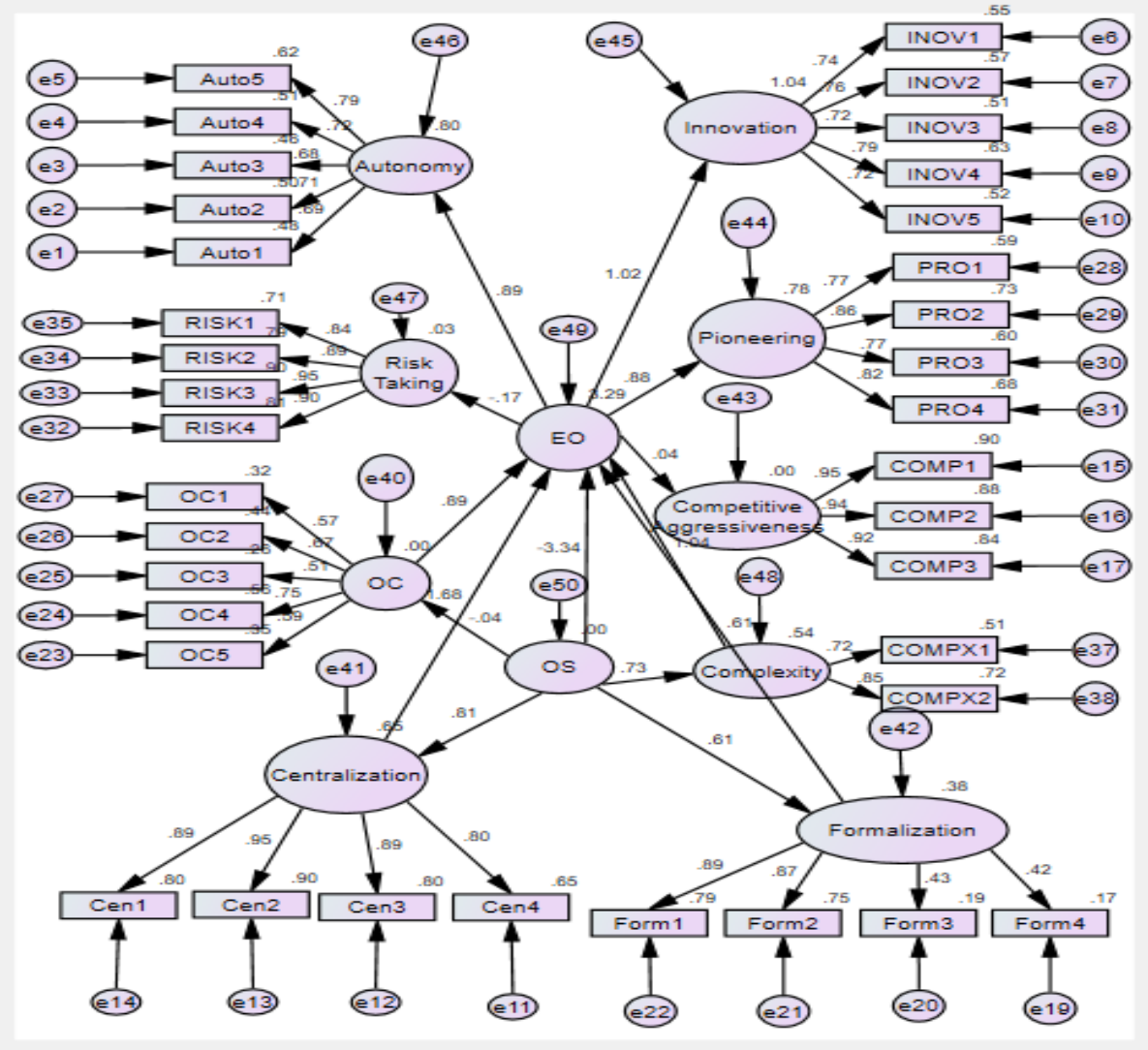
Chi square		**Absolute fit Indices**		**Parsimony Fit Indices**	
X^2 (*P*Value)	859.572 (.000)	RMSEA	0.105	PCFI	0.739
Df	423				
X^2 /df	2.03	RMR	0.147	PNFI	0.630
Chi square		**Absolute fit Indices**		**Parsimony Fit Indices**	
X^2 (*P*Value)	1086.295 (.000)	RMSEA	0.096	PCFI	0.742
Df	581				
X^2 /df	1.86	RMR	0.134	PNFI	0.610

(Source: researcher Amos output)

The model's normed chi-square (X2/DF) is within the acceptable range. The model's absolute fit index value is also within the recommended range in terms of RMSEA (0.105) (0.096) for model without and with mediating variable respectively. Regarding RMR (0.147) (0.134) for model without and with mediating variable respectively, the result is within the threshold value. Further, the model's parsimony fit indices values are acceptable in terms of PCFI and PNFI, which show relatively higher value than the corresponding measurement model which is >0.5. Hence, the full structural model as indicated in Figure 2and Figure 3 is supported and accepted in terms of the selected fit indices in SEM literature.

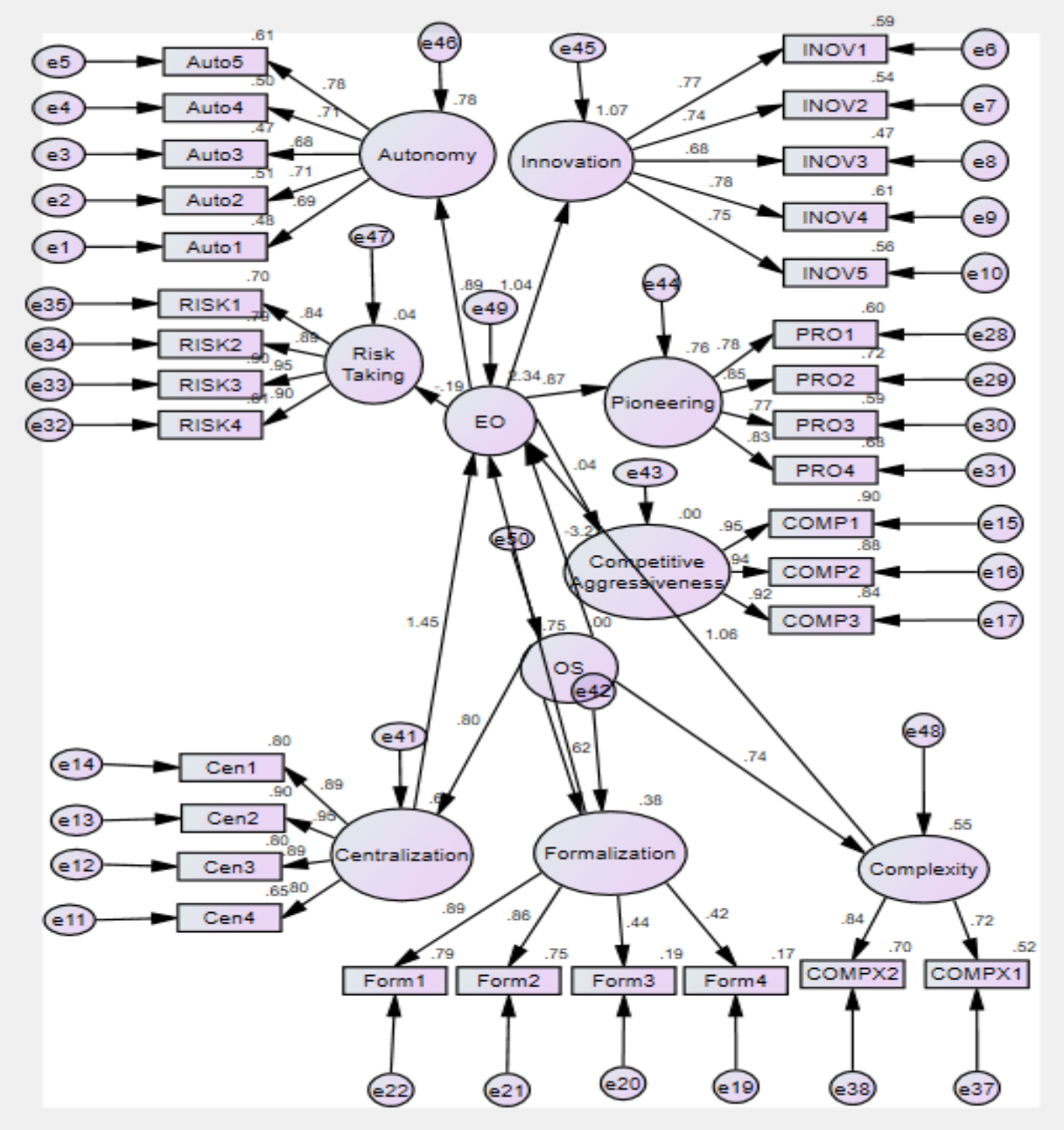
The hypotheses are tested by using the rule of + 1.96 of t-value (C.R.) with a significance or P value of < 0.05. All un standardized regression estimates should be in the expected direction and Statistically different from zero (that is, the critical ratio is larger than 1.96 at the α = 0.05 significance level) (Byrne 2010; Hair et al. 2010).

Figure 2 Proposed Model With Mediating Variable



Source: Amos Output

Figure 3 The Final Model Without Mediating Variable



Source: Amos Output

Table 12 Amos Output of Estimates For The Structural Model In Figure 2 With Mediating Variable

Hypotheis	*Endogenous*		*Exogenous*	*Estimate*	*S.E.*	*C.R.*	*P*	*Status*
H1	EO	<---	OS	-3.508	1.612	-2.176	0.030	Significant
H1a	EO	<---	Centralization	1.425	1.376	1.036	0.300	Not Significant
H1b	EO	<---	Formalization	1.016	0.762	1.333	0.182	Not Significant
H1c	EO	<---	Complexity	1				Can't be estimated
H2	OS	<---	OC	-0.051	0.16	-0.319	0.750	Not Significant
	EO	<---	OC	1.061	0.246	4.308	***	Significant
H3a	Complexity	<---	OS	0.805	0.239	3.37	***	Significant
H3b	Centralization	<---	OS	1				Can't be estimated
H3c	Formalization	<---	OS	0.387	0.139	2.772	0.006	Significant
H4a	Autonomy	<---	EO	0.759	0.131	5.806	***	Significant
H4b	Innovation	<---	EO	1.331	0.195	6.833	***	Significant
H4c	Proactiveness	<---	EO	1				Can't be estimated
H4d	Competitive Aggressiveness	<---	EO	0.061	0.158	0.385	0.700	Not Significant
H4e	Risk Taking	<---	EO	-0.227	0.147	-1.542	0.123	Not Significant

Source: Amos Output

TABLE 13 Amos output of estimates for the structural model in figure 2 without mediating variable

Hypotheis	*Endogenous*		*Exogenous*	*Estimate*	*S.E.*	*C.R.*	*P*	*Status*
H1	EO	<---	OS	-3.438	1.557	-2.207	0.027	Significant
H1a	EO	<---	Centralization	1.219	1.263	0.965	0.335	Not Significant
H1b	EO	<---	Formalization	1.228	0.811	1.515	0.130	Not Significant
H1c	EO	<---	Complexity	1				Can't be estimated
H3a	Complexity	<---	OS	0.829	0.237	3.497	***	Significant
H3b	Formalization	<---	OS	0.395	0.14	2.828	0.005	Significant
H3c	Centralization	<---	OS	1				Can't be estimated
H4a	Autonomy	<---	EO	0.755	0.131	5.768	***	Significant
H4b	Innovation	<---	EO	1.393	0.209	6.658	***	Significant
H4c	Proactivness	<---	EO	1				Can't be estimated
H4d	Competitive Aggressiveness	<---	EO	0.052	0.158	0.329	0.742	Not Significant
H4e	Risk Taking	<---	EO	-0.247	0.149	-1.658	0.097	Not Significant

Source: Amos Output

4.4. Discussions of Empirical Findings

This section discusses in detail the analysis of the results for each independent variable and their effect. Furthermore, the discussion analyzes the statistical findings of the study in relation to the previous empirical evidences. The result for each set of in the above section is discussed as follows.

4.4.1. Organizational Structure

H1: *OS has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.*

As it is shown in table 12 and 13above, coefficient of OS is -3.508 and -3.438 with its p-value 0.030 and 0.027 respectively. It can be seen that holding other explanatory variables constant, OS is found to have a statistically significant negative effect on EO. As a result, the researcher accepts hypothesis stated *OS has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.* This was also confirmed in pervious literatures by Zahra and Covin (1999),Jogartnam, et al (2006) and, Shoghi and Safieepoor (2013). The possible reason for the

significant negative effect could be due to that the companies under the study are inclined towards the Mechanistic Organization (Bureaucratic) structure, and as they are traditional hierarchical organizations that focused to maximize efficiency and minimize cost. The study reflects and confirms the capacity utilization and productivity survey of government that reported the sector is at low level of value addition and still dependent on imports which could be attributed to the low level of Entrepreneurial orientation as can be seen from low level of value addition. Literatures revealed that, for the appearance of EO of employees, different factors have essential roles which include the management and resources of the organization, organizational culture, and organizational structure (Caruana, et al, 2002; Yao, et al, 2009; Learner and Shaker, 2007). Thus, the finding reflects that the basic metals industry lacks the arrangement of its structure to bring the required EO of employees.

4.4.1.1. Complexity

H1a: *Complexity has a significant negative effect on EO of the employees inthe basic metal industry of Ethiopia.*

As it is shown in table 12 and 13 above, complexity is a significant component of organizational structure, and in previous studies complexity found having significant influence on EO. But, as one can observe from the above tables, owing to limitation on simultaneous estimation, AMOS could not establish an estimate for standard error, Critical ratio (Z value) and probability to the "complexity" dimension. Therefore, this research could not test the result thus recommended for further research.

4.4.1.2. Formalization

H2b: *Formalization has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.*

As it is shown in table 12 and 13 above, coefficient of Formalization is 1.06 and 1.228 with its p-value 0.182 and 0.130 respectively. It can be seen that holding other explanatory variables constant, Formalization is found to have a statistically insignificant positive effect on EO. As a

result, the researcher rejects hypothesis that stated *Formalization has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.* The finding is contrary to previous literatures by Shoghi & Safieepoor (2013) and Evangelia, et al, (2011) which concluded that the formalization is a factor that have a significant negative effect on the job independence and job diversity. High level of formalization also found being negatively related with innovation (Damanpour, 1991), as well as being associated with lower motivation & lack of agility in decision making (Fredrickson, 1986).

In our study, the result indicates that formalization has insignificant but positive effect on EO. The positive sign indicates the association of formalization with EO, but not significant. This implies that, formalized structure, though not potentially, may improve the EO of the employees in the basic metal industry of Ethiopia. A study by Holohan et al., (2014) reported that handling complex and uncertain new product development works in a more structured and less flexible manner might be a means of mitigating the project's increased level of risk (Holahan et al., 2014). This is related to the innovativeness and risk taking propensity. The organizations under the study possibly might implement moderate level of formalization that helps them to mitigate the risk level. Additionally, since the main priority of the organizations is meeting the demand of customers with minimum cost possible and in a given schedule, organizations might practice certain level of formality to attain their objective and, employees are expected to have a consistent and uniform output which is consistent with the argument of Fredrickson (2007) that stated high level of formalization narrows the decision making authority of individuals, but avoids ambiguity, maximize efficiency & minimize cost.

In another view, Trust seems to safeguard the dysfunctional effects of excessive formalization and monitoring (Heide et. al., 2007). This means that the lack of trust reduces the positive effects of formalization, since without a certain amount of trust, formalization leads to regulations and procedural overloads. Thus in our finding, it might possibly be the existence of trust between employees that result the positive association of formalization with the EO of employees in the basic metals industry of Ethiopia.

However, in this study, the result revealed that high level of formalization does not hinder EO as the sign evidently is positive as well as low level of formalization is not enough to affect EO since it is insignificant.

4.4.1.3. Centralization

H3c: *Centralization has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.*

As it is shown in table 12 and 13 above, the coefficient of Centralization is 1.425 and 1.219 with its p-value 0.30 and 0.33 respectively. It can be seen that holding other explanatory variables constant, centralization is found to have a statistically insignificant positive effect on EO. As a result, the researcher rejects hypothesis that stated *Centralization has a significant negative effect on EO of the employees in the basic metals industry of Ethiopia.* This finding is contrary to previous literatures by Shoghi & Safieepoor (2013); Caruana, et al, (2002) which reported in the organizations with decentralized systems, higher levels of creative ideas produced.

Unfortunately, this study reveals that the level of centralization does not hinder EO as the sign evidently is positive however the level of decentralization is not enough to affect EO of the companies under the study. This result is consistent with Naziri (2012) that reported insignificant relationship between concentration and organizational entrepreneurship.

Furthermore, Lumpkin et al (2010) have stated that the autonomy is the most important and most effective dimension of the entrepreneurial orientation that leads to the improvement of the organizational performance. Hence, the independent action or freedom without being held by the organizational constraints in bringing a vision or an idea and carrying it through to completion, which is autonomy, is vital for the appearance of EO. Even though it is not significant, the positive effect of centralization on EO of employees in the organizations under the study, is possibly might be due to the existence of moderate level autonomy of employees which surpass organizational constraints.

Among the main factors to consider in organizational structure, the degree of environmental uncertainty is the one. In stable and predictable environment where organization tries to maximize efficiency and minimize cost, mechanistic structures enhance control as the companies under the study partially exhibit such characteristics. The other possible reason for our finding might be associated with the technology used by the companies to transform their input into the desired output. Because of there is no complicated product that requires flexible centralization, most of the production process are redundant and have mostly strict schedule for the delivery of their product, it makes companies to have moderate centralization to attain the overall objective of making the profit for their organization with minimum cost.

However, in this study, the result revealed that the level of centralization does not hinder EO as the sign evidently is positive as well as the level of decentralization is not enough to affect EO since it is insignificant.

4.4.2. Mediating Role of Organizational Culture

H2*: OC has a mediating role between OS and EO of the employees in the basic metals industry of Ethiopia.*

Mediation analysis was performed to test the mediating role of OC. Data analysis of the mediating hypotheses testing will investigate the effect of mediator on the relationship between independent variables and dependent variable in this study; OS and EO. This study examines mediating on the direct path between the independent variables and the dependent variable using the Baron and Kenny's (1986) three step mediation analysis and chi square ($\chi 2$) difference test. The results of the mediating are further confirmed by Sobel's (1982) test, the Aroian's (1944) test, and the Goodman's (1960) test. A variable may be considered a mediator to the extent to which it carries the effect of a given Independent variable to a given dependent variable. Mediation can be said to occur when;

(1) The independent variable significantly affects the mediator,

(2) The independent variable significantly affects the dependent variable in the absence of the mediator,

(3) The mediator has a significant unique on the dependent variable, and

(4) The independent variable on the dependent variable shrinks upon the addition of the mediator to the model.

These criteria can be used to informally judge whether or not mediation is occurring, but MacKinnon & Dwyer (1993) and MacKinnon, Warsi, & Dwyer (1995) have popularized statistically based methods by which mediation may be formally assessed by using the Sobel's (1982) test, the Aroian's (1944) test, and the Goodman's (1960) test. These tests consider the unstandardized regression and standard error for the association between independent variable and mediator, and also the unstandardized regression and standard error for the association between mediator and the dependent variable.

Baron and Kenny's (1986) Three Step Mediating Analysis; A variable may be considered a mediator to the extent to which it carries the effect of a given independent variable to a given

dependent variable. Hence, a mediator accounts for the relationship between an independent variable and the dependent variable. Mediation can be said to occur when

1) The independent variable significantly affects the mediator,
2) The independent variable significantly affects the dependent variable in the absence of the mediator,
3) The independent variable on the dependent variable shrinks upon the addition of the mediator to the model.

The following procedures were conducted to analyze mediation which is explained as follows. First, it is crucial to identify the significance of the indirect to establish mediation and to decide between two major categories of mediation or non-mediation. Prior to identifying the indirect, the path coefficients of both direct and indirect and their significance were estimated simultaneously by using Amos version 23. The significance of indirect was assessed by employing procedures. Second, the classification of mediation or non-mediation is identified based on whether direct is significant or not. The p values for indirect were obtained from the bootstrap result using bias corrected confidence intervals in Amos. Next, to determine the type of mediations or non-mediation according to the criteria listed below (Zhao et al, 2010).

1. **Complementary mediation** occurs if both indirect and directs are significant and have the same directions.
2. **Competitive mediation** occurs if indirect and directs is both significant and has opposite directions.
3. **Indirect only mediation** occurs if indirect is significant, but not direct.
4. **Direct only non-mediation** occurs if direct is significant, but not indirect.
5. **No non mediation** occurs if both direct and indirect is insignificant.

Complementary mediation is known as partial mediation in Baron and Kenny's approach. While the indirect only mediation is the same as full mediation. However, competitive mediation, direct only non-mediation and no non mediation fall under a mediation category in Baron and Kenny's approach which may cause projects to be discarded (Zhao et al, 2010). There are several implications for the type of mediation or non-mediation established. First, when the first three cases; complementary, competitive and indirect only mediation occur, the data supports the hypotheses for mediation. Second, in both complementary and competitive mediation, the mediator identified is consistent with the hypothesized theoretical framework, and the significant

direct signals that there is second possibly omitted mediator which can be examined in any future study. The sign of the direct signals for the sign of an omitted indirect path. Third, indirect only mediation implies that the mediator identified is consistent with hypothesized theoretical framework and there is no need to test for further indirect. The sign of the direct in direct only non-mediation implies that there are yet undiscovered mediators. Finally, the no non mediation is a failure for testing mediation (Zhao et al, 2010).

Table 14 The Summary of Mediation Estimates

Hypotheis	*Endogenous*		*Exogenous*	*Estimate*	*S.E.*	*C.R.*	*P*	*Status*	*Mediating Hypothesis*
H2	OS	<---	OC	-0.051	0.16	-0.319	0.750	Not Significant	Direct only non-mediation
	EO	<---	OC	1.061	0.246	4.308	***	Significant	
	EO	OC	OS	-3.508	1.612	-2.176	0.03	Significant	

Source: Amos Output

Table 15 above indicate OC is direct only non-mediation with OS and EO. Hence, as prescribed earlier the sign of the direct in direct only non-mediation implies that there are yet undiscovered mediators. The researcher suggests for further studies in exploring other mediating variables for this particular set of model.

4.4.3. Second order factor of Organizational Structure

H3. *OS is a second order factor of three elements.*

H3a.*OS has positive significant influence on Complexity.*

H3b.*OS has positive significant influence on Formalization.*

H3c. *OS has positive significant on Centralization.*

Based on table 12 and 13 above OS is second order factor with coefficient of Complexity is 0.805 and 0.829 and its P value is 0.000, Formalization is 0.387 and 0.395 and its P value is 0.005 and 0.006 respectively. While, as can be observed from table 12 and 13 above, owing to limitation on simultaneous estimation, AMOS could not establish an estimate for standard error, Critical ratio (Z value) and probability for the dimension of centralization. Therefore, this research could not test the result and recommend for further research. The result indicates that, out of three variables that made out Organizational Structure, two variables; complexity and formalization are first order

variables and have significant positive association with second order variable OS. The result is filled the gap by testing the element that made up the OS which other studies overlooked.

4.4.4. Second order factor of Entrepreneurial Orientation

H4. *EO is a second order factor of five elements.*

H4a.*EO has positive significant influence on Autonomy*

H4b. *EO has positive significant influence on Innovativeness.*

H4c. *EO has positive significant influence on Pro-activeness.*

H4d. *EO has positive significant influence on Competitive Aggression.*

H4e. *EO has positive significant influence on Risk Taking.*

Based on table 12 and 13 above EO is second order factor with coefficient of Autonomy is0.759 and 0.755 and its P value is 0.000, Innovativeness is 1.331 and 1.393 with P value of 0.000. On contrary, Competitive Aggression coefficient imply 0.061 and 0.052with P value of 0.700 and 0.742 respectively. Likewise, Risk Taking's coefficient indicates -0.227 and -0.247 with P value of 0.123 and 0.097 respectively. Lastly, Pro-activeness as can be observed from table 12 and 13 above, owing to limitation on simultaneous estimation, AMOS could not establish an estimate for standard error, Critical ratio (Z value) and probability. Therefore, this research could not test the result and recommend for further research. The result indicates that, out of five variables that made out EO, two variables; Autonomy and Innovativeness are first order variables and have significant positive association with second order variable EO. The result is filled the gap by testing the element that made up the EO which other studies overlooked.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

The main objective of the study is to examine the effect of Organizational structure on Entrepreneurial Orientation with the mediating role of Organizational Culture in the Basic Metals Industry of Ethiopia. Therefore, based on the analysis and interpretations made at the pervious chapter the following summary, conclusions and recommendation are made.

5.1. Summary of findings

To achieve the objectives, seven research questions were raised. A total of 95 questionnaires were distributed to employees & managers of selected companies in the basic metals industry of Ethiopia, and all questionnaires were filled up and returned making the response rate 100 percent. This indicates that the respondent under this study were committed to give information relevant to the issue understudy. The study employed exploratory factor analyses. And further the analysis was conducted using structural equation modeling techniques that fulfills measurement construct validity (both convergent and discriminant validity) and reliability through AMOS version 23 software. Before going into hypothesis testing, internal consistency measure such as Cronbach alpha reliability, composite reliability, discriminant validity, convergence validity, co linearity diagnostic, model fit and indices has adequately evaluated. Apparently, all values for composite reliability and AVE calculated in this study met the recommended threshold values.

Finally, the research findings are presented as follows:

- The major demographic results were 67.4% of the respondents were Male whereas 32.6% are females. Since basic metal industry is considered by the society as male profession, it is no surprise that the majority are male employees. Majority of the employees are under 26 Years of age is 54.7% and education level of the majority of the respondents indicate 83.2%are a Bachelor's degree holders. The result shows that majority of the respondents are young and have a recent encounter in the higher academic institutions, thus their qualification & age renders more understanding, filling & returning of the questionnaires forwarded that enable the study to portray the reality more accurately.
- The main model indicates Organizational structure is significant and its first order elements namely formalization and complexity made up the second order organizational structure latent variable. While, Autonomy and Innovativeness made out second order latent variable Entrepreneurial Orientation.
- Lastly, the role of Organizational culture in this model indicates direct only non-mediation which implies that there are yet undiscovered mediators. The researcher suggests for further studies in exploring other mediating variables for this particular model set.

5.2. Conclusion

In this section based on the regression analysis findings outlined in chapter four, the conclusion is presented followed by some recommendations to provide insight in to the effect of Organizational structure on Entrepreneurial Orientation with the mediating role of Organizational Culture in the Basic Metals Industry of Ethiopia.

The main objective of conducting this research is to examine the effect of Organizational structure on Entrepreneurial Orientation with the mediating role of Organizational Culture in the Basic Metals Industry of Ethiopia. In addition, this study aimed to evaluate whether the elements of OC & EO would make up the latent construct through the study of the basic metals industry of Ethiopia.

In this study, testing the first hypothesis, organizational Structure is found having a significant and negative effect on Entrepreneurial Orientation. Several studies revealed the significant effect of

OS. For instance; the study conducted by Jogartnam, et a1 (2006), Zahara and Covin (1995) reported that organizational structure has a significant role on organizational entrepreneurship, and on another study, Alipoor, Ahmadi, Pouya, K.Ahmadi &Mowlaie, (2017) found the significant negative effect of organizational structure on job performance of employees.

Similarly, Hao, (2007) reported that in a hi-technology or knowledge intensive industry, organizational performance is affected by structure mainly through innovation and organizational learning. It was also reported that the structure of organizations negatively affect the EO of employees (Shoghi & Safieepoor, 2013).

The finding of the study on hand is consistent with those mentioned researches. Many studies revealed that, among the factors that play a great role for the appearance of EO of employees, organizational structure is the one (Learner and Shaker, 2007; Yao, et al, 2009). Thus, our study reflects and confirms the capacity utilization and productivity survey of government that reported the sector is at low level of value addition & is still dependent on imports which could be attributed to the low level of Entrepreneurial orientation as can be seen from low level of value addition.

It is evident that organizations which have favorable environment for innovation, employees are likely to be interactive to develop their potential & to create knowledge (Teece et al., 2016) and also to solve problems optimally (Hoegl et al., 2003; Joseph et al., 2016). For instance, creating favorable conditions that place appropriate reward system, that improve team working and that support creative and risk taking employees (Aarabi, 2002). Hence, in order to promote entrepreneurship, the existence of such supportive conditions is crucial (Zare, 2006). This suggests managers in the basic metals industry of Ethiopia to create favorable conditions to promote entrepreneurship as well as to get efficiency coped with the environment.

Elements of organizational structure under the study representing Organizational Structure include Complexity, Formalization and Centralization was estimated whether these variables independently have significant association with Entrepreneurial Orientation.

Regarding “complexity”, it is a significant component of organizational structure, and in previous studies it is found having significant influence on EO. For instance, Learner and Shaker (2007) have reported that the lack of complexity of the OS and structures’ consistency with the organizational strategy will improve organizational entrepreneurship.

On the contrary, Naziri, (2012) found "complexity" having no significant relationship with organizational entrepreneurship.

But in our study, owing to limitation on simultaneous estimation, AMOS could not establish an estimate for standard error, Critical ratio (Z value) and probability to the "complexity" dimension. Therefore, this research could not test the result thus recommended for further research.

Studying the effect of formalization dimension, our analysis resulted that, it has insignificant positive effect on the EO of the employees in the basic metals industry. This finding is contrary to previous literatures by (Shoghi & Safieepoor (2013); Evangelia, et al, (2011) which concluded that the formalization is a factor that has a negative effect on the job independence and job diversity. High level of formalization also found being negatively related with innovation (Damanpour, 1991), as well as being associated with lower motivation & lack of agility in decision making (Fredrickson, 1986).

In our study, the result indicates that formalization has insignificant but positive effect on EO. The positive sign indicates the association of formalization with EO, but not significantly. This implies that, formalized structure, though not potentially, may improve the EO of the employees in the basic metal industry of Ethiopia. The organizations under the study possibly might implement moderate level of formalization that helps them to mitigate the risk level for new product development. Holohan et al., (2014) argued that a more structured and less flexible manner might be a means of mitigating the project's increased level of risk in new product development.

Additionally, since the main priority of the organizations is meeting the demand of customers with minimum cost possible and in a given schedule, organizations practice certain level of formality to attain their objective and, employees are expected to have a consistent and uniform output which is consistent with the argument of Fredrickson (2007) that stated high level of formalization narrows the decision making authority of individuals, but avoids ambiguity, maximize efficiency & minimize cost.

In another view, Trust seems to safeguard the dysfunctional effects of excessive formalization and monitoring (Heide et al., 2007). This means that the lack of trust reduces the positive effects of formalization, since without a certain amount of trust, formalization leads to regulations and procedural overloads. Thus in our finding, it might possibly be the existence of trust in organizations that result the positive association of formalization with the EO of employees in the

basic metals industry of Ethiopia. However, in this study, the result revealed that high level of formalization does not hinder EO as the sign evidently is positive as well as low level of formalization is not enough to affect EO since it is insignificant.

Thus, depending on the strategic objective, technology use, size, nature of the industry and other related issues, managers are required to consider and implement the best structural fit.

On the subject of centralization, this study found it having a statistically insignificant positive effect on EO. This finding is contrary to previous literatures by Shoghi & Safieepoor (2013); Caruana, et al, (2002) which reported in the organizations with decentralized systems, higher levels of creative ideas produced.

Unfortunately, this study reveals that the level of centralization does not hinder EO as the sign evidently is positive however the level of decentralization is not enough to affect EO of the companies under the study. This result is consistent with Naziri (2012) that reported insignificant relationship between concentration and organizational entrepreneurship.

Furthermore, Lumpkin et al (2010) have stated that the autonomy is the most important and most effective dimension of the entrepreneurial orientation that leads to the improvement of the organizational performance. Hence, the independent action or freedom without being held by the organizational constraints in bringing a vision or an idea and carrying it through to completion, which is autonomy, is vital for the appearance of EO. Even though it is not significant, the positive effect of centralization on EO of employees in the organizations under the study, is possibly might be due to the existence of moderate level autonomy of employees which surpass organizational constraints. This is to mean that, the result is possibly because of organizations partially gives autonomy for workers to function in a moderately centralized circuit as they have to keep up with the market but they don't unleash their employees to be creative and become out of the box thinkers which adds value to their respective organizations since the main priority of the organization is meeting its demand of customers with minimum cost possible.

It is noted that among the main factors to consider in organizational structure, the degree of environmental uncertainty is the one. In stable and predictable environment where organization tries to maximize efficiency and minimize cost, mechanistic structures enhance control as the companies under the study partially exhibit such characteristics.

The other possible reason for our finding might be associated with the technology used by the companies to transform their input into the desired output. Because of there is no complicated

product that requires flexible centralization, most of the production process are redundant and have mostly strict schedule for the delivery of their product, it makes companies to have moderate centralization to attain the overall objective of making the profit for their organization with minimum cost.

However, in this study, the result revealed that the level of centralization does not hinder EO as the sign evidently is positive as well as the level of decentralization is not enough to affect EO since it is insignificant.

Regarding organizational culture, it is found having insignificant association with organizational Structure. On other hand, the direct relationship between Organizational Structure and Entrepreneurial Orientation is significant indicating direct only non-mediation with Organizational Structure and Entrepreneurial Orientation. Hence, as prescribed by Zhao et al, (2010) the sign of the direct in direct only non-mediation implies that there are yet undiscovered mediators. The researcher suggests for further studies in exploring other mediating variables for this particular set of model. The organizational culture does not become a mediator in this particular model as the effect of the SEM with and without the inclusion of the mediating variable are the same.

In terms of testing second order variables, the result indicates that, out of three variables that made out Organizational Structure, two variables; complexity and formalization are first order variables and have significant positive association with second order variable OS. The result is indicative that mostly the organizational structure is significantly influenced by these two elements. Similarly, Basol & Dogerlioglu (2014), Shoa'I, (2011) contend complexity and formalization is determinant of Organizational effectiveness and knowledge creation.

Likewise, testing second order variables in entrepreneurial orientation indicates that autonomy and innovativeness are first order variables and have significant positive association with second order variable EO. The result of testing the elements of the main variables filled the gap that the elements necessary to make up both organizational Structure and entrepreneurial orientation which other studies overlooked.

5.3. Recommendations

The purpose of the study was to examine the effect of Organizational structure on Entrepreneurial Orientation with the mediating role of Organizational Culture in the Basic Metals Industry of Ethiopia. It is evident that any Basic Metal Manufacturing company wants a high sustainable

exuberant Entrepreneurial Orientation as the company not only minimize its cost through innovation but could also maintain employees which is one of the reason to emphasize on the issue under the study. One of the ways to achieve this is through elements of Organizational structure and Entrepreneurial Orientation which are among the strategic orientation elements.

The industry under the study confirms Organizational structure has an adverse influence on Entrepreneurial orientation. Whereas the mediating variable "organizational culture" proved that has no mediation role between the dependent and independent variable. The elements of organizational structure that are tested independently are tested with Entrepreneurial orientation and indicate they do not have a strong association independently. The elements of Organizational structure as well as Entrepreneurial orientation independently tested their element on whether they make up the latent variable of their respective end; the result indicates that; Complexity, Formalization, Autonomy and Innovativeness make out their respective latent variables.

Based on the findings, the following recommendations which are necessary for the betterment of the industry are forwarded as follows:

- The Metal manufacturing companies has a strict formalized organizational structure that only emphasize on high efficiency, minimization of cost and staying relevant by producing the same old product as long as there is a demand to it. The lack of value addition in the part of the companies would cost the companies an opportunity cost of not taking their opportunity as they lag on incorporating an important element of strategic orientation into their organizational structure. The necessity of the revision of strategic plan for achieving value addition, capturing opportunities & staying competent requires organizations to make appropriate structural shifts to support the strategy implementation.
- Global competitors nowadays are outsourcing part of their designing research to well specialized firms to fill the gap of producing more new products that have high value for the customers. Hence, the Basic Metal industry of Ethiopia need to consider in expensive ways that can be done through collaboration between companies and skilled individuals who are capable of utilizing inside opportunities and bringing out side perspective for better reduce the shortcoming of the organizational structure. In other words, organizations need to focus on outsourcing, partnering or collaborating to solve out the structural shortcomings.

- Since the industry is currently relying on it is employees and formal mass production, the government as well as the manufacturing companies must emphasize sustainably on capacity building of employees to help them capture opportunities as the way forward.
- Since an organization's each structural dimensions have its own advantages and disadvantages, it is necessary to choose, develop, modify or even change designs the way it could be supportive for achieving organizational goals. In addition, the alignment between organizational structure and entrepreneurial orientation is crucial to enhance effectiveness. This implies that, the more an organization flexible is, it is likely to move toward more effectiveness. This in turn suggests managers to have dynamic structure to minimize formality and sophistication to enhance flexibility as well as to be adaptive with the environment.

5.4. Suggestions for Future Research

Further research needs to be carried out on other manufacturing industry sectors in Ethiopia to measure the general viability of the findings. Among the structural dimensions, the effect of "complexity" shall be examined on future researches. This study used mediating variable that has no effect on the model. Thus, it is suggested the use of other possible mediating variable as well as moderating variable such as age and ownership of the company to obtain more comprehensive understanding about the factors that influence entrepreneurial orientation. Moreover, examining the environmental variables' role on the relationship between OS and EO would give better insights. The result of this study indicates that there is a need to emphasize on strategic orientation as it affects performance on organization. Policy issues as well as challenges that have been associated with the norms of the industry need to be explored.

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Appendix A: Questionnaire

ADDIS ABABA UNIVERSITY

College of Business and Economics

Department of Management

Dear/sir/madam Respondents!

Mr Dawit Getachew currently pursuing a thesis at the College of Business & Economics, as partial fulfillment towards the completion of my graduate program, on the survey titled as ***The Effect of Organizational structure on Entrepreneurial Orientation of the employees in the Basic Metals Industry of Ethiopia.*** I kindly request you to fill in this questionnaire while assuring you that the information that you provide will be treated with confidentiality and shall only be used for academic purpose. I would like to remind you that your fair and impartial feedback will make this research a very successful one.

General Instruction:

- No need of writing your name
- Read all the questions before attempting to answer
- Please make a tick mark (√) in the appropriate box and selected likert scales
- Give your answer for all questions
- For open ended questions need to interview
- If you need further clarification contact in the below address

It's essential to bear in mind that this survey is only for academic research purpose and the responses of each participant will be dealt with utmost confidentially.

Thank you for your cooperation and assistance.

Sincerely,

Name: Dawit Getachew

Phone: 09-28-56 18 58

Email: dgetachew99@gmail.com

SECTION I. DEMOGRAPHICAL DATA

Please put a tick ☑ mark in the appropriate box below:

1. Gender: a. Male ☐ b. Female ☐

2. Age: a. Under 26 years ☐ 26- 35 years ☐

☐

c.36-45 years d. Above 60 years ☐

3. Current level of education

a. Grade 12 and below ☐ b. Diploma (12+2, 10+3) ☐

c BA/BSC (Under graduate) ☐ d.MA/MSC/MBA (Graduate) ☐ e. PhD ☐

SECTION II: Entrepreneurial Orientation Constructs

This section is dedicated to assessing various entrepreneurial orientation constructs. Please judge how frequently each statement fits your using the following rating scales. And please indicate your level of agreement or disagreement to the opinion stated in the table below

Select one of the five scales set below from **1= Strongly Disagree to 5= Strongly agree**. Each of the five scales in set to give the meaning stated against each as follows.

R.No	Variable used	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	Autonomy					
Autonomy1	Our firm consider developing independent work units such as "skunkworks" to enhance creative thinking	**1**	**2**	**3**	**4**	**5**
Autonomy2	When using autonomous work units, our firm ensure adequate coordination to minimize inefficiencies and duplication of efforts	**1**	**2**	**3**	**4**	**5**
Autonomy3	our firm have a proper balance between patience and tolerance for autonomous groups and the forbearance to reduce or eliminate initiatives that are not succeeding	**1**	**2**	**3**	**4**	**5**
Autonomy4	our firm implement necessary structural changes such as small, autonomous groups to stimulate new ideas	**1**	**2**	**3**	**4**	**5**

Autonomy5	our firm foster the necessary culture, rewards, and processes to support product champions	**1**	**2**	**3**	**4**	**5**
	Innovativeness					
Innovativeness1	our firm encourage and stimulate technological, product-market, and administrative innovation	**1**	**2**	**3**	**4**	**5**
Innovativeness2	our firm stimulate creativity and experimentation	**1**	**2**	**3**	**4**	**5**
Innovativeness3	our firm properly invest in new technology, R&D, and continuous improvement	**1**	**2**	**3**	**4**	**5**
Innovativeness4	our firm's innovative initiatives hard for competitors to successfully imitate	**1**	**2**	**3**	**4**	**5**
Innovativeness5	our firm "safeguard" investments in R&D during difficult economic periods or are they generally the first area where significant cuts are made	**1**	**2**	**3**	**4**	**5**
	Proactiveness					
Proactiveness1	our firm continuously monitor trends and identify future needs of customers and/or anticipate future demand conditions	**1**	**2**	**3**	**4**	**5**
Proactiveness2	our firm strive to be a "first mover" to capture the benefits of being an industry pioneer?	**1**	**2**	**3**	**4**	**5**
Proactiveness3	our firm aware of the downside of being a first mover, such as customer resistance to novel ideas and bearing the costs associated with unforeseen technological problems	**1**	**2**	**3**	**4**	**5**
Proactiveness4	our firm effectively use the following methods to act proactively: introducing new products and technologies ahead of the competition and continuously seeking out new product or service offerings	**1**	**2**	**3**	**4**	**5**
	Competitive Aggressiveness					
Competitive Aggressiveness1	our firm effectively use an aggressive posture to combat industry trends that may threaten your survival or competitive position	**1**	**2**	**3**	**4**	**5**
Competitive Aggressiveness2	our firm enhance its competitive position by entering markets with drastically lower prices, copying the business practices or techniques of successful competitors, or making timely announcements of new products or technologies	**1**	**2**	**3**	**4**	**5**

Competitive Aggressiveness3	our firm know when it is in danger of acting overly aggressive and avoid such actions which can lead to erosion of firm reputation and retaliation by competitors	**1**	**2**	**3**	**4**	**5**
	Risk-taking					
Risk-taking1	our firm foster and encourage a proper level of business, financial, and personal risk-taking	**1**	**2**	**3**	**4**	**5**
Risk-taking2	our firm enhance its competitive risk position by researching and assessing risk factors in order to minimize uncertainty	**1**	**2**	**3**	**4**	**5**
Risk-taking3	our firm enhance its competitive risk position by applying techniques and processes that have worked in other domains	**1**	**2**	**3**	**4**	**5**
Risk-taking4	Overall, our firm carefully manage risks and avoid taking actions without sufficient forethought, research, and planning	**1**	**2**	**3**	**4**	**5**

SECTION III: Organizational StructureConstructs

This section is dedicated to assessing various Organizational Structure constructs. Please judge how frequently each statement fits your using the following rating scales. And please indicate your level of agreement or disagreement to the opinion stated in the table below

Select one of the five scales set below from **1= Strongly Disagree to 5= Strongly agree**. Each of the five scales in set to give the meaning stated against each as follows.

R.No	**Variable used**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	Complexity					

Complexity1	Our firm has large number of employees	**1**	**2**	**3**	**4**	**5**
Complexity2	our firm have complicated condition of administrative organization's setup	**1**	**2**	**3**	**4**	**5**
	Cenralization					
Cenralization1	Our firm use Strict hierarchy and centeralized	**1**	**2**	**3**	**4**	**5**
Cenralization2	our firm's decision-making process highly concentrated; question bottom-up reflection	**1**	**2**	**3**	**4**	**5**
Cenralization3	Our firm responsibility of each post is fixed;	**1**	**2**	**3**	**4**	**5**
Cenralization4	Our firm have perfect regulations and procedures to guide employees' behavior	**1**	**2**	**3**	**4**	**5**
	Formalization					
Formalization1	Our firm communicate through formal channels	**1**	**2**	**3**	**4**	**5**
Formalization2	Ourfirm has many transverse cooperation relationship	**1**	**2**	**3**	**4**	**5**
Formalization3	Our firm has more attention paid to exerting its whole advantage	**1**	**2**	**3**	**4**	**5**
Formalization4	Our firm has more attention paid to each department's performance	**1**	**2**	**3**	**4**	**5**

SECTION IV: Organizational CultureConstructs

This section is dedicated to assessing various Organizational cultureconstructs. Please judge how frequently each statement fits your using the following rating scales. And please indicate your level of agreement or disagreement to the opinion stated in the table below

Select one of the five scales set below from **1= Strongly Disagree to 5= Strongly agree**. Each of the five scales in set to give the meaning stated against each as follows.

R.No	**Variable used**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Organizational Culture						

Organizational Culture 1	Concepts such as process orientation and excellence in performing processes are discussed by management at periodic meetings	**1**	**2**	**3**	**4**	**5**
Organizational Culture 2	In general, the employees understand the nature of the business as a series of interconnected processes	**1**	**2**	**3**	**4**	**5**
Organizational Culture 3	The company is able to suitably manage conflicts between functions (or departments) and minimize resistance to changes in processes, when necessary.	**1**	**2**	**3**	**4**	**5**
Organizational Culture 4	Alignment exists in the company between the strategic objectives of its functional areas (marketing, sales, production and finance, among others).	**1**	**2**	**3**	**4**	**5**
Organizational Culture 5	Managers hold meetings with the aim of improving the integration of the flows of activities associated with the various functional areas of the business (marketing, sales, production, finance, others).	**1**	**2**	**3**	**4**	**5**

Appendix B: Selected Metal Companies

No.	Name of the Company	Location
1	Steel RMI	Akaki
2	B& C Aluminiuam pvc .ltd .co	Addis Ababa
3	Yesu plc.	Gelan
4	Ethiopian Iron and Steel factory Industry Profile	A.A Akakiy

5	C&E BROTHER Plc.	Debrezeit
6	Sentinel steel PLc	Addis Ababa
7	ZHEN ZENE IRON & STEEL MANUFACTURING PLC.	Gelan
8	HABESHA STEEL Mill PLC	Addis Ababa
9	ABYISINYA COLD ROLLED MILL plc	Addis Ababa
10	Abyisinia integrated steel PLC	Addis Ababa
11	Huano Manuufacturing	Addis Ababa
12	Tree Art steel factory	Sebeta
13	Huaja Aluminuam	Gelan
14	Leggioaluminiumium	Addis Ababa
15	Getachew Aluminum	Addis Ababa
16	Nigat Mechanical Engineering	Addis Ababa
17	Dayot General Business plc.	Gelan
18	Universal metal and minerals pls	Addis Ababa
19	Akaky Basik metals	Gelan