The Relationship Between Organizational Culture, Employee Commitment, and Firm Performance: Evidence from Ethiopian Airlines

BY

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The undersigned have examined the thesis entitled **'The Relationship Between Organizational Culture, Employee Commitment, and Firm Performance: Evidence from Ethiopian Airlines'** presented by **Firew Beyene**, a candidate for the degree of Master of Business Administration. And hereby certify that it is worthy of acceptance.

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DECLARATION

I hereby declare that the research work titled **'The Relationship Between Organizational Culture, Employee Commitment, and Firm Performance: Evidence from Ethiopian Airlines'** is my own work. The work has not been presented elsewhere for assessment. Where material has been used from other sources, it has been properly acknowledged. Due references have been provided on all supporting literatures and resources.

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Abstract

The study aims to investigate the relationship between organizational culture, employee commitment, and firm performance. We used a quantitative approach, a cross-sectional explanatory design, survey method, and questionnaire as a data collection instrument. Employees of Ethiopian Airlines (EAL) established the study setting. We selected survey participants using a simple random sampling technique. 365 questionnaires were distributed, of which 338 were collected, and only 329 were found usable for analysis. The study employed structural equation modeling (SEM) to analyze a battery of latent variables and test the role of the middle variable in the relationship between the antecedent and the consequent. Both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were used for data reduction and identification of factor structures and validate study results, respectively. Results show EAL has an externally focused and stable organizational culture. The study also signpost organizational culture has both direct and indirect positive effects on firm performance and employee commitment partially mediates the relationship between organizational culture and firm performance. We conclude, specific organizational culture traits predict firm performance and employee commitment mediates their relationships.

Keywords: *Organizational Culture, Employee's Commitment, Firm Performance, Ethiopian Airlines, Mediation*

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List of Acronyms

ADA	Adaptability
AMOS	Analysis of Moment Structure
AVE	Average value explained
CFA	Confirmatory factor analysis
CFI	Comparative fit index
COM	Commitment
CONS	Consistency
CR	Critical Ratio
CV	Convergent validity
EAL	Ethiopian Airlines
EFA	Exploratory factor analysis
FA	Factor analysis
GOF	Goodness of fit
HRM	Human Resource Management
IFI	Incremental fit index
INV	Involvement
MI	Modification indices
MIN	Mission
NFI	Normed fit index
OC	Organizational Culture
PCFI	Parsimony comparative fit index

PCA	Principal Component analysis
PERBUS	Business process performance
PERCUS	Customer focus performance
PERFIN	Financial performance
PERLER	Learning and growth performance
PNFI	Parsimony normed fit index
RMR	Root mean residual
RMSEA	Root mean square error of approximation
SEM	Structural equation modeling
SMC	Squared multiple correlations
SPSS	Statistical package for social science
SRL	Standardized Regression Loadings
TLI	Tucker-Lewis index
VFI	Variance inflation factor

Chapter One: Introduction

1.1. Backgrounds of the study

Studying organizational culture has received a lot of attention in 1970s. The first study on the organizational culture was conducted by Pettigrew (1979). He stresses on the anthropologist notion, such as, "symbolism, myths, and rituals that could be utilized in the organizations analysis for different concepts. Later mid-1980, Hofstede and Bon studied organizational culture in depth. According to Hofstede and Bon (1984), organizational culture refers to values, believes and practices that differentiate one company from another. Dolan and Lingham (2012), suggest the culture of any organization perhaps is a significant constitute for its success or failure. Organizational culture is that the shared understanding of the beliefs, values, norms, and philosophies of how things work (Dolan and Lingham, 2012). A system of shared assumptions, values, and beliefs that helps peoples to differentiate between what's appropriate and in appropriate behavior is referred as organizational culture. These values have robust influence on employee behavior also as firm performance (Robbins and Judge, 2013).

Authors depict how organizational culture traits in different dimension at different times. Robbins and Judge (2013) listed the seven primary characteristics of organizational culture; innovation and risk taking, attention to detail, outcome orientation, people orientation, team orientation, aggressiveness, and stability. Moreover, Dolan and Lingham (2012) explain Charles Handy organizational culture concepts that classify organizational cultures as power, role, and task and person culture.

In other hand, Trew, Trigunarsyah, and Coffey (2012) explained the four organizational cultures (Involvement, consistency, adaptability, and mission) depicted on Denison organizational culture model. The researcher further explains these traits as follows: involvement, the primary organizational trait, ensures the participation of employees in deciding. And consistency trait emphasizes on maintenance of the established order by being well coordinated and well integrated. The third trait, adaptability, depicts the power of the organization in translating the demands of the business environment into action by coordination. The last trait is mission

whereby organizations confine meaningful long-term strategic direction and vision of the company.

Firm performance is a key indicator of any organization success or failure. For instance, organizations with high performance are considered as successful in the market and on the other hand those organizations with low are considered failure in the market. The impact of firm performance nowadays is significant for organizations especially organizations which face issues regarding higher competition. Firm performance can be measured both quantitative as well as qualitative term, and it is achieved by the efforts of individual employee and departments (Wright, 1997). Performance of any organization sets it aside from other organizations. The term performance is often used to describe everything from efficiency and effectiveness to improvement (Ali and Junoh, 2016). From previous studies, there is positive relationship between organization culture and its performance.

Different researchers concluded that employee commitment being a determinant of firm performance. The term employee commitment is defined as the individual's participation and classification with the organization in that there is a societal relationship that links the two (individual and organization) together. An extra role behavior is engaged from individuals who are highly committed. Moreover, organizational obligation controls such extra role behavior (Ali and Junoh, 2016). Employee commitment is understood as employee identification with the organization. Garland, Hogan, Kelley, Kim, and Lambert (2013) defined employee commitment as the individual's strength with and involvement in the organization. The three employee commitment dimensions are: affective commitment, normative commitment, and continuance commitment. Affective commitment is defined as "the strength of an individual's identification with and involvement in a particular organization" (Wright, 1997). Normative commitment reflects the sense of obligation to continue in employment. Employees with a high level of normative commitment feel that they ought to remain with the organization The last dimension—continuance commitment—represents cognitive attachment between employees and their organizations because the costs of leaving outweigh the benefits (Wright, 1997).

This study was conducted with the objective of investigating the organizational culture based on Denison's cultural model which involves the four cultural dimensions (involvement, consistency,

adaptability, and mission) and its relationship with employee commitment in the case of Ethiopian Airlines. It is also intended to identify which organizational culture dimension/s whether or not significantly correlated with employee commitment by keeping in view of understanding the concept of firm performance and, the positive relationship between culture and commitment.

1.2. Statements of the Problem

A plethora of researchers investigated the relationship between organizational culture and firm performance (Wahjudi, Singgih, Suwignjo and Baihaqi, 2013; Kessapidou and Varsakelis, 2002; Nikpour, 2017; Flamholtz, 2001; Ali, Said, Abdulah, and Daud, 2017; Booth and Hamer, 2009; Gordon and DiTomaso, 1992; Naranjo, Jimenez, and Sanz, 2016; Rose, Kumar, Abdullah, and Ling, 2008; Yesil, Salih, and Ahmet, 2013; Quy, 2017). Some found a strong relationship (Didiki, Moses, Patdono and Imam, 2013; Kessapidou and Varsakelis, 2002; Flamholtz, 2001), while others found a weak or a confusing relationship (Ali et al., 2017; Booth and Hamer, 2009; Gordon and DiTomaso, 1992; Naranjo et al., 2016; Rose et al., 2008), and yet others no relationship (Yesil, et al., 2013; Quy, 2017) implicating conflicting and contradictory claims among extant literature.

If some claim strong relationships, others claim weak or confusing or no relationship, then more need to be known about their relationship. Such conflicting results usually owe to model specification problems that may necessitate the introduction of interaction variables Keijzers, 2012; Nikpour, 2017 and Patulak, Thoyib, and Setiawan, 2013 suggested introducing employee commitment as a middle variable in the relationship between organizational culture and performance for unbiased, consistent, and efficient estimation.

Booth and Hamer, (2009) and Gordon and DiTomaso, (1992) opined context matters in the study of organizational culture and firm performance. Following this, the current study was carried out in the airline business and developing country industry and national contexts, respectively.

The current study, therefore, introduced employee commitment as a mediating variable to analyze the direct and indirect effect of the input and outcome variables in the airline and developing country contexts assuming such an approach mitigates extant literature limitations.

1.3. Research Objective

1.3.1. General Objective

The objective of the study was to investigate the relationship between organizational culture, employee commitment, and firm performance evidence from Ethiopian Airlines.

1.3.2. Specific Objective

- To identify the dominant organizational cultures that characterizes Ethiopian Airlines.
- To analyze the direct effect of organizational culture on firm performance of Ethiopian Airlines.
- To analyze the direct effect of organizational culture on employees' commitment in Ethiopian Airlines.
- To examine whether employee commitment mediates the relationship between organizational culture and firm performance in Ethiopian Airlines.

1.5 Research Questions

In order to deal with the research objectives, the subsequent general question is asked:

What are the roles of the components of organizational culture in supporting the various sorts of performance?

The research divides this question into the subsequent sets of sub-questions:

- ❖ What is the dominant organizational culture that characterizes Ethiopian Airlines?
- ❖ Does organizational culture affect the performance of Ethiopian Airlines?
- ❖ Does organizational culture affect employees' employee commitment?
- ❖ Does employee commitment mediate the relationship between organizational culture and firm performance?

1.4. Research Hypotheses

The research has four main hypotheses:

H1: Organizational culture has a positive and significant effect on employee commitment

There are four sub-hypotheses for H1

H1a: Involvement Dimension has a positive and significant effect on employee commitment.

H1b: Consistency dimension has a positive and significant effect on employee commitment.

H1c: Adaptability dimension has a positive and significant effect on employee commitment.

H1d: Mission dimension has a significant effect on employee commitment.

H2: Employee commitment has a positive and significant effect on firm performance

There are four sub-hypotheses for H2

H2a: Employee commitment has a positive and significant effect on customer focus performance.

H2b: Employee commitment has a positive and significant effect on business process performance.

H2c: Employee commitment has a positive and significant effect on learning and growth performance.

H2d: Employee commitment has a positive and significant effect on financial performance.

H3: Organizational culture has a positive and significant effect on firm performance

There are four sub-hypotheses and four sub-sub-hypotheses for H3

H3a: Involvement has a positive and significant effect on performance.

H3a1: Involvement has a positive and significant effect on customer focus performance.

H3a2: Involvement has a positive and significant effect on business process performance.

H3a3: Involvement has a positive and significant effect on learning and growth performance.

H3a4: Involvement has a positive and significant effect on financial performance.

H3b: Consistency has a positive and significant effect on performance.

H3b1: Consistency has a positive and significant effect on customer focus performance.

H3b2: Consistency has a positive and significant effect on business process performance.

H3b3: Consistency has a positive and significant effect on learning and growth performance.

H3b4: Consistency has a positive and significant effect on financial performance.

H3c: Adaptability has a positive and significant effect on performance.

H3c1: Adaptability has a positive and significant effect on customer focus performance.

H3c2: Adaptability has a positive and significant effect on business process performance.

H3c3: Adaptability has a positive and significant effect on learning and growth performance.

H3c4: Adaptability has a positive and significant effect on financial performance.

H3d: Mission has a positive and significant effect on performance.

H3d1: Mission has a positive and significant effect on customer focus performance.

H3d2: Mission has a positive and significant effect on business process performance.

H3d3: Mission has a positive and significant effect on learning and growth performance.

H3d4: Mission has a positive and significant effect on financial performance.

H4: Organizational culture has a significant and indirect effect on firm performance via employee commitment.

There are four sub-hypotheses and four sub-sub-hypotheses for H4

H4a: Employee commitment mediates the relationship between involvement and performance.

H4a1: Employees' commitment mediates the relationship between involvement and customer focus performance.

H4a2: Employees' commitment mediates the relationship between involvement and business process performance.

H4a3: Employees' commitment mediates the relationship between involvement and learning and growth performance.

H4a4: Employees' commitment mediates the relationship between involvement and financial performance.

H4b: Employees' commitment mediates the relationship between consistency and performance.

H4b1: Employees' commitment mediates the relationship between consistency and customer focus performance.

H4b2 Employees' commitment mediates the relationship between consistency and business process performance.

H4b3: Employees' commitment mediates the relationship between consistency and learning and growth performance.

H4b4: Employees' commitment mediates the relationship between consistency and financial performance.

H4c: Employees' commitment mediates the relationship between adaptability and performance.

H4c1: Employees' commitment mediates the relationship between adaptability and customer focus performance.

H4c2: Employees' commitment mediates the relationship between adaptability and business process performance.

H4c3: Employees' commitment mediates the relationship between adaptability and learning and growth performance.

H4c4: Employees' commitment mediates the relationship between adaptability and financial performance.

H4d: Employees' commitment mediates the relationship between mission and performance.

H4d1: Employees' commitment mediates the relationship between mission and customer focus performance.

H4d2: Employees' commitment mediates the relationship between mission and business process performance.

H4d3: Employees' commitment mediates the relationship between mission and learning and growth performance.

H4d4: Employees' commitment mediates the relationship between mission and financial performance.

1.5. Significance of the study

Ethiopian Airlines is currently implementing a 5-year strategic plan called Vision 2025 that will see it become the leading airline group in Africa with seven strategic business units (Ethiopian Airlines, 2019). It is well known that organizational culture is one of the major factors that enrich the attainment of organizational goals and objectives (Nongo & Ikyanyon, 2012). It is extremely essential to develop a highly committed employee that will support to meet the strategic objectives and goals that the Airline outlined in its Vision 2025. Furthermore, this study will have the following significance:

- The study Expected to benefit EAL by determining which type of organizational culture has highest effect on employee's commitment and performance. This could also lead to improvements in workplaces to help employees become more committed to their jobs.

- Since the effect of organizational culture on Ethiopian Airlines employee's commitment is not well know, this study can help Ethiopian Airlines to enrich its organizational culture practice and adjust its focus on the most important organizational culture type that can bring employee commitment.
- The company might use the study findings as an input to amend its policy and procedure on organizational culture and other related human capital management strategies.
- Identifying the contribution of organizational culture traits to employee commitment in Ethiopian context empirically is a crucial addition to the literature as well.
- Lastly, similar stakeholders might use it as an input for further study and to investigate more in the area: in a broader and wider scope.

1.6. Scope of the study

The research geographically delimited the company operation area in the Addis Ababa, domestic and outstations. The research is conducted on Addis Ababa (Head quarter) only because of the following reasons:

First of all, executives at Addis Ababa formulate and ensure the implementation of procedures of the airline including procedure on organizational culture and its performance. Additionally, domestic and outstation are operational areas, and the nature of the work there is not appropriate to directly implement each organizational culture and likewise, these areas don't involve in formulating procedures. Second, about 90% of the workforce is located in Addis Ababa (Ethiopian Airlines, 2020) therefore the researcher is forced to draw its representative samples from this target population and thirdly, the financial capacity and time constraint on the researcher inhibit the access to cover the geographical distance to domestic and outstations areas.

Furthermore, Ethiopian Airlines has been providing air transport services for the past 70 years. On the contrary, this study addressed the effect of the current organizational culture practice of Ethiopian Airlines Company on employee commitment.

The four organizational culture traits (involvement, consistency, adaptability, and mission) are encompassed in this study. The four organizational culture traits are adapted from Denison's Model of Organizational Culture. Initially, these traits are expressed in terms of a set of

managerial practices and are implemented in the case company. Moreover, the selected traits are designed and created within the business environment and also uses business language. Thus, showing the effect of each organizational trait on employee commitment in Ethiopia context is another area addressed by the study.

The selection of the research participants is based on cultural traits. Since the effects of selected organizational culture traits on employee commitment and performance are more administrative and strategic, professional employees who have administrative or strategic exposure in the business and possess a minimum of Diploma in their educational qualification are designated. Moreover, the designated professional work experience is greater than one year so as to ensure that they have experienced Ethiopian Airlines organization culture.

1.7. Organization of the Study

The rest of the thesis is structured as follows: chapter two reviews extant literature including the organizational culture, firm performance, and employee commitment as well as the relationship between them. The third chapter discusses the research methodology including the research approach, research design, research method, data collection instrument, sampling technique, and method of data analysis. Chapter four presents the results and discussion of the study. The final chapter captures the summary of findings, conclusions, and recommendations.

Chapter Two: Review of Related Literature

2.1 Introduction

The chapter begins with a discussion of concepts, definitions, and dimensions of organizational culture and follows its discussion with concepts, definitions, and components of performance. In addition, the theoretical review part of the chapter is dealt with different theories related with the study. Empirical review of the literature discusses works which have been forwarded by previous researchers with related to relationships between components of organizational culture, the direct effect of organizational culture dimensions on performance and the mediating role of employee's employee commitment on performance. Finally, the chapter comes up with conceptual model (framework) depicting the relationship between variables under the study.

2.1. Theoretical concept of organizational culture

According to Denison, Nieminen, and Kotrba (2014) organizational culture is stated as stability process, collectivity, and predictability, source of recreation, as well as conflicts and dynamics. Organizational culture has been defined by different scholars, and most of them defined the concept of culture as a set of values, beliefs, behavioral patterns, and norms that form the core identity of organizations and help in shaping the employee's behavior. Culture and personality of organizations that demonstrate their values, ways of dealing with problems, decision making and doing things are very different from organization to organization. Organizational culture overall described as beliefs and attitudes of people in performing, organizing, assessing and rewarding their performance when dealing with problems and how they think and feel about their organizations (Denison, Hooijberg, Lane and Lief, 2012)

In most organizations, the organizational culture reflects the value of owners in strengthening the vision and mission of the organization. In addition organizational culture establishes a strong direction for the overall operation of the organization as well as it provides a common shared identity for members of the organization. It established strong bond between the organization and members so it becomes a controlling mechanism for the coordination of people efforts. According to Robbins and Judge (2013) organization culture has three levels namely Surface, Middle, and Deepest. At Surface level it includes visible appearance and behaviors, such as

physical layout, dress codes, organization structures, organization policies, procedures and programs and attitudes. At middle level culture is represented by the organization's beliefs and values, while at the deepest level it involves basic assumptions i.e. organization's long learned automatic responses and established opinions.

2.2. Models of Organizational Culture

Due to its complexity, organizational culture has been extensively studied over the past few decades. Models of different researchers try to describe organizational culture with different traits or behaviors. Different traits are driven from different beliefs and assumptions that create an organizational culture. These traits were developed by different researchers. Some Models of Organizational Culture: Daniel Denison's Model of Organizational Culture; Edgar Schein Organizational Culture Model; Hofsted's Model of Organizational Culture; Harrison Model of Organizational Culture; Deal and Kennedy's Culture Model; Herman's Iceberg Model; Cooke and Lafferty's Organizational Culture Model; Bass and Avolio's Model of Organizational Culture; and Schneider's Organizational Culture Model. These stated models of organizational cultures include core characteristics of cultures and allows identifying qualitative and quantitative values which best describes the culture of any organization. Two unique features make the Denison Model stand out beyond all the rest: link to organizational performance and the Denison Model provides organizations with an easy-to-interpret, business-friendly approach to performance improvement based on sound research principles. Denison model which is the common to all model of culture and the linkages to organizational success assert that values of employees need to be aligned with vision and mission of the company.

2.2.1. Denison Model

Denison, et al., 2012 identifies four cultural traits Involvement, Consistency, Adaptability, and Mission. These traits are developed with some sets of managerial practices and have twelve measuring indices that make up the model. The four Denison's organizational culture traits are briefly discussed below.

2.2.1.1. Involvement

Involvement is simply building human capital, ownership, and responsibility and it ensures the participation of employees in decision making. It improves employee's skill development and team effort to get work done. To characterize organizational culture as "highly involved" when it strongly encourages employees in decision making and creates a sense of ownership and responsibility. The employee's involvement may rely on informal, voluntary, and implied control system (Denison, et al., 2012).

There are three indices for involvement trait: empowerment, team orientation, and capability development. The first indices empowerment deals with individuals' authority, initiative, and ability to manage their own work. The focus of team orientation is working cooperatively toward common goals for which all employees feels mutually accountable. The third indices capability development explains the organization continually invests in the development of employees' skills in order to stay competitive and meet ongoing business needs (Denison, et al., 2012).

2.2.1.2. Consistency

Consistency is the second trait which emphasizes on maintenance of the status by being well coordinated and well integrated. It is a tool which gives the organization to devises clear agreement about the right way and the wrong way to do things. The values and the systems which are the basis of strong culture are defined by consistency. It also provides a central source of integration, coordination, and control. Most consistent organizations have a clear set of organizational systems to put a clear set of do's and don'ts (Warrick, Milliman, & Ferguson, 2016).

Similar to involvement consistency trait have three indices, the indices of consistency trait are coordination and integration, agreement and core values. Thus, coordination and integration clarify ability of different functions and units of the organization to work together well to achieve common goals. The second indices is agreement, it is the underlying level of agreement and the ability to reconcile differences when they occur. The last one core values tries stress in which members of the organization share a set of values that create a sense of identity and a clear set of expectations (Denison, et al., 2012).

2.2.1.3 Adaptability

The third trait, adaptability, depicts the ability of the organization in translating the demands of the business environment into action through creating change, customer focus, and organizational learning environment.

The main concern of adaptability trait is in translating the demands of the business environment in to action. Organizations support their capacity as well as increase its chances for survival, growth, and development by creating strong norms and beliefs to receive, interpret, and translate signals from its environment into internal behavioral changes (Denison & Neale, 2011).

Three indices of adaptability trait are: creating change, customer focus, and organizational learning. The index that deals with the organizations ability to create different adaptive ways to meet shifting needs is creating change. With this index the organization will quickly peruse the business environment and react to current trends and anticipate future changes. The second indices for adaptability is customer focus; its focus is on the understanding and reaction of the organization to its customer and prediction to upcoming needs. The last indices consider different opportunities for encouraging innovation, gaining knowledge, and developing capabilities when the organization receives, translates, and interprets different signals form the environment (Denison, Nieminen, and Kotrba, 2014).

2.2.1.4. Mission

The last trait for organizational culture is mission whereby organizations set meaningful long-term direction. Most of the time a clear strategic direction, vision, goals, and objectives are obtained in organizations with this trait. The main purpose of this trait is to define a meaningful long term direction that will assist the organization. Mission offers clear direction; goals, purpose, and meaning that allow the organization to shape current behavior by envisioning a desired future state (Warrick et al., 2016).

A mission provides purpose and meaning by defining a social role and external goals for the organization. It provides a clear direction and goals that serve to define an appropriate course of action for the organization and its members. A sense of mission allows an organization to shape current behavior by envisioning a desired future state (Denison and Neale, 2011).

Strategic direction, goals and objectives and vision and intent, are the indices of the mission trait. The first indices of mission put a clear direction which explains the organization's purpose and assure clearance how everyone can contribute. The stress of the second indices is to set clear goals and objectives which could provide a clear direction for everyone in the organization. The clear directions established in these indices are linked to the mission, vision, and strategy of the organization. The final indices vision incorporates core values which apprehend the hearts and minds of the employee's within the organization. Generally vision ensures that organization has a shared view of a desired future state (Warrick et al., 2016).

2.2.2. Benefit of Organizational Culture

Different researchers and scholars list out many benefits of organizational culture. According to Robbins and Judge, (2013) organizational culture will benefit both the organization and employees and culture has a boundary defining role. One organization can be distinct from the other with its culture. If there is a strong and defined cultural custom in the organization, the culture will bear sense of identity for its members. In addition, culture facilitates commitment to something larger than individual self-interest. It also enhances the stability of the social system by being social glue that helps hold the organization together by providing standards for what employees explaining about.

Furthermore, Kondalkar (2007) tried to outline what culture does to both employees and organization. First, it gives members an organizational identity: Sharing norms, values and perceptions gives people a sense of togetherness that helps promote a feeling of common purpose. Then, it facilitates collective commitment. The common purpose that grows out of shared culture tends to elicit strong commitment from all those who accept the culture as their own. Third, it promotes systems stability. By encouraging a shared sense of identity and commitment, culture encourages lasting integration and cooperation among the members of an organization. Fourth, it shapes behavior by helping members make sense of their surroundings. An organization culture serves as a source of shared meaning that explains why things occur the way they do. Finally, it helps organizational members stick to conformity and expected mode of behavior. So, Culture ensures that everyone thinks and behaves in a prescribed manner (Warrick et al., 2016).

And according to Robbins and Judge (2013) a great organizational culture has the following importance and qualities. Initially it creates alignment; alignment in one organization is attained when company's objectives and its employee's motivation are pulling in the same direction. It also produces trust for both the organization and the employee. If the organization has an attractive culture then it will produce a trust on the employees. Third good culture is a magnetic force to create a better teamwork integrated environment. It is well known that innovation without an organized culture is not attainable. Innovation leads organizations to get the most out of the available resources. Finally the better the organizational culture the better psychological safety it creates. Psychological safety starts at team level, not at individual level so organizations need to create an appropriate culture that give every safety to employees.

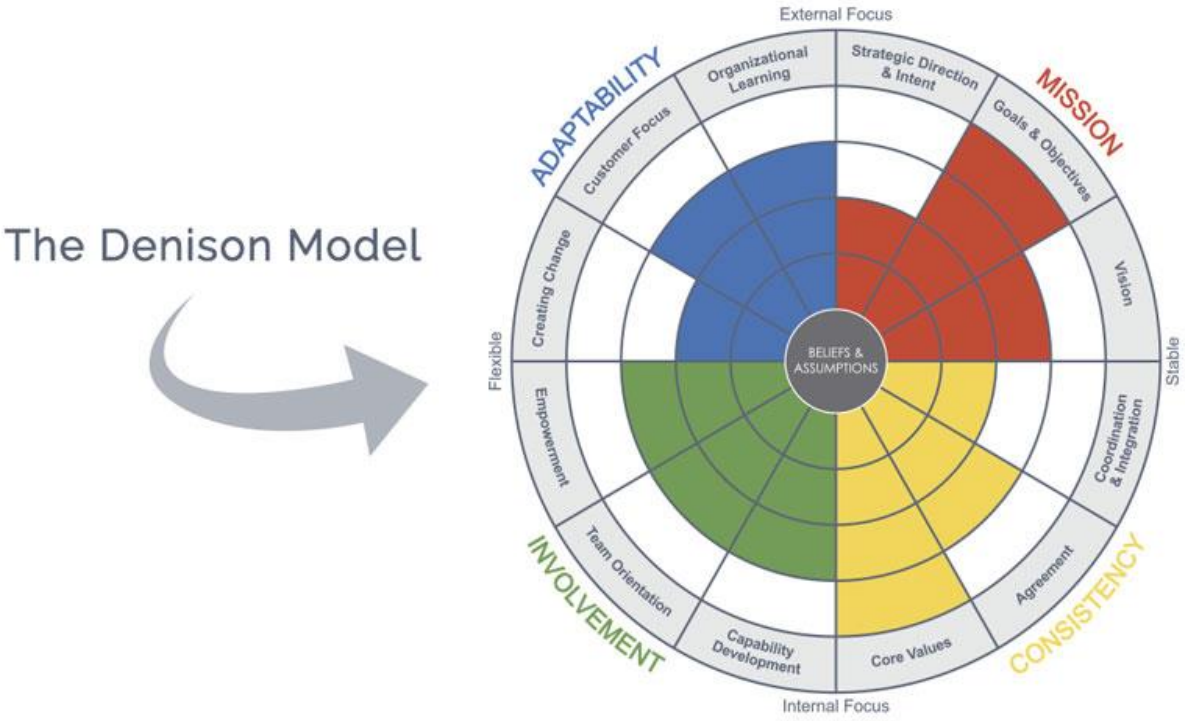

Figure 2. 1 Summary of organizational culture profile using Dennison model

2.4. Employees Commitment

Commitment is a psychological state that characterizes the employee's relationship with the organization. Commitment is a guarantee for the organization that reflects as an employee will stay in the organization under any situation (Meyer and Allen, 1997). According to the definition of Davis, and Newstrom (2002) employee commitment is a degree to which an employee identifies itself with the organization and its desires to preserve actively collaborating in the organization. Employee's commitment is a measure of employee's disposition to stay with a firm within the future. It usually reflects the employee's belief within the mission and goals of the firm, temperament to expend effort in their accomplishment, and intensions to continue operating there.

Luthans, Norman, and Jensen (2007) also explained that, as an attitude, commitment is most often defined as a strong desire to remain as a member of a particular organization; a willingness to exert high levels of effort on behalf of the organization; and a definite belief in and acceptance of the values and goals of the organization. In different words, commitment is a mindset about employees' loyalty to their organization and is ongoing techniques via which organizational members express their concern for the organization and it's endure achievement and well-being.

Employee's commitment according to Meyer, Stanley, Herscovitch and Topolnytsky (2002) can also be deemed as the degree to which an employee identifies with the goals and values of the organization, and is willing to put in efforts to help the organization to achieve these goals.

According to Meyer and Allen (1997), a committed employee is the one who stays with the organization through thick and thin, attends work regularly, puts in a full day (and may be more), protects company's assets, shares company goals and others. With this Mayer and Allen (1997) concluded that an organization with a committed employee have an advantage in many aspects. Besides, they state that commitment characterizes employee's relationship with the organization and it infers membership of employees in the organization.

In attempting to measure commitment, Meyer, Allen, and Gellatly (1990) conjointly planned a three component model of commitments. The three components of commitment are Affective commitment, Continuance Commitment and Normative Commitment. The Affective

Commitment refers to employee's emotional attachment to, identification with, and involvement in the organization. In other words, it refers to the extent of emotional attachment of a person to the organization. This attachment could be due to one's role in relation to the organizational goals and values, or to the organization for its own sake. The continuance commitment refers to commitment based on the costs the employees associate with leaving the organization. As such, during this form of commitment, the less viable alternatives employees have, the stronger are their continuance commitment to current organization they are working in. The Normative commitment refers to employee's emotion of duty to stay with the organization. This form of commitment are going to be influenced by associate individual's expertise before cultural socialization and following organizational socialization entry into the organization (Meyer, et al., 2002). For this study we use the definition of Allen and Meyer that's observed extra suitable.

2.5. Types of employees Commitment

According to the previous paragraph, Meyer, Allen, and Gellatly (1990), proposed three-component types of employee's commitment as Affective Commitment, Continuance Commitment, and Normative Commitment. Below is the detail:

2.5.1 Affective commitment

It describes an employee's emotional attachment to, identification with, and involvement in the organization and its goals. It effects from and is induced by individual and organizational value congruency. Organizational members, who are committed to an organization on an affective basis, continue working for the organization because they want to (Meyer, Allen, and Gellatly 1990). Mowday, Porter, and Steers (1982) also said that an individual who is affectively committed or emotionally attached to the organization:

(i) Believe in the goal and values of the organization,
(ii) Works hard for the organization;
(iii) It intends to stay with the organization.

Affective commitment is a degree to which an individual is emotionally bound to the organization through feelings such as loyalty, affection, and tenderness as defined by Robbins and Judge (20013). This definition shows as employee with strong affective commitment feel as

the part of the organization and continue to work within the organization. Between the three types of commitment, affective commitment has the largest benefit to the organization, and it is also related to desirable work behavior (Fernandez-Lores, Gavilan, Avello, and Blasco 2016).

2.5.2 Continuance Commitment

Continuance Commitment exhibits the individual's awareness of the costs of leaving an organization. There are different factors that makes too costly for an employee to leave and seek other engagements. To list some: community involvement, acquired job skills being unique to the organization, status, seniority, and monetary investments. According to Meyer, Allen, and Gellatly (1990) when employees do not have alternative opportunity or awareness of the costs associated with leaving the organization they will bound with the organization or increase their commitment. The comparison between affective and continuance commitment as made by Meyer, Allen, and Gellatly (1990) is individuals develop affective commitment because they are familiar and they have emotional attachment with it. But individual with high continuance commitment has strong connection with the organization because the individual simply have no choice. Robbins and Judge (2013) also defined Continuous Commitment as it is based on losses when leaving the organization, which is often interpreted as a calculative commitment.

2.5.3 Normative Commitment

Normative commitment can be defined as a feeling of obligation to continue employment. The sense of moral obligations that used to remain in organization is expressed by normative commitment. An employee with high normative commitment makes personal sacrifices and doesn't criticize the organization Meyer and Allen (1997). According to the definition of Marsh and Mannari (1977) individuals with high normative commitment develops moral obligation regardless of the incentives that the organization offered. Suliman and Iles (2000) also said that the strength of normative employee commitment is influenced by accepted rules about obligation between the organization and its members. According to Robbins and Judge (2013), employees develop normative commitment simply because of personal loyalty, by obeying the rules set by the organization.

2.6. Organizational performance

Organization overall performance turns into a massive indicator for companies within side the attainment in their goals or dreams in each evolved and growing economies in small and medium companies in addition massive companies. Richard, Devinney, Yip, and Johnson (2009), defines organization performance as a factor that determines how well an organization achieves its objective.

In early times many organizations heighten their performance by increasing their profits only. Meanwhile, organization performance includes the main three areas such as market performance, financial performance, and stakeholder return (Richards et al., 2008).

Kaplan and Norton (1996) devise a framework for firm performance based on four perspectives. These are customer focus perspective, internal business process perspective, learning and growth perspective, and financial perspective (Tangen, 2004).

2.6.1 Customer focus perspective

The customer perspective defines the value proposition that the organization will apply in order to satisfy customers and thus generate more sales to the most desired (i. e. the most profitable) customer groups (Tangen, 2004). The measures that are selected for the customer perspective should measure both the value that is delivered to the customer (value position) which may involve time, quality, performance and service and cost and the outcomes that come as a result of this value proposition (e. g., customer satisfaction, market share). The value proposition can be centered on one of the three: operational excellence, customer intimacy, or product leadership, while maintaining threshold levels at the other two (Ahmed & Shafiq, 2014).

2.6.2 Internal business perspective

The internal business perspective refers to internal business process. This perspective allows the organization to know how well the business is running (Chamanifard, Nikpour, and Chamanifard, 2014). It focuses on all the activities and key processes required in order for the company to excel at providing the value expected by the customers both productively and efficiently. In order to identify the measures that correspond to the internal process perspective, Kaplan and Norton (1996) propose using certain clusters that group similar value creating

processes in an organization. The clusters for the internal process perspective are operations management (by improving asset utilization, supply chain management, etc.), customer management (by expanding and deepening relations), innovation (by new products and services) and regulatory & social (by establishing good relations with the external stakeholders) (Ahmed and Shafiq, 2014).

2.6.3 Learning and growth perspective

The learning and growth perspective is the foundation of any strategy and focuses on the intangible assets of an organization, mainly on the internal skills and capabilities that are required to support the value-creating internal processes (Lee and Huang, 2012). The learning and growth perspective is concerned with the jobs (human capital), the systems (information capital), and the climate (organization capital) of the enterprise. These three factors relate to what Kaplan and Norton (1996) claim is the infrastructure that is needed in order to enable ambitious objectives in the other three perspectives to be achieved. This of course will be in the long term, since an improvement in the learning and growth perspective will require certain expenditures that may decrease short-term financial results, whilst contributing to long-term success (Ahmed and Shafiq, 2014).

2.6.4 Financial Perspective

Financial perspective characterizes the long term strategic objectives of the organization. The company's improvement through the implementation and execution of its strategy is examined by its financial perspective. Financial perspective of a company can be classified into three: rapid, growth, and harvest Kaplan and Norton (1996). The growth stage starts from the development and growth of the organization which lead to increased sales volumes, acquisition of new customers, growth in revenues, etc. the second stage is sustain stage which is characterized by measures that evaluate the effectiveness of the organization to manage its operations and costs, by calculating the return on investment, the return on capital employed, etc. Finally, the harvest stage will be based on cash flow analysis with measures such as payback periods and revenue volume (Chamanifard et al., 2014).

2.7 Theoretical View

2.7.1 Organization Culture and Organization Performance

Accordingly, Aluko (2003) in a study on impact of culture on firm performance in selected textile firms in Nigeria, attempted to determine the nature of the relationship, the determinants of performance, and the ways in which culture interacts with other factors within an organization. Using both qualitative and quantitative methodologies with a study population of 630, the study found out that irrespective of organization employee's cultural backgrounds, organization employees appeared to have imbibed the industrial way of life. The study further indicated a strong association between the cultural variables and level of commitment, staff attrition, and positive attitude towards work. However, culture did not translate on to high levels of organization performance since other variables were at work such as economy, technology, and political climate. ul Mujeeb and Ahmad (2011), in their study on the impact of Organizational Culture on Performance Management Practices in Pakistan found out a positive relationship between elements of organization culture and performance management at a confidence level of 0.99. This study adopted exploratory research design, on a population of 60 COMSATS institute of information technology in Pakistan.

According to Nikpour (2017) from his study based on 190 employees in education office of Kerman province, the management practice revealed a positive significance with involvement, consistency, adaptability, and mission with 73.6%, 83.7%, 76.7% and 81.5% respectively. Additionally, the research shows employee commitment has a mediating role on organizational culture and firm performance. The study analysis pointed that organization culture beyond its direct impact on organization performance indirectly influence organization performance through employee's organization commitment. Moreover, the indirect impact had a correlation value of 0.7 higher than the direct impact of 0.68 hence organization commitment had a mediator impact on the relationship between organization culture and organization performance.

Allard (2010) from his quantitative non-experimental study obtained a negative relationship between employee organizational culture and firm performance with $r=-0.52$ and $p<0.001$. A survey research in Pakistan with a sample of 110 Software House employees by Shahzad, Iqbal, and Gulzar (2013) concluded that organizational culture has a significant positive impact on

employee performance with a chi-square of 0.716. The study revealed as there is a moderating effect of employee commitment between organizational culture and employee performance with a Person correlation of 0.415 (should be between 0.3 and 0.7).

A study conducted on 3,574 firms from 37 countries by Suto, & Takehara (2018) discovered that cultural values have a negative effect on corporal performance while it has a positive effect on corporal financial performance. This study finding highlights the importance of cultural values in influencing the valuation of an organization.

300 hospital nurses in Taiwan were analyzed by Tsai (2011). The study was done using a cross sectional method. From the result, there was a positive correlation between leadership behavior and job satisfaction with r=0.55 and r=0.47 respectively.

In a survey study conducted by Acar (2012) on the effects of organizational culture and innovativeness on business performance in healthcare industry, a survey design on 332 employees of 65 private hospitals revealed a positive effect of innovation and organization culture on business performance. Lee, Khong, Ghista and Rad (2006) also carried out a survey study on elicit responses from hospital managers and employees and found out that the success of TQM in hospitals with organic organizational structure and medium organizational culture was higher than mechanistic and bureaucratic hospitals with weak organizational culture.

A descriptive research was done by Agwu (2014) in National Agency for Food and Drugs Administration Control in Nigeria. The research focused on organizational Culture and Employees Performance on 420 employees. As expected the result shows that as there is a strong significant relationship between organization culture and increased employee productivity. The role of organizational culture in the quality management of university was studied by Lapiņa, Kairiša, and Aramina (2015). The basis for this study was a scientific publications review using logical and comparative analysis method. From the findings of study, organizational culture directly connected to development and improves the quality of management.

Studies by Aluko (2003), and Suto, & Takehara (2018) revealed a negative significance moreover, Allard, (2010) study revealed a positive significance though a weak one on the interaction between organization culture on performance. Further, studies survey studies by ul

Mujeeb and Ahmad (2011); Nikpour (2017); Allard (2010); Tsai (2011); Acar (2012) and Lee, et al., (2006) revealed a positive significance on organization culture and employee performance, corporate financial performance and corporal social performance respectively.

2.7.2 Organizational Culture and Employee Commitment

2.7.2.1 Involvement and Employee Commitment

Nongo and Ikyanyon (2012) conducted a research and conclude that there is significant and positive relationship between involvement and commitment. From the result, the more an employee involved in decision making the more he becomes committed.

Empowerment, team orientation and capability development plays a major role in success of an organization. If an organization develops these three components of involvement then managers and employees becomes more committed to work and feel that they own a piece of the organization.

2.7.2.2 Consistency and Employee Commitment

From their studies Nongo and Ikyanyon (2012) concluded that there was no relationship between consistency and commitment. As much as organizations try to maintain a strong culture by being highly consistent, well-coordinated, and well integrated, this does not impact significantly on the level of employee commitment the result is inconsistent with what is expected.

The results of Firuzjaeyan, Firuzjaeyan, and Sadeghi (2015) and Radmard and Ardakani, (2014) showed a positive relationship between consistency and employee commitment in contrary to the above study. The studies revealed that components of consistency (core values, agreement, and coordination and integration) increase employee commitment.

2.7.2.3 Adaptability and Employee Commitment

According to Nongo and Ikyanyon (2012) adaptability predicts employee commitment more than any other corporate cultural variables. If there is an adaptation to a changing circumstance in an organization then employees become more committed.

Similarly, employees exhibited the highest employee commitment when they perceived higher learning culture (adaptability traits) which includes culture of creating, acquiring, and

transferring knowledge and also quickly react to current trends, and anticipate future changes (Radmard and Ardakani, 2014).

2.7.2.4 Mission and Employee Commitment

According to Denison, et al., (2012) mission provides purpose and meaning by defining a social role and external goals for the organization. And also mission provides clear direction and goals that serves to define an appropriate course of action for the origination and its members which result the increase in level of employee commitment to the organization. To the contrary, Nongo and Ikyanyon (2012) found no significant relationship between mission and commitment. This means that employees' identification with the purpose, mission, and goals of the organization does not bring commitment to the organization. But companies should define the mission of their organization clearly and communicate same to employees at all times.

2.8. Empirical View

From the conclusion of Singh and Das (1978) by designing a better organizational culture the level of employee's commitment will be improved. With a higher level of employee commitment manufacturing performance will be enhanced according to Arthur (1994).

Opposite to Denison and Mishra (1995), Boon and Arumugam (2006) stated that all dimensions of corporate culture traits may be useful predictors of firm performance and effectiveness. Bonaparte (2008) and Manetje and Martins (2009) argued that employee commitment and performance are the outcome of a good organizational culture. Zain, Ishak, and Ghani (2009) concluded that all dimensions of corporate culture have impact on employee commitment. Dost, Ahmed, Shafi, and Shaheen (2011) stated that employee commitment has strong impact on firm performance.

According to Lauture, Amewokunu, Lewis, and Lawson-Bod (2012) a positive cultural attitudes will force an employees to develop commitment. In line with the study of Lauture et al. (2012) and Kotter and Heskett (2011) asserted that firm performance will be increased by developing a good organizational culture. Nyongesa, Sewe, and Ng'ang'a (2012) concluded that an institutional culture has impact on its performance. Shahzad, Luqman, Khan, and Shabbir (2012) argued that organizational culture has a deep impact on firm performance.

With a similar manner Ghorbanhosseini (2013) and Kashefi, Mahjoub, Rahimi, Hesabi (2013) asserted that there is a direct and a positive as well as a significant relation between organizational culture and employee commitment and performance. Furthermore, Irefin and Mechanic (2014) stated that firm performance is enhanced by employee commitment.

In Ethiopia Mersen (2016), investigate the effect of four organizational culture traits namely, involvement, consistency, adaptability and mission on employee commitment in Ethiopian Airlines Company. The results show that the four traits measuring organizational culture were all positively related with employee's commitment within the range of r=0.530 to r=0.641. From the organizational culture traits adaptability is contributing trait in describing employee commitment with beta value .386. The other three organizational culture traits, in their descending order of standardized coefficients are mission, involvement, and consistency. Furthermore, statistically significance of the three organizational culture traits: adaptability, mission, and involvement, indicate that there is significant relationship with employees' commitment. However, consistency doesn't have significant effect on employee commitment as it is explained by significance level p>0.05.

Mesert (2019), study was to assess and examine the relationship between organizational culture and employees' commitment. The result of multiple regression Analysis revealed that 23.7% of the variation of employees' commitment can be predicted by the independent variables i.e. involvement, consistency, adaptability and mission. In addition, the two organization culture dimensions (i.e. adaptability and mission) had significant contribution to employees' commitment at 95% confidence level. Conversely, the contribution of involvement and consistency is positive but statistically towards employees' commitment. Hence for further creativity and improvement maintaining the organizational culture with a significant contribution commitment by collaborating the missions and visions of the organization to employees is recommended by the researcher. The need to establish clearly defined and visible expression of organizational culture is also recommended by the researcher.

The gap!!

The gap shows that majority of the previous studies shows a different results, some shows positive relationships while others found a weak or confusing relationship and others do not show any relationship. And others conducted on the organizational culture and its effect on employee commitment might help organizations to enrich its organizational culture practice and adjust its focus on most important organizational culture type that can bring employee commitment. But, most of them didn't investigate the mediating role of employee's employee commitment on the relationship between organizational culture and firm performance.

2.9. Conceptual frame work

Denison and Neale (2011), has developed a model which highlights four key organizational culture traits and the unique future of these model is that it is behaviorally based, designed and created within the business environment and it also uses business language to explore business-level issues. Moreover, the model depicts the correlation between cultural traits and firm performance measures which includes employee's commitment. As can be seen in figure 2.1 below, independent variables are involvement, consistency, adaptability, and mission traits of organizational culture considered as traits of organizational culture as they are frequently used by many researchers. Employee's employee commitment was considered as a mediator between organizational culture and performance. As suggested by (Ahmed and Shafiq, 2014), customer focus, internal business process, learning and growth and financial performances are appropriate for airlines industry and the study used these four performance perspectives as dependent variables.

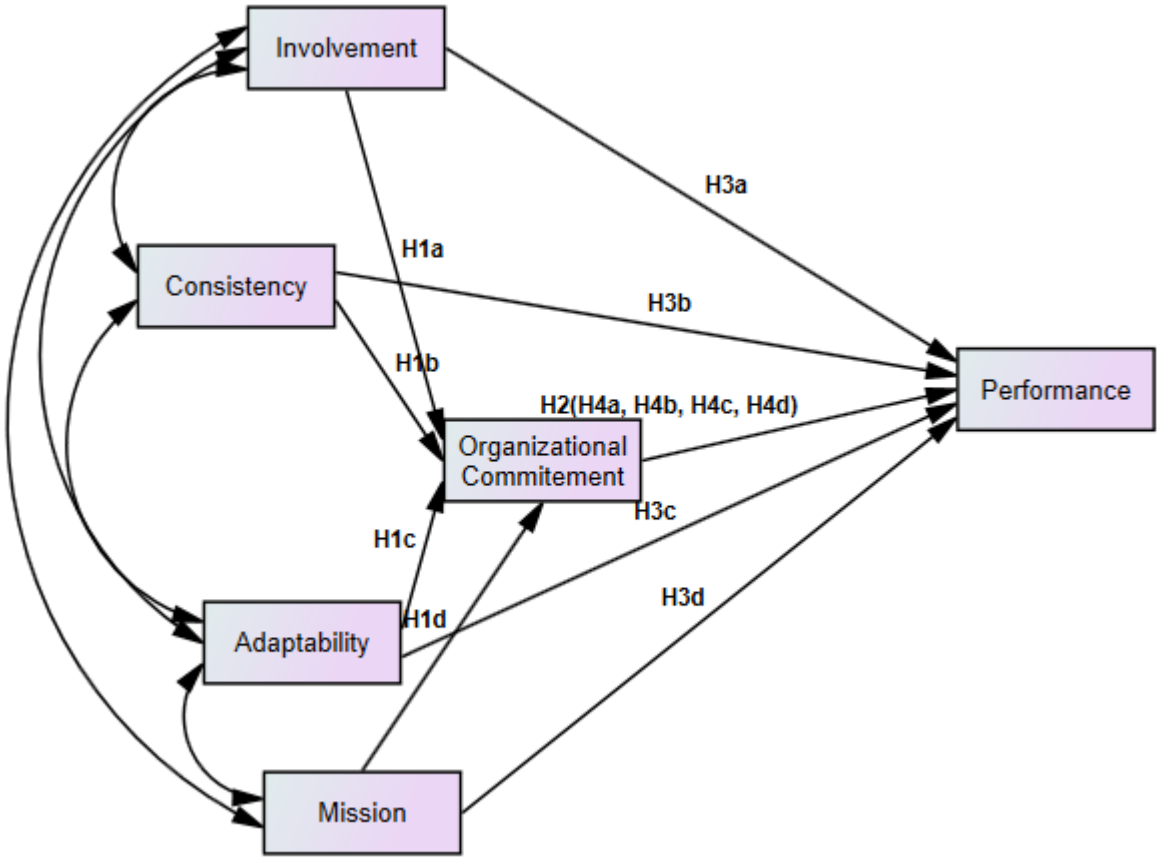

Figure 2. 2 Self-constructed conceptual model

Chapter Three: Research Methodology

3.1. Introduction

Research methodology is a scientific procedure or technic used to identify select processes and solve the research problem. This chapter presents the overall process that outlines how the validity and reliability of the research instrument was ensured in a systematic way to achieve research objectives.

In this part of the study, the research approach, research design, research method, data collection instrument, target population and sample design, model specification and variable description, method of data analysis, proposed reliability, and validity tests and finally ethical consideration.

3.2 Research Approach

There are different research approaches to educational research. The most known research approaches are three types, the first one is positivism, which assumes that reality exists independently of humans. Its main concern is on the cause and effect relationship between phenomena and once established, they can be predicted in the future (Saundres, and Lewis, 2012). The second one is interpretivism, which believes in socially constructed multiple realities. According to interpretivists, truth and reality are created, not discovered. The third one Is critical theory, which assumes that a reality exists, but it has been shaped by cultural, political, ethnic, gender, and religious factors which interact with each other to create a social system (Wilson, 2014). Since this research bases on quantitative research and mainly focuses on cause and effect the researcher uses positivism research approach.

In addition research approaches can be classified in to three: deduction, induction, and abduction. The study adopted the deduction approach because the conceptual framework or research hypotheses are built based on the previous studies and aimed to empirically test theoretically proposed relationships. On a deductive approach the researcher bases on existing theory to develop a hypothesis (Saundres, and Lewis, 2012). The deductive approach can be explained by the means of hypotheses, which can be derived from the propositions of the theory. In other words, the deductive approach is concerned with deducting conclusions from premises or propositions (Wilson, 2014).

3.3 Research Design

3.3.1 Purpose of the Research

A research can be grouped into three based on the purpose of the research, exploratory, descriptive, and explanatory (Anol, 2012). Exploratory research engages with describing things which are not known before but has existence. Descriptive research engages with describing the characteristics of variables in a particular situation. Explanatory research primarily focuses on developing relationships and uses correlations to explain relationships. Since explanatory research is used to answer the why and how types of question in determining the relationship and mediation role of variables the researcher used explanatory research.

3.3.2 Research strategies

A research has different components such as research topic the research standpoint, the research design and research method. These components of research are organized with a research strategy. The four research strategies are: case study, qualitative interviews, quantitative survey, and action-oriented research (Johnson, & Onwuegbuzie, 2004). Since explanatory research is used, the research strategy applicable is quantitative survey and since the study focused in one company the research strategy is case study.

3.3.3 Types of Data

Researchers use different sources of data's for the analysis and discussion of the targeted objective. The source of data's used by the researchers can be grouped into two: primary data and secondary data. A primary source of data is a raw data which is collected by the researcher. Primary source of data gives the access to the main source of the research. Secondary data is a data that is already exists and collected by someone else. A secondary source describes, interprets, or synthesizes primary sources (Sagor, 2011). Primary data is employed for this research based on the main objectives.

3.3.4 Data Collection Technique

There are different kinds of data collection techniques, from those questionnaire is the most widely used tool for business researches (Kabir, 2017). A questionnaire is developed with different standardized question in which the respondents supposed to answer. The data collection technique for this research is a questionnaire since the research is explanatory research.

Accordingly, self-administered and close ended questionnaire with pre-determined 5-point Likert scale for response was distributed for the target sample employees of Ethiopian Airlines.

3.3.5 Time Horizon of the Collection Data

The first step in determining how the study will be carried out is finding out the information that the study requires to attain main goals of the research. Once the required information is known then the time frame for the research will be set (Rindfleisch, Malter, Ganesan, and Moorman, 2008). There are two types of time frames for researches: Short term study or cross-sectional and long term study or longitudinal. The defining feature of a cross-sectional study is that it can compare different population groups at a single point in time. The same subject is observed for several times in longitudinal study (Summers, 2019). In longitudinal study the researcher have the advantage to notice different changes on the target population. Since the study focuses on the current organizational culture and performance that exists in Ethiopian Airlines cross-sectional study is used.

3.4 Research Method

The three approaches that are used in business and social science researches are: quantitative, qualitative, and mixed research approaches as described by Christensen and Johnson (2014). Quantitative research approaches are developed by collecting numerical data's. Qualitative research approaches are developed by collecting non-numerical data's such as words and pictures. Mixed research is developed based on the collection of numeric and non-numeric data's (Hesse-Biber, and Johnson, 2014). Quantitative research approach is used for this study to answer the research questions and achieve the objectives of the study.

3.5. Research Measures

This section outlines both the dependent and independent variables for this study and their measurement. The independent variables are Denison's organizational cultures dimensions which involvement, consistency, adaptability, and mission dimensions, whilst the dependent variables are commitment and performance. Each construct was measured with multi-item scales which were developed to be appropriate to Ethiopian Airlines. All the variables were extracted from previous researchers (see in the appendix A). Each variables were measured on a five-point Likert-type scale ranging from "1= strongly disagree" to "5 = strongly agree".

3.6 Target Population and sample design

3.6.1 Study population

Study population is a collection of all the people or items with certain common characteristics of interest to be studied (Rahi, 2017). As the issue under investigation is an administrative and strategic matter, the participants should have an exposure to such issue in the case organization. The method used to select the sample population is both probabilistic and non-probabilistic. It is non-probabilistic, since the study was done for the departments that exist in the studied organization and it is probabilistic because each of the employees in the department has the chance to be selected. Accordingly, the researcher used preliminary observation to identify the right respondents who had pertinent knowledge, experience, and ability to provide response for the research questions. Thus, the researcher has grouped Ethiopian Airlines Employees in to Professional or Semi/Non- professional employees (Rahi, 2017).

Professional employees refer to employees who have supervisory, administrative, or strategic exposure in the business and possess at least Diploma in educational qualification. On the contrary, those employees having limited / no exposure to strategic and administrative decisions in the business are labeled as semi /non-professional employees.

Moreover, Semi / non-professional employees are those who are engaged in low level tasks which have very less administrative and no strategic decision exposure. These groups of employees are Filing Clerk, Ground Support Equipment Operator/ Driver, Baggage/Cargo Handler, Laundry Attendant, Administrative Assistant, Catering Helper, Documentation Controller, Mason, Printer, Cook, Loader, Tailor, Service Handler, Carpenters, Cleaners, Data Entry Clerk, Gardener, Help Desk Operator. Incumbents of these positions are not part of the study due to the fact that they have no exposure to strategic issues with very limited involvement in administrative decisions and majority of them have Certificate or lower.

On the other hand, professional employees comprise such as Attorney, Auditors, Accountant, Financial Analyst, Programmer, Network Technician, Instructors, Air Craft Technician, Crew Scheduler, Strategic Planner, Customer Services Agent, Marketing Officer, Compliant Resolution Officers, Human Resource Generalists, Ethics Officer, Safety Officer, Sales Representatives, Mechanic, Network Technician, Electrician, Public Relation Officers, System

Administrator, Developer, Engineer, Operational Planner, Supervisor / Team Leaders, Manager, and Directors. Therefore, professional employees whose work experience is greater than one year make up the target population of the study as they have experienced Ethiopian Airlines organization culture and also have supervisory, administrative, or strategic exposure in the business. Thus, response from such diverse professionals on the relation between the dependent (employee commitment and performance) and independent variables (organizational culture) enables to avoid common respondent bias and also to have more reliable data.

3.6.2 Sampling

Purposive selection was used for selecting departments and random sampling technique was used for repondents, because such a sampling technique avoids researcher bias in selecting the sample and improves the external validity of the research. Four methods are identified to select random sampling, namely, simple, systematic, stratified and cluster random sampling (Saundres, and Lewis, 2012). Of these, simple and stratified random sampling techniques have been used. Simple random sampling was used because of the following reasons: first, it completely avoids the researcher's bias. Second, eventually it produces a random result. Thirdly, managers of different departments almost perform similar activities. Stratified random sampling was also used because there are different divisions and data needs to be collected from each division considering each division as strata. Sample from each division was selected proportionally that is; depending on the number of professionals each division has in the population. The researcher obtained the list of the employees for each division and generates the appropriate respondent with well-known software which generates random respondent. By using random sample generator the respondent is selected from the list see Appendix B1.

3.6.3 Sampling Frame

Sampling frame of the study is, out of the total employee of Ethiopian Airlines, the study focuses on professional staffs who are located in Addis Ababa, Head Quarter as the questionnaires need higher level of literacy of understanding and it was difficult to access staffs out of Addis Ababa, Head Quarter due to the reasons stated in the scope of the study. The sampling frame was obtained from the December, 2019 report (Fact Sheet) of Ethiopian Airlines.

3.6.4 Sample Size

Structural Equation Modeling (SEM) is employed to test the hypothesis in this study. The main criteria for SEM is the sample size, the sample size for SEM should be at least with a range of 100 – 200 (Mulugeta, 2015). According to the annual report December, 2019 of Ethiopian Airlines fact sheet, there are a total of 13,978 employees currently working in the company. The division of employees with demography and geographical location are presented in Table 3.1 below.

Table 3. 1 Ethiopian Airlines employees by division

Location	Male	Female	Total	Percentage (%)
Ethiopia – ADD	7,696	4,273	11,969	85.63%
Domestic-Ethiopia	801	309	1,110	7.94%
Outstations-International	629	270	899	6.43%
Total	9,126	4,852	13,978	100%

Source: Ethiopian Airlines annual report fact sheet 2019.

Since the target population is professional employees the selected populations as professional are presented in table below. Among the employees who are located in Addis Ababa Head Quarter, 4,120 professional employees were the target population for this study.

Table 3. 2 Sample size distribution from the target population

Division	Percent from total employee	Sample size distribution	Distributed	Collected
Customer Service Division	13%	536	47	45
Commercial Services Division	10%	412	37	36
Flight Operations Division	9%	371	33	30
Human Resource Management Division	7%	288	26	24
Cargo Service Division	5%	206	18	16
Finance Division	3%	125	11	9
In-Flight Catering Division	2%	82	7	7
Ethiopian Aviation Academy	2%	82	7	6

Division				
Other Corporate Divisions	17%	700	62	58
Maintenance, Repair & Overhaul (MRO) Division	32%	1,318	117	107
Total	**100%**	**4,120**	**365**	**338**

Source: Ethiopian Airlines Headcount Status Report, 2019

When the target population size is known, Yamane's (1967) provides a simplified formula to calculate sample size. His formula is presented as follows.

$$n = \frac{N}{1 + N(e^2)}$$

Where: N-Target Population

n- Required Sample Size

e^2- Error rate (95% Confidence)

For this study the target population (N=4120) then the required sample size is calculated as

$$n = \frac{4120}{1 + 4120(0.05^2)} = 365$$

3.7. Method of data analysis

Depending on the main objective of the study, the researcher undertakes the data analysis process in order to transform the raw data to relevant, valid, and meaningful summary. Following this, raw data was collected and cleaned properly for further analysis. After the data is cleaned EFA (Explanatory Factor Analysis) is done to obtain the rotated component matrix which is used as an input for CFA (Confirmatory Factor Analysis). CFA is used to test the validity of the data and used as an input for SEM (Structural Equation Modeling). Under SEM two models were analyzed measurement model and structural model. Finally the structural model is used to assess the meditational effect of employee commitment. All the descriptive and inferential statistics were analyze using SPSS v23 and AMOS v23 software's.

3.8. Ethical consideration

Relevant ethical issues were addressed in this study: An ethical consideration of confidentiality and privacy were addressed. A guarantee was given to the respondents that their names were not exposed in the research report.

Chapter Four: Results and Discussions

Introduction

The section is structured in a manner that aids in answering each research question and research hypothesis. After collecting data using a questionnaire, this chapter presents quantitative statistics to analyze data and test hypotheses. The chapter has seven major sections. Section 4.1 tests non response bias, section 4.2 discusses about questionnaire pilot testing, section 4.3 is about profile of the respondents, section 4.4 assesses the quality of data, section 4.5 describe about factor analysis, exploratory and confirmatory factor analysis, section 4.6 discuss about the meditational effect of employees employee commitment and finally section 4.7 discusses about findings of empirical results.

4.1 Testing for Non-Response Bias

The two types of non-response are item non response and unit item non-response. Sometimes respondents doesn't answer certain question such non-response is called item non-response. Unit non-response occurs when some individuals totally refuse to answer the questions or cannot be contacted. When one of the two non-responses happened bias will occur (Pickett, 2017). The possible bias that occurred due to non-response increases with the size of non-responding group. Any research conducted using questionnaire needs to be tested for non-response bias. Most of research texts list these rules: e.g., "A response rate below 60% is a disaster, and even a 70% response rate is not much more than minimally acceptable" (Willimack, Lyberg, Martin, Japec, and Whitridge, 2004). For this study 365 respondents receive the questionnaires and 329 usable responses were collected with 90% response rate. Since the response rate is higher there is no worry for response bias.

4.2 Questionnaire Pilot Testing

A good question is one that is relevant to both the research agenda and each potential respondent's experience and knowledge. Question evaluation through pilot testing allows poorly performing questions to be fixed to ensure that the questions capture the intended concept (e.g. difficulty in various domains of functioning) and to ensure that data will be comparable across countries and across different sectors of the population in one country (Husni, Meyer, Cohen, Mody, and Abrar, 2007).

The pilot test data analysis comprises statistical procedures ranging from simple frequencies and cross tabulations through correlations and regression analyses to identify significant patterns of interpretations and to test hypotheses (Willimack, Lyberg, Martin, Japec, and Whitridge, 2004). A pilot study was conducted prior to the beginning of the full study. 25 respondents were randomly selected and the questionnaire was distributed for pilot study. The objectives of the pilot study were to establish that the respondents understand the questions in the survey, to solicit feedback for improvements to the instrument. The responses showed the general ease of completion of the questionnaire, and there were no comments or improvement suggestions from the respondents. Therefore, no further adjustments were needed. In addition, a reliability test was conducted to examine the internal consistency of the instruments employed in this study.

4.2.1 Validity

Validity is the extent to which the results really measure what they are supposed to measure. Valid research produces a result that resembles real properties, features, and variation in physical world. Validity can be described in different forms such as content, external (criterion) and construct (convergent and discriminant) validity (Straub, Boudreau, and Gefen, 2004). To test the validity of the questionnaire some respondents that work in EAL form different departments were selected and given the questionnaire. From their response the measures of the constructs are covered, the arrangement of the questionnaire is good and easy to understand means that the instrument fulfills content validity. Additionally from the response of the selected respondents, the researcher found that their scores on measures are correlated from variables to variables which are known to be correlated implying that the instrument fulfills criterion validity. Additionally the sample size is ample to generalize about the population from the sample. Convergent and discriminant validity are assessed in the factor analysis part of this chapter.

4.2.2 Reliability

Measurement of any construct should provide sable and consistent result, the consistency and stability of the measurement is checked by its reliability (Oluwatayo, 2012). Consistency across the parts of any instrument is measured using test for reliability (Taherdoost, 2016). A consistent instrument is that with high internal consistency and the items of the scale measure the same construct (Taherdoost, 2016 and Whitley, 2013). Internal consistency or reliability mostly

measured using Cronbach Alpha Coefficient. Especially for likert scales measuring reliability with Cronbach Alpha Coefficient is the most appropriate. The cutoff point or the minimum internal consistency that most researchers agreed is .70.

According to Straub et al. (2004) the reliability of an instrument should be greater than or equal to 0.6. The four cutoff points suggested by Zwick and Velicer (1982) are excellent reliability (greater than or equal to 0.9), high reliability (0.70 to 0.90), moderate reliability (0.50 to 0.70) and low reliability (0.5 and below). Although reliability is important for study, it is not sufficient unless combined with validity. In other words, for a test to be reliable, it also needs to be valid (Zwick and Velicer, 1982).

Three criteria to evaluate reliability are used for this study. The first one is Cronbach's Alpha should be greater than or equal to 0.70 (Taherdoost, 2016 and Whitley, 2013). The second one is corrected item-total correlations should be greater than or equal to 0.35 to be retained. This value revealed the extent to which, within a scale, an item correlated with the other items. It was employed to determine the items which ought to be retained in a scale to support construct validity 35 (Raykov, and Marcoulides, 2012). The third one is inter-item correlation and this value should not exceed 0.8 for all pairs. This value measures if individual questions on a questionnaire give consistent and appropriate result (Bernstein, Fink, Handelsman, Foote, Lovejoy, Wenzel, and Ruggiero, 1994).

As can be seen in Table 4.1 the measure of CON began with 11 items, four Items were dropped because their correlated item total correlations were 0.303, 0.335, 0.256, and 0.298 which are below 0.35. Hence, using 7 items Cronbach alpha for CON was 0.778. Looking for IN, it began with 9 items, of which 1 was dropped because its correlated item total correlation was 0.323 which is below 0.35 as a result; Cronbach alpha for IN was 0.823. Likewise MN dropped three items for similar reason and its Cronbach alpha was 0.871. BPP dropped one item for similar reason resulting in Cronbach alpha of 0.817. AD, COM, LGP, and FP retained all of their items since their items satisfied all criteria.

Table 4. 1 Instrument Reliability

Constructs	No. of Items Proposed	No. of items dropped	No. items retained	Cronbach's alpha
Consistency(CON)	11	4	7	0.778
Involvement(IN)	9	1	8	0.823
Adaptability(AD)	9	-	9	0.793
Mission(MN)	12	3	9	0.871
Commitment(COM)	9	-	9	0.885
Customer Focus Performance(CFP)	4	-	4	0.865
Business Process Performance(BPP)	7	1	6	0.817
Learning & Growth Performance(LGP)	4	-	4	0.842
Financial Performance(FP)	10	-	10	0.857

4.3 Description of Profile of the Respondents

The findings in Table 4.2 below discovered that nearly 62.6 percent of EAL workers were male. Result regarding to participant Educational background 2.4% of the respondents were Diploma graduates, other 75.4% of them are Degree holder and the rest of 22.2 % of the respondents were Masters Holder and above. Basically, where we look about respondents work experience; 3% of them have an experience less than 2year, other 37.1% of them worked for 3-5yrs, 42.6% of the respondents with experience between 6-10yrs, other 10% of the respondents have the experience of 11-15yrs and the rest of the respondents worked for about 16-21yrs.

Table 4. 2 Description of the Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	206	62.6
	Female	123	37.4
	Total	329	100
Education Level	Diploma	8	2.4
	Degree	248	75.4
	Masters	72	21.9
	PHD and above	1	0.3
	Total	329	100
Experience	0-2yrs	10	3.0
	3-5yrs	122	37.1
	6-10yrs	140	42.6
	11-15yrs	33	10.0
	16-20yrs	17	5.2
	21 and above	7	2.1
	Total	329	100

Source: From researcher filed survey, 2019

4.4 Data Analysis: Assessing the Quality of Data

4.4.1 Assessing the Sample Size

Determining adequate sample size is vital to ensure an acceptable likelihood of obtaining desirable empirical outcomes, specifically, parameter precision, and statistical power. What is adequate depends on several issues. What is important is not the proportion of the research population that gets sampled, but the absolute size of the sample selected relative to the

complexity of the population, the aims of the researcher and the kinds of statistical manipulation that will be used in data analysis (Bandalos, 2014).

Findings are generalized from samples to the population. To do so researchers should obtain matching parameters that reflects the population as closely as possible (Kline, 2005). For Structural Equation Modeling the sample size should be at least 100 to 200 (Loehlin, 2004). The sample size used for this study was 329 which are suitable for performing the EFA; the CFA; and the structural model.

4.4.2 Assessing Common Method Bias

Different researchers use questionnaire survey for the purpose of data collection. The information obtained from the survey is used to measure the independent and dependent variables in the data analysis. In doing this the estimated impact of one variable on other variable is at risk of being biased due to CMB. Common Method Bias (CMB) is the systematic variance shared among the variables (Podsakoff and Mackenzie, 2012). CMB has a negative effect on validity of measure and is a main source of measurement error. If there is CMB in any measure then correlation is inflated (Meade, Watson, and Kroustalis, 2007) and yields hypothetically ambiguous conclusion (Carlson, Kacmar, and Williams, 2000). According to Podsakoff, Mackenzie, and Podsakoff (2003), the first factor of un-rotated factor analysis should be less than 50% to be free from CMB. In this study the first factor accounted for 19.75%, therefore, the results suggested that there were no common variable.

Table 4. 3 Total Variance Explained

Total Variance Explained						
	Initial Eigenvalues			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.032	19.745	19.745	5.009	7.589	7.589
2	5.408	8.194	27.939	4.731	7.167	14.757
3	3.711	5.622	33.561	4.256	6.448	21.205

4	3.369	5.105	38.666	3.067	4.647	25.852
5	2.693	4.080	42.746	3.047	4.617	30.469
6	2.039	3.090	45.836	2.997	4.541	35.009
7	1.872	2.837	48.672	2.973	4.505	39.514
8	1.784	2.703	51.376	2.942	4.458	43.972
9	1.532	2.322	53.697	2.877	4.359	48.331
10	1.455	2.205	55.902	2.692	4.079	52.410
11	1.284	1.946	57.848	2.210	3.349	55.759
12	1.250	1.894	59.742	2.153	3.262	59.020
13	1.122	1.700	61.442	1.363	2.065	61.085
14	1.043	1.580	63.022	1.278	1.937	63.022
15	.964	1.461	64.483			
16	.964	1.460	65.943			
17	.917	1.390	67.332			
18	.887	1.344	68.677			
19	.838	1.270	69.947			
20	.831	1.260	71.207			
21	.797	1.207	72.414			
22	.789	1.195	73.609			
23	.752	1.139	74.749			
24	.733	1.110	75.858			
25	.696	1.055	76.913			
26	.678	1.027	77.941			

27	.648	.982	78.923			
28	.631	.956	79.880			
29	.623	.944	80.824			
30	.609	.923	81.747			
31	.595	.901	82.648			
32	.570	.864	83.512			
33	.552	.836	84.348			
34	.530	.803	85.151			
35	.495	.750	85.901			
36	.493	.748	86.648			
37	.479	.726	87.375			
38	.454	.688	88.063			
39	.452	.685	88.748			
40	.431	.653	89.401			
41	.424	.643	90.044			
42	.410	.621	90.665			
43	.392	.594	91.259			
44	.371	.562	91.821			
45	.357	.541	92.362			
46	.344	.521	92.883			
47	.334	.506	93.389			
48	.327	.496	93.885			
49	.317	.480	94.365			

50	.308	.467	94.832			
51	.291	.441	95.273			
52	.286	.433	95.706			
53	.269	.408	96.114			
54	.260	.393	96.507			
55	.251	.380	96.887			
56	.249	.377	97.264			
57	.234	.355	97.618			
58	.219	.332	97.950			
59	.211	.320	98.270			
60	.199	.301	98.571			
61	.176	.267	98.838			
62	.173	.262	99.101			
63	.167	.253	99.354			
64	.148	.225	99.579			
65	.141	.214	99.792			
66	.137	.208	100.000			

4.4.3 Assessing Missing Data

Missing data are a serious issue in quantitative research. Missing data leads to biased estimates, will produce decreased statistical power with an increased standard errors, and weakened generalizability of findings. Enders (2004) stated that a missing rate of 15% to 20% was common in educational and psychological studies but variable with more than 50% of missing data should be omitted. Since there were some missing data's in the variables, the researcher omitted 9

responses and the number of responses reduced from 338 to 329 usable questionnaires; these are enough for EFA, CFA, and path analysis.

4.4.4 Assessing outliers

Outliers occurred when much smaller or much larger observations or measures presented in the responses. Such extremes do not reflect the correct result of the analysis. Outliers occurred due to different reasons; inappropriate scale of data's, data entry problem, and complexities among variables which were not expected (Tabachnick and Fidell, 2000). Atkinson and Riani (2000) suggest that testing for the presence of outliers must be done before data analysis. Their presence and their nature will influence the analysis and possibly impact the understanding of the empirical findings (Kline, 2005).

The absolute values of frequency distributions of Z-scores are used to find univariate outliers. If the absolute value of Z-score is greater than 3.29 with $p < .001$, it indicates that there is a univariate outlier (Tinsley and Brown, 2000). Accordingly, based on the previous rule, there were no outlier cases in this study.

4.4.5 Assessing Linearity Assumption

In linear regression the relationship between the independent and dependent variables is linear.

If the relationship between the independent and dependent variables is linear the standard multiple regression accurately estimate their relationship. If their relation is not linear then the results of the regression analysis will under-estimate the true relationship and inaccurate statistical result will occur (Jensen and Ramirez, 2013). The study conducted curve estimation for all the relationships in the model and all the relationships were sufficiently linear to be tested using a covariance based structural equation modeling algorism.

4.4.6 Assessing Multicollinearity Assumption

The correlation between the response and predictors is expected nonetheless correlation among predictors is displeasing. When predictors are correlated with other predictors it is called multicollinearity in regression. Multicollinearity occurs when some factors occurred redundantly (Jensen and Ramirez, 2013). The existence of multicollinearity increases the standard error of the coefficients. Increased standard errors in turn mean that coefficients for some independent variables may be found not to be significantly different from 0. Multicollinearity makes some

variables to be statistically insignificant when they should be significant. But those variables are significant if multicollinearity or standard error does not exist (Kleinbaum, Kupper, Nizam, and Roseenberg, 2013).

In regression analysis multicollinearity can be measured using the variance inflation factor (VIF) and value of tolerance. The VIF assesses how much the variance of an estimated regression coefficient increases if multicollinearity exists. If no factors are correlated, the VIFs will all be 1. When a predictor variable has a strong linear association with other predictor variables, the associated VIF is large and is evidence of multicollinearity. The cutoff point for VIF is less than or equal to 3.3 and Tolerance greater than 0.1 (McClendon and McKee, 2003).

As can be seen in table 4.4, the study calculated VIF for all independent variables in SPSS and the results revealed that all of the VIF results are below the threshold value of 3.3 and Tolerance results also as per the rule of thumb indicating there is no multicollinearity problem for the data.

Table 4. 4 Multicollinearity Test Results

		Collinearity Statistics	
No.	Independent Variable	Tolerance	VIF
1	AD	.604	1.656
2	CON	.602	1.660
3	IN	.777	1.287
4	MN	.980	1.020
a. Dependent Variable: Performance			

4.4.7 Assessing Normality Assumption

Usually the normality assumption considers for the disturbance of regression equation. An error occurred in the relation between the independent and dependent variable is called disturbance of regression equation. Any sample actually has a different random variable which encompasses all the "noise" that accounts for differences in the observed and predicted values produced by a regression equation, and it is the distribution of this disturbance term or noise for all cases in the sample that should be normally distributed (Good and Hardin, 2003).

The researcher used skewness and kurtosis to evaluate the normality of the observed items. Skewness is the tilt (or lack of it) in distribution and kurtosis is the peakedness of a distribution. A common rule of thumb test for normality is to run descriptive statistics to get skewness and

kurtosis and use the criterion that skewness and kurtosis should be within the -2 to +2 range when the data are normally distributed (Lemann, 2008). From the results of skewness and kurtosis the researcher concluded that the data is normally distributed (see in appendix C1)

4.5 Data Analysis: Factor Analysis

Factor analysis is used to remove redundancy from set of correlated variables. Factor analysis minimizes number of correlated variables by representing correlated variables with derived variables (Debasish, 2004). It is also useful for testing significance of results of the research. Nowadays, FA becomes the most important tool to measure the significance of research data and to deduce data to a significant one. The assumption of FA is that the fundamental dimensions of factors could be used to explain the complex phenomena instead of the entire factors (Stevens, 2002).

According to Field (2009) FA has four main goals. First, to identify factors those are not observed directly from the observable or measurable variables. Secondly, it stubs to find out the fundamental factors or variables that are used to explain the pattern of correlation within a set of observed variables. Thirdly, used for reduction of data to find the fundamental factors that most explain the variance of observed in much larger number of visible variables. Finally, it is used to formulate a hypothesis about casual mechanisms as well as to screen variables for subsequent analysis (Field, 2009).

There are two factor analysis techniques these are, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). EFA is used for simplification of interrelated measures. EFA has been used to explore the conceivable fundamental factor structure of a set of observed variables without imposing a defined structure on the outcome (Child, 1990). In general EFA used to identify the fundamental factor structure. By testing predictions and exploring the dataset EFA simplifies the complex patterns (Child, 2006). Confirmatory Factor Analysis (CFA) mainly used to verify the factor structure of a set of observed variables. It is also helpful for testing hypothesis in which the relation between observed variables and their fundamental latent construct exists. CFA attempts to confirm hypotheses and uses path analysis diagrams to represent variables and factors (Child, 2006). CFA would be preferred where measurement models have a well-developed underlying theory for hypothesized patterns of loadings (Bartholomew, Steele, and Moustaki, 2008).

4.5.1 Exploratory Factor Analysis (EFA)

EFA is a variable reduction technique which identifies the number of latent constructs and the underlying factor structure of a set of variables. EFA hypothesizes an underlying construct, a variable not measured directly and estimates factors which influence responses on observed variables. EFA has three main Objectives such as; to determine the number of latent constructs underlying a set of items (variables), to provide a means of explaining variation among variables (items) using a few newly created variables (factors), and to define the content or meaning of factors (Field, 2009).

Assumptions underlying EFA are; random sampling, relationship between observed variables is linear, a normal distribution (each observed variable), a bivariate normal distribution (each pair of observed variables), and multivariate normality (Truxillo, 2003). Researcher's data are prepared based on the assumptions of EFA. The researcher uses SPSS (Statistical Package for Social Science) version 23 to perform EFA and reliability analysis.

4.5.1.1 Factor Extraction

As discussed above factor analysis pursues to discover common factors. In FA the technique used as extracting factors is to take out as much common variance as possible in the first factor. Subsequent factors are, in turn, intended to account for the maximum amount of the remaining common variance until; hopefully, no common variance remains (Hu & Bentler, 1999). By applying mathematical models the factor matrix can be obtained from the correlation matrix in direct extraction method. But the direct solutions are not sufficient to reach on conclusion. Adjustment to the frames of reference by rotation methods improves the interpretation of factor loadings by reducing some of the ambiguities which accompany the preliminary analysis (Child, 1990).

There are several ways to conduct FA (i.e., principal components; unweighted least squares; generalized least squares; maximum likelihood; principal axis factoring; alpha factoring; image factoring) and alternative choice of methods (i.e., correlation matrix or a covariance matrix) (George and Mallery, 2003).

On the basis of the assumptions of EFA, the researcher used principal component method for the factor extraction with the results of the univariate analysis and used Variamax rotation to carry out factor interpretation.

Factorability of any data is evaluated by statistical measures generated by SPSS; these are: Kaiser-Meyer-Olkin (KMO); and Bartlett's test of Sphericity (Pallant, 2003). Kaiser – Meyer – Olkin (KMO) is measure of sampling adequacy. It measures the distribution value, whether or not it is adequate to conduct FA. The cutoff points for Kaiser-Meyer-Olkin (KMO) measures are: a measure of >0.9 is marvelous, >0.8 is meritorious, >0.7 is middling, >0.6 is mediocre, >0.5 is miserable and <0.5 is unacceptable. 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. FA would be meaningless with an identity matrix. A significance value <0.05 indicates that the data DO NOT produce an identity matrix and are thus appropriately multivariate normal and acceptable for FA (George and Mallery, 2003).

Table 4.5 reported that Chi-Square was 10,858.958 with (df = 2145, p<0.001) 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 4. 5 KMO and Bartlett's Test

KMO and Bartlett's Test Initial		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.871
Bartlett's Test of Sphericity	Approx. Chi-Square	10,858.958
	df	2,145
	Sig.	0.000

4.5.1.2 Communality

The measure of the percentage of variables variation that is explained by the factors is called communality. It is the amount of variance an original variable share with all other variables included in the analysis. If a variable has much in common with other variables take as a group then there is high communality (Islam and Mamun, 2005). Further, the communality measures the presence of variance in a given variable explained by all the factors jointly and may be interpreted as the reliability of the indicator. Through the common source with others, the communality estimates a part of the variance in a variable. Low communality (below .5) may

lead to its variable being omitted (Thompson, 2004). Principal component analysis starts with certain variables and common factors. Initially, it assumes that all variances are common. Hence, the communalities equal 1 before extraction. This means that there are common factors which, after extraction, represent the common variance in the data structure. The communalities after extraction represented the amount of variance in each variable which could be explained by the retained factors. All the variables of in the data were above 0.5 indicating high communality (see in the appendix D2).

4.5.1.3 Total Variance Explained

Total variance explained used to assess the variance in all variables which are accounted for by a single factor. Total variance is displayed by Eigen values. The ratio of Eigen values is the ratio of explanatory importance of the factors with respect to the variables. The percentage of explanatory importance of a given factor with respect to the variables is expressed by the ratio of Eigen values. A factor with low Eigen value is considered as a redundant when compared to the more important factors and contribute small in explanation of the variance in the variables (Kaiser, 1958). Mostly different extraction approaches are used but the most used extraction approach is "root greater than one" criterion and originally suggested by (Kaiser, 1958). This criterion retains those components whose Eigen values are greater than 1. The rationale for this criterion is that any component should account for more "variance" than any single variable in the standardized test score space.

In this study initially 66 variables extracted with 66 Eigen values and fourteen factors explained 63.022% of the variance but later on these factors were reduced in to nine because some variables which were unrelated to any of the factors and/or have low loadings were dropped. These nine factors explained 63.232% variance using Varimax rotation to conduct this analysis (see Table 4.3).

4.5.1.4 Factor Rotation

Factor rotation is used to check and improve the interpretability of factors. Rotation used to maximize the loadings of each variable on one of the extracted factors at the same time it minimizes the loading on all other factors. Despite the fact that keeping their differential values constant, rotation works through changing the absolute values of the variables despite the fact that keeping their differential values constant (Field, 2009).

The three techniques for orthogonal rotation are Varimax, quartimax and equamax. The varimax method is the most popular among these techniques and is often used to make factor analysis FA. The procedure seeks to rotate factors so that the variation of the squared factor loadings for a given factor is made large (Hair, Black, Babin, Anderson, and Tatham, 2006). The higher the loading, the better the representation that particular item has on the factor. Hair et al., (2006) recommended that factor loadings greater than 0.30 are the minimum requirement; loadings of 0.40 are considered more important; and loadings of 0.50 or greater are considered significant. The exact choice of rotation depends largely on whether or not the researcher should choose one of the orthogonal rotations (Generally, researchers' recommend as varimax).

Based on this guideline, varimax rotation is used and items that have factor loadings of lower than 0.50 discarded to get items more representatives for their respective factor. In order to increase the significance of items to their respective factor the researcher used 0.50 as cutoff. Moreover, this technique initially divided the factors into fourteen factors but later they were reduced in to nine when some variables were dropped because they were unrelated to any of the factors and/or have low loadings (loadings below 0.5). The analysis was performed in an iterative way, until factor extraction rules were met. The rotated factor loadings for the nine constructs obtained from the SPSS outputs are presented in table 4.6. These out puts of EFA are used as inputs for CFA. In summary, the EFA results in nine factors namely MN, COM, PERFIN, IN, PERCUS, PERBUS, AD, PERLER, and CON, consisting of 7, 7, 6, 5, 4, 4, 5, 4, and 4 questions respectively.

Table 4. 6 Rotated Factor Loadings

Rotated Component Matrix[a]									
	Component								
	1	2	3	4	5	6	7	8	9
MN3	.804								
MN9	.796								
MN2	.780								

MN12	.774								
MN10	.756								
MN11	.743								
MN4	.713								
COM7		.826							
COM6		.787							
COM5		.776							
COM3		.732							
COM8		.676							
COM4		.631							
COM9		.545							
PERFIN7			.752						
PERFIN6			.731						
PERFIN5			.716						
PERFIN9			.691						
PERFIN10			.687						
PERFIN8			.669						
IN3				.796					
IN4				.760					
IN2				.740					
IN1				.597					
IN5				.528					
PERCUS3					.878				
PERCUS2					.868				
PERCUS4					.814				
PERCUS1					.733				
PERBUS2						.765			
PERBUS3						.764			
PERBUS1						.739			

PERBUS4						.668			
AD8							.745		
AD9							.731		
AD7							.642		
AD6							.571		
AD5							.528		
PERLER3								.827	
PERLER4								.708	
PERLER2								.687	
PERLER1								.630	
CON3									.692
CON2									.679
CON4									.591
CON5									.534
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.									
a. Rotation converged in 7 iterations.									

4.5.2 Confirmatory Factor Analysis (CFA)

CFA is used to whether or not a defined factor model fits an observed set of data. CFA also have different uses it is used to; establishes the validity of a single factor model, compare the capability of two different models to validation for the same set of data, test the significance of a specific factor loading, test the relationship between two or more factor loadings, test whether a set of factors are correlated or uncorrelated, and used to assess the convergent and discriminant validity of a set of measures (Brown, 2015). CFA has strong links to Structural Equation Modeling. Structural Equation Modeling (SEM) is a statistical method increasingly used in scientific studies in the field of social sciences in recent years (Barrett, 2007).

Structural equation modeling is a statistical method used to test the relationships between observed and latent variables. Observed variables are the measured variables in the data collection process and latent variables are the variables measured by connecting to the observed variables because they cannot be directly measured. Structural model and measurement mole are

the two basic components of Structural Equation Modeling (Guay, Valois, Morin, Litslien, and Vallerand, 2015). Different researchers developed different methods testing hypothesis. From these massive methods structural equation modeling is more suitable for testing the hypothesis than other methods (Karagöz, 2016). Structural equation modeling involves a system of linear equations. The key in the regression analysis is to determine how much of the change in the dependent variable is explained by the independent variable or variables.

Structural equation modeling (a new statistical technique) applies the basic principle of multiple regression analysis while multiple regression analysis is applied only for observed variables. By modeling complex relationships among observed and latent variables SEM tests a hypothesis in a single process which couldn't be done by using multiple regression analysis. SEM detects both the direct and indirect effects while only the direct effect is detected by the regression analysis.

The first step to use SEM is finding out the fundamental structure using exploratory factor analysis with the use of a method of principal component analysis, then model fit indices are employed to assess the construct validity by using confirmatory factor analysis (Tabachnick, Fidell, and Ullman, 2007). The basic approach to performing a SEM analysis is as follows:

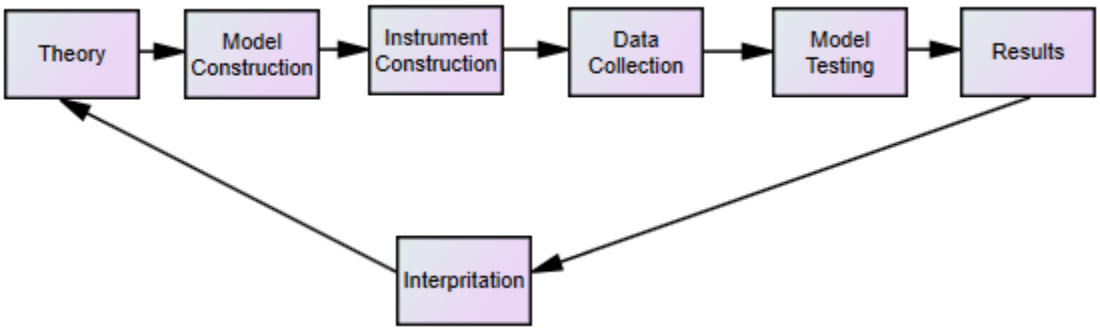

Figure 4. 1The process of SEM results Source: (Byrne, 2010)

Structural equation modeling (SEM) is a multivariate statistical framework that is used to model complex relationships between directly and indirectly observed (latent) variables. SEM is not a single step process rather it is a multi-step process which involves solving systems of linear equations and also it incorporates systems and techniques like: factor analysis, path analysis, latent growth curve modeling, simultaneous econometric equations, and regression analysis (Barrett, 2007). Structural equation modeling (SEM) is a multivariate statistical method that involves the estimation of parameters for a system of simultaneous equations.

Structural Equation Modeling SEM helps researchers to specify confirmatory Factor Analysis (CFA), regression analysis and complex models. Nowadays structural Equation Modeling (SEM) is the most widely used multivariate statistical model, which is widely used in different social and behavioral sciences. It can be viewed as a combination of factor analysis and regression or path analysis (Kline, 2005). There are two sub models under structural equation modeling: measurement model and structural model. The main objective of measurement model is to estimate the relationship between the observed variables (indicators) and the latent variables. The main objective of the structural equation model is to estimate the relationship within latent variables (Kaplan and Miller, 2000).

4.5.2.1 Measurement Model

The measurement model of Structural Equation Modeling (SEM) is the Confirmatory Factor Analysis (CFA) and depicts the pattern of observed variables for those latent constructs in the hypothesized model. CFA is mainly used for reliability test of the observed variables. In addition to CFA, researchers also used the measurement model to examine the amount of co-variation and level of interrelationship among the latent constructs. The first step that comes before testing the structural model is deriving the best indicator that fits the latent variables by estimating factor loadings, unique variances, and modification indexes. The modification indexes are used to decide whether a variable is dropped or a path is added (Kaplan and Miller, 2000). One of the main importance's of measurement model is to evaluate construct validity. Construct validity in a measurement model is done in terms of convergent validity and discriminant validity. Convergent validity and discriminant validity are used to determine the extent to which the measures have adequate internal consistency by conducting the necessary tests and acceptance levels for goodness of fit (Pohlmann, 2004).

Construct Validity

Construct validity used to test how the researcher translated or converted a concept, knowledge, or behavior that is developing a hypothesis into effective and operative reality, the operationalization. Before assessing the structural model and testing the research hypotheses, it is necessary to assess construct validity further through CFA after the fundamental factor structure for each of the theorized research constructs are determined through EFA (Byrne, 2010). The two components of construct validity are: convergent and discriminant validity. Construct

validity mainly concerned in testing a scale in terms of derived hypotheses theoretically regarding the nature of fundamental variables or constructs (Pallant, 2011). For constructing prediction about test scores in various settings and situations, a theory should be refined by using construct validity (Kelsey, Devellis, Begum, Hooten, and Cambell, 2006). Factor analysis, correlation analysis, and multi-trait, multi-method matrix of correlations are used to check construct validity of the instrument (Pett, Lackey, and Sullivan, 2003). The examination process of the instrument for convergent validity is done by convergent and discriminate validity. Therefore construct validity is divided in to two categories: i) convergent validity, and ii) discriminant validity (Kelsey et al., 2006).

(i) Convergent Validity

Construct validity used to measure the amount of a given scores on a measure share in relation with scores obtained on a different measure intended to assess the similar construct. The measure share could be high, medium, or low relationship as compared to different measures in assessing similar construct (Messick, 1995). It is established when the scores obtained with two different instruments measuring the same concept are highly correlated. It is the degree to which two variables measured separately accept a relationship to one another. It is the actual general agreement among ratings, gathered independently of one another, where measures should be theoretically related (Kaplan and Miller, 2000).

The extent of the relationship between an observed variable and a latent construct is directly measured by construct validity. Always convergent validity is attained when the relationship between observed variable and latent construct significantly is different from zero when represented by factor loadings. For each factor loadings critical ratios and p-values were calculated to measure the statistical significance of the factor loadings. The acceptable range for critical ratios is that the z-value should be outside -1.96 to +1.96 and the cutoff point for p-value is, $p<0.05$. Z-value outside -1.96 to +1.96 and $p<0.05$ indicate factor loadings that are significantly different from zero. Testing the significance of factor loadings is the key criterion in assessing factor validity (Mulugeta, 2015).

Furthermore, regression weights, standardized regression weights and squared multiple correlations (SMC) can be calculated to assess convergent validity. Standardized regression weights should be above 0.5, with values of above 0.7 optimal (Hair et al, 2006). SMC are

squared standardized factor loadings and represent the extent to which a measured variable's variance is explained by a latent factor (Hair et al, 2006). SMC can also be used to assess item reliability. An SMC between 0.3 and 0.5 indicates that the item is a weak but adequate measure of the construct (Holmes-Smith, 2007). An SMC of 0.5 calculates to a standardized loading of 0.7, which indicates that the item reflects the construct very well (Mulugeta, 2015).

In sum, there are different measures that are used to measure construct validity: the first one is using standardized regression loadings (SRL) (this value should be greater than 0.5), the second one is using significant p-value (at 95% confidence interval) with a critical ratio (Z-values outside -1.96 to +1.96) and finally, using squared multiple correlations (SMC should be greater than 0.4) are consider to hold convergent validity. SMC values between 0.4 and .5 were scrutinized and accepted if all other convergent validity measures were well above the recommended thresholds. SMC above 0.5 were accepted. The standardized factor loadings, the critical ratio, p-value, and SMC of each item are displayed for the measurement model (Hair et al, 2006).

(ii) Discriminant Validity

Discriminant validity is a measure of the extent to which one latent variable differentiates from other latent variables. Discriminant validity means that a latent variable is able to account for more variance in the observed variables associated with it than a) measurement error or similar external, unmeasured influences; or b) other constructs within the conceptual framework. If this is not the case, then the validity of the individual indicators and of the construct is questionable (Kaplan and Miller, 2000). Discriminant validity or divergent validity of concept or a measurement tests or measures whether the concept or a measurement are not supposed to be related are actually unrelated. In other words discriminant validity holds when constructs that should have no relationship, in fact, not have any relationship. The correlation between different constructs is used to measure discriminant validity. High correlations (above 0.8 or 0.9) between constructs indicate a lack of discriminant validity (Holmes-Smith, 2007). In addition to model fit statistics, discriminant validity measures will be presented for the measurement model.

(iii)Goodness of Fit

The goodness of Fit (GOF) of a statistical hypothesis tests to look through how well the data fits into set of observation (or how well sample data fit a distribution from population with a normal

distribution). Goodness of fit establishes the discrepancy between the observed values and those that would be expected of the model in a normal distribution. GOF statistics are GOF indices with known sampling distributions, usually obtained using a systematic methods that are used in statistical hypothesis testing. Assessing absolute model fit (i.e., the discrepancy between a model and the data) is critical in applications, as implications drawn on poorly fitting models may be badly misleading (Steiger, 2007).

There are various GOF indicators; generally GOF indicators can be grouped into three categories: absolute measures, incremental measures and parsimonious fit measures. To ensure consistency in the empirical assessment, as suggested in the literature (Kline, 2005) multiple GOF indices are used. Kline,2005) suggests that at a minimum the following indices should be reported: The model chi-square, RMSEA, CFI, and SRMR. This study uses the GOF indices reported by Cornell University, Cornell Statistical Consulting Unit and the following fit indices are used as a threshold values chis-square, normed chi-square, RMSEA, RMR and CFI.

Table 4. 7 Category of GOF Indices

Measure	GOF indices	Description	Cut off for good fit
Chi-Square (X^2)	Chi-Square (X^2)	Assess overall fit and the discrepancy between the sample and fitted covariance matrices. Sensitive to sample size.	p-value> 0.05
	Degrees of freedom	Covariance in the observed matrix less the number of estimated coefficients	
	Probability statistic (p-value)	Probability that the observed and estimated covariance matrices are actually equal	
(A)GFI	(Adjusted) Goodness of Fit	GFI is the proportion of variance accounted for by the estimated population covariance. Analogous to R^2. AGFI favors parsimony.	GFI ≥ 0.90 AGFI ≥0.90
(N)NFI TLI	(Non) Normed Fit Index and Tucker Lewis Index	An NFI of .95 indicates the model of interest improves the fit by 95% relative to the null model. NNFI is preferable for smaller samples. Sometimes the NNFI is called the Tucker Lewis index (TLI)	NFI ≥ 0.90 NNFI ≥ 0.95
CFI	Comparative Fit Index	A revised form of NFI. Not very sensitive to sample size. Compares the fit of a target model to the fit of an independent, or null, model.	CFI ≥.90
RMSEA	Root Mean Square Error of	A parsimony-adjusted index. Values closer to 0 represent a good fit.	RMSEA < 0.08

	Approximation		
(S)RMR	(Standardized) Root Mean Square Residual	The square-root of the difference between the residuals of the sample covariance matrix and the hypothesized model. If items vary in range (i.e. some items are 1-5, others 1-7) then RMR is hard to interpret, better to use SRMR	SRMR <0.08
AVE (CFA only)	Average Value Explained	The average of the R^2s for items within a factor	AVE >.5

Source: Cornell University, Cornell Statistical Consulting Unit

The CFA measurement model is constructed from the output of EFA, which consists of both latent variable and observed variable (indicators). From the results of SPSS rotated component matrix used as an input for AMOS (Analysis Of Moment Structure) software to undergo CFA. The researcher uses AMOS V23 software to analyze CFA and SEM. The summary of the rotated component matrix is presented in table 4.8.

Table 4. 8 Summary for variables to be used for CFA

No.	Latent variables	Indicators
1	Involvement (INV)	IN1, IN2, IN3, IN4, IN5
2	Adaptability (ADA)	AD5, AD6, AD7, AD8, AD9
3	Consistency (CONS)	CON2, CON3, CON4, CON5
4	Mission (MIN)	MN2, MN3, MN4, MN9, MN10, MN11, MN12
5	Commitment (COMM)	COM3, COM4, COM5, COM6, COM7, COM8, COM9
6	Customer focus performance (PERCUS)	PERCUS1, PERCUS2, PERCUS3, PERCUS4
7	Business perspective performance (PERBUS)	PERBUS1, PERBUS2, PERBUS3, PERBUS4
8	Learning perspective performance (PERLER)	PERLER1, PERLER2, PERLER3, PERLER4
9	Financial perspective performance (PERFIN)	PERFIN5, PERFIN6, PERFIN7, PERFIN8, PERFIN9, PERFIN10

Based on different previous researches and researchers goal, the researcher develops the full confirmatory factor analysis measurement model as shown in figure 4.2 below. The analysis of SEM begins with the model shown below. Using AMOS software the Goodness of Fit indices

are obtained and summarized in Table 4.9. The result reveals that the proposed measurement model is **inadmissible**.

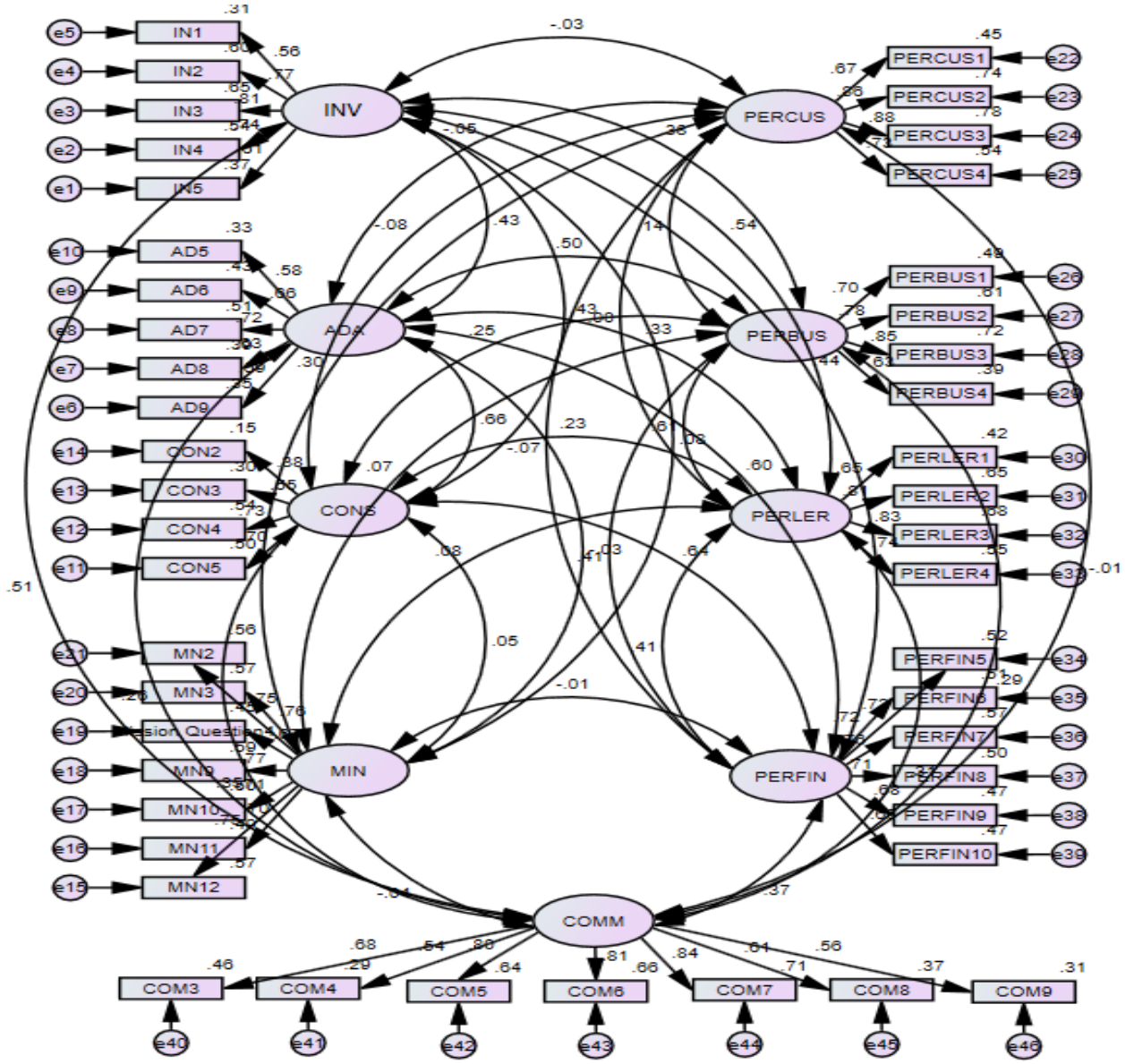

Figure 4. 2 The complete CFA measurement Model (Source Researchers AMOS output)

Table 4. 9 Results of CFA measurement model for convergent validity

Initial Iteration							
Chi-Square		Absolut Fit Indices		Incremental Fit Indices		Parsimony Fit Indices	
X2	1563.52	RMSEA	0.043	CFI	0.909	PCFI	0.837
Df	953	RMR	0.051	IFI	0.91	PNFI	0.735
X2/Df	1.641	CMIN/ DF	1.641	TLI	0.902	GFI	0.828
Factor Loadings *****=p<0.001, **=p<0.01, *=p<0.05** **Rows with blank space indicates indicator is set as default**							
Item <--- Variable	Estimate	S.E.	C.R.	P	SMC	Comments	
IN5 <--- INV	0.607				0.368	Convergent Validity doesn't Hold	
IN4 <--- INV	0.735	0.121	10.279	***	0.541	Convergent Validity Holds	
IN3 <--- INV	0.809	0.129	10.896	***	0.655	Convergent Validity Holds	
IN2 <--- INV	0.772	0.113	10.607	***	0.596	Convergent Validity Holds	
IN1 <--- INV	0.56	0.109	8.408	***	0.313	Convergent Validity doesn't Hold	
AD8 <--- ADA	0.627				0.393	Convergent Validity doesn't Hold	
AD9 <--- ADA	0.591	0.102	8.617	***	0.349	Convergent Validity doesn't Hold	
AD7 <--- ADA	0.716	0.125	9.887	***	0.513	Convergent Validity Holds	
AD6 <--- ADA	0.658	0.096	9.335	***	0.433	Convergent Validity Holds	
AD5 <--- ADA	0.577	0.104	8.455	***	0.333	Convergent Validity doesn't Hold	
CON5 <--- CONS	0.704				0.496	Convergent Validity Holds	
CON4 <--- CONS	0.734	0.09	10.443	***	0.539	Convergent Validity Holds	
CON3 <--- CONS	0.547	0.087	8.361	***	0.3	Convergent	

						Validity doesn't Hold
CON2 <--- CONS	0.382	0.099	5.998	***	0.146	Convergent Validity doesn't Hold
MIN12 <--- MIN	0.753				0.566	Convergent Validity Holds
MIN11 <--- MIN	0.698	0.083	12.431	***	0.487	Convergent Validity Holds
MIN10 <--- MIN	0.707	0.082	12.611	***	0.5	Convergent Validity Holds
MIN9 <--- MIN	0.765	0.08	13.733	***	0.586	Convergent Validity Holds
MIN4 <--- MIN	0.674	0.086	11.984	***	0.455	Convergent Validity Holds
MIN3 <--- MIN	0.756	0.079	13.556	***	0.572	Convergent Validity Holds
MIN2 <--- MIN	0.75	0.074	13.43	***	0.562	Convergent Validity Holds
PERCUS1 <--- PERCUS	0.674				0.454	Convergent Validity Holds
PERCUS2 <--- PERCUS	0.857	0.11	13.296	***	0.735	Convergent Validity Holds
PERCUS3 <--- PERCUS	0.885	0.111	13.521	***	0.783	Convergent Validity Holds
PERCUS4 <--- PERCUS	0.733	0.11	11.741	***	0.538	Convergent Validity Holds
PERBUS1 <--- PERBUS	0.703				0.494	Convergent Validity Holds
PERBUS2 <--- PERBUS	0.781	0.084	12.604	***	0.61	Convergent Validity Holds
PERBUS3 <--- PERBUS	0.851	0.089	13.376	***	0.725	Convergent Validity Holds
PERBUS4 <--- PERBUS	0.627	0.083	10.321	***	0.393	Convergent Validity doesn't Hold
PERLER1 <--- PERLER	0.648				0.42	Convergent Validity Holds
PERLER2 <--- PERLER	0.808	0.113	11.836	***	0.653	Convergent Validity Holds
PERLER3 <--- PERLER	0.826	0.108	11.999	***	0.683	Convergent Validity Holds
PERLER4 <--- PERLER	0.742	0.105	11.133	***	0.55	Convergent Validity Holds

PERFIN5 <--- PERFIN	0.722				0.521	Convergent Validity Holds
PERFIN6 <--- PERFIN	0.716	0.086	12.092	***	0.513	Convergent Validity Holds
PERFIN7 <--- PERFIN	0.758	0.08	12.769	***	0.574	Convergent Validity Holds
PERFIN8 <--- PERFIN	0.709	0.078	11.973	***	0.502	Convergent Validity Holds
PERFIN9 <--- PERFIN	0.685	0.079	11.579	***	0.469	Convergent Validity Holds
PERFIN10 <--- PERFIN	0.684	0.083	11.565	***	0.468	Convergent Validity Holds
COM8 <--- COMM	0.609				0.371	Convergent Validity doesn't Hold
COM9 <--- COMM	0.557	0.112	8.608	***	0.31	Convergent Validity doesn't Hold
COM7 <--- COMM	0.84	0.106	11.611	***	0.706	Convergent Validity Holds
COM6 <--- COMM	0.814	0.107	11.388	***	0.663	Convergent Validity Holds
COM5 <--- COMM	0.803	0.11	11.289	***	0.645	Convergent Validity Holds
COM4 <--- COMM	0.537	0.109	8.354	***	0.288	Convergent Validity doesn't Hold
COM3 <--- COMM	0.675	0.094	10.002	***	0.456	Convergent Validity Holds

Source: researcher AMOS output

From the results in table 4.9, the value of CMIN/DF is 1.641which is within the threshold value (between 1 and 5), the value for RMSEA and RMR is about 0.043 and 0.051 respectively, both are in the acceptable range (<0.08), the values of CFI, IFI, and TLI are all within the threshold ranges (>=0.9) and the values are 0.909, 0.910 and 0.902 respectively. Additionally the values of PCFI and PNFI are also fall within the acceptable range both have values greater than 0.5. All standardized regression weights (estimates) are significant at p value of below 0.001(as described in ***). The critical ratios of the factor loadings are all significantly different from zero (above 1.96). Standardized regression weights (Estimates) are expected to be above .5, but only one item (CON2) is below it. On top of that, in order to satisfy convergent validity squared

multiple correlations (SMC) are not expected to be below .4 and the result of model shows that the SMC values for IN1, IN5, AD5, AD8, AD9, CON2, CON3, PERBUS4, COM8, COM9, and COM4 are also lower than the 0.4, suggesting a problem of item reliability and convergent validity. Since there is a problem of convergent validity the CFA measurement model needs to be re-modeled. To re-model the CFA measurement model the items which do not satisfy convergent validity are deleted from the initial model and the AMOS regression was rerun again. To check the discriminant validity for each item the researcher uses the correlations of each latent variable. As can be seen in the Table 4.10, the correlations of all the latent variables are below the threshold of .8, indicating the existence of discriminant validity within the latent variables.

Table 4. 10 Results of CFA measurement model for discriminant validity

Initial Iteration		
Constructs	**Correlation**	**Comments**
INV <--> ADA	0.433	Discriminant Validity Holds
INV <--> CONS	0.43	Discriminant Validity Holds
INV <--> MIN	0.079	Discriminant Validity Holds
ADA <--> CONS	0.663	Discriminant Validity Holds
ADA <--> MIN	-0.029	Discriminant Validity Holds
IN <--> COMM	0.51	Discriminant Validity Holds
ADA <--> COMM	0.262	Discriminant Validity Holds
CONS <--> COMM	0.352	Discriminant Validity Holds
MIN <--> COMM	-0.036	Discriminant Validity Holds
CONS <--> MIN	0.054	Discriminant Validity Holds
PERCUS <--> COM	-0.012	Discriminant Validity Holds
PERBUS <--> COM	0.29	Discriminant Validity Holds
PERLER <--> COM	0.309	Discriminant Validity Holds
PERFIN <--> COM	0.365	Discriminant Validity Holds
PERLER <--> PERFIN	0.409	Discriminant Validity Holds
PERBUS <--> PERFIN	0.414	Discriminant Validity Holds
PERCUS <--> PERFIN	-0.065	Discriminant Validity Holds
PERBUS <--> PERLER	0.606	Discriminant Validity Holds
PERCUS <--> PERLER	0.001	Discriminant Validity Holds
PERCUS <--> PERBUS	0.137	Discriminant Validity Holds
INV <--> PERCUS	-0.032	Discriminant Validity Holds
INV <--> PERBUS	0.381	Discriminant Validity Holds
INV <--> PERLER	0.545	Discriminant Validity Holds

INV <--> PERFIN	0.437	Discriminant Validity Holds
ADA <--> PERBUS	0.497	Discriminant Validity Holds
ADA <--> PERLER	0.329	Discriminant Validity Holds
CONS <--> PERFIN	0.643	Discriminant Validity Holds
ADA <--> PERCUS	-0.054	Discriminant Validity Holds
CONS <--> PERCUS	-0.081	Discriminant Validity Holds
CONS <--> PERBUS	0.251	Discriminant Validity Holds
CONS <--> PERLER	0.229	Discriminant Validity Holds
MIN <--> PERCUS	0.297	Discriminant Validity Holds
MIN <--> PERBUS	0.073	Discriminant Validity Holds
MIN <--> PERLER	0.085	Discriminant Validity Holds
MIN <--> PERFIN	-0.006	Discriminant Validity Holds
ADA <--> PERFIN	0.599	Discriminant Validity Holds

Source: researcher Amos output

The above validity tables only show the validity within the latent variables. The validity for unobserved variables is tested using Average Value Explained (AVE). Table 4.11 shows the validity for unobserved variables. The table was generated as a template to analyze AVE and other parameters. The table reveals that as there are validity concerns in some unobserved variables. There is a discriminant validity concern with unobserved variables of ADA and CONS for that the square root of the AVE is less than the absolute value of the correlation with another factor. And also there is convergent validity concern in unobserved valuables of ADA, INV, and CONS because of their AVE is less than the threshold (AVE should be greater than 0.5).

Table 4. 11 Validity check for unobserved variables initial

Unlike in the structural model, in the measurement model modification indices considered from covariance between error terms of observed indicators only within the same latent variable and

	CR	AVE	ADA	INV	CONS	MIN	COMM	PERFIN	PERLER	PERBUS	PERCUS
ADA	0.771	0.404	**0.636**								
INV	0.828	0.495	0.433	**0.703**							
CONS	0.690	0.370	0.663	0.430	**0.608**						
MIN	0.888	0.533	-0.029	0.079	0.054	**0.730**					
COMM	0.868	0.491	0.262	0.510	0.352	-0.036	**0.701**				
PERFIN	0.861	0.508	0.599	0.437	0.643	-0.006	0.365	**0.713**			
PERLER	0.844	0.576	0.329	0.545	0.229	0.085	0.309	0.409	**0.759**		
PERBUS	0.831	0.555	0.497	0.381	0.251	0.073	0.290	0.414	0.606	**0.745**	
PERCUS	0.869	0.627	-0.054	-0.032	-0.081	0.297	-0.012	-0.065	0.001	0.137	**0.792**

having a M.I. of above 4. Table 4.12 reveals the existence of covariance having a high M.I. within the same latent variable and these includes e34 with e35, e36 with e37,e37 with e38, e40 with e42, e40 with e44, and e42 with e43. Consequently, the measurement model was unacceptable. After the variables stated above are deleted and after covering e34 with e35, e36 with e37,e37 with e38, e40 with e42, e40 with e44, and e42 with e43, AMOS has been rerun. The results of the modification indices are shown in table 4.12 below.

Table 4. 12 Results of Modification Indices for CFA Measurement Model

	M.I.	**Par Change**		**M.I.**	**Par Change**
e34 <--> IN	7.749	0.064	e11 <--> FP	4.297	-0.028
e28 <--> e30	4.916	-0.096	e11 <--> e30	4.608	-0.042
e28 <--> e29	12.438	0.197	e11 <--> e16	4.007	-0.029
e27 <--> e29	4.597	-0.124	e10 <--> IN	6.35	0.044
e26 <--> COM	4.345	0.133	e9 <--> e17	4.17	0.024
e26 <--> AD	4.955	-0.071	e8 <--> e12	5.158	-0.032
e26 <--> e27	6.442	0.161	e8 <--> e11	7.456	0.034
e24 <--> AD	4.322	0.054	e7 <--> e17	5.082	-0.042
e24 <--> e31	9.495	0.122	e6 <--> e31	7.937	-0.072
e23 <--> e34	4.445	0.049	e6 <--> e7	26.388	0.098
e22 <--> e34	6.411	-0.067	e5 <--> BPP	10.269	-0.067
e17 <--> e30	7.129	0.055	e5 <--> CFP	5.283	0.071
e17 <--> e20	7.146	-0.036	e5 <--> e28	7.849	-0.105
e17 <--> e19	5.044	0.032	e5 <--> e11	11.406	-0.056
e16 <--> IN	4.015	-0.031	e5 <--> e7	4.838	0.049
e16 <--> FP	6.429	0.038	e5 <--> e6	8.307	0.052
e16 <--> e32	4.982	0.036	e4 <--> AD	7.706	0.054
e16 <--> e18	4.418	0.039	e4 <--> e30	7.5	-0.068
e15 <--> e19	7.993	-0.035	e4 <--> e29	6.882	0.083
e14 <--> FP	7.415	-0.046	e4 <--> e20	6.963	0.042
e14 <--> e33	8.995	-0.054	e4 <--> e15	12.963	0.055
e14 <--> e24	6.028	0.067	e4 <--> e9	4.567	-0.03
e14 <--> e16	7.752	-0.049	e3 <--> e17	9.045	0.049
e13 <--> e33	6.066	0.04	e3 <--> e13	4.647	-0.036
e13 <--> e14	32.972	0.1	e3 <--> e7	17.484	-0.085
e12 <--> COM	6.7	-0.091	e3 <--> e6	4.276	-0.034
e12 <--> e19	5.23	-0.035	e3 <--> e5	8.994	-0.058
e12 <--> e17	7.046	-0.042	e2 <--> e7	16.9	-0.079
e12 <--> e16	5.856	0.04	e2 <--> e6	7.442	-0.042
e12 <--> e15	5.435	0.032	e2 <--> e3	57.436	0.125
e12 <--> e13	7.524	-0.045	e1 <--> CON	9.849	0.085

e11 <--> BPP	4.289	0.034	e1 <--> e13	7.382	0.054

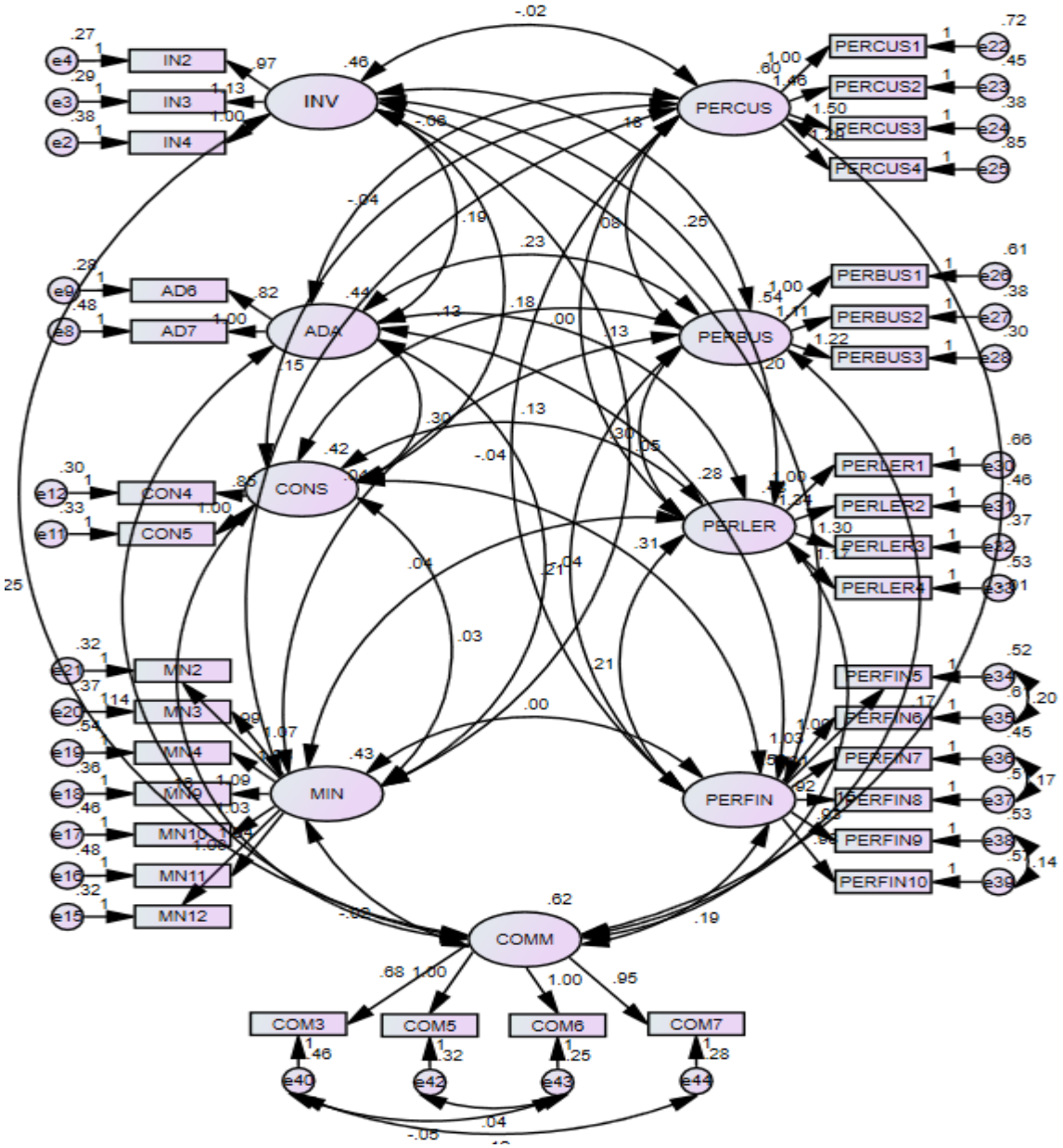

Figure 4. 3 Re-specified Structural Model (source: researcher Amos output)

After variable deletion and covering of the modification indices AMOS has been rerun and the results are presented in Table 4.13.

Table 4. 13 Results for Re-run CFA Measurement Model convergent validity

After Modification Indices							
Chi-Square		Absolut Fit Indices		Incremental Fit Indices		Parsimony Fit Indices	
X2	717.015	RMSEA	0.034	CFI	0.963	PCFI	0.838
Df	518	RMR	0.046	IFI	0.964	PNFI	0.766
X2/Df	1.384	CMIN/DF	1.384	TLI	0.958	GFI	0.89

Factor Loadings

*****=p<0.001, **=p<0.01, *=p<0.05**

Rows with blank space indicates indicator is set as default

Item <--- Variable	Estimate	S.E.	C.R.	P	SMC	Comments
IN4 <--- INV	0.742				0.551	Convergent Validity Holds
IN3 <--- INV	0.819	0.085	13.26	***	0.671	Convergent Validity Holds
IN2 <--- INV	0.785	0.075	12.924	***	0.616	Convergent Validity Holds
AD7 <--- ADA	0.693				0.48	Convergent Validity Holds
AD6 <--- ADA	0.719	0.089	9.215	***	0.517	Convergent Validity Holds
CON5 <--- CONS	0.751				0.564	Convergent Validity Holds
CON4 <--- CONS	0.709	0.086	9.839	***	0.503	Convergent Validity Holds
MIN12 <--- MIN	0.753				0.567	Convergent Validity Holds
MIN11 <--- MIN	0.697	0.083	12.432	***	0.486	Convergent Validity Holds
MIN10 <--- MIN	0.707	0.082	12.622	***	0.5	Convergent Validity Holds
MIN9 <--- MIN	0.766	0.079	13.749	***	0.586	Convergent Validity Holds
MIN4 <--- MIN	0.674	0.086	11.983	***	0.454	Convergent Validity Holds
MIN3 <--- MIN	0.757	0.079	13.579	***	0.573	Convergent Validity Holds
MIN2 <--- MIN	0.75	0.073	13.443	***	0.562	Convergent Validity Holds
PERCUS1 <--- PERCUS	0.674				0.454	Convergent Validity Holds

PERCUS2 <--- PERCUS	0.858	0.11	13.309	***	0.737	Convergent Validity Holds
PERCUS3 <--- PERCUS	0.884	0.111	13.518	***	0.781	Convergent Validity Holds
PERCUS4 <--- PERCUS	0.733	0.11	11.741	***	0.537	Convergent Validity Holds
PERBUS1 <--- PERBUS	0.687				0.472	Convergent Validity Holds
PERBUS2 <--- PERBUS	0.799	0.09	12.312	***	0.638	Convergent Validity Holds
PERBUS3 <--- PERBUS	0.855	0.096	12.684	***	0.732	Convergent Validity Holds
PERLER1 <--- PERLER	0.647				0.418	Convergent Validity Holds
PERLER2 <--- PERLER	0.806	0.114	11.776	***	0.65	Convergent Validity Holds
PERLER3 <--- PERLER	0.828	0.109	11.97	***	0.686	Convergent Validity Holds
PERLER4 <--- PERLER	0.743	0.106	11.113	***	0.552	Convergent Validity Holds
PERFIN5 <--- PERFIN	0.699				0.488	Convergent Validity Holds
PERFIN6 <--- PERFIN	0.683	0.076	13.503	***	0.466	Convergent Validity Holds
PERFIN7 <--- PERFIN	0.728	0.092	10.966	***	0.553	Convergent Validity Holds
PERFIN8 <--- PERFIN	0.673	0.09	10.231	***	0.453	Convergent Validity Holds
PERFIN9 <--- PERFIN	0.67	0.091	10.231	***	0.449	Convergent Validity Holds
PERFIN10 <--- PERFIN	0.677	0.095	10.326	***	0.458	Convergent Validity Holds
COM7 <--- COMM	0.814	0.1	9.53	***	0.663	Convergent Validity Holds
COM6 <--- COMM	0.843	0.059	16.98	***	0.711	Convergent Validity Holds
COM5 <--- COMM	0.812				0.66	Convergent Validity Holds
COM3 <--- COMM	0.62	0.087	7.853	***	0.384	Convergent Validity doesn't Hold

Table 4.13 reveals that all other model fit indices are within the threshold. The squared multiple correlations (SMC) of COM3 are below the threshold of 0.4 indicating lack of convergent

validity. The result reveals that the proposed measurement model is **inadmissible** again. As a result, the variable has been deleted from the model. Table 4.14 also shows that the correlations of all latent variables are within the acceptable range (below .8) indicating the existence of discriminant validity.

Table 4. 14 Results for Re-run CFA measurement model for discriminant validity

After Modification Indices		
Constructs	Correlation	Comments
INV <--> ADA	0.425	Discriminant Validity Holds
INV <--> CONS	0.409	Discriminant Validity Holds
INV <--> MIN	0.105	Discriminant Validity Holds
ADA <--> CONS	0.696	Discriminant Validity Holds
ADA <--> MIN	-0.086	Discriminant Validity Holds
IN <--> COMM	0.469	Discriminant Validity Holds
ADA <--> COMM	0.266	Discriminant Validity Holds
CONS <--> COMM	0.308	Discriminant Validity Holds
MIN <--> COMM	-0.032	Discriminant Validity Holds
CONS <--> MIN	0.076	Discriminant Validity Holds
PERCUS <--> COM	-0.011	Discriminant Validity Holds
PERBUS <--> COM	0.288	Discriminant Validity Holds
PERLER <--> COM	0.277	Discriminant Validity Holds
PERFIN <--> COM	0.349	Discriminant Validity Holds
PERLER <--> PERFIN	0.423	Discriminant Validity Holds
PERBUS <--> PERFIN	0.412	Discriminant Validity Holds
PERCUS <--> PERFIN	-0.068	Discriminant Validity Holds
PERBUS <--> PERLER	0.583	Discriminant Validity Holds
PERCUS <--> PERLER	0.002	Discriminant Validity Holds
PERCUS <--> PERBUS	0.142	Discriminant Validity Holds
INV <--> PERCUS	-0.032	Discriminant Validity Holds
INV <--> PERBUS	0.366	Discriminant Validity Holds
INV <--> PERLER	0.534	Discriminant Validity Holds
INV <--> PERFIN	0.417	Discriminant Validity Holds
ADA <--> PERBUS	0.473	Discriminant Validity Holds
ADA <--> PERLER	0.286	Discriminant Validity Holds
CONS <--> PERFIN	0.684	Discriminant Validity Holds
ADA <--> PERCUS	-0.122	Discriminant Validity Holds
CONS <--> PERCUS	-0.079	Discriminant Validity Holds
CONS <--> PERBUS	0.266	Discriminant Validity Holds
CONS <--> PERLER	0.296	Discriminant Validity Holds
MIN <--> PERCUS	0.297	Discriminant Validity Holds

MIN <--> PERBUS	0.084	Discriminant Validity Holds
MIN <--> PERLER	0.085	Discriminant Validity Holds
MIN <--> PERFIN	-0.006	Discriminant Validity Holds

The validity of unobserved variables was done with the template after variables deleted and modification indices covered. The result proves that as discriminant validity exists for all unobserved variables whereas there is a convergent validity concern for unobserved variables of AD and PERFIN. The result of the template is presented in Table 4.15 below.

Table 4. 15 Validity check for unobserved variables after variables deleted

	CR	AVE	ADA	INV	CONS	MIN	COMM	PERFIN	PERLER	PERBUS	PERCUS
ADA	0.665	0.499	**0.706**								
INV	0.826	0.613	0.425	**0.783**							
CONS	0.695	0.533	0.696	0.409	**0.730**						
MIN	0.888	0.533	-0.086	0.105	0.076	**0.730**					
COMM	0.858	0.604	0.266	0.469	0.308	-0.032	**0.777**				
PERFIN	0.844	0.474	0.589	0.417	0.684	-0.006	0.349	**0.689**			
PERLER	0.844	0.576	0.286	0.534	0.296	0.085	0.277	0.423	**0.759**		
PERBUS	0.825	0.614	0.473	0.366	0.266	0.084	0.288	0.412	0.583	**0.783**	
PERCUS	0.869	0.627	-0.122	-0.032	-0.079	0.297	-0.011	-0.068	0.002	0.142	**0.792**

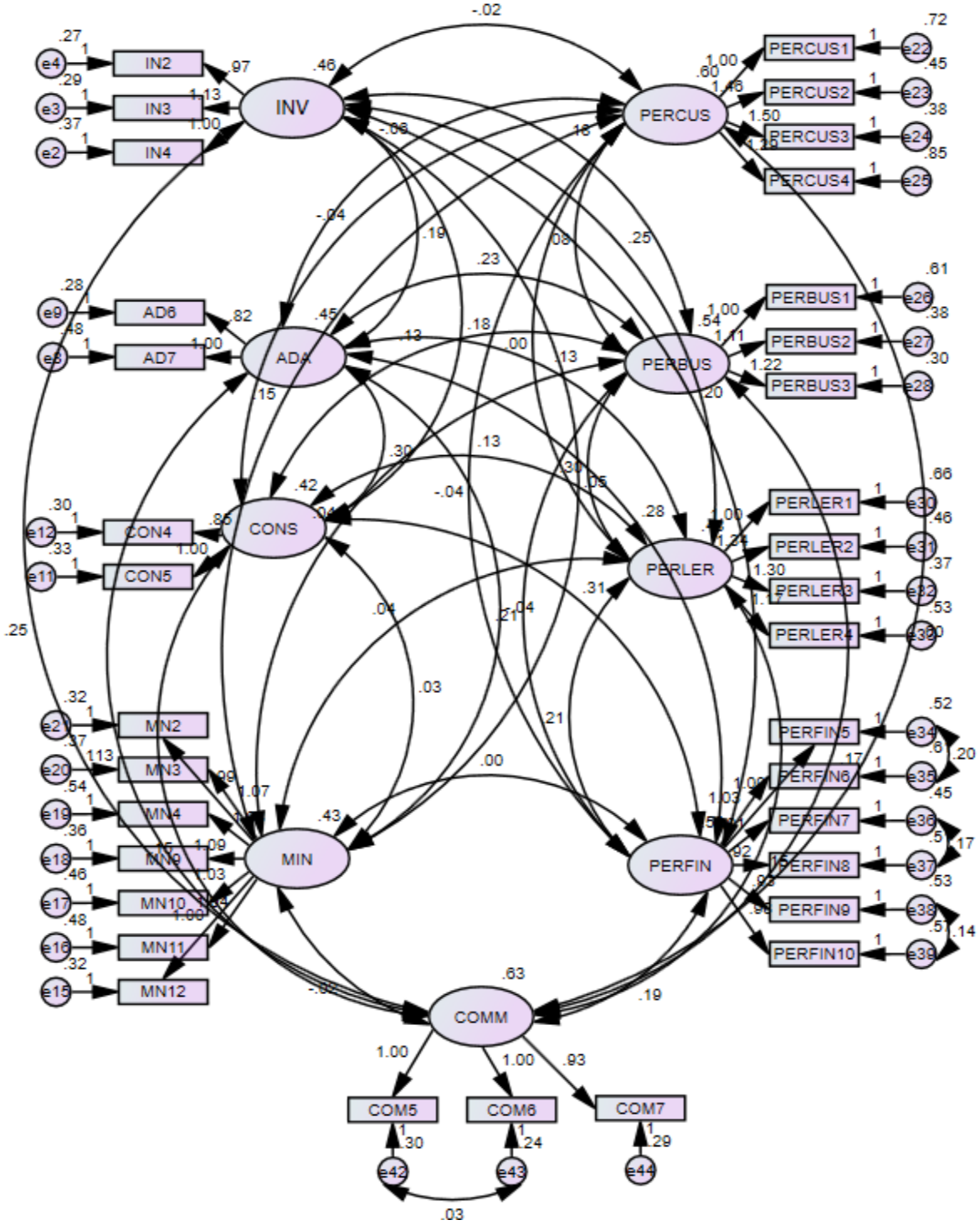

Figure 4. 4 Final CFA Measurement Model (source: researcher Amos output)

Table 4. 16 Results of Final CFA Measurement Model for convergent validity

After Variable Deleted and after Modification Indices							
Chi-Square		Absolut Fit Indices		Incremental Fit Indices		Parsimony Fit Indices	
X2	692.47	RMSEA	0.036	CFI	0.961	PCFI	0.834
Df	487	RMR	0.046	IFI	0.961	PNFI	0.764
X2/Df	1.422	CMIN/ DF	1.422	TLI	0.955	GFI	0.891
Factor Loadings *****=p<0.001, **=p<0.01, *=p<0.05** **Rows with blank space indicates indicator is set as default**							
Item <--- Variable	Estimate	S.E.	C.R.	P	SMC	Comments	
IN4 <--- INV	0.742				0.551	Convergent Validity Holds	
IN3 <--- INV	0.819	0.085	13.27	***	0.671	Convergent Validity Holds	
IN2 <--- INV	0.785	0.075	12.93	***	0.616	Convergent Validity Holds	
AD7 <--- ADA	0.695				0.484	Convergent Validity Holds	
AD6 <--- ADA	0.717	0.089	9.225	***	0.514	Convergent Validity Holds	
CON5 <--- CONS	0.75				0.563	Convergent Validity Holds	
CON4 <--- CONS	0.71	0.086	9.833	***	0.504	Convergent Validity Holds	
MIN12 <--- MIN	0.753				0.567	Convergent Validity Holds	
MIN11 <--- MIN	0.697	0.083	12.43	***	0.486	Convergent Validity Holds	
MIN10 <--- MIN	0.707	0.082	12.62	***	0.5	Convergent Validity Holds	
MIN9 <--- MIN	0.766	0.079	13.75	***	0.586	Convergent Validity Holds	
MIN4 <--- MIN	0.674	0.086	11.98	***	0.454	Convergent Validity Holds	
MIN3 <--- MIN	0.757	0.079	13.58	***	0.573	Convergent Validity Holds	
MIN2 <--- MIN	0.75	0.073	13.44	***	0.562	Convergent Validity Holds	
PERCUS1 <--- PERCUS	0.674				0.454	Convergent Validity Holds	
PERCUS2 <--- PERCUS	0.858	0.11	13.31	***	0.737	Convergent	

						Validity Holds
PERCUS3 <--- PERCUS	0.884	0.111	13.52	***	0.781	Convergent Validity Holds
PERCUS4 <--- PERCUS	0.733	0.11	11.74	***	0.537	Convergent Validity Holds
PERBUS1 <--- PERBUS	0.687				0.472	Convergent Validity Holds
PERBUS2 <--- PERBUS	0.799	0.09	12.32	***	0.638	Convergent Validity Holds
PERBUS3 <--- PERBUS	0.855	0.096	12.69	***	0.732	Convergent Validity Holds
PERLER1 <--- PERLER	0.646				0.418	Convergent Validity Holds
PERLER2 <--- PERLER	0.806	0.114	11.77	***	0.65	Convergent Validity Holds
PERLER3 <--- PERLER	0.828	0.109	11.97	***	0.686	Convergent Validity Holds
PERLER4 <--- PERLER	0.743	0.106	11.11	***	0.552	Convergent Validity Holds
PERFIN5 <--- PERFIN	0.698				0.487	Convergent Validity Holds
PERFIN6 <--- PERFIN	0.682	0.076	13.5	***	0.466	Convergent Validity Holds
PERFIN7 <--- PERFIN	0.728	0.092	10.96	***	0.53	Convergent Validity Holds
PERFIN8 <--- PERFIN	0.674	0.09	10.23	***	0.454	Convergent Validity Holds
PERFIN9 <--- PERFIN	0.67	0.091	10.23	***	0.449	Convergent Validity Holds
PERFIN10 <--- PERFIN	0.677	0.095	10.33	***	0.458	Convergent Validity Holds
COM7 <--- COMM	0.808	0.099	9.372	***	0.653	Convergent Validity Holds
COM6 <--- COMM	0.849	0.059	17.03	***	0.721	Convergent Validity Holds
COM5 <--- COMM	0.822				0.675	Convergent Validity Holds

Table 4.16 reveals that all the model fit indices are within the acceptable range and all observed variables have a convergent validity. As can also see from Table 4.17, all the latent variables correlation is below 0.8 indicating the existence of discriminant validity. Consequently, the overall model fit was acceptable. Therefore the proposed measurement model is **admissible.**

Table 4. 17 Results of final CFA measurement model for discriminant validity

After Variables Deleted and after Modification Indices		
Constructs	Correlation	Comments
INV <--> ADA	0.425	Discriminant Validity Holds
INV <--> CONS	0.409	Discriminant Validity Holds
INV <--> MIN	0.105	Discriminant Validity Holds
ADA <--> CONS	0.697	Discriminant Validity Holds
ADA <--> MIN	-0.086	Discriminant Validity Holds
IN <--> COMM	0.466	Discriminant Validity Holds
ADA <--> COMM	0.267	Discriminant Validity Holds
CONS <--> COMM	0.307	Discriminant Validity Holds
MIN <--> COMM	-0.036	Discriminant Validity Holds
CONS <--> MIN	0.076	Discriminant Validity Holds
PERCUS <--> COM	-0.015	Discriminant Validity Holds
PERBUS <--> COM	0.283	Discriminant Validity Holds
PERLER <--> COM	0.283	Discriminant Validity Holds
PERFIN <--> COM	0.335	Discriminant Validity Holds
PERLER <--> PERFIN	0.409	Discriminant Validity Holds
PERBUS <--> PERFIN	0.397	Discriminant Validity Holds
PERCUS <--> PERFIN	-0.065	Discriminant Validity Holds
PERBUS <--> PERLER	0.583	Discriminant Validity Holds
PERCUS <--> PERLER	0.002	Discriminant Validity Holds
PERCUS <--> PERBUS	0.142	Discriminant Validity Holds
INV <--> PERCUS	-0.032	Discriminant Validity Holds
INV <--> PERBUS	0.366	Discriminant Validity Holds
INV <--> PERLER	0.534	Discriminant Validity Holds
INV <--> PERFIN	0.4	Discriminant Validity Holds
ADA <--> PERBUS	0.473	Discriminant Validity Holds
ADA <--> PERLER	0.285	Discriminant Validity Holds
CONS <--> PERFIN	0.66	Discriminant Validity Holds
ADA <--> PERCUS	-0.122	Discriminant Validity Holds
CONS <--> PERCUS	-0.079	Discriminant Validity Holds
CONS <--> PERBUS	0.266	Discriminant Validity Holds
CONS <--> PERLER	0.296	Discriminant Validity Holds
MIN <--> PERCUS	0.297	Discriminant Validity Holds
MIN <--> PERBUS	0.084	Discriminant Validity Holds
MIN <--> PERLER	0.085	Discriminant Validity Holds
MIN <--> PERFIN	-0.006	Discriminant Validity Holds
ADA <--> PERFIN	0.57	Discriminant Validity Holds

The validity of unobserved variables was done with the template after variable deleted and modification indices covered. The result proves that as discriminant validity as well as convergent validity exists for all unobserved variables. The result of the template is presented in Table 4.18 below.

Table 4. 18 Final Validity check for unobserved variables

	CR	AVE	ADA	INV	CONS	MIN	COMM	PERFIN	PERLER	PERBUS	PERCUS
ADA	0.766	0.500	**0.707**								
INV	0.826	0.612	0.423	**0.783**							
CONS	0.726	0.534	0.697	0.407	**0.731**						
MIN	0.888	0.533	-0.085	0.105	0.073	**0.730**					
COMM	0.867	0.684	0.250	0.464	0.294	-0.037	**0.827**				
PERFIN	0.767	0.523	0.526	0.326	0.702	-0.012	0.363	**0.723**			
PERLER	0.844	0.577	0.281	0.534	0.295	0.085	0.270	0.374	**0.759**		
PERBUS	0.825	0.614	0.471	0.366	0.264	0.084	0.285	0.340	0.583	**0.783**	
PERCUS	0.869	0.627	-0.122	-0.031	-0.081	0.297	-0.007	-0.072	0.002	0.142	**0.792**

Final Reliability

Reliability is the extent of how the said measurement model in measuring the intended latent construct. After research constructs have been checked for reliability validated, the model is checked for reliability to go for structural model. Most commonly used solution to assess reliability is checking the Cronbach's alpha coefficients of internal consistency. The Cronbach's alpha should exceed 0.7, the threshold value.

Table 4. 19 Instrument Reliability

Constructs	Number of items	Cronbach's Alpha
IN	3	0.823
CON	5	0.702
AD	2	0.754
MN	6	0.887
COM	3	0.871
PERCUS	3	0.865
PERBUS	3	0.821
PERLER	3	0.84
PERFIN	3	0.86

4.5.2.2 Structural Model

Measurement model is mainly used for observed variables whereas the structural model develops the relationships between the latent variables. The relationship between latent variables and observed variables that are not indicators of the latent variables is mentioned by structural equation model. Before developing structural equation model several issues should be considered. From different issues to be considered the major one is that the measurement model (factor analysis) should be fitted first followed by the structural model. Whereas measurement models are concerned with how latent constructs are measured, structural models are concerned with the directional relationships among latent variables or factors, once their measurement qualities have been established. Structural models in SEM are like standard regression models, except that the independent variables, dependent variables, or both are latent factors measured with observed indicators. For implications of theory, practice, or policy, the main focus of structural models is on testing the strength and direction of substantive relationships among variables.

The structural model and its latent variables represent the stable, theoretically and conceptually established contextual link between observed data on the input and output sides (Chin, 2010). Based on the structural model the goal of the analysis is to predict the output layer data by means of the input layer data. In other words, the structural model is used to illustrate one or more dependence relationships liking the hypothesized model's construct. In order to assess the structural model Hair, Sarstedt, Hopkins and Kuppelwieser (2014) proposed five step structural model assessment procedure. 1) Assess model fit, that is, GOF indices 2) Assess comparison of loadings of the structural model and the measurement model 3) Assess the level of R^2 4) Assess the effect size f^2 5) Assess the size, direction and significance of the estimated structural parameters.

The list of the most popular fit statistics used and recommended cut-offs that indicate a structural model fit are presented in Table 4.20. Table 4.20 provides a description of the above tests and the rule of thumb criteria for what constitutes as acceptable value based on recommendations of SEM literatures. There are more than a dozen different fit statistics researchers use to assess their confirmatory factor analyses and structural equation models, the researcher uses Hair et al. (2014) and Kline and Rosenberg (2010) as a base to select the fit rule of thumb.

Table 4. 20 Tests for Structural Model Validity

SEM Tests	Description	Acceptable values
Structural model fit	Assesses extent of the structural model fit of the sample data using the GOF indices used for the measurement model	See Table 4.8
Comparison of loadings of the structural model and the measurement model	Assesses closeness of the parameter loadings of the structural and measurement models	Difference in loading should be 0.05 or less
Variance explained (R^2)	Extent to which variance is explained by the estimates of the model	0.70 and above = great; 0.50 and above = very good
Effective Size (f^2)	Evaluate whether exogenous constructs have a substantive impact on endogenous constructs	f^2<0.02 Small Effect 0.02<f^2<0.15 Medium Effect f^2>0.35 Large Effect
Size, direction and significance of parameter estimates	Significance of the parameter estimates based on the corresponding p-values	p<0.05

Source: Hair et al., (2014) and Kline and Rosenberg (2010)

After checking the convergent and discriminant validity as well as reliability of the proposed measurement model finally the admissible measurement model is converted into structural model to assess the relationship between latent and observed variables that are not indicators of latent variables. Figure 4.5 presents the structural model which shows the relationship between constructs or latent variables or unobserved variables that are easy to understand.

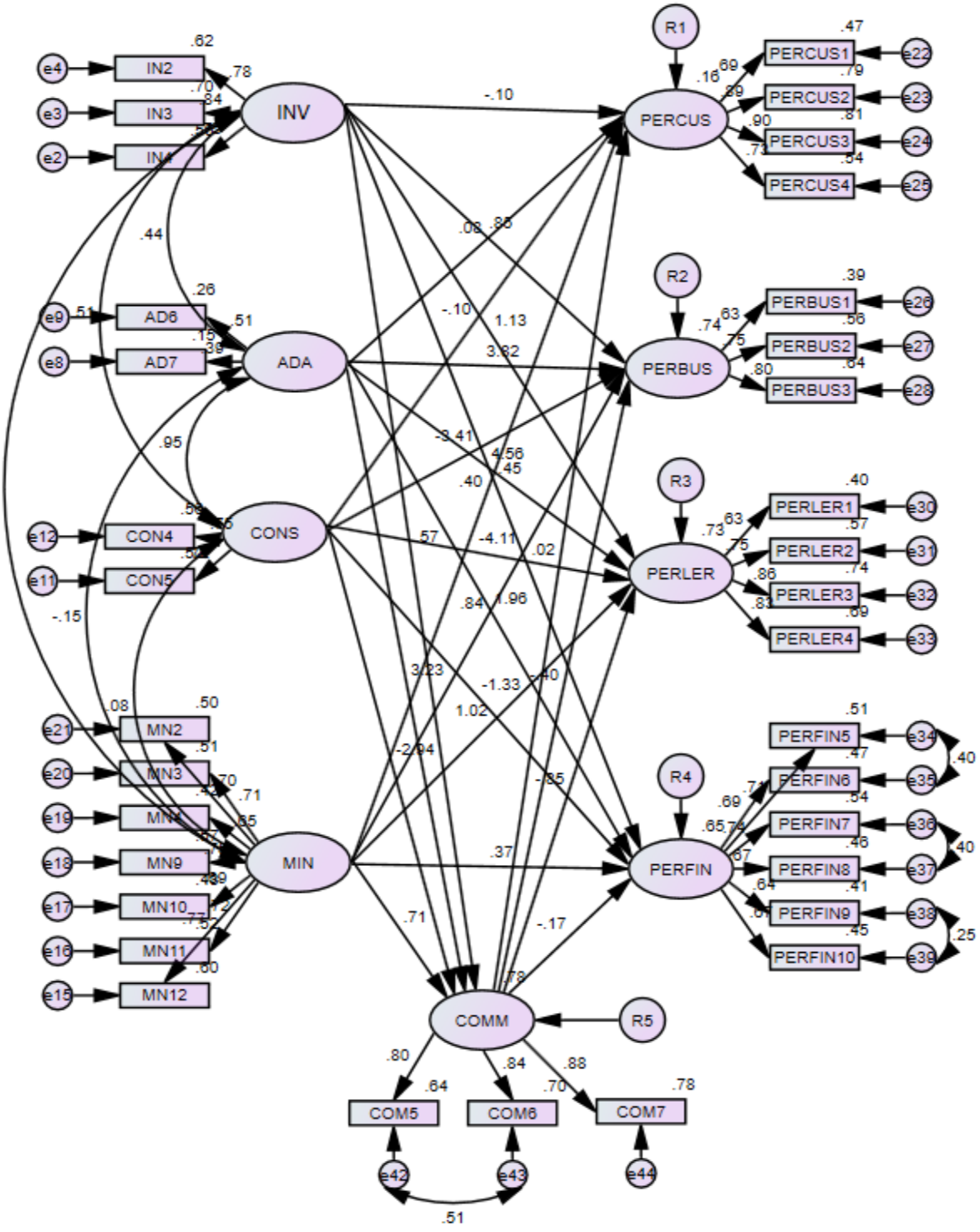

Figure 4. 5 Structural Model (Source: researcher Amos output)

Based on the five criteria discussed in table 4.20 the structural model is evaluated.

Criteria 1: Assess model fit

The model fit statistics of the structural model are shown in Table 4.21.

Table 4. 21 Model Fit Results for Structural Model

GOF Indices							
Chi-Square		Absolut Fit Indices		Incremental Fit Indices		Parsimony Fit Indices	
X2	723.189	RMSEA	0.038	CFI	0.956	PCFI	0.84
Df	493	RMR	0.047	IFI	0.956	PNFI	0.769
X2/Df	1.467	CMIN/DF	1.467	TLI	0.95	GFI	0.887

From the results in Table 4.21, the value of CMIN/DF is 1.467 which is within the threshold value (between 1 and 5), the value for RMSEA and RMR is about 0.038 and 0.047 respectively, both are in the acceptable range (<0.08), the values of CFI, IFI, and TLI are all within the threshold ranges (>=0.9) and the values are 0.956, 0.956 and 0.95 respectively. Additionally the values of PCFI and PNFI are also fall within the acceptable range both have values greater than 0.5. Hence, the full structural model as indicated in Figure 4.5 is supported and accepted in terms of the selected fit indices in SEM literature.

Criteria 2: Assess comparison of loadings of the structural model and the measurement model

The path coefficients or loadings in the structural model and the standardized coefficient or loadings in the measurement model should be similar (Hair et al, 2006). Based on this argument, almost all of the loadings of the structural model are similar to that of the measurement model. Almost all differences between the structural models to the measurement model are below the threshold 0.05(Hair et al, 2006). The largest difference in standardized loadings is 0.029, which is not above the 0.05. This indicates the existence of parameter stability among the measured items in the two models, which provides further support for the validity of the structural model.

Criteria 3: Assess the level of R^2

In PLS (Partial Least Square) analysis, the predictive power of a particular model or construct and the determination of the standard path coefficient of each relationship between exogenous and endogenous variable is assessed using the R-squared (R^2) values of the endogenous variables (Chin, 1998). The R^2 values indicate the amount of variance in the construct that is explained by the model. R-square indicates the amount of variance explained by the exogenous variable in its endogenous counterpart. It represents the quality of the model variables (Hair, Black, and Anderson, 2010). According to Henseler and Sarstedt (2013), and Hair et al. (2014), an R^2 value of 0.75 is considered substantial, an R^2 value of 50 is regarded as moderate, and an R^2 value of 0.26 is considered as weak.

In this study, the inner path models were 69%, 74%, 73%, 65%, and 78% for the quality endogenous latent constructs. This indicates that the four independent constructs substantially explain of the variance in the quality. Meaning that the model explains; 69%, 74%, 73%, 65%, and 78% of the variance (R^2) in customer perspective performance, business perspective performance, learning and growth perspective performance, financial perspective performance, and organizational employee commitment respectively.

Criteria 4: Assess the effect size f^2

The assessment of the effect size f^2 seeks to evaluate whether exogenous constructs have a substantive impact on endogenous constructs. It is important to determine the relevance and the extent to which the examined path changes the explaining power of the endogenous construct (Cohen, 1988). As the path coefficient cannot provide any information about the effect size of the exogenous latent variables on the endogenous construct. In determining the effect size, Cohen F^2 value was used and calculated with the formula provided below by Cohen (1988):

$$F^2 = \frac{R^2 included - R^2 excluded}{1 - R^2 included}$$

The study tries to see the effect of removing one exogenous construct on other endogenous constructs. The results from AMOS for each exogenous variable are shown in Table 4.22. Table 4.22 shows that all exogenous constructs have substantive impact on the endogenous constructs.

Table 4. 22 Effective Size for each exogenous constructs

Exogenous Variables								
	ADA				CONS			
Endogenous Variables	R^2 Included	R^2 Excluded	F^2	Interpretation	R^2 Included	R^2 Excluded	F^2	Interpretation
PERCUS	0.69	0.66	0.10	Medium Effect	0.69	0.5	0.61	Large Effect
PERBUS	0.74	0.57	0.65	Large Effect	0.74	0.67	0.27	Medium Effect
PERLER	0.73	0.48	0.93	Large Effect	0.73	0.56	0.63	Large Effect
PERFIN	0.65	0.64	0.03	Medium Effect	0.65	0.63	0.06	Medium Effect
COM	0.78	0.29	2.23	Large Effect	0.78	0.39	1.77	Large Effect
Exogenous Variables								
	INV				MIN			
Endogenous Variables	R^2 Included	R^2 Excluded	F^2	Interpretation	R^2 Included	R^2 Excluded	F^2	Interpretation
PERCUS	0.69	0.41	0.90	Large Effect	0.69	0.25	1.42	Large Effect
PERBUS	0.74	0.71	0.12	Medium Effect	0.74	0.67	0.27	Medium Effect
PERLER	0.73	0.67	0.22	Medium Effect	0.73	0.6	0.48	Large Effect
PERFIN	0.65	0.65	0.00	Small Effect	0.65	0.64	0.03	Medium Effect
COM	0.78	0.72	0.27	Medium Effect	0.78	0.51	1.23	Large Effect

Criteria 5: The size, direction, and significance of the estimated structural parameters

The fifth set of criteria for assessing the validity of the structural model is investigating the size, direction, and significance of the structural parameter estimates. Table 4.23 presents the structural path estimates and seventeen of the twenty four paths are significant.

Table 4. 23 Significance level of the structural parameter estimates

	Estimate	S.E.	C.R.	P	Remark
COMM <--- MIN	0.895	0.216	4.143	***	Significant
COMM <--- CONS	0.972	0.368	2.641	0.012	Significant
COMM <--- ADA	0.848	0.182	4.659	***	Significant
COMM <--- INV	0.613	0.175	3.51	***	Significant
PERCUS <--- MIN	0.502	0.109	4.597	***	Significant

PERBUS <--- MIN	0.881	0.446	1.975	0.049	Significant
PERLER <--- MIN	0.31	0.13	2.388	0.017	Significant
PERFIN <--- MIN	0.06	0.078	0.771	0.441	Not Significant
PERCUS <--- CONS	-0.731	0.291	-2.515	0.012	Significant
PERBUS <--- CONS	-3.594	1.757	-2.046	0.041	Significant
PERLER <--- CONS	-1.178	0.372	-3.163	0.002	Significant
PERFIN <--- CONS	0.095	0.221	0.429	0.668	Not Significant
PERCUS <--- ADA	0.694	0.319	2.177	0.029	Significant
PERBUS <--- ADA	4.517	2.006	2.252	0.024	Significant
PERLER <--- ADA	1.543	0.416	3.712	***	Significant
PERFIN <--- ADA	0.734	0.249	2.95	0.003	Significant
PERCUS <--- INV	-0.161	0.119	-1.355	0.175	Not Significant
PERBUS <--- INV	-0.432	0.461	-0.938	0.348	Not Significant
PERLER <--- INV	0.251	0.126	1.992	0.042	Significant
PERFIN <--- INV	0.022	0.091	0.239	0.811	Not Significant
PERCUS <--- COMM	0.107	0.086	1.247	0.212	Not Significant
PERBUS <--- COMM	0.408	0.157	2.598	0.013	Significant
PERLER <--- COMM	0.117	0.108	1.086	0.277	Not Significant
PERFIN <--- COMM	0.122	0.059	2.067	0.035	Significant

*** indicating P<0.001

4.6 Testing the Meditational Effect of COM

A mediator between the dependent and independent variable mainly explains how or why an independent variable is related to a dependent variable. In mediation the main focus is on understanding of the mechanism, looking through the casual chain of events, or the fundamental process. Mediation is also known as an indirect effect of X on Y through M. The basic mediation model considers the following pattern, an independent variable (X) is hypothesized to influence a mediator (M) which, in turn, influences the dependent variable (Y) (Baron and Kenny, 1986). Mediation an answers the question 'how does X affect Y?' by following some general procedure.

To establish that an independent variable X affects a distal dependent variable Y through a mediating variable M, as shown in figure 4.6, Baron and Kenny, 1986 recommend three tests: A variable functions as a mediator when it meets the following conditions: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator (i.e., Path a), (b) variations in the mediator significantly account for variations in the dependent variable (i.e., Path b), and (c) when Paths a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation occurring when Path c is zero (Fairchild and McQuillin, 2010).

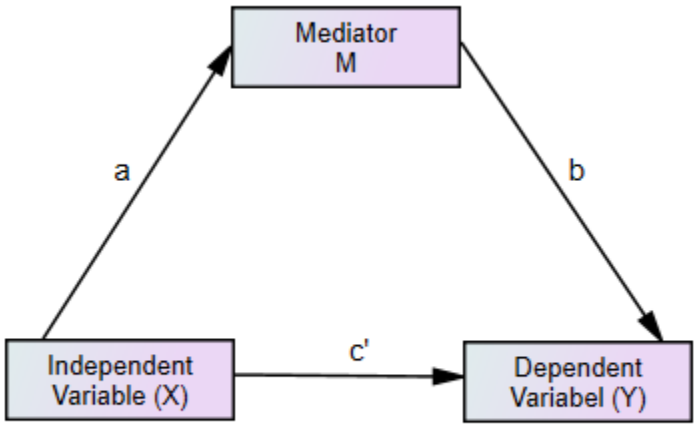

Figure 4. 6 Model of Mediation

The indirect effect is a product term of a x b. While, the total effect of X and Y relationship includes two parts that are the direct effect of X on Y represented by c and the indirect effect of X on Y through M (a x b). Total effect of X on Y is c' = (axb) + c.

Under this study mediation analysis was performed to test the mediating effect on COM. This research has four major hypotheses on mediation and each major hypothesis has four sub hypotheses for mediating effects. Typologies for mediation and non-mediation; according to Baron and Kenny, 1986 there are five criteria's for mediation and non-mediation. Three patterns consistent with mediation and two with non-mediation:

1. Complementary mediation: Mediated or indirect effect (a x b) and direct effect (c) both exist (significant) and point at the same direction. (Partial Mediation)
2. Competitive mediation: Mediated or indirect effect (a x b) and direct effect (c) both exist (significant) and point in opposite directions. (Partial Mediation)
3. Indirect-only mediation: Mediated or indirect effect (a x b) exists, but no direct effect. (Full Mediation)
4. Direct-only non-mediation: Direct effect (c) exists (significant), but no indirect effect.
5. No-effect non-mediation: Neither direct effect nor indirect effect exists. It occurs when both direct and indirect effects are insignificant.

Complementary mediation categorized as partial mediation; indirect-only mediation branded as full mediation. Other three categories of competitive mediation, direct-only non-mediation, and no effect non-mediation were often clubbed together as no mediation by Baron and Kenny, 1986. 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 effect signals that there is second possibly omitted mediator which can be examined in any future study. The sign of the direct effect 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 effects.

The sign of the direct effect in direct only non-mediation implies that there is yet undiscovered mediators. Finally, the no effect non-mediation is a failure for testing mediation (Judd and Kenny, 2010).

Table 4. 24 Hypothesis Testing of the Structural Model

Hypothesis	Exogenous Variables	Mediator Variable	Endogenous Variable	Path Coefficients	P-value	Results	Type of the mediating Effect
DIRECT EFFECT							
H1	INV		COMM	0.613(a1)	***	Supported	
H2	CONS		COMM	0.972(a2)	0.012	Supported	
H3	ADA		COMM	0.848(a3)	***	Supported	
H4	MIN		COMM	0.895(a4)	***	Supported	
H5	INV INV INV INV		PERCUS PERBUS PERLER PERFIN	-0.161 -0.432 0.251 0.022	0.175 0.348 0.042(*) 0.811	Not Supported	
H6	CONS CONS CONS CONS		PERCUS PERBUS PERLER PERFIN	-0.731 -3.594 -1.178 0.098	0.012(*) 0.041(*) 0.002(**) 0.668	Supported	
H7	ADA ADA ADA ADA		PERCUS PERBUS PERLER PERFIN	0.694 4.517 1.543 0.734	0.029(*) 0.024(*) *** 0.003(**)	Supported	
H8	MIN MIN MIN MIN		PERCUS PERBUS PERLER PERFIN	0.502 0.881 0.310 0.060	*** 0.049 0.017(*) 0.441	Partially Supported	
H9	COMM COMM COMM COMM		PERCUS PERBUS PERLER PERFIN	0.107(b1) 0.408(b2) 0.117(b3) 0.122(b4)	0.212 0.013(*) 0.277 0.035(*)	Partially Supported	

INDIRECTEFFECT							
H10	INV INV INV INV	COM COM COM COM	PERCUS PERBUS PERLER PERFIN	0.066 (a1*b1) 0.25(a1*b2) 0.072(a1*b3) 0.075(a1*b4)	0.003(**) 0.011(**) 0.003(**) 0.002(**)	Supported	Full Meditator Full Meditator Partial Meditator Full Meditator
H11	CONS CONS CONS CONS	COM COM COM COM	PERCUS PERBUS PERLER PERFIN	0.104(a2*b1) 0.397(a2*b2) 0.114(a2*b3) 0.119(a2*b4)	0.013(*) *** 0.014(*) 0.016(*)	Supported	Competitive Meditator Competitive Meditator Competitive Meditator Full Meditator
H12	ADA ADA ADA ADA	COM COM COM COM	PERCUS PERBUS PERLER PERFIN	0.091(a3*b1) 0.346(a3*b2) 0.099(a3*b3) 0.103(a3*b4)	0.013(*) *** 0.036(*) 0.007(**)	Supported	Partial Meditator Partial Meditator Partial Meditator Partial Meditator
H13	MIN MIN MIN MIN	COM COM COM COM	PERCUS PERBUS PERLER PERFIN	0.096(a4*b1) 0.366(a4*b2) 0.105(a4*b3) 0.109(a4*b4)	0.039(*) *** 0.041(*) 0.024(*)	Supported	Partial Meditator Full Meditator Partial Meditator Full Meditator

4.7 Discussions of Results

Results of the data analyses presented in this chapter are discussed in this section to address the research questions outlined in Chapter 1. A review of the hypotheses is provided at the beginning of each section. This section analyses the findings of this study in light of existing literature and reports on the consistency or otherwise of the research findings with previous studies. Lastly a summary is presented to conclude this chapter.

Central to the objective of this thesis is initially to find out the dominant organizational culture, to understand the impact of organizational culture on performance and the mediating role of employee's employee commitment in Ethiopian Airlines, which leads to the three major hypotheses considered under this study. The first one is there is a significant effect of dimensions of organizational culture on employee's firm performance, the second one is OC and COM has significant effects on the different types of performance and finally OC has significant effect on performance via COM. Based on this, the discussion section is presented in four sections as follows:

4.7.1 The dominant organizational culture in Ethiopian Airlines

The results of Table 4.24 are summered with four quadrats to reflect the Denison's organizational culture model. The profile splits horizontally to distinguish between an external focus (top half) and an internal focus (bottom) half. The two organizational traits involvement and consistency address the internal dynamics of the organization and the other two traits of organizational culture, adaptability, and mission shows the connection between the organization and the environment. In addition to the horizontal split, the profile splits vertically to distinguish between flexible organization (left hand side) and stable organization (right hand side). In this perspective the two organizational traits mainly indicates flexible organization these traits are adaptability and involvement whereas, the other two organizational traits mission and consistency stress a stable organization.

From the profile drawn below the right hand side displays a strong support than the left hand side of the model indicating that Ethiopian airlines is more stable than flexible. And from the horizontal split Ethiopian airlines focuses on external environment than the internal.

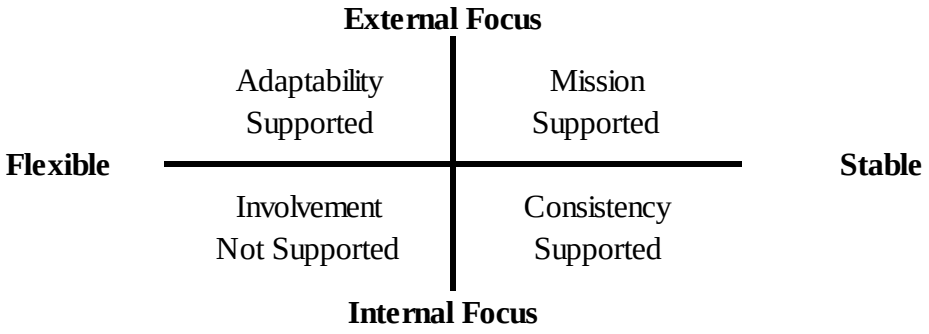

Figure 4. 7 Profile adapted from Denison's Model

This result is similar to the work of Kweyu (2010) with his work on Kenya Airways. On his conclusion under his findings he suggests that Kenya Airways needs to develop an organizational culture which brings an external focus in order to increase the performance of the company. The current organizational culture that exists in Kenya Airways is mainly focused on the internal system and process. In addition to Kweyu (2010); Juma (2015) undergoes a case study on Kenya Airline. Besides the frame work used to assess the organizational culture the

results of Juma (2015) is similar to this study. Juma (2015) used a competitive frame work developed by Cameron and Quinn. Using this competitive values frame work the researcher concluded that the airline focuses more on stability than flexibility.

Harris, 2014 tries to assess the effect of organizational culture on the performance of South Africa airline. From his findings Harris (2014) conclude that South Africa airline has stable organizational culture than flexible as well as the company focuses more on the external environment than the internal. His results resembles with this research study. In addition to this researchers results, the results of Banerjee (2013) from his exploratory study and Guruprasad (2020) a case study on Emirates Airline shows that the airline has more external focus than internal focus. According to Guruprasad (2020) Emirates airline increases it external focus mainly after the airplane crush at 2011G.C to attract the customers, to change the image of the company and to save the company from bankruptcy. Currently it is well known that Emirates airline is one of the leading companies in the world. The result of the two researchers' coincides with the result of this study.

4.7.2 The effect of Organizational culture on employee Commitment

Using Amos version 23 analyses are done and the findings of the structural equation modeling show that all of the four hypotheses are empirically supported. Employee commitment has shown significant positive correlations with all the dimensions of organizational culture. The research findings suggest that participants displayed high levels of organizational culture. Savickas (2013) believes that in order for employees to feel concerned about their future career and to be committed they require to be, involved, consistent, career adaptable and part of the mission of the company.

H1a: Involvement Dimension has a positive effect on COM.

The proposed model can be empirically examined by the use of a latent variable structural equation modeling (SEM) using AMOS version 23. According to the results of the model, there is a positive significant statistical relationship between involvement and commitment. From the result the path coefficient is about 0.613 at p-value less than 0.001. The conclusion from the result is, involvement directly influences organizational employee commitment, or there is a direct linkage between involvement and commitment. The result is consistent with the findings

of Warrington and Shim (2000) and Gahwiler and Havitz (1998). Therefore **hypothesis H1a** is accepted.

H1b: Consistency dimension has a positive effect on COM.

CONS affect COM with path coefficient of 0.972 and p-value of 0.012. The findings reinforce the value of consistency as key element framing how HRM signals managerial intentions to employee commitment. Moreover, the findings illustrate the positive benefits of consistency in strengthening commitment and in shaping outcomes. According to Azadi, Bagheri , Eslami and Aroufzad (2013) there is moderate level of positive relation between consistency and employee commitment. Therefore the finding of this study is consistent with Azadi, Bagheri , Eslami and Aroufzad (2013) findings and **hypothesis H1b** is accepted.

H1c: Adaptability dimension has a positive effect on COM.

As shown in Table 4.22, the path from career adaptability to commitment is significant; consistent with existing research, this study found that the relationship between adaptability and commitment is statistically significant and have positive effect on commitment. The result is directly consistent with research done by Tolentino, Garcia, Lu, Restubog, Bordia, and Plewa (2014), he has found that highly committed employees have proactive personalities, are goal orientated, and are more optimistic regarding their future careers. Findings in Table 4.22 suggest that the participants in this study display high levels of employee commitment and will tend to remain with the organization for longer. Therefore **hypothesis H1c** is accepted.

H1d: Mission dimension has a positive effect on COM.

Mission statements are a widely used strategic management tool and commonly promoted in business strategy classes. Tolentino et al., (2014) demonstrated that top management commitment to the mission statement might influence the effect the mission statements have on firm performance and provided a group of management actions that reflect employee's employee commitment to the mission statement. The result of this study supports the conclusion of Tolentino et al., (2014). From the result (path coefficient 0.895 with significant level greater than 0.001) mission dimension has a positive and significant effect on employee commitment. The

result is consistent with the work of Tolentino et al., (2014) and Savickas (2013) **hypothesis H1d** is accepted.

4.7.3 Employee commitment has a direct and significant effect on the different types of Performance.

H2: COM has a direct and positive effect on Performance.

Sub hypothesis are H2a, H2b, H2c and H2d which states that COM has a positive effect on customer focus, business process, learning and growth, and financial performance respectively. Hypothesis 2 received partial support: COM has statistically significant effect on business process and financial performances and its effect is insignificant on customer focus and learning and growth performances. COM affects business process performance with a standardized path coefficient of 0.408 and p-value of 0.013 and financial performance with a standardized path coefficient of 0.112 and p-value of 0.035. As a result hypothesis H2b and H2d are accepted and H2a and H2c are rejected. The rejection of H2a is consistent with the work of Andreeva and Kianto (2011) but the rejection of H2c is inconsistent with many researchers.

According to the literature by Meyer and Allen (1990), there are three-component types of employee's commitment as Affective Commitment, Continuance Commitment, and Normative Commitment. Each types of commitment have different relation with the firm performance. The possible reason for this could be many of the respondent doesn't have direct contact or are not intimate with customer, respondent are not concerned about customer focus or they may not have operational duty as well as learning and growth performance is not the result of commitment because learning and growth enforced by the company.

The measures that are selected for the customer perspective should measure both the value that is delivered to the customer (value position) which may involve time, quality, performance, service and cost and the outcomes that come as a result of this value proposition (e. g., customer satisfaction, market share). The value proposition can be centered on one of the three: operational excellence, customer intimacy, or product leadership, while maintaining threshold levels at the other two (Ahmed and Shafiq, 2014).

The learning and growth perspective is the foundation of any strategy and focuses on the intangible assets of an organization, mainly on the internal skills and capabilities that are required to support the value-creating internal processes (Lee and Huang, 2012). The learning and growth perspective is concerned with the jobs (human capital), the systems (information capital), and the climate (organization capital) of the enterprise.

4.7.3 Organizational culture has a direct and significant effect on the different types of Performance.

H3: Organizational Culture has a direct and significant effect on firm performance

H3a: Involvement has a direct and positive effect on performance.

Under this major hypothesis, there are four sub hypotheses (H3a1, H3a2, H3a3, and H3a4) which state that involvement has a direct and positive effect on customer focus, business process, learning and growth, and financial performance respectively.

Counter to expectations, empirical findings of this study revealed that INV has a statistically significant positive effect on learning and growth performance product innovation with path coefficient of 0.251 and p-value of 0.042 and has positive effect on financial performance though it is not statistically significant. Beside the two it has negative effect on customer focus and business process though it is not statistically significant. H3a is rejected because three of sub hypothesis are failed to confirm with the empirical literature. But only hypothesis H3a3 is accepted.

Involvement is building human capability, ownership, and responsibility. Thus, organizational cultures characterized as “highly involved” strongly encourage employee involvement, and create a sense of ownership and responsibility. Involvement ensures the participation of employees in decision making; it also relies on team effort to get work done and continual investment in the development of employee’s skills (Warrington and Shim, 2000).

The result of this study is not consistent with the works of Warrington and Shim (2000) the possible reason for this is the strategy of Ethiopian Airlines is not involving employees in decision making rather improving the working environment with adding incentives to employees. The other possible reason could be Ethiopian Airlines doesn't have the system that

encourages employee's involvement in decision making and may not delegate authority to employees.

According to Jones and Kato (2005) involvement has relationship with firm performance and all three components have significant and positive impact on firm performance. Organizations which delegate authority to employees perform well as compared to those who don't delegate. Organizations who allow their employees to work in team have more performance level than those who have non-team based structure. Therefore the result of this study is inconsistent with Jones and Kato (2005); Nyongesa and Ng'ang'a (2012) and Ahmed and Shafiq (2014) too.

H3b: Consistency has a direct and positive effect on performance.

Under this major hypothesis, there are four sub hypotheses (H3b1, H3b2, H3b3, and H3b4) which state that consistency has a direct and positive effect on customer focus, business process, learning and growth, and financial performance respectively. H3b is rejected because four of sub hypothesis are failed to confirm with the empirical literature.

Opposite to the expected result of the study (path coefficient -0.731 and p-value of 0.012 for customer focus performance, path coefficient -3.594 and p-value of 0.041 for business process performance, path coefficient -1.178 and p-value of 0.002 for learning and growth performance and path coefficient 0.098 and p-value of 0.668 for financial performance), CONS have negative effect on customer focus, business process and learning and growth performance. The result shows that there is a statistically significant negative relationship between CONS and the three components of performance. In the other direction CONS has positive effect on financial performance though it is not statistically significant. The result of this analysis is inconsistent with the work of Cooper,Dewe, and O'Driscoll (2001) and Nyongesa and Ng'ang'a (2012).

When any organization wants to increase its profit and to improve its performance, that organization must be consistent in coordination among departments and must adapt new processes with consistency. Consistency in integration is also required to share information among different departments (Cooper et al., 2001).

H3c: Adaptability has a direct and positive effect on performance.

Under this major hypothesis, there are four sub hypotheses (Hc1, H3c2, Hc3, and Hc4) which state that adaptability has a direct and positive effect on customer focus, business process, learning and growth, and financial performance respectively. H3c is fully accepted because four of sub hypothesis are passed to confirm with the empirical literature.

As expected, the result shows that all hypotheses have positive and significant relation with all components of performance. From the result the path coefficients are 0.694, 4.517, 1.543, and 0.743 for customer focus, business process, learning and growth, and financial performance respectively. The p-values are 0.029, 0.024, >0.001, and 0.003 for customer focus, business process, learning and growth, and financial performance respectively. These results are consistent with the work of Calarco and Guravis (2006) and Nikpour (2017) and the result is inconsistent with the work of Kweyu (2010).

There are several important points to be made with regard to the relationship between adaptability and performance. First, different results show that adaptive actions have a direct positive impact on perceptions of their service provision among customers. In other words, adaptability leads to improved performance that, in turn, gives companies a competitive advantage. Second, this adaptive activity is very important for strengthening customer relationships, since the consequently improved logistics services enhance client satisfaction and build customer loyalty. This relationship between customer satisfaction and consequent loyalty was the strongest in different models. Third, there is a positive direct impact of adaptability on customer satisfaction and loyalty, but they are weaker than the indirect impacts via performance enhancement Calarco and Guravis (2006).

H3d: Mission has a positive effect on performance.

Under H3d there are four sub hypothesis (H3d1, H3d2, H3d3, and Hd4) stating that MIN has a direct positive effect on customer focus, business process, learning and growth, and financial performance. Empirical results of the study revealed that MIN has the strongest and statistically significant positive effect on customer focus performance having a standardized path coefficient of 0.502, P <0.001) supporting H3d1. MIN also has strong positive effect on business process

performance having a standardized path coefficient of 0.881, P =0.049) supporting H3d2. MIN also has strong positive effect on learning and growth performance having a standardized path coefficient of 0.310, P =0.017) supporting H3d3. Counter to expectations, MIN doesn't have a statistically significant relationship with financial performance. Hence, H3d is partially supported. This finding is almost consistent with the results of Biloslavo and Lynn (2007), and Iseri-Say, Tatoglu, Deirbag, Toker, and Kantur, (2008) but inconsistent with Kweyu (2010).

There is statistically significant difference between the companies with implicitly or explicitly stated missions and companies without them with the regard to only one measure of a company performance (Iseri-Say et al., 2008). Mission is a key performance measure related to interests of many company's stakeholders. Namely, a company not only plays an important role in generating profits, which are in interest of the owners, but also has an important social role (Buležan, 2008). Only a successful company is able to provide jobs to people, the country to pay benefits, and equity investors and lenders will allow the award of the risks associated with their investments in the company. On the bases of our research, we can conclude that the development and the existence of a mission statement and its communication across and beyond companies' borders might lead to increase of performance in a company and through this also to important social benefits (Biloslavo and Lynn, 2007). Therefore additional effort should be put into developing mission statements and into incentives and knowledge resources to do this (Biloslavo and Lynn, 2007).

4.7.4 The Indirect Effects of OC on Performance via COM

H4: Organizational Culture has significant and indirect effect on firm performance via employee commitment.

This section of the analysis tried to answer the research question "what are the indirect effects of OC on Performance via COM?" It tried to identify the type of meditational role COM playing on the interaction between OC components and the four components of performance. Under this research question, there are four major sub hypotheses (H4a, H4b, H4c, and H4d) and each sub major hypothesis has four sub-sub hypotheses. The classification of the type of mediation and the criteria for mediation is based on the work of Nikpour (2017).

H4a: COM mediates the relationship between involvement and performance.

As discussed above, there are four sub hypotheses under this hypothesis (H4a1, H4a2, Ha3, and H4a4) which state that INV has an indirect positive effect on customer focus, business process, learning and growth, and financial performances. Empirical results of the study revealed that INV has a statistically significant indirect effect on customer focus, business process, learning and growth, and financial performances with standardized path coefficients of 0.066, 0.250, 0.072, and 0.075 respectively significant with P value of 0.003, 0.011, 0.003, and 0.002 respectively. As per the mediation criteria forwarded by Nikpour (2017), COM fully mediates INV with customer focus, business process, and financial performances. This implies that the data supports the hypotheses for mediation. And also COM is partial mediator between INV and learning and growth performance implying that the mediator identified is consistent with the hypothesized theoretical framework, and the significant direct effect signals that there is second possibly omitted mediator which can be examined in any future study. Hence, H4a is accepted. The result of this study corroborates the findings of Nikpour (2017).

H4b: COM mediates the relationship between consistency and performance.

There are four sub hypotheses under H4b (H4b1, H4b2, H4b3, and H4b4) which states that CONS has an indirect positive effect on customer focus, business process, learning and growth, and financial performances. As per the results of SEM using Amos, CONS has statistically significant effect on customer focus, business process, learning and growth, and financial performances. The standardized path coefficients are (0.104, P = 0.013; 0.397, P > 0.001, 0.114, P = 0.014 and 0.119, P = 0.016) for customer focus, business process, learning and growth, and financial performances respectively. Based on the findings of the study, COM is competitive mediator between CONS and customer focus, business process, and learning and growth performances implying that the mediator identified is consistent with the hypothesized theoretical framework, and the significant direct effect signals that there is second possibly omitted mediator which can be examined in any future study. COM also fully mediates CONS with financial performance. It is consistent with previous researchers such as Dost et al., (2011) and Amin Nikpour (2017) and hypothesis H4b is accepted.

H4c: COM mediates the relationship between adaptability and performance. Under this major hypothesis, there are four sub hypotheses (H4c1, H4c2, H4c3, and H4c4) which state that ADA has an indirect positive effect on customer focus, business process, learning, and growth, and financial performances. ADA has standardized regression coefficient of 0.091, P = 0.013; 0.346, P > 0.001; 0.099, P = 0.036 and 0.103, P = 0.007 for customer focus, business process, learning and growth, and financial performances respectively. The result of the study implies that COM partially mediates the relationship of ADA with customer focus, business process, learning and growth, and financial performances indicating that there might be another possible mediator between ADA and components of performances. This shows that the data supports the hypothesis for mediation. Consequently, H4c is accepted.

H4d: COM mediates the relationship between mission and performance.

There are four sub hypotheses under H4d (H4d1, H4d2, H4d3, and H4d4) which states that MIN has an indirect positive effect on customer focus, business process, learning and growth, and financial performances. As per the results of SEM using Amos, MIN has statistically significant effect on customer focus, business process, learning and growth, and financial performances. The standardized path coefficients are (0.096, P = 0.039; 0.366, P > 0.001, 0.105, P = 0.041 and 0.109, P = 0.024) for customer focus, business process, learning and growth, and financial performances respectively. Based on the findings of the study, COM is partial mediator between MIN and customer focus and learning and growth performances implying that the mediator identified is consistent with the hypothesized theoretical framework, and the significant direct effect signals that there is second possibly omitted mediator which can be examined in any future study. COM also fully mediates MIN with business process and financial performances. It is consistent with previous researchers such as Nikpour (2017) and hypothesis H4d is accepted.

Chapter Five: Conclusions

5.1 Introduction

The purpose of the study was to investigate the mediating role of employee commitment on the relationship between organizational culture and firm performance in Ethiopian Airlines. Results have indicated that organizational culture is vital for superior performance in Ethiopian Airlines. This final chapter presents the conclusions and contributions from the research findings and direction for future research are also discussed.

5.2 Conclusion of the Results

The research aimed to analyze the mediating role of employee commitment in the relationship between organizational culture and firm performance in the case of Ethiopian Airlines. From the result EAL has a stable and externally focused culture. Second, the paper concludes employee commitment partially mediates the relationship between organizational culture and firm performance in the case organization. The third conclusion form the result, indirect effect of organizational culture has a more strong influence on firm performance.

Moreover, Ethiopian Airlines is better at mission, consistency, and adaptability but it does not support involvement. And the finding of the research indicates that organizational culture has a positive and significant impact on employee commitment, similarly employee commitment has a positive and significant impact on firm performance in Ethiopian Airlines. Finally, Employee commitment fully mediates involvement and measures of firm performance as well as it is a competitive mediator in the case of consistency, for adaptability and mission, employee commitment has a partial mediation.

5.3 Recommendations

From the results of the research the following recommendations are forwarded.

- With the rapidly changing external environment (fast growing business opportunities) and the rearrangement of internal structure and processes, this company needs to build more on Involvement to excel.

- One of the most important aspects that determine the firm performance is the organizational values, which directly translates the performance; therefore the company needs to work on employee's commitment improvement.
- Involvement represents the processes, actions, and interactions by which firms team up with current or potential to learn about their needs and alter firm performance therefore for better results and to get competitive advantage the company needs to involve the employees in many aspects.
- Consistency develops routines and builds momentum. It forms habits that become almost second nature. It's very important to create better change with a uniform and known trend for these reasons the company needs to give more attention in developing consistency in different aspect.
- Finally, implementing the above listed recommendation, the organization would be able to focus on selected organizational culture and also it would be possible to have improvements in workplaces to help employees become more committed to their jobs.

5.4 Direction for Future Research

As this research emphasizes combining organizational culture, organizational employee's commitment and firm performance that are less frequently examined simultaneously, further investigation in this area is obviously needed, for example, firm innovation, leadership competence, and work force diversity as a meditating variable between organizational culture and firm performance. In addition to this moderating effect of employee commitment as well as firm innovation, leadership competence, and work force diversity in the relationship between organizational culture and firm performance should be assessed to. The model proposed in this study considers only the head office so it should be integrating in the domestic and international districts. Additionally the relationship between organizational culture, organizational employee's commitment, and firm performance should be assessed with other sectors too. Future researchers should also consider the components of organizational employee commitment separately to investigate the effect organizational culture on firm performance.

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Appendices

Appendix A: Questionnaire

ADDIS ABABA UNIVERISTY

SCHOOL OF GRADUATE STUDIES

MBA PROGRAM

Dear Sir/Madam

My name is **Firew Beyene**, Final year Masters of Business Administration (MBA) student at Department of Management, Faculty of Business, and Economics –Addis Ababa University. I am conducting a study **"The Relationship between Organizational Culture, Employee Commitment, and Firm Performance: Evidence From Ethiopian Airlines"**

Thank you very much in advance for being a volunteer and for taking your valuable time in filling up this questionnaire. This questionnaire is distributed to get your highly valued input for academic purpose. Please take up only few minutes to fill up this questionnaire. Your genuine response is highly valuable to the study and then to arrive at good results. I hereby request you to fill this questionnaire and give me back the earliest possible time. All your responses will be kept confidential.

Kind regards,

Firew Beyene

MBA Student, AAU

Part One: Personal Information

1. Name: _____ (Optional)
2. Sex ☐ Female ☐ Male
3. Age ☐ 18-30 ☐ 31-40 ☐ 41-50 ☐ 51 and above
4. Level of Education: ☐ Diploma ☐ Degree ☐ Master ☐ PhD and above
5. Year of service in Ethiopian Airlines?

   0-2 ☐ 3-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21 years and above ☐
6. Marital Status

   ☐ Single ☐ Married ☐ Divorced ☐ Widowed

Part Two: The following are dimensions of organizational culture commonly observed in most organizations (Denision, D. R., 1995). Please rate the state of culture behaviors in your company. Rating scale: Strongly agree=5; Agree=4; Neutral=3; Disagree=2; strongly disagree=1

Involvement	**SA**	**A**	**N**	**D**	**SD**
1. Most of the stuffs are highly involved in their work					
2. Decision is usually made at the level where the best information is available					
3. Information is widely shared so that everyone can get the information they need when the need it.					
4. Everyone believe that they can have positive impact					
5. Cooperation across different parts of the company is actively encouraged					
6. People work like they are part of the team					
7. Team work is used to get work done, rather than hierarchy					
8. Teams are the primary building blocks for the company					
9. Authority is delegated so that the people can act independently					

Consistency	SA	A	N	D	SD
1. Managers practice what they preach					
2. There is a characteristic management style and a distance set of management practice					
3. There is a clear and consistent set of values that governs the way we do business					
4. Ignoring core values will cause trouble					
5. When disagreements occur company work hard to achieve "win-win" solution					
6. There is a "strong" culture					
7. It is easy to reach consensus even on difficult issues					
8. The company often have trouble reaching agreement on key issues					
9. The approach in doing business is very consistent and predictable					
10. People from different part of the company share a common perspective					
11. It is easy to coordinate projects across different parts of the company					

Adaptability	SA	A	N	D	SD
1. Customer components and recommendations often lead to changes					
2. Customer input directly influence the companies decisions					
3. All staff have a deep understanding of customer wants and needs					
4. The intenerates of customers often get ignored in the company's decision					
5. The company view failures as an opportunity for learning and improvement					
6. Innovation and risk taking are encouraged and rewarded					
7. Lots of things "fall between the cracks"					
8. Learning on the job is an important objective in the employees day-to-day work					
9. The way things are done is very flexible and easy to change					

Mission	SA	A	N	D	SD
1. There is a long-term purpose and direction					
2. The company's strategy leads other organizations to change the way the compete in the industry					
3. There is a clear mission that gives meaning and direction to the company's work					
4. There is a clear strategy for the future					
5. There is widespread agreement about goals					
6. Leaders set goals that are ambitious but realistic					
7. The leadership has "gone on record" about the objectives that employees are trying to meet					
8. The employees continually track their progress against the stated goals					
9. The company have a shared vision of what the organization well be like in the future					
10. Leaders have a long-term viewpoint					
11. Short-term thinking often compromise our long-term vision					
12. The companies vision creates excitement and motivation for the employees					

Part Three: The following are dimensions of employee Commitment commonly observed in most organizations. Please rate the state of culture behaviors in your company.

Questionnaire for Employee Commitment (Wang, 2004)

Commitment Dimensions	SA	A	N	D	SD
1. I am extremely glad that I chose this company to work for over others I was considering at the time I joined.					
2. I talk up this company to my friends as a great company to work for.					
3. I am proud to tell others that I am part of this company.					
4. I feel that the problems that arise in my company are like my own problems.					

5. The reason I want to stay in the company is because the company provides me with various tangible and intangible benefits, which motivates me to stay loyal to the company.					
6. I feel that my value is greater in this company which makes me feel committed.					
7. To leave the company is more costly for me.					
8. I work for the company because of the challenging job.					
9. The reason that I want to stay in the company is because of the recognition and promotions that I receive.					

Part Four: The following are dimensions of firm performance commonly observed in most organizations. Please rate the state of culture behaviors in your company.

Questionnaire for firm performance Adapted from Drury (2008)

Performance Dimensions	Frequency				
1. Customer Perspective Dimensions	SA	A	N	D	SD
1. There is an increase in market share in the company.					
2. There is an increase customer retention and customer acquisition in the company					
3. There is an improved service quality time to time					
4. Safety is the first					

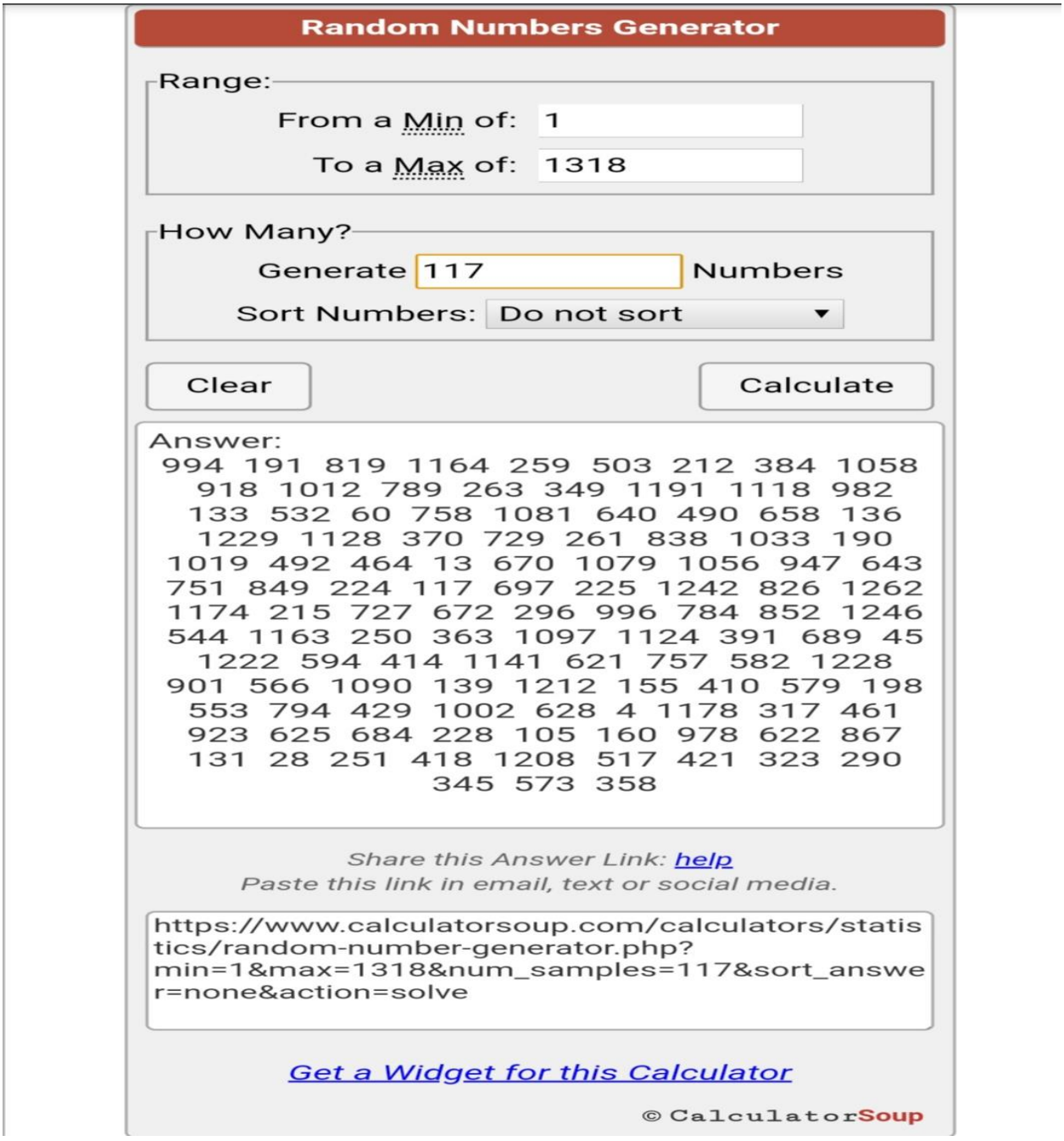
Performance Dimensions	Frequency				
1. Business Process Perspective Dimensions	SA	A	N	D	SD
1. There is an increased number of new services					
2. Decrease the time taken to develop new services					
3. There is an increase in process efficiency and process quality					
4. There is a decrease in process cost and process time					

Performance Dimensions	Frequency				
1. The Learning and Growth Perspective Dimensions	SA	A	N	D	SD
1. There is an increase in employee capability					
2. There is an increase in information system capability					
3. There is an increase in motivation, empowerment and alignment					
4. There is an increase in service efficiency, service time and service cost					

Performance Dimensions	Frequency				
1. The Financial Perspective Dimensions	SA	A	N	D	SD
1. The company is developing new customers and market					
2. The company is reducing employees to minimize cost per unit					
3. The company is reducing selling/general administration cost					
4. There is an increase in number of new services					
5. The company is improving asset utilization					
6. There is an increase in service efficiency, service time and service cost					
7. There is a decreased price relative to competitors which will attract the customers.					
8. Percentage of improvement in quality of the service delivery process					
9. The company is reducing product/service cost per unit					
10. Overall level of firm performance					

Appendix B: Random Sample Generator

Appendix B1 Random Sample Generated for Maintenance, Repair & Overhaul (MRO) Division



Random Numbers Generator

Range:

From a Min of: 1

To a Max of: 1318

How Many?

Generate 117 Numbers

Sort Numbers: Do not sort

Clear Calculate

Answer:

994 191 819 1164 259 503 212 384 1058
918 1012 789 263 349 1191 1118 982
133 532 60 758 1081 640 490 658 136
1229 1128 370 729 261 838 1033 190
1019 492 464 13 670 1079 1056 947 643
751 849 224 117 697 225 1242 826 1262
1174 215 727 672 296 996 784 852 1246
544 1163 250 363 1097 1124 391 689 45
1222 594 414 1141 621 757 582 1228
901 566 1090 139 1212 155 410 579 198
553 794 429 1002 628 4 1178 317 461
923 625 684 228 105 160 978 622 867
131 28 251 418 1208 517 421 323 290
345 573 358

Share this Answer Link: help

Paste this link in email, text or social media.

https://www.calculatorsoup.com/calculators/statistics/random-number-generator.php?min=1&max=1318&num_samples=117&sort_answer=none&action=solve

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Appendix C: Reliability Test Results

Appendix C1 Item total correlation for **Consistency**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CON1	37.4924	25.403	.303	.193	.761
CON2	37.6535	24.099	.406	.259	.749
CON3	37.5957	24.516	.447	.280	.745
CON4	37.5289	23.994	.548	.386	.734
CON5	37.6748	23.848	.493	.384	.739
CON6	37.5714	24.264	.523	.381	.737
CON7	37.9088	23.150	.508	.371	.736
CON8	38.1094	23.025	.514	.288	.735
CON9	37.8723	24.935	.335	.186	.758
CON10	37.8055	25.066	.256	.187	.771
CON11	37.5593	25.363	.298	.166	.762

Appendix C2 Item total correlation for **Involvement**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IN1	30.4498	23.328	.515	.313	.799
IN2	30.2705	23.399	.543	.479	.796
IN3	30.4255	22.459	.583	.550	.790
IN4	30.4498	22.517	.594	.472	.789
IN5	30.5289	22.872	.569	.368	.793
IN6	30.5866	22.951	.489	.386	.802
IN7	30.9119	21.916	.526	.422	.798
IN8	30.7234	23.042	.511	.361	.799
IN9	30.5957	24.918	.323	.181	.820

Appendix C3 Item total correlation for **Mission**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MN1	43.3222	39.475	.447	.245	.846
MN2	43.3769	38.120	.705	.561	.828
MN3	43.3799	37.877	.668	.535	.829
MN4	43.4498	37.767	.619	.431	.832
MN5	43.1489	42.395	.276	.098	.856
MN6	43.0608	41.905	.304	.170	.855
MN7	43.0456	42.269	.296	.115	.855
MN8	42.9119	41.757	.372	.226	.849
MN9	43.2492	37.822	.668	.521	.829
MN10	43.4012	37.954	.635	.455	.831
MN11	43.3769	37.839	.634	.460	.831
MN12	43.4164	38.524	.657	.504	.831

Appendix C4 Item total correlation for **Business Process Performance**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PERBUS1	21.7508	14.749	.572	.427	.783
PERBUS2	21.6109	14.946	.581	.507	.780
PERBUS3	21.6839	14.235	.665	.573	.764
PERBUS4	21.7508	14.749	.603	.393	.776
PERBUS5	21.5137	16.549	.533	.545	.790
PERBUS6	21.5015	16.318	.548	.554	.787
PERBUS7	21.6657	17.833	.338	.274	.817

Appendix D: Exploratory Factor Analysis (Using SPSS)

Appendix D1 Results for **Skewness and Kurtosis**

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
AD1	329	-.766	.134	.990	.268
AD2	329	-.766	.134	.294	.268
AD3	329	-.429	.134	.372	.268
AD4	329	-.531	.134	.124	.268
AD5	329	-.875	.134	1.270	.268
AD6	329	-1.054	.134	1.960	.268
AD7	329	-.594	.134	-.078	.268
AD8	329	-.818	.134	.948	.268
AD9	329	-.892	.134	1.251	.268
CON2	329	-.835	.134	.511	.268
CON3	329	-.570	.134	.394	.268
CON4	329	-.577	.134	.424	.268
CON5	329	-.824	.134	.958	.268
CON6	329	-.716	.134	.856	.268
CON7	329	-.642	.134	.100	.268
CON8	329	-.373	.134	-.250	.268
IN1	329	-.822	.134	.537	.268
IN2	329	-1.120	.134	1.740	.268
IN3	329	-.959	.134	.873	.268
IN4	329	-.989	.134	1.187	.268
IN5	329	-.823	.134	.685	.268
IN6	329	-.969	.134	.709	.268
IN7	329	-.531	.134	-.415	.268
IN8	329	-.694	.134	.263	.268
MN1	329	-.741	.134	-.111	.268
MN2	329	-1.024	.134	1.325	.268
MN3	329	-1.057	.134	1.044	.268
MN4	329	-.823	.134	.227	.268
MN8	329	-1.475	.134	3.105	.268
MN9	329	-1.004	.134	.800	.268
MN10	329	-.818	.134	.388	.268
MN11	329	-1.076	.134	1.169	.268
MN12	329	-.936	.134	.924	.268
COM1	329	-.967	.134	.970	.268
COM2	329	-.943	.134	.772	.268
COM3	329	-.879	.134	1.114	.268
COM4	329	-.547	.134	-.314	.268

COM5	329	-1.075	.134	1.181	.268
COM6	329	-1.019	.134	1.237	.268
COM7	329	-.890	.134	1.086	.268
COM8	329	-.793	.134	.083	.268
COM9	329	-.536	.134	-.269	.268
PERLER1	329	-.727	.134	-.100	.268
PERLER2	329	-.711	.134	-.265	.268
PERLER3	329	-.625	.134	-.187	.268
PERLER4	329	-.474	.134	-.385	.268
PERBUS1	329	-.806	.134	.079	.268
PERBUS2	329	-1.039	.134	.763	.268
PERBUS3	329	-.853	.134	.273	.268
PERBUS4	329	-.591	.134	-.196	.268
PERBUS5	329	-.553	.134	.227	.268
PERBUS6	329	-.765	.134	.858	.268
PERFIN1	329	-.838	.134	.353	.268
PERFIN2	329	-.584	.134	-.137	.268
PERFIN3	329	-.653	.134	.081	.268
PERFIN4	329	-.726	.134	-.018	.268
PERFIN5	329	-.434	.134	-.178	.268
PERFIN6	329	-.268	.134	-.659	.268
PERFIN7	329	-.445	.134	-.097	.268
PERFIN8	329	-.594	.134	-.066	.268
PERFIN9	329	-.419	.134	-.159	.268
PERFIN10	329	-.475	.134	-.152	.268
PERCUS1	329	-.288	.134	-.886	.268
PERCUS2	329	-.434	.134	-1.034	.268
PERCUS3	329	-.425	.134	-1.092	.268
PERCUS4	329	-.128	.134	-1.314	.268
Valid N (listwise)	329				

Appendix D2 Results for **Communalities**

Communalities		
	Initial	Extraction
AD1	1.000	.601
AD2	1.000	.552
AD3	1.000	.505
AD4	1.000	.636
AD5	1.000	.503
AD6	1.000	.527
AD7	1.000	.576
AD8	1.000	.586
AD9	1.000	.601
CON2	1.000	.484
CON3	1.000	.551
CON4	1.000	.603
CON5	1.000	.584
CON6	1.000	.585
CON7	1.000	.650
CON8	1.000	.477
IN1	1.000	.564
IN2	1.000	.713
IN3	1.000	.686
IN4	1.000	.665
IN5	1.000	.548
IN6	1.000	.726
IN7	1.000	.678
IN8	1.000	.628
MN1	1.000	.524
MN2	1.000	.662
MN3	1.000	.652
MN4	1.000	.583
MN8	1.000	.546
MN9	1.000	.675
MN10	1.000	.608
MN11	1.000	.595

MN12	1.000	.655
COM1	1.000	.515
COM2	1.000	.583
COM3	1.000	.588
COM4	1.000	.593
COM5	1.000	.707
COM6	1.000	.742
COM7	1.000	.735
COM8	1.000	.581
COM9	1.000	.510
PERLER1	1.000	.575
PERLER2	1.000	.727
PERLER3	1.000	.767
PERLER4	1.000	.653
PERBUS1	1.000	.658
PERBUS2	1.000	.744
PERBUS3	1.000	.750
PERBUS4	1.000	.642
PERBUS5	1.000	.643
PERBUS6	1.000	.691
PERFIN1	1.000	.596
PERFIN2	1.000	.626
PERFIN3	1.000	.671
PERFIN4	1.000	.659
PERFIN5	1.000	.661
PERFIN6	1.000	.644
PERFIN7	1.000	.717
PERFIN8	1.000	.696
PERFIN9	1.000	.658
PERFIN10	1.000	.608
PERCUS1	1.000	.614
PERCUS2	1.000	.799
PERCUS3	1.000	.818
PERCUS4	1.000	.695