

**CORPORATE ENVIRONMENTAL PRACTICES, STAKEHOLDERS'  
COLLABORATION AND PERCEIVED SUSTAINABLE  
COMPETITIVENESS IN KENYA'S TEA SECTOR**

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## DECLARATION

### Declaration by Candidate

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## **DEDICATION**

This thesis is dedicated to my daughters, Dorothy and Dorcas; son, Immanuel; and wife, Anne for their support during the period of data collection, analysis, writing and completing this thesis, without whom I would not manage to finalise this report.

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## ABSTRACT

Production and processing of tea in an environmentally friendly manner; through collaboration is a concern among stakeholders for sustainable competitiveness. Tea is one of the leading foreign exchange earners in Kenya; however, the effect of corporate environmental practices on its sustainable competitiveness has not been established. The purpose of the study was to determine the moderating effect of stakeholders' collaboration on the relationship between corporate environmental practices and sustainable competitiveness in tea sector of Kenya's economy. The objectives of the study were to; evaluate the effect of process adaptation, product adaptation, managerial control mechanism and training on sustainable competitiveness of tea firms; and to evaluate the moderating effect of stakeholders' collaboration on the relationship between corporate environmental practices and sustainable competitiveness in tea firms. This research utilized the resource based view, resource dependency and stakeholder theories. The study targeted 1883 respondents from 107 registered tea firms in Kenya and multistage sampling method was used to get sample size of 484. Primary data was collected using questionnaires. Data was analyzed using descriptive and inferential statistics. There was a positive significant effect of process adaptation ( $\beta=0.300$ ;  $p=0.000$ ), product adaptation and ( $\beta = 0.118$ ;  $p=0.001$ ), managerial control mechanism ( $\beta= 0.114$ ;  $p=0.003$ ) and training ( $\beta =0.4116$ ;  $p=0.000$ ) on sustainable competitiveness in tea firms. The stakeholders' collaboration moderates the relationship between corporate environmental practices and sustainable competitiveness in tea firms in Kenya ( $\beta=0.243$   $p=0.000$ ). But there was a negative significant moderation of stakeholders' collaboration on sustainable competitiveness and product adaptation ( $\beta= -0.113$ ;  $p=0.001$ ), managerial control mechanism ( $\beta= -0.128$ ;  $p=0.000$ ), and training ( $\beta = -0.110$ ;  $p=0.011$ ) in tea firms. However, no significant moderation exist on process adaptation ( $\beta= -0.014$ ;  $p=0.557$ ). The corporate environmental practices positively influence the sustainable competitiveness in tea firms. The moderation effect of stakeholders' collaboration on sustainable competitiveness and product adaptation, managerial control mechanism and training in tea firms was negative. It was concluded that corporate environmental practices leads to sustainable competitiveness however stakeholders' collaboration significantly antagonize this relationship hence need for further research to ascertain the moderating results. Managers of tea firms should pay close attention to the strategies of process, product adaptation, managerial control mechanism and training that enhance sustainable competitiveness and the moderating roles with stakeholders' collaboration as they were negative and significant in this study.

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**ABBREVIATIONS AND ACRONYMS**

CEP	Corporate Environmental Practices
EPZA	Export Processing Zones Authority
KMO	Kaiser-Meyer-Olkin model
KTDA	Kenya Tea Development Agency
KTGA	Kenya Tea Growers Association
LCA	Life Cycle Analysis
MCM	Managerial Control Mechanism
MNC	Multinational Corporations
PDA	Product Adaptation
PRA	Process Adaptation
RBV	Resource Based View
SC	Sustainable Competitiveness
STC	Stakeholders' Collaboration
TBK	Tea Board of Kenya
TEP	Training on Environmental Practices

## OPERATIONAL DEFINITIONS OF TERMS

**Clean Technonologies** are environmental practices whereby improvements on production process are made to conform to legal requirements.

**Corporate Environmental Practices** refers to both social and economic activities namely; process adaptation, product adaptation, managerial control mechanism and training in the production and processing of tea.

**Firm Employees** are workers engaged by tea firms in production, processing and marketing of tea.

**Managerial Control Mechanism** refers establishment of formal management systems and procedures or ‘infrastructural investments’ (Lucas, 2010; Klassen and Whybark, 1999) that relate to the tracking of environmental information, the establishment of management control mechanisms and the development of corporate policies and procedures.

**Process Adaptation** environmental action aimed at improving process efficiency with better input utilization, cleaner process technology, better housekeeping and maintenance procedures, and streamlined operations (Melnyk *et al.*, 2003 and Sroufe, 2003). ; Sroufe *et al.*, 2000).

**Product Adaptation** refers to environmental activities that modify the existing product’s design to reduce any negative impact on the environment during manufacturing, packaging, use, disposal and reuse’ (Lucas, 2010; Klassen and Whybark, 1999,).

**Stakeholder's Collaboration** means taking into account both the internal and external key players in the production and processing of tea; balancing of stakeholders interest over time and appreciating how they perceive the risks posed by decisions Schwarzkopf (2006), and best practices for balancing and trading off their interests.

**Sustainable Competitiveness** means that which rest not on static efficiency nor on optimizing within fixed constraints but on capacity for improvement that shifts the constraints.

**Training on Environmental Practices** refers to educating and increasing knowledge for the organization's employees (Coates *et al* 2002) and stakeholders on environmental practices and on how the environment can affect and be affected by their duties and decisions.



## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Overview**

In this chapter, the background of the study, statement of the problem, general objective of the study, specific objectives of the study, study hypotheses, significance of the study and the scope of the study were covered.

#### **1.1 Background of the Study**

Sustainable competitiveness is important for a firm because it increases benefits. Competitiveness is picked up when associations perform superior to their rivals in a similar industry. With the goal for associations to outsmart rivalry and prevail in the market, they should have some sort of points of interest contrasted with their opponents. Willems (2012) points out that a firm attains a higher level of competitiveness when it acquires or develops a resource or a combination of resources that allows it to outclass its competitors.

Barney (2001) indicates that sustainable competitiveness is procured through assets and abilities a firm controls, that are important, uncommon, defectively imitable, and not substitutable. These assets and capacities can be seen as groups of unmistakable and elusive resources, including a company's administration abilities, its authoritative procedures and schedules, and the data and information it controls. Also, sustainable competitiveness is what lay not on static effectiveness nor on advancing inside settled requirements yet on limit change that moves the imperatives' through joint effort with the partners. Fougher (2006) indicates that competitiveness gets to be distinctly significant just in connection to performers working inside the setting of some rendition of a market economy. Any firm should be competitive to survive and should

have the capacity to meet focused gauges of profitability, that is, the effectiveness with which it changes over assets into better value.

Smith *et al.*, (2008) pointed out that worries about sustainability concentrate on the need to embrace advancements and practices that don't significantly affect the environment, are effortlessly open to and successful for farmers, can prompt to enhancements in sustenance efficiency and have positive reactions on ecological products and enterprises. In any case, corporate ecological mishaps can make public relations problems, crush markets and professions, and thump billions off the value of an organization. To this end, Esty and Winston (2006) asserts that organizations that don't add ecological speculation to their practices, risk missing upside openings in business sectors that are progressively molded by environmental factors.

The consequences of corporate environmental exercises have stretched out to end up determinants of the long term performance. To be fruitful in the long term, organizations need to set up activities that have a quantifiable positive and durable effect on the environment (Ringbeck and Gross, 2008). Similarly, Epstein (2008) sketched out the significance of creating ecological methodologies, which would minimize environmental effects through reusing, life-cycle evaluations and waste reduction systems. Furthermore, for partnerships with contamination counteractive action situated corporate ecological techniques, the relationship amongst environmental and corporate performance was more positive (Wagner, 2005).

Research has demonstrated that through corporate environmental practice systems, firms can accomplish positive financial execution results (Aragon-Correa and Sharma, 2003; Dowell, *et al.*, 2000; Sharma, 2000) and gain an upper hand over their opponents. Ambec and Lanoie (2008) point out that all the more particularly, acting

in an ecologically sustainable manner gives a chance to firms to make an incentive by upgrading incomes or potentially diminish costs. Through focused environmental activities and initiatives, firms can make interest for new, environmentally friendly products, which can open up new markets prompting to improved incomes. Furthermore, Dowell *et al.*, (2000) note that firms can likewise accomplish significant reputational profits by ecological activity which thus can prompt to expanded deals and in this way, improve incomes.

On the cost side of the condition, environmental activities can help firms to decrease costs through decreasing waste and contamination, enhanced energy proficiency, and enhanced business processes all through their operations and supply chains (Christmann, 2000; Rao and Holt, 2005; Rothenberg, Pil, and Maxwell, 2001; Sroufe, 2003). In addition, from a long-term point of view, such activities can stay away from potential future costs identified with consistence, ecological emergency, and liabilities (Reinhardt, 1999; Karpoff, Lott, and Wehrly, 2005).

Ansanelli (2011) notes that interests in clean innovations mirror a responsive stance to ecological issues, whereby restricted assets are focused on tackling environmental issues: item and production process enhancements are made to adjust to legitimate prerequisites. Source decrease means that organizations constantly adjust their products and production processes with a specific end goal to diminish contamination levels based on legitimate necessities. Kristel and Verbeke (2003) point out that to the degree that counteractive action at the source permits firms to accomplish administrative consistence at a lower cost and to diminish liabilities, this ecological technique might be seen as a cost authority approach.

On product differentiation, Samy and ElMaraghy (2010) point out that products and production procedures are intended to minimize the negative ecological pressure amid the products' whole life cycle. A base prerequisite for the fruitful usage of this practice is that some type of life cycle investigation (LCA) be carried out. Albu-Schäffer *et al.* (2007) note that life cycle examination is utilized to survey the ecological burden made by a product from 'cradle to grave': material choice, creation, circulation, packaging, utilization, and disposal.

In this manner, it relies upon its partners' coordinated effort: an organization must consider and draw in shareholders, workers and customers, as well as providers, public specialists, local (or national, as indicated by an association's size) group and common society as a rule, financial partners among others. These days and more later on, joint effort with partner is the directing standard for the administrative basic leadership training and the mainstay of more exhaustive corporate environmental practices. Perrini and Tencati (2006) comment that adopting this partner perspective implies reconsidering environment and motivations behind firms and the administrative instruments received by organizations themselves. The reasoning does not block any innovation on ideological grounds, but rather exemplifies all advances that are socially satisfactory, enhances profitability and does not hurt the environment.

Going "sustainable" will change the tea business, which has been experiencing for a long-time over-supply and under-performance. Adding to the need of creating tea sustainably is the purchaser voice willing to pay for tea delivered in an ethical way ensured by outsider bodies (Divney, 2007; Alliance, 2007; Sande van der Wal, 2008). Tea is the most well-known and least expensive drink beside water and is an essential product as far as occupations and export income for various tropical developing

nations. While tea is produced in more than 35 nations, Sande van der Wal (2008) point out that just a modest bunch; China, India, Kenya and Sri Lanka are in charge of very nearly seventy percent of generation.

At worldwide scale, Kariuki (2012) notes that tea is significantly produced in vast farms; however, smallholder production is critical in nations, for example, Kenya and Sri Lanka. Kenya is the third biggest producer of tea after India and China and biggest exporter of dark tea on the planet with smallholder generation representing around 66% of aggregate tea production (378 million kilograms in 2011). Tea is the main exchange earner (earned US\$ 1.3 billion in foreign trade in 2011) and contributes around 4% of Gross Domestic Product (GDP). The tea segment additionally offers work lasting through the year to around 639,521 farmers in the rural regions notwithstanding providing work in different parts of the tea value chain.

The Tea Board of Kenya (2008) report notes that as a labour intensive industry, the tea sector is a source of jobs of more than three million people specifically and by implication (around 10% of Kenya's aggregate population). Notwithstanding its significance to developing nations, the tea sector is confronted with various limitations. In a survey of six significant tea producing nations (India, Indonesia, Sri Lanka, Kenya, Vietnam and Malawi), tea production is hindered by poor farming practices and climate change among many other difficulties (Sanne van der Wal, 2008). Genuinely, the costs of tea have gone around 35% in the previous 25 years (Mulder, 2007).

Furthermore, the sector's ecological impression is significant, with lessened biodiversity because of ecological change and high-energy utilization (for the most part utilizing logged timber) among other different elements. Moreover, for the

smallholder tea sector, hazardous issues incorporate low farm gate costs, poor extension services, constrained market channels, and low level of farmer association. Tending to the rising issues requires appropriation of other effective rural practices and theory that considers the environment, social and financial effects of agricultural practices when making developments in the present farming frameworks. Economical agribusiness adds to tending to this test. Most recent insights demonstrate that roughly 62% of the aggregate tea crop in Kenya is delivered by smallholder farmers who produce and offer their tea through publicly owned possessed Kenya Tea Development Agency, which is the biggest single tea organization in the globe with sixty-two tea firms (Kagira *et al.*, 2012).

Despite the yield disparities, the small-scale sector has managed to achieve higher quality standards resulting in consistently higher auction prices. The industry is the largest employer in the private sector, with more than 80,000 people working on the estate and about 3 million people earning their livelihood from the sector (Kenya Tea Development Authority, 2003).

Agriculture is the main economic activity sector in the Kenya. Export Processing Zones Authority-EPZA (2005), note that the sector accounts for about 24% of Kenya's Gross Domestic Product. Further, an estimated 75% of the population depends on the sector either directly or indirectly. Agriculture is the largest provider of foreign exchange through export earnings of agricultural products. In 2003, tea, coffee and horticultural products contributed 55% of exports revenue. It has been noted that good agricultural performance in the country translates into measurable improvements in the quality of life (Kimenyi, 2002).

Tea is the most popular and cheapest beverage next to water and is an important commodity in terms of jobs and export earnings for a number of tropical developing countries. While tea is produced in more than 35 countries, only a handful-China, India, Kenya and Sri Lanka are responsible for almost three-quarters of production and, indeed, more than half of the world's tea is produced in China and India alone (Sanne van der Wal, 2008). At global scale, tea is majorly produced in large plantations, but smallholder production is important in countries such as Kenya and Sri Lanka. Kenya is the third largest producer of tea (displacing Sri Lanka), after India and China and largest exporter of black tea in the World with smallholder production accounting for about 66% of total tea production (378 million kilograms in 2011), (Kariuki, 2012).

Tea is the leading exchange earner (earned US\$ 1.3 billion in foreign exchange in 2011) and contributes about 4% of Gross Domestic Product (GDP). The tea sectors also offers employment all-year-round to about 639,521 growers in the rural areas in addition to providing employment in other parts of the tea value chain. As a labour intensive industry, tea sector supports livelihoods of more than three million persons directly and indirectly (about 10% of Kenya's total population) (Tea Board of Kenya, 2008).

Despite its importance to developing countries, the tea sector is faced with a number of environmental constraints. In a review of six major tea producing countries (India, Indonesia, Sri Lanka, Kenya, Vietnam and Malawi), Sanne van der Wal (2008) reported that tea production is hindered by rising production costs (labour, fuel and electricity), mismanagement, age of tea bushes, high overhead costs, bad agricultural practices, low labour productivity, climate change and dilapidated infrastructure. In

real terms, prices of tea have gone down by about 35% in the past 25 years (Mulder, 2007).

Kagira *et al* (2012) further note that whatever is left of tea is produced by exclusive extensive scale tea organizations that operate and manage thirty tea firms. A couple of these substantial scale tea firms incorporate Unilever Tea, James Finlay, Kakuzi, George Williamson and Kaisugu. It might be contended that sustainable competition is impacted by the level of joint effort on corporate environmental practices with every one of the partners. Most imperative in tea sector in Kenya, is that sustainable competitiveness might be derived from the joint effort with partners that's; government, clients, providers, and workers.

In addition, the sector's environmental footprint is considerable, with reduced biodiversity due to habitat conversion and high-energy consumption (mainly using logged timber) among other factors. Additionally, for the smallholder sector, problematic issues include low farm gate prices, poor extension services, limited market channels, poor access to credit and low level of farmer organization. Addressing the emerging issues requires adoption of alternative agricultural practices and philosophy that takes into account environmental, social and economic impacts of agricultural activities when making improvements in the current farming systems. Sustainable agriculture contributes to addressing this challenge.

## **1.2 Statement of the Problem**

In the recent past firms have been struggling to come up with strategies that can guarantee sustainable competitiveness in Kenya. A number of agricultural policies have been developed aimed at mitigating the problem but tea products has been facing challenges of low demands from customers in the international market due to several



factors. Some of these difficulties include the unstable foreign currency, poor value addition of their products and poor marketing strategies. However key to the problem could be the relatively neglected issue of sustainable competitiveness of tea firms and tea products in the world and particularly in Kenya. In depth evaluation of the relationship between corporate environmental practices and sustainable competitiveness is necessary to partially mitigate the problem of lack of strategic response that relate to sustainable competitiveness of tea firms in Kenya.

Production and processing of tea in an environmentally friendly manner is the desire for global customers for the tea products more so from Kenya. These requirements in the market for tea includes among other guarantees includes process adaptation, product adaptation, managerial control mechanism and training is compelling firms to search for new strategies for sustainable competitiveness. The growing concern on the need for collaboration with the stakeholders has been drawn by the decline in the level of sustainable competitiveness of tea firms. Accordingly, there is need for in collaborations with stakeholders on environmental practices that yields real strategic benefits for the firm.

Despite the increased acceptance of corporate environmental practices as being the main reason among other factors as potentially necessary in increasing sustainable competitiveness, results have been found to be inconclusive in regard to its contribution towards sustainable competitiveness of firm. Theoretically there is relationship between corporate environmental practices and sustainable competitiveness. A number of studies have been done on competitiveness and environmental practices. This study conceptualizes an empirical link between and among corporate environmental practices, sustainable competitiveness and

stakeholders' collaboration. It goes further in the sustainable competitiveness debate by arguing that stakeholders' collaboration contributes significantly to competitiveness.

Lack of stakeholders' collaboration could partially explain the problem of lack of sustainable competitiveness of tea firms in Kenya. This problem has been underscored in developing nations in general and more so in Kenya. Therefore this study attempted to fill this knowledge gap and extend the conceptual and empirical debate that characterize the link between corporate environmental practices, sustainable competitiveness and stakeholder's collaboration in tea firms in Kenya.

### **1.3 General Objective of the Study**

This study analyzed moderating effect of stakeholders' collaboration on the relationship between corporate environmental practices and sustainable competitiveness in the tea sector in Kenya.

### **1.4 Specific Objectives of the Study**

This research had five main specific objectives, namely:

1. To evaluate the effect of process adaptation on perceived sustainable competitiveness of tea firms in Kenya.
2. To assess the effect of the use of product adaptation on perceived sustainable competitiveness of tea firms in Kenya.
3. To examine the influence of managerial control mechanism on perceived sustainable competitiveness of tea firms in Kenya.

4. To examine the influence of training on environmental practices on perceived sustainable competitiveness of tea firms in Kenya.
5. To determine the moderating effect of stakeholders' collaboration on the relationship between corporate environmental practices and perceived sustainable competitiveness of tea firms in Kenya.
  - a. To identify the moderating effect of stakeholders' collaboration on the relationship between process adaptation and perceived sustainable competitiveness of tea firms in Kenya.
  - b. To examine the moderating effect of stakeholders' collaboration on the relationship between product adaptation and perceived sustainable competitiveness of tea firms in Kenya.
  - c. To assess the moderating effect of stakeholders' collaboration on the relationship between managerial control mechanism and perceived sustainable competitiveness of tea firms in Kenya.
  - d. To examine the moderating effect of stakeholders' collaboration on the relationship between training and perceived sustainable competitiveness of tea firms in Kenya.

### **1.5 Study Hypotheses**

The study hypothesized and tested that:-

- H<sub>01</sub>: There is no significant effect of process adaptation on perceived sustainable competitiveness of tea firms in Kenya.
- H<sub>02</sub>: There is no significant effect of product adaptation on perceived sustainable competitiveness of tea firms in Kenya.

- H<sub>03</sub>: There is no significant effect of managerial control mechanism on perceived sustainable competitiveness of tea firms in Kenya.
- H<sub>04</sub>: There is no significant effect of training on environmental practices on perceived sustainable competitiveness of tea firms in Kenya.
- H<sub>05</sub>: Stakeholders' collaboration does not moderate the relationship between corporate environmental practices and perceived sustainable competitiveness of tea firms in Kenya.
- H<sub>05a</sub>: Stakeholders' collaboration does not moderate the relationship between process adaptation and perceived sustainable competitiveness of tea firms in Kenya.
- H<sub>05b</sub>: Stakeholders' collaboration does not moderate the relationship between product adaptation and perceived sustainable competitiveness of tea firms in Kenya.
- H<sub>05c</sub>: Stakeholders' collaboration does not moderate the relationship between managerial control mechanism and perceived sustainable competitiveness of tea firms in Kenya.
- H<sub>05d</sub>: Stakeholders' collaboration does not moderate the relationship between training and perceived sustainable competitiveness of tea firms in Kenya.

## **1.6 Significance of the Study**

Theoretically this survey could provide the managers and policy makers with the much-needed empirical direction on how and the extent to which they can develop

collaboration with the key stakeholders in the tea sub sector in Kenya and could be able to get solutions to the emerging demands in the global market for tea on the minimum expected standards on environmental practice from the production chain of tea to mitigate on the ever increasing problem of climate change.

This study has documented and analyzed data from the tea sector in Kenya thus enabling to fill the knowledge gap, which has remained unfilled for years since the emergence of calls by the environmentalists on the need to address the challenges of global warming. This is a challenge facing not only one organization but also the whole world and requires concerted efforts through collaboration with all the stakeholders in the production and processing of tea.

Furthermore, this survey would shade some lights for the investors in tea manufacturing and would be in a position to collaborate with the stakeholders in a manner that would make them remain competitive in the ever dynamics market for tea. Moreover, this study would provide recommendations on how to evaluate sustainable competitiveness in accordance to environmental management in collaboration with the stakeholders and would be helpful to the tea sector and business practitioners in informing them in the area of environmental strategies.

Finally, yet importantly; it would also serve as a future reference for researchers on the subject of environmental management, stakeholders' collaboration and sustainable competitiveness and most importantly, this research would educate society and government in deciding on whether the tea sub sector is really fulfilling its responsibility to the community.

### **1.7 Scope of the Study**

The scope or limit of environmental practice is so wide for this study to be able to adequate address, so the cover has been narrowed down to the firm level and collaboration with the stakeholders in the tea sub sector in Kenya aimed at gaining sustainable competitiveness.

On the aspect of competitiveness; it is equally broader term in the real definition of the word and can take both domestic and international dimension or short and long term; however, for the purpose of this study, it has been reduced to over a period of three years performance of tea firms in Kenya.

On unit of analysis, the target population was limited to the production managers, employee relations managers and finance managers because they have full knowledge of their stakeholders and the survey used a structured questionnaire to collect their views. The study looked at only registered tea firms with Tea Board of Kenya because it is the only government organ mandated to regulate and control the production, manufacture and export of tea in Kenya (Tea Board of Kenya, 2008).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Overview**

In this chapter, a review of literature in the concept of sustainable competitiveness, the concept of corporate environmental practices, the concept of stakeholders' collaboration, the theoretical conceptual framework, the moderating effect of stakeholders' collaboration on the association between environmental practices and sustainable competitiveness, and theoretical conceptual framework of the study are presented.

#### **2.1 Concept of Sustainable Competitiveness**

Competitiveness in a firm is the ability to produce the right goods and services of the right quality, at the right price, at the right time. It means meeting customers' needs more efficiently and more effectively than other firms do (Edmonds 2000). Generally, Competitiveness is the ability of an organization to compete successfully with its commercial rivals (Law 2009). Feurer and Chaharbaghi (1994) gave a holistic definition of competitiveness, taking into account the sustainability: "Competitiveness is relative and not absolute. It depends on shareholder and customer values, financial strength which determines the ability to act and react within the competitive environment and the potential of people and technology in implementing the necessary strategic changes.

Competitiveness can only be sustained if an appropriate balance is maintained between these factors which can be of a conflicting nature". This is based on a combination of price and quality. With equal quality and an established reputation, suppliers are competitive only if their prices are as low as those of rivals (Black *et al.*

2009). To measure sustainable competitiveness Porter's Diamond Model was used. He found that competitive advantage is the result of interaction of four determinants: factor conditions, demand conditions, related and supporting industries and firm structure, strategy and rivalry. Apart from these four factors, two other factors that is; Government and Chance also affect this interaction, (Porter, 1990)

The Lisbon Strategy, launched in 2000, was based on an acknowledgement of the European Union's need to increase its productivity and competitiveness, while enhancing social cohesion, in the face of global competition, technological change and an ageing population. The financial and economic crisis that started in 2008 resulted in a significant loss in jobs and potential output. The European Commission (EC) proposed the new European Union strategy for smart, sustainable and inclusive growth – "Europe 2020". EC identifies three key drivers for growth, to be implemented through concrete actions at EU and national levels: smart growth (fostering knowledge, innovation, education and digital society), sustainable growth (making the production more resource efficient while boosting the competitiveness) and inclusive growth (raising participation in the labour market, the acquisition of skills and the fight against poverty) (Europe 2020, A Strategy for Smart, Sustainable and Inclusive Growth 2010).

It is generally recognized that continued competitiveness and economic growth are essential factors for supporting living standards and wellbeing. Strong international competitiveness creates the resources that enable material improvements in living standards and resources for investments that promote both individual wellbeing and national competitiveness (Discussion Paper on Wellbeing and Competitiveness 2008). Competitive regions and cities are places where both companies and people want to



invest and to locate in (Kitson *et al.* 2004). Competitiveness research and studies look at all the elements that can explain the competitiveness success and try to identify the drivers of competitiveness. Despite there is a whole strand of scientific literature on competitiveness, alas, unanimous agreement about definition or model of competitiveness has not been reached. For developing the concept of competitiveness it is necessary to undergo critical analysis of existing studies on national competitiveness. Theoretical explanations of economic competitiveness vary. Some researchers believe that the concept of competitiveness applies most appropriately to firms and products. Others identify the national competitiveness as an important determinant of firms' overall competitiveness or analyse it from the sectoral perspective. International researches highlight that cities drive economic growth and enhance national competitiveness.

In the literature the word "competitiveness" conveys a different meaning when applied to an individual firm or an individual sector or economic activity within a country or region. For a firm, competitiveness is the ability to produce the right goods and services of the right quality, at the right price, at the right time. It means meeting customers' needs more efficiently and more effectively than other firms do (Edmonds 2000). Generally, competitiveness is the ability of an organization to compete successfully with its commercial rivals (Law 2009).

Firms compete in the market just as industries in different countries compete in the world market, but, given the nature of international exchanges, the notion of competing countries does not make sense (Krugman 1994). Feurer and Chaharbaghi (1994) have proposed a holistic definition of competitiveness, taking into account the sustainability: "Competitiveness is relative and not absolute. It depends on

shareholder and customer values, financial strength which determines the ability to act and react within the competitive environment and the potential of people and technology in implementing the necessary strategic changes. Competitiveness can only be sustained if an appropriate balance is maintained between these factors which can be of a conflicting nature”.

For an industrial sector, the main competitiveness criterion is maintaining and improving its position in the global market. Competitiveness – the ability to compete in markets for goods or services. This is based on a combination of price and quality. With equal quality and an established reputation, suppliers are competitive only if their prices are as low as those of rivals (Black *et al.* 2009). Snieška and Bruneckienė (2009) have defined a regional competitiveness as an ability to use factors of competitiveness in order to make a competitive position and maintain it among other regions. Traditionally, the international competitiveness of countries was explained by international trade theories derived from the work of Adam Smith. However, global economy is too complex to be explained by traditional theories.

The Organization for Economic Co-operation and Development (OECD) suggested that competitiveness be understood as: “The ability of companies, industries, regions, nations or supranational regions to generate, while being and remaining exposed to international competition, relatively high factor income and factor employment levels on a sustainable basis” (Hatzichronoglou 1996). According to the OECD, competitiveness is the ability of a country to produce goods and services, under free and equal market conditions, that pass the test of the international market and at the same time ensure long-term growth of living standards (Economic Policy Reforms 2010: Going for Growth 2010).

The World Economic Forum defines competitiveness as “The set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the sustainable level of prosperity that can be earned by an economy” (Schwab 2009). In other words, more-competitive economies tend to be able to produce higher levels of income for their citizens. The productivity level also determines the rates of return obtained by investments in an economy. Because the rates of return are the fundamental drivers of the growth rates of the economy, a more-competitive economy is one that is likely to grow faster in the medium to long run. The concept of competitiveness thus involves static and dynamic components: although the productivity of a country clearly determines its ability to sustain its level of income, it is also one of the central determinants of the returns to investment, which is one of the key factors explaining an economy’s growth potential.

Two types of definitions of competitiveness are currently used in the International Institute for Management Development’s (IMD) World Competitiveness Yearbook: a condensed definition and an academic definition (Garelli 2005). The first IMD’s definition of competitiveness is “How nations and enterprises manage the totality of their competencies to achieve prosperity or profit”. The second definition is “Competitiveness of Nations is a field of economic theory, which analyses the fact and policies that shape the ability of a nation to create and maintain an environment that sustains more value creation for its enterprises and more prosperity for its people”. Competitiveness is not just about growth or economic performance but should take into consideration the “soft factors” of competitiveness, such as the environment, quality of life, technology, knowledge, etc. The National Competitiveness Council in Ireland generally understands competitiveness as the ability of enterprises to successfully sell goods and services on international markets.

Competitiveness is a crucial determinant of national economic survival and future prosperity (Our Cities: Drivers of National Competitiveness 2009).

A definition of national competitiveness according to the National Competitiveness Council (Annual Competitiveness Report 2004: 3) – “Competitiveness is the ability to achieve success in markets leading to better standards of living for all. It stems from a number of factors, notably firm level competitiveness and a supportive business environment that encourages innovation and investment, which combined lead to strong productivity growth, real income gains and sustainable development”. This definition brings together a number of issues. First, the definition draws attention to the view that in the long-run, competitiveness is essentially about growth in productivity. Productivity is a measure of the efficiency with which goods and services are produced and is the key long-term determinant of every nation’s living standards. Second, the definition draws attention to the importance of costs and the ability of firms to compete in international markets. Finally, the definition emphasizes that promoting competitiveness should not be an agenda that divides business and wider society. Economic dynamism and social progress must go hand-in-hand.

National competitiveness in the Annual Competitiveness Report (2006) is defined as all those factors that impact on the ability of firms in a country to compete in international markets, in a way that provides people with the opportunity to improve their quality of life. Economic growth is nothing other than the sum of the growth created in all areas of the country. The potential for growth across the country can be boosted by increasing local and regional competitiveness and creating a better climate for entrepreneurship, innovation and investment.

Competitiveness refers to the overall economic performance of a nation measured in terms of its ability to provide its citizens with growing living standards on a sustainable basis and broad access for jobs to those willing to work. Competitiveness is understood to mean a sustained rise in the standards of living of a nation or region and as low level of involuntary unemployment as possible. Meanwhile, competitiveness is often measured in a narrower sense by comparing relative inflation rates and the falling demand for export or in a narrower sense by comparing relative inflation rates (Law 2009). International competitiveness is the ability of an economy to supply increasing aggregate demand and maintain exports. A loss of competitiveness is usually signaled by increasing import and falling exports (Black *et al.* 2009). In order to proceed with a study on competitiveness, first, it is necessary to clearly define the concept of competitiveness; second, it is important to identify issues which are keys to underpinning national competitiveness, and rebalancing economic activity to support sustainable, export-led growth. To generalize, competitiveness is both a test of the economy and a chance to further enhance economic performance.

Previous researchers provide different classification of the existing studies. Cho (1998), Ambastha and Momaya (2005) have identified three categories according to differences in unit entity: firm (organization) competitiveness, industry competitiveness and competitiveness of nations. In order to explain how competitiveness on the firm level can be achieved, business theory provides two basic concepts: the market-based-view and the resource-based view (Berger 2008). According to Grant (1991b), the key to a resource-based approach to strategy formulation is the understanding of the relationships between resources, capabilities, competitive advantage, and profitability – in particular, an understanding of the mechanisms through which competitive advantage can be sustained over time.

Competitive advantage in any world-class company is created from market impact, lean operations and balanced culture (Smith 1995). Four competitive paradigms have been identified by Pace and Stephan (1996) 1) Craftsmanship; 2) Productivity; 3) Quality; 4) Immediacy.

Carneiro (2000) has examined the knowledge management influence on competitiveness. The competitiveness relations with management systems were also analysed by Mikulis and Ruževičius (2009). Haake (2002) proposed to relate national business systems to industrial competitiveness. Itagaki (2009) has analysed the competitiveness of Japanese multinational enterprises. Other researches specialize in different industry sectors or one of them, because an assessment of external competitiveness requires sectors to be examined individually. For example, Sabonienė (2009) has analysed the export competitiveness. Rybakovas (2009) tried to find the most competitive sector of Lithuanian manufacturing industry. Ginevičius and Krivka (2009) have developed the model of the multi-criteria evaluation of the competitive environment in the oligopolic market, which was applied for the comparative analysis of three Lithuanian oligopolic markets: cellphone connection service market, beer market and Internet connection service market. The term of “Regional competitiveness” has two meanings.

First, the term “regional” means the area (city, urban) in the same country or a composite part of a larger economic social space, which differs from other surrounding territories in economic, social, demographic, cultural, natural, and infrastructure systems connected by material and informational relations. A number of researchers are trying to create the models of regional competitiveness (Brooksband, Pickernell 1999; Huggins 2003; Berger, Bristow 2009; Bruneckienė, Cinčikaitė 2009; Bristow

2010). Huggins (2003) has introduced “*Three-factor model*” for measuring local and regional competitiveness and has constructed the *UK Index of Competitiveness*.

Berger and Bristow (2009) have focused on examining the ability to predict and rank regional economic performance. They have identified the problems of the selection of indicators and the method of aggregation into one single value (the weighting of the indicators). Aiming to measure the regional competitiveness in Lithuania, Snieška and Bruneckienė (2009) have formed two models which supplement each other: “*Rindex*” and “*Regional Diamond*”. Studies of city competitiveness propose a wide variety of factors which impact upon the performance of cities within the global economy.

Second, the term “regional” can mean bloc competitiveness for example, EU–15, EU–27, Asia, Baltic States (Lithuania, Latvia, Estonia), the so-called BRIC (Brazil, Russia, India and China) countries, the Triad (EU, US and Japan), etc. The unified social, economic and technological space in the Baltic region as a research area is described by Melnikas (2008). Rojaka (2009) has looked at the progress of the three Baltic countries to evaluate their competitiveness perspective before and after the global crisis. Usually governments seek to promote the international (global, external) competitiveness of the regions, reducing disparities between the levels of development of the various regions.

Pedersen (2008) has introduced the concept of institutional competitiveness to show how the concept of international competition has been reformulated as part of a political project for initiating economic globalization. According to Pedersen (2008), firstly, nations compete by reforming the institutional (legal, political, economic and cultural) context for firms in an attempt to produce comparative advantages; e.g. by

creating conditions for internal and external flexibility of working conditions. Secondly, nations compete by deliberately creating institutional complementarities, e.g. by coordinating a number of policy areas, societal players and levels of government into governance systems equipped for mutual and ongoing learning and experimentation. Snieška (2008) and others research the international competitiveness of nations and companies. Mutsune and College (2010) present a Total Factor Productivity based model that measures the state of United States ability to compete in the international marketplace.

The main evaluation problems that arise at the theoretical, or methodological, level are: the absence of a definite, clear, and solid concept of competitiveness; and the limitations caused by various evaluation methods. Practical problems are associated with limited resources, and the quality of (as well as the access to) relevant information, used in the process of competitiveness evaluation (Navickas, Malakauskaitė 2010). Existing studies on competitiveness can be divided into the categories according to differences in unit entity. Clear categorization of the competitiveness research could help to make a systematic view of competitiveness.

A great number of economists develop national competitiveness theory nowadays. The models of competitiveness are based on the selection and grouping the different factors of competitiveness into a general system. A wide range of complex competitiveness determinants could be found. In order to determine the level of competitiveness of region or country, a great number of various and often incompatible criteria should be considered. Porter's (1998) theory, introduced in his book "The competitive advantage of nations", is generally accepted and commonly referred to as *Porter's Diamond model*, as it comprises four key elements that lead to



national competitiveness. The interlinked advanced factors of competitive advantage of countries or regions in Porter's Diamond framework are: 1) Firm strategy, structure and rivalry; 2) Demand conditions; 3) Related supporting industries; 4) Factor conditions. Although not illustrated in the formal model, Porter also acknowledges the role that governmental forces and luck can play in national competitive advantage.

The Diamond model is one of the few models in international business research that illustrates what comprises national competitiveness within a given industry. A lot of studies have evaluated the concept of national competitiveness based on the Porter's model (Grant 1991a; Bosch, Prooijen 1992; Krugman 1994; Weihrich 1999; Snowdon, Stonehouse 2006; Berger 2008) or have tested it (Sledge 2005). Some of them have criticized it or tried to improve it (Grant 1991a; Bosch, Prooijen 1992; Rugman, D'Cruz 1998; Davies, Ellis 2000; Moon *et al.* 1998). For example, Bosch and Prooijen (1992) have criticized the lack of attention given to the role of national culture in Diamond model. European management has to cope with different national environments based on different national cultures. These different national environments give rise to differences in competitive advantages between European countries. According to Grant (1991a), at the empirical level, the theory is applied selectively and qualitatively and without resort to rigorous testing of its predictive validity. Krugman (1994) was uncomfortable with the Porter's (1990) idea that nations, like corporations, compete with each other.

Rugman and D'Cruz (1998) incorporated the international context in Porter's model by introducing *the Double-Diamond model*. This was made by combining the domestic diamond with that of a relevant economy, leading to a Double-Diamond. This model itself has some limitations, as it can lead to multiple, not only double

diamonds if more than one economy is relevant for the analysis. Therefore, Moon *et al.* (1998) introduced *the Generalized Double-Diamond (GDD) model*. This expanded and adjusted competitive advantage model has three major advantages compared with Porter's original model (Moon *et al.*, 1998). Firstly, it incorporates multinational firms, secondly, it is easier to operationalize and thirdly, government activities are seen as an endogenous variable. Still, drawing cluster and industry boundaries for the comparison remains a difficult task and the linkages are also not so easy to assess. Some limitations like the focus on the national rather than international context and the non-incorporation of multinational firms have been addressed by models like the Double-Diamond and the Generalized Double-Diamond model (Berger 2008).

Cho and Moon (2000) proposed the integrated model of competitiveness "*The Nine-Factor model*", which encompasses both physical and human factors. These nine factors are classified into four categories – subject, environment, resources and mechanism – by the roles they play to increase the level of competitiveness. Three aspects are taken into consideration. The first comprises four physical factors – the basic factors that determine a nation's competitiveness: endowed resources, business environment, related and supporting industries, and domestic demand.

The second, human factors are the subjects that mobilize the above mentioned four physical factors, thereby creating and maximizing competitiveness. In developing countries the key engine for economic growth has been the group of people with generally high level of education, motivation and dedication. These people are grouped into four categories: workers who carry out basic economic activities, politicians and bureaucrats who formulate and implement economic plans, entrepreneurs who make bold investments, and professional management and

engineers who constantly challenge new technologies. The third are external factors. Chance events strengthen a nation's competitiveness only when the human factors are ready to take advantage of such chances. There is a similarity between "Porter's Diamond model" and "The Nine-Factor model": four of the nine factors are identical (endowed resources, related and supporting industries, domestic demand, and chance events), while one factor is similar in nature – strategy, structure and firm rivalry versus business environment. The difference, however, is that the latter emphasizes human factors by separating workers from endowed resources (Cho 1998).

Cho and Moon (2000) introduced the evolution of Competitiveness Theory from Adam Smith to Michael Porter. Wehrich (1999) used the *TOWS* (Threats, Opportunities, Weaknesses, Strengths) *Matrix* – an alternative to Porter's model – for analysing the competitive advantages and disadvantages of Germany. Wehrich concluded that although Porter's model provides a useful framework for analysing the environment, especially the economic one, it does not require government policy makers to develop responsible alternative strategies that create and maintain a competitive advantage for their nations. A different analysis can be accomplished by using concepts from strategic management – namely, the *TOWS Matrix*. This approach does not contract but, rather, supplements Porter's analysis. The *TOWS Matrix* approach is less deterministic than Porter's model. It provides a framework for developing alternative national strategies by analysing a nation's strengths and weaknesses and integrating them with global opportunities and threats.

Sledge (2005) summarized that Porter's model depicting the competitive advantage of nations is illustrated quite well by the global automotive industry. Certain aspects of the data do not accord to the model precisely, but the model does identify the key

elements of national competitive advantage which lead to global competitiveness among leading automotive manufacturers around the world. Other researchers examine the relationship between different areas or components and competitiveness. Freeman (2004) made a critical review of the developments in the theory of international trade and showed how competitiveness cannot be explained by wage rates, prices and currency rates. Freeman (2004) analyses how technological infrastructure differs between countries and how such differences are reflected in international competitiveness.

Mutsune (2008) examines the relationship between trade performance and international competitiveness. Factors that determine competitiveness can be categorized as macro-level and micro-level parameters. Gerasymchuk and Sakalosh (2007) reveal economy competitiveness and knowledge-based economy questions and the basis of information and communication technologies influence on this. The knowledge infrastructure has been considered as a main drive to competitiveness by (Raval *et al.* 2009). Other researchers try to estimate impact of foreign direct investment on growth of economy (Tvaronavičienė, Kalašinskaitė 2010; Tvaronavičienė, Grybaitė 2007).

According to Rutkauskas (2008), country (region) competitiveness measure is assumed as *three-dimensional indicator*, which depends on the fields of activity, dominating in the country, international economic relations and legal, financial, ecological, natural resources and geographical location, environment competitiveness. The National Competitiveness Council (NCC 2009) analyses Ireland's competitiveness performance using 150 competitiveness indicators. These range from measures of the successes of past competitiveness, such as economic growth and quality of life, to the policy inputs that will drive future competitiveness, such as the education system and

public spending on infrastructure. Department of Statistics to the Government of the Republic of Lithuania (Statistics Lithuania) provides 28 success indicators of country's economic competitiveness. To generalize, the concept of competitiveness and competitiveness models are still far from creating a consensus. According to Lodge (2009), the ability of a nation to compete effectively in the world economy depends to a great extent on its prevailing ideology.

Sustainable growth means decoupling economic growth from use of resources, building a resource-efficient, sustainable and competitive economy, a fair distribution of the cost and benefits and exploiting Europe's leadership in the race to develop new processes and technologies, including green technologies. Inclusive growth means building a cohesive society in which people are empowered to anticipate and manage change, thus to actively participate in society and economy. Member States should decouple economic growth from resource use, turning environmental challenges into growth opportunities and making efficient use of their natural resources.

The definition of competitiveness as well as the definition of development sustainability requires adequate interpretation and quantitative assessment (Rutkauskas 2008). Porter and Linde (1995) pointed out what there is a need of thinking about the relationship between competitiveness and the environment. An underlying logic links the environment, resource productivity, innovation and competitiveness.

According to Wade-Benzoni (1999), maintaining the long-term viability of the earth's ecosystems by using the earth's resources sustainably helps ensure that economic opportunities are kept open for the future generations. Wysokińska (2003) has observed a strong correlation between the sustainable competitiveness of the economy and the

growing productivity of its different sectors on the global market. Grundey (2008) has applied sustainability principles in the economy among the three levels of economy (macro, mezzo and micro). The link between pollution abatement and indicators of competitiveness has been reviewed by Pasurka (2008).

According to Rutkauskas (2008), success in risk management is supposed to be factor of the highest importance to tackle sustainability at country's competitiveness development. The essence of environmental sustainability is a stable relationship between human activities and the natural world, one that does not diminish the prospects for future generations to enjoy a quality of life at least as good as our own. The importance to control balance between economic development, social development, and environmental development was mentioned by Grybaitė and Tvaronavičienė (2008). Lapinskienė and Paleckis (2009) have also initiated to establish the relationship between the sustainable development and the economic growth.

There have been an increasing number of studies and reports on competitiveness over the last years, but as yet relatively few of them have looked at competitiveness from the standpoint of globalization and sustainable development. Keršienė (2009: 819) has tried to investigate the factors of SME's competitiveness sustainability under the circumstances of globalization and trade liberalization. It is generally recognized that, with the globalization of the economy, competitiveness has become one of the prime concerns of governments and firms.

According to Fougner (2008), the discourse on economic globalization contributed to transform the meaning of national competitiveness. The reason for this is that a globalist conception of the world economy as characterised by a high degree of mobility

on the part of firms and production factors made it problematic to talk about national firms competing with foreign ones for shares of international product and service markets. The increased global mobility of the factors of production across regions heightens the significance of benchmarking and understanding the competitiveness of regions within this global context (Huggins, Izushi 2009).

The concept of sustainable competitiveness has gained considerable popularity in the literature over the past two decades (Hart, 1995; Elkington, 1998; Diesendorf, 2000; Neumayer, 2003, Goldsmith and Samson, 2005; Steurer *et al.*, 2005; Russell *et al.*, 2007; Benn and Dunphy, 2009; Baumgartner and Ebner, 2010). This high interest among academics can be explained by the fact that one of the greatest challenges that business face nowadays are growing society expectations upon firms' long-term social and environmental impacts. This relies on sustainable relationships between the firm and its multiple stakeholders. According to the study on sustainable value creation conducted by Hart and Milstein (2003) only effective integration of stakeholder thinking into strategy processes will create sustainable shareholder value. In this paper the term stakeholder relations attributes to any economic, environmental or social relationship between the firm and its stakeholders (Hillman and Keim, 2001). This emerging paradigm shift is likely to result in creating shared value for both businesses and communities.

Porter and Kramer (2011) argue that it is creation of economic value in a way that also creates value for society by addressing its needs and challenges. Businesses must reconnect its company success with social progress. For instance, trusting relationships with stakeholders can give understanding of how to allocate limited resources while keeping stakeholders satisfied (Harrison *et al.*, 2010). As a result this

can lead to increased competitiveness, financial performance and enhanced corporate image as well as help in avoiding legal suits and consumer boycotts (Heikkurinen and Bonnedahl, 2013). To meet these growing societal expectations and demands for sustainable development, firms will need to develop new organizational practices and internal capabilities that will help support effective stakeholder engagement. The literature has increasingly emphasized the importance of social responsibility. In addition, more and more, companies focus on pursuing goals that go far beyond earlier concern for reputation management (Elkington, 1998). Currently, the concept of social responsibility is associated with ideas such as sustainable development, socio-environmental responsibility and sustainability (Bulgacov *et al.*, 2015).

The concept of sustainable competitiveness is the term which meaning has been debated quite extensively in the literature (Russell *et al.*, 2007). For instance, Diesendorf (2000) highlights that the term of sustainable competitiveness is most commonly perceived to be meaning a long-lived corporation which is not necessary contributes to ecological or social sustainability. Conversely, sustainable competitiveness is often referred as application of sustainable development on the corporate level (Steurer *et al.*, 2005): “It is commonly perceived as societal guiding model, which addresses a broad range of quality of life issues in the long term, SC is a corporate guiding model, addressing the short- and long-term economic, social and environmental performance of corporations” (p.274). Steurer *et al.* (2005) claim that if one accepts this understanding of sustainable competitiveness, the microeconomic framework of sustainable development can also be read as a framework of sustainable competitiveness. Similarly, Baumgartner and Ebner (2010) claimed that when sustainable development is incorporated by firms it is called sustainable



competitiveness. This illustrates the link between sustainable competitiveness and CEP suggested by the authors.

Sustainable competitiveness and its interdependences (Baumgartner and Ebner, 2010) and Russell *et al.* (2007) summarized various understandings of sustainable competitiveness extracted from different theoretical conceptions of sustainable competitiveness presented in other literature. The authors came up with four basic understandings of sustainable competitiveness: a corporation working towards long-term economic performance; a corporation working towards positive outcomes for the natural environment; a corporation that supports people and social outcomes; a corporation with a holistic approach.

The most commonly used definition of sustainable development is given in the report of the Brundtland Commission: “to meet the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). The four aspects that underpin the commission’s definition are: Holistic planning and strategy making; Preservation of ecological processes; Protection of heritage and biodiversity; Development that can be sustained for future years.

There are many other interpretations to the definition, for instance, Goldsmith and Samson (2005) provide the following definition for the sustainability practices: “sustainability practices are the ways to manage technology and social organization to make balanced and equitable progress on economic, environmental and social needs so that meeting these needs in the present does not compromise the ability of future generations to meet their own needs.” Correspondingly, sustainability is characterized as “the ability to ensure economic development is accompanied by

progress towards social inclusion and does not take place at the expense of the natural environment” (Benn and Dunphy, 2009, p. 276–277).

Steurer *et al.* (2005) suggest that there are at least three paradigms of sustainable development: weak sustainability, strong sustainability and balanced sustainability. Weak sustainability implies that manmade or human capital can fully substitute for a decline of natural capital. “It does not matter whether the current generation uses up nonrenewable resources or dumps CO<sub>2</sub> in the atmosphere as long as enough machineries, roads and ports are built in compensation” (Neumayer, 2003, p1). Therefore, weak sustainability assumes monetary reimbursements for environmental degradations.

Authors writing on strong sustainability claim that natural capital is non-substitutable by other forms of capital. The reasoning behind this conception of sustainability is that, first, there is a qualitative difference between manufactured capital and natural capital, as the consumption of natural resources is usually irreversible (Steurer *et al.*, 2005). Second, “Today’s generation cannot ask future generations to breathe polluted air in exchange for a greater capacity to produce goods and services. That would restrict the freedom of future generations to choose clean air over more goods and services” (UNDP, 2011). Strong sustainability proposes that there are “critical” elements (Ekins *et al.*, 2003) in the natural capital that should be kept above certain thresholds of degradation.

In contrast, the balanced sustainability is a concept that mediates between the weak and strong sustainability. Steurer *et al.* (2005) assume that “a partial substitutability of (non-critical) natural capital and acknowledge physical limits to economic growth where critical forms of natural capital (such as the world climate) are seriously

affected” (p. 269). Thus, sustainable competitiveness is considered to be a societal guiding model, which focuses on a broad range of issues in the long term. Similarly, sustainable competitiveness is a corporate guiding model that addresses the short- and long-term social, economic, and environmental performance of firms.

This thesis follows the view of those authors who claim that the term of sustainable competitiveness refers to the triple bottom line and to the long-term profitability of organizations (Bansal, 2002; Dyllick and Hockerts, 2002; Baumgartner and Ebner, 2010). This also can be understood as integration of ecological, social and economic challenges to an organization (Schaltegger *et al.*, 2013). Thus, sustainable competitiveness will be considered as a model that aims at integrating of economic, social and environmental issues in all levels of corporate strategies in the both short- and long-term perspectives (Steurer *et al.*, 2005).

### ***Economic dimension***

The term sustainable competitiveness in the traditional strategy and management literature is often refers to economic performance, growth and long-term profitability of organizations (e.g. Porter, 1985). Steurer *et al.* (2005) for the corporate context identified economic issues as follows: the financial performance of a company (described with indicators like cash-flow, shareholder value, profits, profitability, debt-equity ratio and liquidity; the company’s long-term competitiveness; and a company’s economic (i.e. financial) impact on stakeholder groups.

The major assumption behind the long-term competitiveness is that sustainable development has a long-term focus. Therefore, it becomes the main goal for management of the company to secure or improve firm’s market share in order to maximize the wealth of its owners (Fowler and Hope, 2007). As for the firm’s

economic impact on stakeholder groups, Steurer *et al.* (2005) highlight that "a corporation is only sustainable when it pays taxes to public authorities, adequate prices to its suppliers and wages to its employees, interests to its creditors and (at least at a certain point in time) dividends to its shareholders" (p. 271).

### ***Environmental dimension***

Environmental sustainability is the understanding of sustainable competitiveness that is based on the premise that firms are located and operate within the natural environment (e.g., Sharma, 2003). According to Steurer *et al.* (2005) the key issues of environmental protection within the environmental dimension are: resource exploitation; emissions; and environmental damages and risks.

In other words, different activities conducted by organizations have a significant impact on the environment they are working on, e.g. waste and pollution emissions or the exploitation of natural resources (Stead and Stead, 2004). On the other hand, environment where company operates might also impact the business activities of the company, for example through changes in climate. Current discussion in this area shifts from pollution control and prevention to benchmarking and strategic thinking for the sake of solving existing environmental challenges. Of course, minimization of resource use and ecological footprint are still on the table of environmental sustainability, but the evolution of the views is in place and seen as a good sign by many researchers (e.g., Hart, 1995; Sharma, 2003).

### ***Social dimension***

Today's megatrends in socio-economic development such as globalization brought social aspect of sustainable competitiveness to the table. Nowadays it is required from businesses to assume wider sets of responsibilities towards various stakeholder groups

and the social environment in which they operate (Dunphy *et al.*, 2003). Since late 1970s topics such as business ethics, occupational health and safety, corporate philanthropy and stakeholder demands started to arise in academic literature. Recently “corporate social responsibility” or “corporate social sustainability” concepts became so common, that majority of publicly traded companies today have positions of Sustainability Officers. In general, social sustainability means three basic aspects: an organization pays attention to its employees’ development, establishes proactive approach in relationship with its community and engages with various stakeholders. It is to be noted that Elkington (1998, 2004) suggests that the three dimensions of sustainability are closely tied together and influence each other in various ways. Thus, it is impossible for a modern corporation to completely differentiate between its economic social and environmental sustainability. Likewise, Baumgartner and Ebner (2010) underline that: “For a comprehensive sustainable competitiveness strategy, it is necessary to consider all dimensions, their impacts and their interrelations” (p. 77).

Parrish (2005) in exploring the motivation of sustainable entrepreneurs described the two types of entrepreneurs: opportunity-driven and sustainability-driven. The goal of the opportunity-driven entrepreneurs is to exploit opportunities to make profit, while the goal of sustainability-driven entrepreneurs is not only to maximize profits but also to solve sustainable issues. Similarly, Heikkurinen and Bonnedahl (2013) argued that corporate responsibility and sustainability should be examined from sustainable competitiveness.

In order to achieve better results both financially and in sustainability, company should embrace the concept and translate competitiveness approach to stakeholders via its vision as well as integrate environmental practices on multiple levels of

organizational system. The commitment to sustainability needs should start from the top starting from management and vision of the organization, which reflects that company has incorporated sustainable approach into its strategy.

According to Hallstedt *et al.* (2010) sustainable competitiveness has to be an integral part of company's goals, internal incentives and decision support systems. At the same time, sustainability should not end up on the support from senior management, research of Luring and Thomsen (2009) shows that without accepting sustainable competitiveness into day-to-day practices initiatives are likely to fail. Connection to organizational strategy is also among important factors of success for sustainability initiatives Michelin *et al.* (2013).

In both business world and academics there is no consensus concerning the issue of how CEP should be defined. Carroll (1999) in his literature review of CEP definitions in academic literature dates the first formal definition of CEP to Bowen (1953). Howard Bowen proposed the CEP definition as “the obligations of business to pursue those policies, to make those decisions or to follow those lines of action which are desirable in terms of the objectives and values of our society” (Bowen, 1953). Dahlsrud (2006) concluded that available definitions of CEP are consistently referring to five dimensions: environmental, social, economic, stakeholder and voluntariness (actions not prescribed by law). CEP in corporate social responsibility follows the concept of the “triple bottom line” and is the firm's commitment to managing and improving the social, environmental and economic aspects of its activities.

Valor (2005) explains the emergence of this new concept by absence of a single and clear definition of CEP, and CEP's focus on externalities and academic origin. In addition CEP is being criticized for its narrowness (Birch, 2001) and at the same time

broadness (Marrewijk, 2003) in terms of its content and intends to overcome these difficulties and serve as a framework for integration of CEP and stakeholder management. However, the main criticism of CEP also applies to corporate citizenship: the ambiguity of the concept. There is no clear definition for corporate citizenship in literature (Matten et. al., 2013). Andriof and Marsden (undated) argued that corporate citizenship should be defined as “understanding and managing company’s wider influences on the society for the benefit of the company and the society as a whole”. Some authors claim that CEP “presents more advantages to advancing the social control of companies and should be considered a superior theory vis-à-vis achieving social control of companies” (Valor, 2005). They believe that a system change can be achieved by exploring and spreading the normative basis for CEP.

The shared value is an emerging concept that has not been yet widely discussed and researched in academic literature. Porter and Kramer (2011) describe this term as “creating economic value in a way that also creates value for society by addressing its needs and challenges. Businesses must reconnect company success with social progress”. According to the authors shared value leads to a stronger and more sustainable value chain.

In recent years, the importance of achieving sustainability to ensure long-term competitiveness at city level has been recognized, both nationally and internationally. Cities are increasingly seen as the drivers of national competitiveness of economic and social development. Berger (2008) argues that national competitiveness should be seen as a relative rather than an absolute concept that allows for a benchmarking of nations.

Gains in national competitiveness of one nation must not be at the cost of other nations. If two nations grow at fast rates, with one growing still faster than the other, the one with the higher rate of growth could be seen as being more competitive (ability to earn) even that in absolute terms both nations would be better off. Indeed, there would be a “relative loser” and a “relative winner” but no absolute winner or loser (Berger 2008). Some nations support competitiveness more than others by creating an environment that facilitates the competitiveness of enterprises and encourages long-term sustainability.

The National Competitiveness Council (NCC) analyses the literature on wellbeing from the perspective of national competitiveness. In the National Competitiveness Council’s view, the competitiveness remains a foundation for national economic and social progress. The competitiveness agenda is not one that divides business and wider society. The key objective of competitiveness is to support a high quality of life, which is broader than material living standards. The overarching goal of national competitiveness is to improve living standards and quality of life by enhancing the ability of the enterprise base in a county to trade in international markets.

Economic growth should benefit everyone and nobody should be left behind. It is important to identify the most powerful factors both to the economic growth and the living standards (Balkytė, Valentinavičius 2006). Economic growth and social progress are inextricably linked. Continued competitiveness and economic growth are essential to supporting living standards and wellbeing. Strong international competitiveness creates the resources that enable material improvements in living standards and resources for investments in health, education, transport infrastructure



and other areas that promote both individual wellbeing and national competitiveness (Discussion Paper on Wellbeing and Competitiveness 2008).

Countries which are highly ranked regarding competitiveness are even highly ranked regarding living standards (Schuller, Lidbom 2009). An environment that supports high levels of wellbeing is becoming an important driver of competitiveness as country's endeavours to attract and develop world-class companies and workers. The relationship between competitiveness and wellbeing is becoming stronger and mutually supportive. Generally, globalization, economic dynamism and social progress, sustainability and competitiveness go hand-in-hand. The different sets of competitive advantages interact and reinforce each other. In this context, it should be pointed out that there is a need of research initiatives to develop further the concept of "Sustainable competitiveness" and the new theoretical models, with much focus on how international globalization, economic growth, sustainable development, wellbeing and competitiveness interact.

Porter (2004) notes that unless there is suitable change at the micro and macro-economic levels, the political, legitimate and social changes won't bear meaningful outcomes that can be appreciated by all that are involved. At the end of the day, macro-economic conditions impact the micro-economic environment and the other way around. In addition, there are numerous cases where firms practice different levels of competitiveness (both decidedly and contrarily) despite the fact that they exist in a similar large-scale business environment.

Porter (1990) posits that competitiveness is primarily established, in particular, in a country's micro-economic essentials, contained in the advancement of organization operations, the nature of the micro-economic business environment, and the quality of

clusters. He additionally underscores the gainful utilization of assets in a country as a decent way of measuring the level of competitiveness. To put it plainly, intensity can be practical if and just if the assets bringing about competitiveness are continually in existence and the firm could build up an arrangement of administrative procedures where these assets are prospered and used. To this end, there are ten criteria used where four of them outline the result measures/ markers, three of them measure organization assets, and the other three criteria measure administrative procedures and abilities.

Scholars such as Oral (2009) and Porter (2004) have noted that despite the fact that there are substituting hypothetical models and their executions that guide policy makers around the world, shockingly there are no hypothetical or viable estimation models created to quantify competitiveness at the organization level. Organizations or firms are the small scale units where rivalry really happens however they shape the competitiveness for country at the total level.

Sustainable competitiveness was measured by utilizing the Hoque (2004) and Joiner *et al.* (2009) methodology which gives focus to the increment of sales or incomes, income from operations, rate of profitability, profit for value, market share, improvement and development of new products and market advancement. The effect of environmental administration and assurance exercises on corporate financial execution has additionally been bantered about firmly for a long time. This means that there is no characteristic or mechanical law naturally connecting environmental performance with financial performance (Schaltegger and Synnestvedt, 2002). The generally accepted result markers in the literature are development, export, and profit.

This study utilized these markers and developed them by including the effect of the organization on the client and the society.

Gray (2010) points out that practical competitiveness is a framework based idea and environmentally conceptualized as anything underneath planetary and species level while Aras and Crowther (2008) indicate that it is based upon effectiveness in the change procedure and value in the distributive impacts. Schaltegger and Wagner (2006) posit that the administration of sustainability performance requires a sound administration structure which firstly interfaces ecological and social administration with the business, competitive methodology and administration and, also, that incorporates environmental and social data with monetary business data and sustainability reporting aspects Ameer *et al.*, (2012).

The relationship remains constant just in particular cases, where the environmental and wellbeing directives give solid monetary motivating forces to organizations to make unrelenting changes in their business operations. In this case, environmental issues must be of sure critical significance in order for them to have some effect on the organization's monetary performance level. A survey of a hypothetical system which blossoms with accuracy and energy to clarify this suggested relationship is as per the following: Basing on the Schaltegger and Synnestvedt (2002) dynamic hypothetical structure, for environmental protection to be beneficial, the organization administration would need to recognize the particular set of limitations, openings, dangers, and motivators. As a proceeding step, targets and objectives would need to be characterized, plans created and solid moves made.

Thus, based on the "revisionist" perspective, in any event in a dynamic point of view (or perhaps even in the short term); the capacity to improve and to grow new

innovations and production methodologies is a more noteworthy determinant of competitiveness and financial achievement. On the other hand, corporate magnanimity or philanthropy might be utilized to impact the competitive setting of a firm which would in turn permit the firm to enhance its competition and in the meantime satisfy the requirements of some of its partners (Archie and Kareem, 2010). For instance, philanthropy in terms of providing for training courses would enhance the quality of the workforce that is accessible for the firm. Correspondingly, Porter and Kramer (2002) note that philanthropic commitments to a social setting or group brings about the creation and protection of high personal satisfaction at the local level, which may manage refined, more informed and demanding nearby clients.

Campbell *et al.* (2012) posit that sustainable competitiveness occurs when a firm has an upper hand based on the fact that it can make more monetary value than the peripheral (breakeven) contender (Peteraf and Barney, 2003) and firms are strategically inclined to manage such favorable position while isolating factors that bar opponents from getting key assets. Along these lines, ex-post mobility restricts on assets, for example, non-traceability; exchanging costs, co-specialization of resources, and high exchange costs, assume a basic component.

The critical conclusion that can be drawn from Schaltegger and Synnestvedt (2002) hypothetical system is that, relationship between environmental performance and financial achievement can shift at given level of monetary achievement. The monetary impact of corporate environmental performance can likewise shift at a given environmental performance level. The relationship between monetary and environmental performance, or at the end of the day the topic of 'when it pays to be green', does not just rely on upon organization outside factors (for instance controls)

rather, it significantly relies on inner factors impacted by administration. Organizations in industries with higher environmental effect are confronted with a competitive disadvantage, if stringent directions trouble them with higher environmental costs in respect to different ventures (Wagner and Schaltegger 2003).

Notwithstanding, another contradicting “revisionist” perspective recommends that, environmental performance would result in cost reduction, increment in sales and accordingly enhance monetary performance. As indicated by this revisionist perspective, Wagner and Schaltegger (2004) recommend that a contrarily U-shaped curve is the most ideal depiction of the relationship between environmental and financial performance. In the “revisionist” perspective, organizations have a motivation to inquire about new advancements and development of ways to diminish negative externalities. In such manner, Epstein and Roy (2001) note that Environmental Management Systems (EMS) has helped organizations to efficiently distinguish, measure and manage with their environmental commitments and hazards.

Buchanan *et al.* (2005) have put forward various key aspects concerning organization change and they have commented that a few changes in hierarchical setups, procedures, and activities, for example, workforce training for product quality and safety all have coordinate expenses. In any case, a deliberately considered corporate social duty procedure coordinated at overseeing group relations may bring about cost decreases. Charitable money related duty is an impression of authoritative change in accordance with financial imbalance. Charitable giving must be seen as an honest to goodness sign of the association's basic social responsiveness with a specific end goal to build the firm's esteem (Godfrey, 2005).

In addition, Patten (2008) discovers a confirmation of the relationship between the declaration of corporate commitments to the tsunami relief efforts and ensuing change in the market value of such charitable firms. On the other hand, Barnett (2007) notes that as a general rule, the relationship between social duty and corporate monetary performance shifts from one firm to the next because of partner impact limits and situational possibilities. The main objective of a business is the making of sustainable financial, social and environmental value (Wheeler *et al.*, 2003).

Wheeler *et al.* (2003) further content that the win– win point of view embraced by the life sciences firm Novo Group permitted it to seek after its business which is profoundly required in hereditary change, yet keeps up exceptionally intelligent and productive associations with partners and distributes an exceedingly appraised environmental and social report annually. Interestingly, another firm, Monsanto, was confronted with a few challenges in its business, which is of a comparable sort to that of Novo Group because of its disregard of partner requests.

Although, sustainable agriculture addresses both environmental and social concerns, Smith *et al.*, (2008) argue that it additionally offers creative and monetarily feasible opportunities for farmers, workers, buyers, policy makers and many others in the whole food framework. This implies, as Pretty *et al.*, (2008) notes, that worries about sustainability concentrate on the need to embrace advances and practices that don't negatively affect the environment, are readily available to and effective for farmers, can prompt to upgrades in sustenance profitability and have positive reactions on environmental products and ventures.

The philosophy does not block any innovation on ideological grounds, but rather encapsulates all advancements that are socially satisfactory, enhances profitability and

does not negatively affect the environment. This means that going "sustainable" will change the tea business, which has been experiencing for a long time, oversupply and under-performance. This new of re-examining will then result in a new and distinctive environmental profile which may bring about reduction in related costs.

Schaltegger and Synnestvedt (2002) hypothesize and delineate that, starting at a specific level of financial achievement; each environmental protection process will diminish the financial achievement which can be relied upon to diminish in the short term. This means that for whatever length of time that organizations can grow environmentally friendly advancements, which decrease the peripheral costs, the financial performance is enhanced. Since there may be precise contrasts in minor expenses of environmental protection crosswise over businesses and crosswise over nations (because of enactments), different monetary results are conceivable.

Divney (2007); notes that adding to the need of delivering tea economically is the customer voice willing to pay for tea produced in ethical ways ensured by third parties. In this way, the idea of practical competitiveness has critical ramifications for firms, especially huge multinational partnerships. Initially, it implies perceiving the connection between material utilization in the North and ecological debasement in the South (most items expended in the North require crude materials or assets from the South). Sustainability may even suggest that organizations seek after methodologies that really lessen material and power utilization in the North. Furthermore, sustainable competitiveness implies that organizations must create markets in the South while decreasing the environmental burden made by this new economic venture.

Indeed, market research points to the fact that the environment is vied as an important challenge both for the developed and developing nations; that firms (either

multinational or local) are engrained on producing short-term profits while neglecting the environment are as a result not likely to develop long-term positions especially in the developing nations. Effectively competing for these in the future may most likely rely on the firm's capacity to visualize sustainable innovations and products that are not yet in existence and to provide them ahead of the existing competition.

The win-win point of view to corporate social duty practices gives a perspective in which corporate social responsibility is seen as a vehicle that permits both the firm to seek after its needs and partners to fulfill their requests. Ebner and Baumgartner (2006) note that sustainable development when consolidated by the association is called sustainable competitiveness and it contains, as sustainable development, each of the three components: financial, ecological and social and these three measurements interact. For a far reaching sustainable competitiveness practice, it is important to consider all measurements, their effects and their inter-relations. Corporate competitiveness has developed as a persuasive, yet disputable, idea for business and strategy.

An increasing level of awareness is developing that a major change in the way society utilizes natural assets and produces energy might be required on the off chance that the society is to gain ground on critical environmental issues, for example, eco-system degradation and climate change at a global scale. With this as setting, partner's innovation is progressively being referred to as a critical channel for achieving a change to sustainable products and procedures. Brown (2006) notes that various books that sound desperate notices of environmental calamity frequently end on a hopeful note, reasoning that the societies help rests upon the shoulders of responsible social and environmental enterprises. Lessening emissions is the basic point of



contamination counteractive action, though product stewardship directs the choice of raw materials and orders the design of products with the target of minimizing the environmental effect of product frameworks and Bauml (2002) and Helpman (2004) note that this is especially perceptible in the late commitments.

On the other hand, Ambastha and Momaya (2004) point out that the level of competitiveness of firms has been considered in the interdisciplinary fields of methodology, operations and economics. This implies that together, these two procedures disjoin the negative connections amongst business and the environment in the developed markets of the North. A sustainable improvement procedure, be that as it may, likewise directs that exertion be made to disjoin the negative connections amongst environment and financial movement in the developing nations of the South, and respite the question; under what conditions is corporate competitiveness, welfare-making versus welfare-wrecking, particularly once all externalities are figured in? A great part of the work to date in the corporate competitive field has a certain supposition that opposition just prompts to positive results for society.

Sanne van der Wal (2008) indicates that in the most recent decade there has developed an appreciated harmoniousness between the examination of Michael Porter and standard development scholars in that there is currently much clearer acknowledgment among business analysts of the significance of sound micro-economic basics if a venture and advancement amicable environment is to be made that is helpful for practical development. A firm seeking after a sustainable competition system; infers both generous venture and a long-term responsibility to market advancement. There is little motivation to trust that this speculation will bring about upgraded temporary benefits.

Nonetheless, duty to sustainable competition may raise a company's desires for future performance with respect to contenders, reflected by such measures as price earnings or market-to-book proportions. Sustainable competitiveness will probably require a deliberate exertion—a long-term vision—to influence ecologically cognizant practices into the developing nations that incorporates low-effect innovation and products as the reason for market entry and advancement. In any case, Dilek and Hakan (2013) posit that measuring competitiveness of firms and benchmarking with different organizations are irrelevant in the literature is shocking since measure of competitiveness of countries has all around advanced with regarded benchmarking studies accessible.

### **2.1.1 Factor Conditions**

Factor conditions are the compulsory inputs which are required by an organization to compete in the market. These factors can be grouped into five categories human resources, physical resources, knowledge resources, capital resources, and infrastructure resources. The competitiveness of the cluster is determined by the availability of factors of production. There is nothing more than the required inputs to compete in any industry (Karkkainen, 2008). The presence of sufficient resources ensures smooth working of the firm.

Porter (1990) explained that two types of factors are required by the firms. These are basic factors and advanced factors. Basic factors include national resources, location, capital, availability of raw material and labour. Advanced factors include modern infrastructure and presence of highly educated personnel in the cluster. Porter (1990) explained that advanced factors are the most important for enhancing the competitiveness. The unavailability or shortage of any factors of production forces the

firms for innovation. The presence of adverse conditions such as scarcity of raw material, shortage of labour and unavailability of infrastructure leads to two situations i.e. either the firms start using resources effectively or firms start developing new designs, methods or products hence improving competitiveness.

Offstein, *et al.* (2007) point out that research presents numerous view-points and structures at the nation, business and firm level. While a few reviews concentrate on individual firm and its techniques for worldwide operations, others focus on the administration in competition. In any case, there is additionally a developing mindfulness that the customary financial related measures are uni-dimensional and a cutting edge organization tries to be more than financially fruitful; that financial accomplishment in the short term does not promise it in the long term; and that there are other, more complete, yet essential parts of performance that can be measured to give a more adjusted image of the soundness of the endeavor. These measurements, corporate environmental practices, can then be followed after some time to supplement financial performance measures and maybe give some autonomous, early, and savvy indications of performance issues.

The structure portraying a company's ability to compete, develop and be productive (Martin *et al.*, 2006) is moderately uncontested, however applying a similar idea to nations or regions has been liable to much level headed discussion. The verifiable similarity amongst firms and countries has been broadly reprimanded in light of the fact that a nation can't leave business and in light of the fact that opposition between nations can profit both, while rivalry between organizations in a similar part will probably be a zero whole amusement. A significant part of the work to date in the

corporate competitive field has an understood supposition that; opposition just prompts to positive results for the society.

Wagner and Schaltegger (2003) set forward neo-classical environmental, financial aspects perspective connecting environmental and social issues. As per this view, the reason for environmental controls is to remedy for negative externalities, which reduce social welfare. Environmental controls decrease these negative externalities; notwithstanding, make extra costs in this way lessening benefits. There are number of hypothetical works conceptualizing the connection between environmental performance, social performance, and financial performance. The social obligation of a business incorporates financial, legitimate, moral, and optional desires that society has of associations at a given point in time (Ameer and Othman, 2012).

Ameer and Othman (2012) further proposed that 'to talk about an association as 'good group' permits us to recognize the ethical criticalness of the human communications and relationship inside associations. Fredrick (2006) classified standards of social obligation and procedures of social responsiveness as throughputs, and association's financial related performance was as one measurement of general social performance.

### **2.1.2 Demand Conditions**

Porter (1990) defined that the most important characteristics that determines the demand conditions are 'the composition of the demand, its size and patterns of the growth and the internalization of domestic demand. Demand condition directly affects the performance of firms as they start moving from producing low quality and imitative product or service to innovation and differentiation (Karkkainen, 2008). The pressure from demanding and sophisticated consumer motivates the firm to improve its performance with regard to existing as well as future needs. Porter explained that

foreign market did not provide all these benefits but it is the local demand that makes the firm competitive. Porter (1998) explained that in the global economy, the quality of local demand matters more than its size and influence setting of demand conditions heavily.

The concentration of environmental administration management and eco-control on creation forms has a custom. Jasch (2009) and Schaltegger *et al.* (2008) noted that in the forefront are money related markers underway and additionally the relationship between non-financial pointers underway and financial outcomes. A procedure oriented sustainability administration control however goes past a fixation on natural issues with (specialized) production processes. Alongside production procedures different business procedures, for example, innovation, and administration, coordination or client service are a part of the procedure point of view of the porter's diamond model.

Numerous "administration prevailing fashions", for example, lean administration, frameworks re-engineering or add up to quality administration basically include a procedure orientation. Some of these methodologies can at any rate to a degree be found in environmental and quality administration (e.g. add up to quality environmental administration). The most essential strides of process-arranged sustainability administration control incorporate the investigation and enhancement of procedures.

Distinctions can be made here between core procedures and process chains, the meaning of client, social and environmental necessities, the usage in causal connections and quantifiable pointers and additionally inner reporting. Schaltegger (2010) point out that process advancement requests propelled and enable workers

perform their duties efficiently. Since powerful and proficient sustainability administration may require significant and non-stop change, sustainability administration control must consider environmental learning procedures and inspiration.

### **2.1.3 Firm Strategy, Structure and Rivalry**

This factor determines the ways; the firms are created, organized and managed. With the development of information technology, Schaltegger (2010) contends that counseling services and the rising offer of services even in material-based businesses, the significance of know-how, data and worker inspiration is expanding. Knowledge management incorporates not just the utilization of information technology solutions in environmental and social administration (for instance ecological databases and programs) and the provision of training courses. It is a great deal more critical to empower workers to make, recognize and effectively execute innovations.

Sustainability management control is tested to offer help in the chain from information recovery to the effective execution of knowledge. The organizing and systems administration of data to business-pertinent information about manageability and in addition the support of a learning and advancement well-disposed corporate culture serve a productive trade of learning amongst workers and outside specialists.

### **2.1.4 Related and Supporting Industries**

The fourth determinant on Porter's model is the presence of related and supporting industries. The presence of suppliers accelerates the process of innovation and upgrades the business of the cluster. The presence of related industries gives a better chance to the firms located in the cluster to share information and identify new

opportunities. This factor determines the ways; the firms are created, organized and managed.

Porter explained that no managerial approach can be considered the best for the development of an industry rather than it depends on the manner how efficiently the nations practice match the competitive advantage of a particular nation. Porter explained that competition and rivalry within the cluster directly affects its competitiveness. The presence of competitors within the cluster leads to innovation and continuous improvement (Porter, 1990). Before formulating any strategy, the firms always consider the reaction of the competitor located at the same place. The presence of rivalry generates imitation.

The presence of large number of competitors in the cluster motivates all the firms to take notice of each others' action and try to adopt the best strategy to face the competition. As domestic firms are visible to each other, success on the part of one showed that further development is possible in the local circumstances (Davies and Ellis, 2000). The pressure from the firms which are in proximity to each other provides inspiration to the firms to search for innovation and in turn improve its competitiveness.

An incorporation structure in which social and ecological viewpoints are coordinated with business administration has been put forward (Wagner, 2007). The thought of "reconciliation" means the linkages of objectives and exercises identified with socio-ecological administration with center administrative procedures and capacities in those zones which are of key significance to the organizations, specifically corporate system, quality administration, health and security, and social issues. Wagner (2007)

distinguished four intermediate determinants of financial performance- proficiency related, market related, image related, and risk related.

Wagner combines social and ecological administration with the core procedures. This mix prompts to cost savings, inventive products, high market share and better profit margins, and diminishment in business related accidents and wounds (Ameer *et al.*, 2012). A basic issue for sustainability is winning time, particularly amid periods when it is seen that expenses surpass benefits, and in such a time of questionable term, best practice might be ended as not cost savvy. In any case, over the long term, anticipated advantages are more noteworthy than the costs.

On the other hand, Wagner (2011) posits that reconciliation of ecological and sustainability perspectives with general administration have an impact on both, monetary and environmental performance. This thought is like that of Pivato *et al.* (2008) who attracted regard for the significance of interceding factors in the investigation of social obligation and corporate performance relationship. The scholars contend that the specialists ought to focus on the intermediate performance measures, for example, consumer and brand loyalty. Cacioppe *et al.* (2007) note that organizations which esteem environmental protection, generous conduct and moral business practices are seen by clients to be great corporate citizens, and can separate themselves from contenders and pull in client devotion.

A pattern will profit firms that have advanced adaptability in their way to deal with ecological policy, since utilizing market devices to enhance the environment permits firms to tailor their reactions to their own needs and to look for creative answers for meeting their duties (Archie and Kareem, 2010). All the more by and large, in any case, there is the trust that moving forcefully toward ecological change will help firms



to wind up distinctly more entrepreneurial on various key measurements that have been noted previously.

Changes in the worldwide economy have progressively moved the premise of modern intensity from static value rivalry towards dynamic change, profiting firms that can make information quicker than their rivals. Maskell and Malmberg (1999) point out that sustainable competitiveness requires the continuous substitution of broken down assets, the revamping of out of date structures and the recharging of financially vital national or local establishments, when impersonation bit by bit transforms limited abilities into worldwide ubiquities.

One should manage those groups that can have an influence on them, while to be responsive (and viable in the long-term) one should manage those groups that one can influence (Freeman, 1984). This implies that an association's personality introduction that is non-conformist, social or collectivist decides the way of its partner connections (Brickson, 2007). Albeit individualistic firms have a tendency to keep up frail ties, social firms have a tendency to keep up solid ties, and collectivist firms have a tendency to have ideological ties.

To describe this in a concise perspective, Laplume *et al.* (2008), endeavored to answer the question; how do firms adjust partner interests? Laplume *et al.* (2008) contends that firms can accomplish partner bolster by building trust and abstaining from treating partners opportunistically, reputation administration, impression administration, rhetoric, and image (Carter, 2006; Snider, Hill, and Martin, 2003). Legislation has a helpful part in making everything fair at first, yet industry pioneers could be pushed harder to raise standards globally (Sa de Abreu *et al.*, 2015). The two fundamental main thrusts for industry are the additional financial related an incentive

subsequently of taking after sustainable practices and the change of public images. The fundamental inspiration driving sustainability reporting was to upgrade corporate image and validity towards outer partners and to react to public pressure (Adams, 2002, Battaglia *et al.*, 2015).

Sustainable competitiveness is ability and its potential must be acknowledged in a company's regular operations. Unless there is proper change at the micro-economic level, macro-economic, political, legal and social changes won't bear full positive results (Porter, 2004). As it were, macro-economic conditions impact micro-economic (business) environment and the other way around. Displaying competitiveness at the firm level with the end goal of system plan or methodology development is a test for the study operational research.

The recent work of Oral (2009) build up on scientific model in view of a system that conceptualizes firm competition in a bigger competitiveness environment at the national and global levels. The review offers an approach that outcome with various competition measures for every organization except, sadly, it doesn't permit a benchmarking of organizations fundamentally. The model is an exceptionally point by point record of one organization and its rival for a given client base.

As a component of market qualities, client desires identified with the properties of products and services, for example, value, quality, amount, conveyance period, usefulness, outline, and bundling may fluctuate significantly. Be that as it may, once a market is picked, future potential for financial development. The report surveys the capacity of nations to give large amounts of flourishing to their subjects. This thus relies upon how profitably a nation utilizes accessible assets. In this way, the GCI

measures the set of foundations, strategies, and elements that set the manageable present and medium-term levels of financial prosperity.

In any case, in this study it was preferred to call the foundations of competition at the firm level unique in relation to the ones utilized at the national level. Barney (1991) and Prahalad (1990) note that the asset based perspective of firms underline that organizations are a set of skills/capacities of creating and sending abilities. Consequently, for the main aspect, it is ideal to call it "result" since the organization needs to show performance in all parts of what it does to contend. Utilizing performance as a term for the last after-effect of competitiveness may confound. The second aspect may be called "assets" rather than resources or variables, an umbrella term to depict abilities of a firm.

The third aspect is an expansion of the possibility of foundations or strategies for the organizations, we name it "administrative procedures and abilities" to incorporate a capacity term with a specific end goal to incorporate the part of administration in the move of contributions to outputs. This exchange instrument is not a static consequence of procedures and structures but rather likewise cognizant contribution of administration where administrative aptitudes influence the entire procedure. To put it plainly, competition can be practical if and just if the assets bringing about competitiveness are kept viable and active and the firm could set up a set of administrative procedures where these resources are developed and used.

Notwithstanding potential unsustainable lease seeking by partnerships, entrepreneurial flow may likewise prompt to unexpected issues. What exactly degree do new products and services spearheaded by partnerships make new social and ecological difficulties? To be sure, the historical backdrop of business is loaded with answers for issues that

have prompted to new negative externalities that are presently being tended to. Hahn and Hester, (1989) notes that another motivation to go past consistence is that the hierarchical development with which such practices are related is very much coordinated to the pattern in ecological direction itself. The example of administrative legislation in America gives off an impression of being developing from one of command and control to one that utilizations advertise like components, for example, balances, bubbles, and tradable discharges licenses to accomplish ecological benefits.

The non-showcase environment can be partitioned into socio-social, legitimate and political components (Schaltegger, 2010). Socio-cultural issues include the social acknowledgment or legitimating of business exercises and the provision of business products and services, customs, social qualities, media responses and popular supposition. An essential piece of issue administration includes the relationship to sentiment pioneers, innovators and other key associations and people.

## **2.2 Concept of Corporate Environmental Practices**

Husted (2005) noted that corporate environmental practice includes corporate choices about the assignment of assets. McWilliams and Siegel (2001) point out that a critical examination of the expenses and advantages of corporate environmental practice extends regarding cash flows, utilizing customary methods of valuation, regularly prompts to the choice to forego such speculations. Thus, financial experts have customarily met exchanges of corporate environmental practice with extensive distrust due to its inability to add to the objective of augmenting an incentive for shareholders.

The world today is confronting three basic issues, high fuel costs, climatic changes and air contamination (Demirbas, 2009) and Ulusarslan *et al.*, 2009). As of now,

there are a few critical issues to be settled around the world, high requirement for energy, high exhaustion of non-renewable energy resources and high local and worldwide environment. Sroufe *et al.* (2002) note that corporate environmental practices incorporate everything from an association's inside endeavors for environmental appraisal, planning, and usage, to methodology for coordinating environmental product and process outline with production operations (Handfield *et al.*, 2001), to the detailing of environmental performance data to interior and outer partners of the firm (Melnyk *et al.*, 2003; Delmas and Toffel, 2004).

The correct social obligation of business is to transform a social issue into financial opportunity and monetary advantage, into beneficial limit, into human skill, into generously compensated occupations, and into riches (Drucker, 1984). The longing of each company is to put resources into beneficial business undertaking and to stay focused in the market paying little heed to the level of the quantity of competing organizations carrying out the similar economic activities.

Pal *et al.*, (2002) discovered that ecological contamination by poisonous metals emerges accordingly of various exercises including industrial and farming waste and disposal of sewage. Metals that are released as solutes or particles have a tendency to be non-biodegradable and can result in bio-unsafe impacts. The issue of arsenic contamination in ground water represents a genuine danger in these zones since ground water is the primary source of drinking water. Long term exposures to high arsenic levels can bring about irreversible and serious harm to the health of human beings. Arsenic danger causes skin sores, lesions, and harm mucous membranes, digestive, respiratory, circulatory and sensory system and more over it is connected with the cancer of the skin, liver and lungs.

Furthermore, arsenic exposure prompts to black foot sickness, diffused and spotted melanosis, diffused and spotted keratosis, no pitting oedema, Bowen's illness and gangrene (Wang *et al.*, 2001). However, on the other hand, there is much work to be done analyzing the relationship among corporate environmental practices and pointers of financial and market performance (Hart, 1995). Hart (1995) also notes that the common asset based perspective of the firm opens a radical new area of inquest and proposes numerous beneficial ways for research throughout the coming 10 years.

Furthermore, the asset based view has created a gainful discourse among previously detached points of view (Connor, 1991). Brown *et al.* (1994) and Meadows *et al.* (1992) note that this hypothesis, similar to its more restricted inside and outer predecessors, still contains one genuine exclusion, that it methodically disregards the limitations forced by the bio-physical (regular) environment. Truly, Shrivastava (1994) pointed out that management hypothesis has utilized a slender and parochial idea of environment that underscores political, monetary, social, and mechanical angles to the virtual prohibition of the indigenous habitat.

Porter and Kramer (2011) state that companies create shared value in three ways: Re-conceiving products and markets, which includes improved serving existing markets, finding new ones, or creating innovative products; Redefining productivity in the value chain, which includes the quality, quantity, cost improvements as well as production, and distribution in a sustainable manner and; Enabling local cluster development, which implies development of a strong competitive context.

Overall, shared value is created by leveraging the firm's unique resources and expertise. It is a new way to achieve economic and social value. In this sense, in order to achieve a sustainable shared value chain firms need to consider and adopt ways to

engage stakeholders (Dunphy *et al.*, 2007). The fundamental distinction between SCR and create shared value is that the former focuses on performing activities separate from the business, while the latter aims at changing how the core business operates and tries to integrate social and environmental impact into the business in order to drive economic value (Porter, 2012).

Given the developing extent of natural issues, this exclusion has rendered existing hypotheses deficient as a reason for recognizing vital rising sources of competitive power. Since the hypothetical underpinnings of dependable competitiveness or sustainable competitiveness is as yet advancing, it might be important to investigate the parts of the subject utilizing subjective strategies with a specific end goal to fabricate information and suggestions (Cheruiyot and Maru, 2012). This review considers four sorts of corporate natural practices in particular: process adaptation practices, product adaptation, lessening in raw materials practices and training on ecological practices.

### **2.3 Process Adaptation and Sustainable Competitiveness**

Melnyk *et al.* (2003), Sroufe (2003) and Sroufe *et al.* (2000) describe process adaptation as the change of process proficiency with better-input use; cleaner prepare innovation, better housekeeping and upkeep systems, and streamlined operations. Klassen and Whybark (1999) contend that production operations, through product design and process innovations, have been perceived as the basic driver of ecological performance. They further; note that it is the set of all exercises that alter the current item's design to lessen any negative effect on the environment amid production, packaging, utilization, disposal and recycling. By basically changing to renewable assets in production and packaging, and changing product designs to encourage

reconstructing, reusing and disposal, product adaptation processes intend to diminish both the utilization of assets inputs and the production of undesired products. It tries to make procedures and products that have negligible effect on the environment.

Kurk and Eagan (2008) point out that this incorporates numerous exercises, from plan for disassembly, for example, joint and part designs, to more extensive lifecycle evaluation practices. The information and improvement of these abilities in product adaptation is a capacity that can furnish organizations with a noteworthy preferred standpoint. Verhulst *et al.* (2007) and Boks (2006) both point out that in spite of just about 20 years of advancement, the absence of product adaptation by organizations is still criticized. Innovation related product adaptations are probably going to require specialized mastery and related understanding. This depends on the notion that despite the fact that non-exclusive information about approaches to avert contamination as of now exist, practices to counteract contamination should be modified to the specific production procedures and results of the receiving firm. Outer pressure from obligatory controls could likewise affect the ecological creativity of firms despite the fact that these controls don't specifically oblige firms to product adaptation advances.

Administrative pressures can make motivations to embrace such advances if these advances significantly affect decreasing emissions of controlled toxins and in this manner lessening present or expected expenses of compliance. Madhu *et al.* (2008) further note that firms may likewise willfully embrace product adaptation advancements to serve as a pointer of environmental obligation and lessen administrative examination and the stringency with which ecological controls are authorized.



Within the previous decade, there has been huge pressure for firms to minimize or remove emissions completely, effluents, and waste from their operations. Caincross (1991) notes that contamination decrease can be accomplished through two essential means, first through control, that is, emissions and effluents are trapped, stored, treated, and discarded utilizing contamination control equipment and counteractive actions whereby, emissions and effluents are diminished, changed, or anticipated through better housekeeping, material substitution, re-using, or process advancement. The last approach lessens contamination amid the manufacturing procedure while delivering saleable products. The previous approach involves costly, ineffective contamination control equipment. Process adaptation additionally incorporates end-of-pipe and process reusing exercises, more extensive counteractive action projects, for example, approach and methodology.

Gonza'lez *et al.* (2008) point out that these components start from a more conventional ecological administration framework (EMS, for example, those connected with ISO 14000. In this case, an EMS may include formal frameworks and databases which incorporate strategies and procedures for the preparation on ecological practices of staff and the checking, condensing, and detailing of specific environmental performance data to inward and outer partners of the firm. Melnyk *et al.* (2003) note that the documentation of this environmental data is principally inside centered around plan, contamination control and waste minimization, training on ecological processes, answering to top administration, and the setting of objectives.

Private associations may encourage the appropriation of clean advances by the modern venture. Fields *et al.* (2005) calls attention to the fact that monetary obstructions are a noteworthy requirement in receiving clean advances. On the other

hand, Kemp and Volpi (2008) portray that the dissemination procedure of embracing advances procedures can be long. Along these lines, interest in the long-term objectives of the practical industrial undertaking may require new synergistic association endeavors among the legislature, budgetary foundations and modern ventures to make advances reasonable to the industrial venture to accomplish its objectives. As such, the reception of methodologies, for example, government endowments to expel obstacles and encourage implementation of clean innovations (Jain, 2007).

Genaidy *et al.* (2010) furthermore acknowledge that knowledge collaboration between government specialists and partners in the industrial venture can be valuable vehicles to encourage the dissemination of clean innovations in modern undertakings. There is conventional method for fighting contamination; through treatment of waste and polluting streams and rivers, treating water, air, noise and solid waste (Olajire, 2012). An entire scope of innovations is included from the large number of environmental and substance frameworks utilized for treating water, to filtration frameworks, violent winds and other obstruction frameworks utilized for air, acoustic enclosures in areas and buffers and different composting or disposal strategies. For any stream, there will presumably be a progression of similarly satisfactory treatment alternatives, with various quality, financial matters and environmental performance.

On the off chance that focus is given to the conventional ways to deal with overseeing wastes, the development has been from, dumping and scattering, to controlling, on to reusing and administration and now it is focused on counteractive action at source, attempting to oversee and minimize utilization of assets. A more accentuation on sparing assets and utilizing what rare sources of inputs available all the more sensibly

are available, in this way the push will definitely slant towards an all the more upstream set of arrangements. Tea processing regularly produces a lot of waste water and now and again, solid waste that must be discarded or treated at all expensive and most secure route in order to meet the strict discharge controls that are set by government substances to ensure life (both human and animal) and the environment (Simate, 2011).

The acidity or alkalinity of waste water influences both waste water treatment and the environment. Low pH demonstrates expanding acidity while a high pH shows expanding alkalinity (a pH of 7 is normal). Olajire (2012) points out that the pH of waste water needs to stay in the vicinity of 6 and 9 to ensure living organisms are protected. Antacids and acids can change pH in this way inactivating waste water treatment forms. In the future water conservancy needs to accentuate boosting the whole of financial and aquatic ecosystem service values.

A structure coordinating both financial capital and normal capital, that is, values of nature's environment administrations (Carpenter *et al.*, 2011) ought to be built up to evaluate aquatic ecosystem services, contending utilization for fresh waters, and the procedures that support the long-term protection of freshwaters. This is a requirement for an adjusted accentuation on blue water and green water. The customary meaning of water conservancy is confined to just surface and groundwater, or alleged blue water. Falkenmark and Rockstrom (2006) note that there is a general disregard of the management of another vital water source, green water, which is soil moisture stored in unsaturated soil and in the end utilized by vegetation through evapo-transpiration.

Liu *et al.* (2009) point out that in all actuality, green water overwhelms water use for agriculture by giving more than 80% waste water utilization and for normal

ecosystem, for example, forests and grasslands by giving all-destructive water utilization. In this case, given the significance of green water, Falkenmark and Rockstrom (2006) note that the future concentration of water conservancy ought to be diverted from a blue-water project viewpoint toward considering the full water balance as sensible including green-water streams.

Alex (2010) noted that energy and utility administration empower the formalization of checking; assessing and focusing on energy utilization and giving area particular benchmarking data. Effective utility and energy administration rely on upon a collaboration beginning with a firm responsibility from the plant manager and his or her administration group. Inside modern and business applications, the idea of energy and utility administration must epitomize other key territories, including training on environmental practices, motivation and awareness, green accounts; where organizations review the ecological performance of their operation, and additionally its financial performance. Tidal ponds are moderate, shabby, and generally wasteful, yet can be utilized for different sorts of waste water management. They depend on the connection of daylight, green growth, micro-organisms and oxygen. Economic competitiveness plans to minimize the ecological pressure of firm development through the improvement of clean innovations. It requires a long term vision shared among all applicable partners, which is an uncommon asset.

#### **2.4 Product Adaptation and Sustainable Competitiveness**

Product adaptation alludes to all exercises that change the current item's plan to lessen any negative effect on environment amid production, packaging, utilizing, disposal and reuse. Basically, changing to renewable assets in production and packaging, and adjusting product designs to encourage modifying, reusing and disposal, product

adjustment activities are meant to lessen both the utilization of assets and the era of undesired by-products. Considering the environment in product configuration can be traced back over 30 years, when it was firmly connected to the first ever significant oil emergency (Plouffe *et al.*, 2011). Developing collective familiarity with the debasement of normal assets alongside progressively stringent environmental controls without a doubt cultivated the advancement and promoting of eco-designed products. Added to this is the formalization of the procedures and techniques for advancement of eco-designed products.

Today, Karlsson and Luttrupp (2006, Braungart *et al.* (2007) and Borchardt *et al.* (2010) all point out that about all procedures and methodologies identified with the mix of ecological contemplations in products configuration are gathered under the term eco-design. The most widely recognized approach utilized for eco-design is life-cycle analysis (LCA) (ISO (International Organization for Standardization), 2002). It includes considering the ecological effects in the determination of raw materials, the assembling procedure, the capacity and transportation stage, utilization, and last disposal.

While life-cycle deduction and life-cycle analysis infer having a systemic perspective of product configuration or design to keep away from contamination transfer, numerous different methodologies are utilized like eco-proficiency, eco-viability, additionally outline for recovery, design for the environment, outline for destroying, cradle to cradle design. Numerous publications, regularly government-generated, underscore the hypothetical advantages of eco-design. In these "Standard-setting" reports, the cost-viability of eco-design is constantly mentioned (ISO, 2002).

Berneman *et al.* (2009) noted that the potential derivatives can be combined in three classifications.

Decrease in costs can be accomplished in different methods, for example, the utilization of re-cycled materials, which can cost less, better utilization of raw materials (Platcheck *et al.*, 2008; Borchardt *et al.*, 2010), enhanced coordination and energy savings. As a rule, these reductions are the after effect of the streamlining of one or a few parts of the life cycle of the product. Eco-designed products give more prominent fulfillment to customers, who are progressively concerned with environmental issues. Aoe (2007) noted that an increasing number of open and privately owned businesses are utilizing environmental performance as a model for selecting their providers.

Eco-planned items along these lines empower firms to qualify as potential providers; as a rule, eco-design, while lessening a product's environmental effect, can prompt to its improvement and to a more drawn out lifecycle, subsequently helping it to emerge from the opposition. It can be simpler to develop client loyalty when eco-design drives a firm to offer a service instead of a product, since a long term relationship is set up for substitution of the product. This is the situation for Michelin tires where Aoe (2007) notes that the organization wants to lease the tires and replace them before they are totally exhausted, with the goal that they can be revamped. Clients in this manner have a higher likelihood of staying faithful to the brand.

On the other hand, Harrison *et al.* (2013) contended that a significant part of the current business publications argues that the interests of partners are in strife. A straightforward distinguishing proof of partners and their interests has a tendency to create lists that point in various directions, especially that the firm has a fixed pie of

assets, every group will be competing for the greatest number of those assets as they can and the accomplishment of any one group in getting assets decreases the sum left for the others especially on part of inspiration and demeanor, that they are self-intrigued and with cunning, the image of profound situated disagreement among partner interests is distinctively drawn.

In the meantime, Aoe (2007) notes that some eco-designed products can create financial advantages for the purchasers, for example, bring down energy utilization, and can in this manner add to their dependability. Experimental reviews on eco-design are generally contextual analyses that allude to various monetary advantages originating from these encounters. Dutch cases are depicted with regards to an administration activity to advance eco-plan in SMEs; Mathieux *et al.* (2001) portray a few cases in the electronic products industry in Europe; in addition, Tischner and Nickel (2003) exhibit a case in the printing business. Every one of these reviews indicates positive components as far as productivity, either through an expansion in incomes or a lessening in expenses.

Johansson *et al.* (2001) led a more deliberate review on the financial advantages of eco-design on 11 organizations in the electric and electronic areas. Their outcomes additionally demonstrate positive outcomes for the organizations, both at the financial and non-financial levels. Such outcomes are perfect with a developing pattern in the literature demonstrating that it is conceivable to accommodate the organizations' ecological and financial performances (see Ambec and Lanoie, 2008).

Kitazawa and Sarkis (2000) point out that this incorporates programs for operational procedures have been real activities in environmental focused practices since the early combination of aggregate quality administration- like ecological projects, for

example, add up to quality natural administration programs. Like total quality administration programs that concentrate on aversion and product adaptation in quality issues, add up to quality environmental administration projects can likewise profit by the decrease and counteractive action of waste. In this manner, Sarkis and Cordeiro (2001) note that product adaptation programs constitute activities that can create considerable early ecological advantages which are regularly more noteworthy than those of end-of-pipe practices on environmental emissions.

Additionally, processes can run from proofing of mistake, to recognizable proof of substitutes, to basic housekeeping exercises in projects. Indeed, Zhu and Sarkis (2004) posit that complementarities have appeared to exist between quality projects and environmental projects. Smart (1992) asserts that it might spare not just the cost of introducing and working clean contamination control gadgets, yet it likewise may expand profitability and effectiveness. Young (1991) also notes that less waste means better usage of inputs, bringing about lower costs for raw materials and waste transfer.

It might likewise decrease process durations by rearranging or evacuating pointless stages that exist in operations (Hammer and Champy, 1993). Moreover, it offers the possibility to cut emissions well underneath required levels, decreasing the firm's consistence and obligation costs (Roomey, 1993). Therefore, product adaptation encourages decrease in costs, which, thus, ought to bring about increased income and profitability for the firm. Roomey (1993) also notes that evidence also recommends that in the early phases of product adaptation, there is a lot of "low hanging fruit"- simple and modest behavioral and material changes that result in decrease in vast emissions in respect to costs.



As the firm's environmental performance increases, in any case, Frosch and Gallopoulos (1989) contend that more decreases in emissions turn out to be logically more challenging, frequently requiring huge changes in procedures or even altogether new generation innovation. Nonetheless, as the firm draws nearer to "zero emissions," Walley and Whitehead (1994) found out that decreases will turn out to be more capital intensive and may require more extensive changes in fundamental product design and innovation.

Control signals organizations about likely asset wasteful aspects and potential mechanical enhancements; however a few organizations would be still inexperienced in measuring their emissions, understanding the full cost of inadequate use of assets and toxicity and considering new ways to deal with minimizing discharge or do away with unsafe substance (Watchman and Linde, 1995). Controls bolt attention regarding the area of potential developments.

Fiksel (1993) noted that product adaptation hence involves coordinating the "voice of environment," that is, outside (partner) points of view, into product design and advancement forms. Hart (1995) stated that in reality, in the last decade, essentially every major industrialized nation on the planet has embraced a legislature supported program for confirming products as ecologically responsive. It hence appears to be sensible to infer that organizations in the developed markets will be driven progressively to minimize the life-cycle ecological expenses of their product frameworks. Through product adaptation, firms can exit environmental risky ventures, update existing product frameworks to lessen liability, and develop new products with lower life-cycle costs. Hart (1995) also notes that the relative significance of these three exercises will differ as per the way of the firm's current product portfolio.

Roomey (1992) points out that product adaptation requires broad representative contribution and constant improvement of decrease in emissions, instead of dependence on costly "clean" contamination control innovation. Through contamination prevention, Hart (1994) also notes that firms can gain significant savings, bringing about a cost advantage in respect to contenders. Proctor and Gamble, for instance, has committed quite a bit of its product adaptation endeavors toward changing its core detergent and cleaning products, which generally have been founded on phosphates and solvents. However, for Church and Dwight, whose core products depend on environmental considerate baking soda, Hart (1995) notes that it has possessed the capacity to arrange its product adaptation endeavors around new product advancement in both the purchaser and industrial markets. Hart (1995) also points out that for start-up firms, product adaptation can shape the foundation for firm methodology, on the grounds that there are no previous responsibilities to products, facilities, or production processes.

Be that as it may, in light of the fact that the market for "green" products is from time to time expansive or lucrative at an early stage, competitive advantage may best be secured at first through competitive appropriation. This favorable position can be accomplished through two essential means: by increasing favored or select access to vital, however constrained assets; raw materials, areas, productive capacity, or consumers or by building up principles, controls, or measures that are remarkably custom fitted to the firm's capacity. Stuart (2009) noted that this is a procedure to react to and shape social- environmental frameworks under states of instability change to maintain the supply and opportunities for utilization of ecosystem services to bolster human prosperity.

## **2.5 Managerial Control Mechanism and Sustainable Competitiveness**

This is firmly grounded and reliant on the improvement of ecological administration bookkeeping. Sustainability is complex and has an extraordinary assortment of components that are important to business achievement. These can work in both market and non-market activities. With a specific end goal to better perceive and effectively deal with these components anyway it is fundamental that an extended comprehension of administration control be produced, and also a more extensive yet very much organized idea of sustainability management control. Since the Porter's Diamond Model deliberately incorporates non-financial components into administration, Schaltegger (2010) points out that it offers incredible potential for organizing a more extensive idea of administration control that likewise incorporates non-market perspectives.

The company's formal detailing structure, its formal and casual planning, controlling and coordination of frameworks, is a part of hierarchical capital as noted by Youndt *et al.* (2004). This can likewise be inside or remotely engaged, require the foundation of formal (or schedule based) administration frameworks and methodology or 'infrastructural investments' (Klassen and Whybark, 1999) inside core ventures that identify with the following of environmental data, the foundation of administration control systems and the improvement of corporate strategies and techniques. This is intended to track the data on which proactive and receptive administration control instruments (e.g., reviews, impact appraisals and certification) are based.

Likewise, Klassen and Whybark (1999) point out that it incorporates 'altered working techniques and improvement of environmental measurement frameworks', the 'monitoring of environmental performance and related consistence reviews' what's

more, the supposed authoritative 'systems analysis and planning' activities, which Klassen and Whybark depict as 'objectives, plans and systems that decides operations' position and responsiveness to environmental issues and direction'. Sroufe *et al.* (2002) asserts that it is like natural approaches and techniques with a conspicuous place in the company's key planning procedure, for example, an environmental statement of purpose with broad and point by point targets for environmental performance or plainly characterized environmental obligations regarding workers.

The accomplishment of an environmental procedure requires a really forward-looking methodology and a long term responsibility from the firm. Interchanges with the firm's outside partners about corporate environmental activities, through either outer reporting, for example, publication of ecological reports and deliberate exposure of environmental performance data, the sponsorship of environmental events or the quest for environmental honors, are cases of such speculations (Gonzalez-Benito and Gonzalez-Benito, 2005). These diverse sorts of corporate environmental activity, depending on the RBV point of view, uncovers various advantages that can possibly be gotten from the usage of an assortment of environmental activities, through asset protection, process productivity improvements, product adaptation and additionally waste reduction, in this manner giving a general bearing to the coordination and combination of these activities in the mission for achievement.

Management control mechanism takes a coordination and integration function that does justice to the interdisciplinary character of sustainable competitiveness sustainability management. However there is still the challenge of making a real contribution to the various functional areas of a firm. This complex challenge should not however act as a deterrent, because management control mechanism takes on a

role of moderation and consulting that would be necessary in any case. The danger of disapproving exists when the stakeholders of management control mechanism is confused with that of policing environmental and social wrong doings, a task that at any rate would be doomed to failure, Schaltegger (2010).

## **2.6 Training in Corporate Environmental Practices and Sustainable Competitiveness**

Based on the RBV of the firm (Barney 1986, 1991; Wernerfelt 1984), scholars have unpacked the organizational resources and capabilities that link environmental strategy to organizational performance (Hart 1995; Hart and Dowell 2011). Sharma and Vredenberg (1998) found that proactive environmental strategies were associated with the development of valuable organizational capabilities such as continuous innovation, organizational learning, and stakeholder integration that in turn explain for the outcome of competitive advantage. Christmann (2000) also showed that while a firm's implementation of "best practices" for environmental management did not bring along the cost-saving advantage in itself, such implementation practices required the support of complementary innovation and implementation process capabilities to achieve the expected cost-saving advantage.

In spite of the resource-capability-competitiveness linkage as implicitly derived from previous resource-based studies, other authors (Bowman and Haire 1975; Bragdon and Marlin 1972; Chen and Metcalf 1980; Fogler and Nutt 1975; Hart and Ahuja 1996; Klassen and McLaughlin 1996; Russo and Fouts 1997 Spicer 1978) using larger samples of firms to empirically analyze the financial performance effects of environmental strategies brought inconclusive results (Christmann 2000). Results were conflicting in that some studies showed a positive relationship (Nehrt 1996),

other studies reported no or negative relationships (Stead and Stead 1995). This lack of resolution calls for additional research to examine the potential mediating role of other complementary capability assets required for gaining the different competitive advantage and organizational performance from different environmental strategies.

Internal environmental management resource domains refer to a systematic collection of organizational investment efforts that are required to move the firm from one environmental strategy stage to the next (Hart 1995). Specifically, four such resource domains namely: 1) training investment in employees' environmental skills; 2) formal investment in environmental planning, reporting, and performance appraisal; 3) investment in organizational competencies in environmental management; and 4) investment in effort over participation and integration of environmental issues in corporate strategic planning have been identified (Buisse and Verbeke 2003). It has been asserted that as a kind of strategic resources, environmental management domains can help a firm address its organization-environment boundary spanning activities, and improve cooperation and coordination among supply chain members (Dyer 2000).

In keeping with the strategic management perspective, researchers in the green supply chain area (Lee, Kim, and Choi 2012; Paulraj 2011) put emphasis on a relational view to account for the mediating effect of environmental collaboration between suppliers and buyers. Relational competences being developed through inter-firm collaboration enable firms to acquire rent-yielding resources and capabilities that are unique and hard to imitate (Harrison *et al.* 2001), and help the firm to obtain sustainable competitive advantage and improved organizational performance (Sambharya and Banerji 2006; Paulraj and Chen 2007). The adoption of internal environmental

management serves to increase transparency and openness of inter-firm business processes, help suppliers build trust and credibility in the relationship with the buyers, and ultimately enhance relational efficiency (Zacharia *et al.*, 2009) that in turn contribute to business performance (Lee *et al.*, 2012).

For SME suppliers located in emerging markets with outsourcing and off sourcing operations for foreign buyer firms, cooperation and collaboration with buyer firms is critical. In order to comply with the varied environmental regulations in producing parts and components for different foreign countries, SME suppliers need to cooperate, collaborate and learn from the involved buyers regarding complex regulations that must be compiled in various international markets (Lee and Klassen 2008; Lee 2009). Cooperative learning among the suppliers and buyers in form of inter-firm interaction routines not only improve total environmental impact of existing products and reduce waste along the supply side (Handfield *et al.*, 1997; Geffen and Rothenberg 2000; Klassen and Vachon 2003), but also help to design new socially superior products and modify existing processes for better operational efficiencies (Darnall *et al.*, 2008; Wittmann, Hunt, and Arnett 2009; Lao, Hong, and Rao 2010; Pagell *et al.*, 2010). It is expected that environmental knowledge integration can enable the synergetic combination of resources and capabilities between supplier and buyer partners, and can help create complementary endowments that are more valuable, rare and difficult to imitate (Dyer and Singh 1998). Thus, environmental knowledge integration can serve as a critical mediator that better accounts for how the firm's environmental management resource domains contribute to its international performance outcomes.

Coates and McDermott (2002) note that training and access to information are essential to the improvement and use of assets and abilities in RBV hypothesis (and training on environmental practices programs that concentrate on instructing and expanding information for the firm's workers can overcome these hindrances. With this new learning, workers can then see how the environment can influence and be influenced by their obligations and choices. From a RBV viewpoint, Daily and Huang (2001) assert that the shortcoming of an organization's business culture and its weaknesses in human resource might be vital hindrances during the time spent on corporate environmental activity.

Notwithstanding, Darnall (2006) noted that when there are partner and institutional pressure for organizations to embrace environmental practices, there are heterogeneous reactions to these pressures (that might be clarified by the absence of capacities as characterized by RBV. Apparently, assets are fundamental with the goal for organizations to react to these partner pressures to embrace environmental practices. A standout amongst the most vital assets is information, the asset, which training on environmental practices helps to develop.

On the other hand, Del Brio *et al.* (2007) and Fernandez *et al.* (2003) contend that the exploration on the subject of environmental training and human resources when all is said and done, is still restricted. (Daily and Huang (2001) point out that it has been contended that various human resources and hierarchical conduct issues might be essential for the accomplishment of an organization's environmental operations system and the improvement of competitive advantage from these components.

Consequently, such issues incorporate administrative obligations, top administration support, the role of organizational culture in the arrangement of inward partner



environmental mindfulness, rewards frameworks, the firm's inclusion in environmental issues, environmental training on environmental practices and concern, environmental inspiration, motivating forces and performance, and organizational developments (Sohel and Schroeder, 2003). Training on environmental practices may assume a particularly critical part since it serves as a technique to assemble the authoritative abilities and information of all workers who take an interest in these projects.

Training assumes a significant part in the usage of the organization's environmental practices by researching its intercession between pressure from partners and the appropriation of environmental practices. Sammalisto, and Brorson (2008) note that research has demonstrated that training on environmental practices serves as a key variable amid the usage of environmental management frameworks by adjusting disposition and conduct among supervisors and representatives.

Lefebvre *et al.* (2003) posit that in smaller organizations, firms within various different industry areas, worker training on environmental practices was seen as the most critical part of environmental management framework usage in their overseeing of environmental issues. Administration's profound inclusion and its key integration, and in addition to worker inspiration and cooperation, positively affects the organization accomplishing a focused edge in light of environmental activity; training on environmental practices is intended to help in this activity (del Brio *et al.*, 2007).

Balzarova, and Castka (2008) note that training for abilities and information advancement is imperative not just for the underlying execution and appropriation of environmental practices, for example, environmental administration frameworks, additionally for their support and proceeded with operation. Training fosters the

'experience, judgment, knowledge, connections and understanding of individual managers and workers in a firm' and expanding on the work (Youndt *et al.*, 2004), that advance individual workers' learning, aptitudes and capacities, in this manner reasonably isolating them from the "pathways" through which learning is distributed, more energy proficient production and product delivery processes. Schroeder *et al.* (2002) note that the information required by workers is probably going to wind up distinctly more perplexing, requiring new aptitudes from workers at all levels of the firm.

These aptitudes to be completely conveyed, the firm needs to give suitable settings and motivations to both workers and directors in their environmental endeavors. Assessment plans of workers, for instance, ought to involve an environmental part. While the specialized parts of process adjustment have been very much developed, Boks (2006) notes that one noteworthy boundary to usage is its "milder" viewpoints, which incorporate challenges in receiving certain change management and human asset practices.

Process and product adaptation require an alternate mentality and spotlights on new, imaginative practices that specialists and planners may not effortlessly get a grip because of a customary concentration on form, fit and financial outline. Johansson, (2002) noted that inspiration and competency have been observed to be perspectives which are basic to process and product adaptations achievement. Both these components are created through suitable training on environmental practices programs. In an expansive investigation of the usage of process and product adaptation practices in Europe, Tukker *et al.* (2001) notes that instruction was observed to be a basic prejudicial element for 'leader' organizations.

Training enables workers in total quality environmental administration methods have been placed as being urgent to the accomplishment of these projects (Kaynak, 2003). In addition, Hanna *et al.* (2000) note that employee contribution is a basic component of projects that look to enhance both environmental and operational execution. Keeping in mind the end goal to accomplish successful strengthening building and worker contribution, representatives need be trained in particular abilities.

Wilkinson *et al.* (2001) and Dunphy *et al.* (2003) point out that studies into this area has inferred that environmental projects are more effective if elements, for example, training on environmental practices, strengthening, cooperation, and rewards are tended to and has proposed that there exists a relationship amongst human and ecological sustainability. Jabbour *et al.* (2008) note that training on environmental practices is a basic component to the greater part of these frameworks, however it has likewise turned out to be apparent that training on environmental practices is important for their fruitful implementation. These four professional workplace practices were looked at in connection with feasible competitiveness of tea firms in Kenya and their impact diagnostically reflected from administrative point of view.

## **2.7 Concept of Stakeholders' Collaboration**

Partners' joint effort according to Loza (2004) and Wolf (2008), have advanced in this new environment is progressively a well-known instrument for adapting to complex aggregate activity issues and tending to basic difficulties. Exchangeable terms, for example, associations, social collusions and systems have been utilized to allude to these community oriented courses of action to address multifaceted social and environmental issues. In any case, Mandell and Steelman (2003) note that as

organizations have multiplied and duplicated, a waiting test is to build up a more full valuation for the variegated way of these plans.

Sinclair and Galaskiewicz (1997) posit that the 21st century will be a period of quickened association. Cross-segment coordinated effort between charities, partnerships, and governments will heighten. A joining of political, financial, and social pressures is cultivating such joint effort. Governments are scaling back and privatizing because of financial pressures on spending plans and because of acknowledgment of the points of confinement of the state as a deliverer of social administrations. There is a developing devolution of capacities from national governments to the local level and from the general population division to the private area, including both non-profits and partnerships.

On partners' coordinated effort, Porter and Kramer (2002) agree that when organizations get the where and how right, generous exercises and competitive advantage turn out to be commonly fortifying and make a temperate circle. They assert that corporate charity might be utilized to impact the focused setting of a firm, which would permit the firm to enhance its competitiveness and in the meantime satisfy the necessities of some of its partners. For instance, philanthropically providing for instruction causes would enhance the quality of human resources accessible for the firm. Correspondingly, philanthropic commitments to group bring about the creation and protection of high local quality of life, which may maintain 'advanced and demanding local clients'.

Austin (2007) noted that the connection between the philanthropic and the enterprise can be conveniently imagined as a cooperation continuum. On the other hand, Archie and Kareem (2010) state coordinated effort might be utilized to impact the

competitive setting of a firm, which would permit the firm to enhance its competitiveness and in the meantime satisfy the necessities of some of its partners. Wheeler *et al.*, (2003) note that 'it won't be too much sooner than it can start to state that the matter of business is the production of feasible esteem that is financial, social and ecological.

Partners' coordinated effort whereby Austin (2000) asked an essential question "What sort of cooperation do we have, and by what means may it advance after some time?" Austin (2000) expressed and characterized three sorts or stages: charitable, value-based, and integrative. In the charitable stage, the nature of the relationship is to a great extent that of charitable, benefactor and beneficiary. This describes most non-profit business connections today, yet expanding numbers are moving to the next level. In the value-based stage, there is unequivocal asset trades concentrated on particular exercises; for instance, cause-related promoting, event sponsorships, and legally binding administration courses of action would fall into this class. A few coordinated efforts have moved to the integrative stage in which the partners' missions, individuals, and exercises start to converge into more aggregate activity and organizational cooperation. This union stage approximates a joint venture and speaks to the most noteworthy vital level of cooperation.

In the current worldwide patterns, corporate environmental practices is taking the center stage and that is the reason, Porter and Kramer (2002) contend that, the win-win point of view to corporate social obligation practices is gone for fulfilling partners' requests while, in the meantime, permitting the firm to seek after its operations. By drawing in its partners and fulfilling their requests, the firm discovers

openings and arrangements which empower it to seek after its productivity enthusiasm with the assent and support of its partner surroundings.

Partners as indicated by Choi and Shepard (2005) will probably bolster firms that they see as more established, all the more subjectively genuine, very much loved, dependable, responsible, and deliberately adaptable. Subsequently, it is proposed that "business visionaries may be very much encouraged to contribute disproportional accentuation on the intellectual authenticity issue of novelty and how key partners see the qualities and objectives of the new pursuit and endeavor to enhance the emotional coinciding with them".

Organizational justice, Hosmer, and Kiewitz (2005) assert that it is in all probability when partners trust they have been genuinely considered, genuinely treated, and reasonably compensated. Firms need to utilize partner administration systems with alertness so as not to disintegrate their believability or more regrettable, alienate partners. By complexity, life-cycle stage pressures impact company's partner administration systems (Jawahar and McLaughlin, 2001).

Kaler (2006) note that the part of administration is to adjust the interests of partners after some time, critics contend that the hypothesis gives no premise to settling on contending partner interests. Be that as it may, Beekun and Badawi (2005) supplicate that the faithful can look to holy books for direction on the best way to adjust partner interests. On adjusting choices, Schwarzkopf (2006) contends that the administration needs to acknowledge how others see the dangers postured by their choices, and that the "prescribed procedures" for adjusting and exchanging off between partner interests vary significantly among ventures. However others contend that partner agents ought to be straightforwardly incorporated into the administrative choice

process or incorporated into intervention to all the more successfully settle issues (Lampe, 2001).

Cheruiyot and Maru (2012) prescribed that administration policy framework ought to consolidate a multi-partner way to deal with approach plan, since competitiveness relies upon social and human viewpoints. Environmental changes are happening among both inner partners (proprietors, clients, workers, and providers) and outside partners (governments, rivals, customer advocates, environmentalists, specific vested parties, and the media) (Porter and Kramer, 2002). Subsequently, managers need to consider those groups and people that can influence, or are influenced by, the achievement of the business undertaking (Porter and Kramer, 2002).

Additionally it is recommended that the division procedures of promoting ought to be utilized to categorize partners, better comprehend their interests, and foresee their practices (Porter and Kramer, 2002). Four generic partner administration systems were identified- exploit, shield, swing, fortify that could supplement Porter's list of generic business practices (Porter and Kramer, 2002). Inventive partners' joint effort is in this manner progressively considered as an intelligent procedure including various performers and connections, a procedure including the trading of various types of learning – classified and tacit information, and a learning procedure where learning and advancement emerge from the trading of various types of learning, their exploitation and progressive appointment and transformation into new structures.

Landry (2002) states that learning based advancement, at the end of the day, relies on upon the union of various types of information and the powerful activation of unmistakable and elusive types of capital. This is another thought, which might be a recombination of old thoughts, a pattern that challenges the present order, an equation

or an interesting methodology which is seen as new by the people included (Landry, 2002). It can take a few structures and, despite the fact that there is an inclination to partner it with mechanical advancements, it has as of late been all the more by and large characterized to incorporate process development, benefit advancement, vital development and administration development. Dees (2001) noted that in its broadest sense, advancement includes the foundation of new and better courses for finishing advantageous goals.

As firms effectively draw in with partners, the firm's number of partners will develop, while their potential consequences for performance and productivity may get to be distinctly bigger; partners may, for example, impact economic situations for firms by providing information (Feddersen and Gilligan, 2001). (de Hond, 2008) noted that the customary event of individual communications amongst firms and partners that is recurrence of contact, impacts the organizations' inclination to team up with partners, positions people inside these two associations as the channels through which conditions are built up, and accordingly show in the probability of more formal assertions.

Outstandingly, Shultz *et al.* (2006) stated that unequal partner saliency and defective asset distinctness are imperative requirements. In addition, adjusting interests crosswise over choices has a tendency to create more instrumental esteem and is likewise observed as more moral. Freeman's traditional meaning of a partner is "any group or person who can influence or is influenced by the accomplishment of the firm's goals. To gauge sustainable competitiveness the Porter's Diamond Model was utilized, Schaltegger (2010) speaks to both a vital administration idea and in addition a method for estimation, supporting an administration rationale and performance



measurement in the five points of view of finance, clients, interior business procedures, learning and advancement, and in addition non-market components of sustainability (Schaltegger, 2004 and Schaltegger and Dyllick, 2002).

Burris (2001) takes note that this makes it progressively critical for the firm to keep up a corporate system of relations, with their opponents and clients as well as with partners, public experts, and political controllers. Likewise, de Hond (2008) notes that firms and their managers are worried with the asset complementarities that is, fit between their associations and potential partners, demonstrating as far as possible to these conditions in the occasion such fits are not seen to exist.

Baron (2003) states that effectively engaging with partners and creating non-market techniques obliges firms to understand a compelling coordination of these systems with their market exercises. Furthermore, de Hond (2008) notes that the company's general duty to environmental practices as a helper for coordinated effort recommends an augmentation of asset reliance hypothesis in that a firm's conditions are specifically impacted by its key viewpoint as well as by its good and moral inclination.

de Hond (2008) further asserts that these three key factors clarify the probability of firm and partners cooperation; that is recurrence of contacts, perceived strategic fit, what's more, firms' dedication to environmental practices and remarked that it's not a shocking set from an asset reliance hypothesis viewpoint.

Sustainable competitiveness relies on sustainable relationships between the firm and its multiple stakeholders. According to the study on sustainable value creation conducted by Hart and Milstein (2003) only effective integration of stakeholder

thinking into strategy processes will create sustainable shareholder value. Based on the literature analyzed by Heikkurinen and Forsman-Hugg (2011) the researchers suggested that organizations use two alternative strategies in stakeholder management: responsive and beyond responsive approaches. Responsive approach focuses on reacting to current stakeholder demands and anticipation of forthcoming changes on the market. Beyond responsive approach, on the other hand, defines behavior that exceeds external expectations for sustainable development.

Firms are motivated to implement various sustainable management practices if their stakeholders have a higher demand for sustainable management (Bansal, 2005). Similarly, Kourula and Halme (2008) stated that firms could not only handle existing business operations more responsibly but rather adopt new business models for dealing with social and environmental problems. Such strategy can lead to increased competitiveness, financial performance and enhanced corporate image as well as help in avoiding legal suits and consumer boycotts (Heikkurinen and Bonnedahl, 2013). In addition, trusting relationships with stakeholders can give understanding of how to allocate limited resources while keeping stakeholders satisfied (Harrison *et al.*, 2010). This might be helpful when deciding on how many resources are used for sustainability practices in general as well as which environmental and social activities are more important or of higher priority at a certain time period. Another point of view represent Seuring and Müller (2008) who claim that in many cases motivation for sustainable competitiveness initiatives comes as a result of external pressures from stakeholders. Hill (2001) emphasized that if firms do not respond to these pressures “society could place increasing costs on unsustainable business practices, and customers may not choose to purchase associated products and services. Ultimately, this process may alienate the company from the rest of society, resulting in reduced

reputation, increased costs, and decreasing shareholder value through erosion of its license to operate” (p. 32). Kaltoft *et al.*, (2007) emphasized that better results are achieved when a mix of top-down approach and bottom-up approach is adopted. Thus, the organizations provide knowledge and direction, while stakeholders suggest practical improvements. In the literature it is also argued that the attributes of one approach compensate the disadvantages of the other. Steurer *et al.*, (2005) claim that the approach that focuses on describing the interactions between sustainability issues and stakeholder relations is the sustainable development – stakeholder relations management approach. The approach shows how sustainable development and stakeholder relations management relate to each other. The research is based on consideration that sustainable competitiveness can be achieved in many different ways and stakeholders’ collaboration is one of those ways.

## **2.8 Corporate Environmental Practices, Stakeholder Collaboration and Sustainable Competitiveness**

Egels-Zandén and Sandberg (2010) note that partner or stakeholder management has turned into an extremely normal research subject in the scholarly world and is esteemed by undertakings, together with the developing enthusiasm for business morals. Since Freeman (1984) introduced his seminal work, thousand of articles and books about partner administration or partner hypothesis have been distributed (Egels-Zandén and Sandberg, 2010; Laplume, Sonpar and Litz, 2008).

This implies that partner collaboration is more basic for managers today than any other time in recent memory, as they face an inexorably perplexing, vague, and evolving environment. Partner administration is a helpful approach for firms to effectively adjust their vital objectives and choices to partner prerequisites (Olfe and

Putler, 2002). Halal (2001) sees partners as accomplices who co-work with the firm and bolster knowledge sharing to produce both financial and social qualities. In this view, partner administration assumes an imperative part in upgrading firm ability concerning information era.

In addition, Hall and Martin (2005) highlight the importance of imaginative vulnerability affected by stakeholders and recommend that endeavors need to receive diverse methodologies as per different circumstances of partner equivocalness and unpredictability. Specifically, these scholars recommend that the customary perspective of strategic management is inadequate for managers to accomplish their vital objectives in a complex and dynamic environment. An endeavor ought to recognize the requirements of its different partners and work together with them to produce value that can profit the firm and in addition its partners.

Partner's joint effort accommodates commonly and compensating exchanges and connections according to Cropanzano and Marie (2005) through corporate natural practices which make partners feel that they have been genuinely considered, genuinely treated, and reasonably rewarded. Consequently, Hosmer and Kiewitz (2005) state that this creates a feeling of sustainable competitiveness through controls that are important, uncommon, defectively imitable, and not substitutable" in the tea subsector in Kenya (Barney, 2001).

At the point when a firm teams up with partners in actualizing a value creating environmental practice not all the while being executed by present or potential rival also, when different firms can't copy the advantages of this practice; observe that this may make sustainable competitiveness if the gains are experienced after some time. Schaltegger (2010) contended that the beginning stage for a powerful administration

of components of sustainability significant to business achievement is a comprehension of their inter-relationships. There are however two basically unique assessments about the impacts of willful environmental and social measures on financial achievement.

From one perspective, Bhimani and Soonwalla (2005) state that there is environmental and social exercises that run past conforming to the law just motivation extra expenses and along these lines struggle with the objective of financial achievement. This view expects that each environmental and social action lessens financial achievement. Cases given in this setting are commonly end-of-the-pipe measures, for example, waste water treatment plants or channels in environmental protection. The opposite position is that there is a positive relationship in which business exercises progressing environmental and social destinations likewise increment business achievement.

Ordinary cases for this positive relationship between deliberate environmental and social exercises and business achievement incorporate lower costs through more noteworthy vitality effectiveness. Christmann (2000) argues that client securing through the presentation of regular or natural items (Schaltegger and Wagner 2006). Without going into the purposes behind these two differentiating perspectives (Lankoski 2000; Schaltegger and Wagner 2006; and Walsh *et al.* 2000), expressed that these cases demonstrate that there are exercises showing both sides and that the relationship amongst environmental and social engagement and business achievement will be particular to a given organization and will most likely be found along a range between these two important perspectives.

Note that when making a "business case" for sustainable competitiveness, the sheer number of sustainability exercises is less essential than how sustainability management is sorted out. Contingent upon the association of management, deliberate environmental and social exercises will have either a positive or a negative impact on business achievement. Schaltegger (2010) states that this brings up the issue about the particular methodologies expected to build up a business case for sustainable competitiveness and with the assistance of management control.

Perron *et al.* (2006) contends that organizations have been preoccupied with corporate environmental management activities to enhance their environmental performance. They have additionally possessed the capacity to accumulate different advantages for their firms from these activities, including enhanced financial and diminished hazardous benefits. However, noteworthy hindrances can exist to the selection and usage of different environmental practices. These boundaries are specialized, as well as incorporate organizational culture and change management hindrances. Darnall and Edwards (2006) state that organizations that execute pollution prevention practices have additionally put resources into training their workers and along these lines can apply their abilities to more propelled types of environmental management.

Cropanzano and Marie (2005) observed that relationship advancement is not a matter of a solitary stimulus response. However, it is more undifferentiated from climbing a ladder. As one climbs, the rung for which one was initially coming to turns into a dependable base for the next stride. The objective accomplished at one-stage gives the establishment to a considerably higher climb. Molm (2003) underscores the early phase of relationship advancement, while Eisenberger *et al.* (2001), Eisenberger *et al.* (2002) and Bishop *et al.* (2000) accentuate developed connections. It includes a

progression of associations that create commitments (Emerson, 1976). These connections are typically observed as related and dependent upon the activities of someone else.

As indicated by Blau (1964), these exchanges can possibly produce brilliant connections, in spite of the fact that as it should be seen, this will only happen in specific situations. Despite the fact that the concept of stakeholder management was rooted in the field of strategic management, few studies have examined the linkage between stakeholder management and competitive advantage, which is the core issue in strategic management literature. Notable exceptions are Post, Preston and Sachs (2002) and Rodriguez, Ricart and Sanchez (2002). Post *et al.* (2002) suggest that a firm's relationships with its critical stakeholders are crucial to generating organisational wealth.

Rodriguez *et al.* (2002) also argue that engaging in good stakeholder relationships enhances innovation and reputation that lead to a firm's sustained competitive advantage. Nevertheless, a stakeholder perspective of competitive advantage is still in its early stage of development, and there remains a lack of studies that focus on this particular issue. relationship between competitive advantage and stakeholder management still lacks empirical study, especially in developing countries. Past studies, Ayuso, Rodríguez and Ricart (2006) indicate that empirical research on the association between competitive advantage and stakeholder interaction is still at an early stage.

Similarly, Dentchev (2009) also argues that there are not enough empirical studies in this area, such as instrumental stakeholder theory. He says that: The breadth of stakeholder theory (Phillips, Freeman, & Wicks, 2003) and its complexity are a

potential explanation for the lack of empirical support to the instrumental power of stakeholders. Therefore the three variables; sustainable competitiveness, corporate environmental practices and stakeholders' collaboration were jointly based on the background of stakeholder theory, resource based view theory and resource dependency theory respectively to conceptualised the model for this study.

Sustainable development policies are imposed by governments and, thus, imply regulatory force. Management systems, on the other hand, are practiced more or less voluntarily by a firm's management. Therefore, stakeholders have a certain influence on firms in getting sustainability standards certifications (Steurer *et al.*, 2005). Kassinis and Vafeas (2006) in their study on stakeholders' influence on firms' environmental performance suggest two stakeholder groups – regulatory (governmental organizations) and community (non-governmental organizations). Qi *et al.* (2013) extended this research and identified the third stakeholder group – organizational stakeholders. Organizational stakeholders include those “directly related to an organization with the ability to impact the firm's bottom line directly” (Qi *et al.*, 2013, p. 1988). The authors studied the impact of these three stakeholder groups on firms' decisions regarding obtaining sustainable management system certifications. These study focus on economic, environmental and social pillars of sustainable management practices and corresponding to them three international standardized management systems.

## **2.9 Theoretical Framework**

Stakeholder theory formed the basis for the dependent variable, sustainable competitiveness, and resource based view and resource dependency theories for



corporate environmental practices and stakeholders' collaboration respectively covered in sub-section 2.5.1, 2.5.2 and 2.5.3.

### **2.9.1 Stakeholder Theory**

Although some authors (Andriof *et al.*, 2002) underlined that the concept of stakeholder involvement is a contemporary characteristic of more modern companies, in the last decade, a rising number of diverse research studies dealing with utilization of stakeholder theory in contemporary organizations have been published (Clarke, 2005; Baron and Diermeier, 2007; Harrison *et al.*, 2010). Thus, stakeholders are taking up a more central role in the organizations. Clement (2005) attributes this expanded role to the increased pressures on organizations to acknowledge different stakeholder group interests. Wood (1991) connects it to the fact that firms that meet the expectations of multiple stakeholders enhance their reputation and, therefore, experience a positive impact on its bottom line. In opposite, firms that fail to satisfy the needs of various stakeholders experience a negative financial impact (van der Laan *et al.*, 2008). In brief, stakeholder theory is considered to be drawn on four of the social sciences: sociology, economics, politics and ethics (Mainardes, Raposo, 2012, p. 1862) and "Strategic Management: A Stakeholder Approach" written by Freeman (1984) is generally accepted as the theoretical landmark.

Stakeholder relations are rated among key strategic priorities for firms according to numerous researchers (e.g. Bansal, 2005; Stubbs and Cocklin, 2008). Stakeholder identification is a key issue in stakeholder management. One of the crucial issues in stakeholder management is how to deal with all stakeholders simultaneously. According to Fassin (2009), concurrent management is unworkable; therefore, it is a theoretical requirement to utilize criteria for prioritizing stakeholders.

Stakeholder theory describes a network of stakeholders. There are many ways academics have been identifying stakeholders. The most cited study on stakeholder identification and management is the Freeman's (1984) work (e.g. Mithcell *et al* 1997, Frooman 1999, Preble 2005). Freeman urges firms to consider a broad range of internal and external groups and individuals as their stakeholders regardless the impact that those stakeholders might or might not have. He presented his model as a map in which the company has a central role and interacts with the surrounding stakeholders. In this model, company-stakeholder relationships are binary and mutually self-reliant.

While economic returns are fundamental to a firm's core stakeholders, most stakeholders want other things as well (Bosse, Phillips & Harrison, 2009). Attention to these other factors may prove critical to understanding why firms succeed over time, why stakeholders are drawn to and remain with; some firms, and which firms do the most for their stakeholders. Stakeholder theory anticipates that firms have stakeholders and should proactively pay attention to them (Freeman, 1984), that it exists in tension (at least) with shareholder theory (Friedman, 1970), and provides a vehicle for connecting ethics and strategy (Phillips, 2003), and that firms that diligently seek to serve the interests of a broad group of stakeholders will create more value over time (Freeman, Harrison & Wicks, 2009).

The underlying philosophy that has characterized stakeholder theory emphasizing the "joint-ness" of stakeholder interests and the need for all stakeholders to benefit over time through their cooperation (Freeman, Harrison & Wicks, 2007). Stakeholder theory advocates that focusing on stakeholders, specifically treating them well and managing for their interests, helps a firm create value along a number of dimensions

and is therefore good for firm performance (Harrison and Wicks, 2007; Harrison, Bosse & Phillips, 2010). Freeman, *et al.*, (2010), is generally supportive of a positive relationship between stakeholder-oriented management and firm performance, which is almost always measured in terms of financial returns (Choi & Wang, 2009; Hillman & Keim, 2001).

Consistent fundamental idea that a firm should serve multiple stakeholders, firm performance might be defined as the total value created by the firm through its activities, which is the sum of the utility created for each of a firm's legitimate stakeholders, (Harrison *et al* 2013). Phillips (2003) identifies a firm's legitimate (or normative) stakeholders as those groups to whom the firm owes an obligation based on their participation in the cooperative scheme that constitutes the organization and makes it a going concern. They include customers, communities in which the firm operates suppliers of capital, equipment, materials, and labor. Firms may have other legitimate stakeholders' specific to their own situations.

In contrast, with stakeholders' collaboration; one of the underlying arguments, found repeatedly in the stakeholder literature as well as the inter-firm networks literature, is that firms tend to perform better when they see stakeholder interests as joined, or at least largely overlapping, than firms that see them as primarily conflicting (Freeman, *et al.*, 2007; Freeman, *et al.*, 2004). Harrison *et al.*, (2013) noted that the experience of real firms that organizations are able to operate in ways that draw in stakeholders and create enough overlap in their interests for them to function.

Conflicts of interest and tensions among stakeholders still exist, particularly in cases that highlight those potential tensions; where the focus is on the allocation of a fixed pie of resources at a given point in time. However, stakeholder theory highlights the

underlying overlap of stakeholder interests in generating value and describes the operations of a firm as a mechanism for all stakeholders to become better off over time (Freeman, *et al.*, 2007). His argument is supported by the idea that stakeholders depend on the firm and its other stakeholders to satisfy their own interests.

Stakeholder interests are inseparably connected in a system of value creation in which each stakeholder provides resources or influence in exchange for some combination of tangible and/ or intangible goods (Sachs & Rühli, 2011). The quality of contributions of each stakeholder to the system influences the total value created in the system (Susniene & Vanagas, 2006). Part of what holds stakeholder cooperation together and generates utility for stakeholders is the presence of shared norms that go beyond strict self-interest.

Harrison *et al* (2013) appreciated that a variety of disciplines have demonstrated that most people operate within norms of fairness and reciprocation (Becker, 1986; Cialdini, 1984; Cropanzano & Mitchell, 2005; Fehr & Gächter, 2000; Rawls, 1971), while other scholars have gone so far as to suggest that love is a motivating agent in organizations (Argandoña, 2011)—all of which may provide both direct and indirect, enabling behaviors like trust that lead to increased value creation for stakeholders. The fact that they voluntarily come together to participate as stakeholders of the firm is powerful evidence that their interests are overlapping and reinforcing to a substantial degree.

Another way of identification typology that is commonly referred to in the literature is to distinguish between primary and secondary stakeholders. According to Clarkson (1995), primary stakeholders (e.g. customers, shareholders, employees, suppliers and regulators) are those who have a direct interest in the firm, while secondary ones (e.g.

academic institutions, NGOs and social activists) are those who can affect, or are affected by the firm, although they are not engaged in transactions. Primary stakeholders are claimed to more likely have similar 'interests, claims or rights'. In contrast, secondary stakeholders may have different goals (Clarkson, 1995).

Additionally, stakeholder identification can be performed through distinguishing between internal and external stakeholders. For instance, Cavanagh and McGovern (1988) recognize communities, customers, government and environment as external stakeholders, while employees, managers and stockowners – as internal ones. Some other typologies include: actors or those acted upon; those existing in a voluntary or an involuntary relationship with the firm; as risk-takers or influencers (Mitchell *et al.* 1997, p. 854). However, as individuals that form stakeholder groups might belong to and interact with more than one group stakeholder groups cannot be considered as either homogeneous or stable (Winn, 2001).

Similarly, Crane and Livesey (2003, p. 41) noted that: "Stakeholders are understood not to be just related to the firm but are also recognized to be related in many ways to each other, whether by exchange, communication or whatever other form of interaction. Thus, just as firms have relationships with diverse stakeholders, so too do those stakeholders have relationships with their own stakeholders, and these stakeholders in turn have relationships with a further set of stakeholders and so on". Therefore, stakeholder identification becomes more problematic in terms of both methodology and rationality and the need for businesses to build networks of stakeholders emerge. As firms do not possess sufficient resources to address simultaneously all stakeholders and their multiple interests, the need for stakeholder prioritization emerges.

A dynamic stakeholder analysis and categorization model offered by Mitchell *et al.* (1997) focuses on stakeholder-manager relationships in terms of the relative absence or presence of all or some of the attributes: (1) power; (2) legitimacy; (3) and/or urgency. According to the authors, “a party to a relationship has power, to the extent it has or can gain access to coercive, utilitarian, or normative means, to impose its will in the relationship” (Mitchell *et al.*, 1997, p. 865). It is also emphasized that the power itself is transitory: it can be acquired as well as lost. For the notion of legitimacy the authors use the definition given by Suchman (1995): "legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (p. 574). Urgency is believed to help move the model from static to dynamic and defined as “the degree to which stakeholder claims call for immediate attention” (Mitchell *et al.*, 1997, p. 867). However, why stakeholders assess their relationships with firms as critical is not specified.

Previous literature has addressed various aspect of stakeholder management e.g. stakeholder identification (Freeman, 1984; Clarkson, 1995; Mitchell *et al.*, 1997), prioritizing (Mitchell *et al.*, 1997; Johnson and Scholes, 1999; Fassin, 2009), the role of stakeholder relations in firm’s performance (Freeman, 1984; Mitchell *et al.*, 1997; Preble, 2005). However, the engagement with stakeholders is considered as an under theorized area. Vast majority of studies focus on either on the attributes of firms or the attributes of stakeholders, while the attributes of the relationship between firms and stakeholders are rarely observed (Frooman, 1999; Greenwood, 2001). Far less has been done to explore stakeholder engagement within the context of sustainable competitiveness. The theory still lacks consensus in framework for incorporating stakeholder engagement into sustainable competitiveness practices. This study aims to

contribute to filling this gap by exploring current stakeholder engagement practices of several sustainability proactive companies.

Stakeholder relationships have been studied from different perspectives including the sustainable practices point of view. In this study the term stakeholder relations attributes to any economic, environmental or social relationship between the firm and its stakeholders (Hillman and Keim, 2001). The role of stakeholder relations in firm's performance was first studied by Freeman (1984) who described the issue as a "multifaceted, multi objective, complex phenomenon". Nowadays, the stakeholder approach is commonly used to support sustainable competitiveness (Dyllick and Hockerts, 2002). Studies show that stakeholder engagement is critical in developing both semi-proactive and proactive attitudes towards sustainability (Factor, 2003).

### **2.9.2 Resource Based View Theory**

Corporate capacity and capability invest in environmental practices basically dependent on the level of its resources because; according to (Sarkis *et al.*, 2010) companies do engage in corporate environmental management initiatives to improve their environmental performance. They have also been able to accrue other benefits for their organizations from these initiatives, including improved economic and reduced risk benefits. Yet, significant barriers can exist to the adoption and implementation of various environmental practices.

A resource-based view of the firm has typically been applied in order to strategically manage companies (Rugman and Verbeke, 2002). Resource-based view examines those resources and capabilities of the firm that will enable it to generate above normal rates of return and a sustainable competitive advantage. Resources can include human, information technology, capital, equipment and knowledge resources. They

can be separated into tangible (equipment and assets) and intangible (knowledge and intellectual property) dimensions.

Resource-based view states that a resource must be valuable, rare, inimitable and non-substitutable in order to confer advantage. Resource-based view predicts that valuable, rare and costly-to-imitate resources affect the performance and success of programs (Ray *et al.*, 2005) (Sohel and Schroeder, 2003). Strategic management has viewed these resource-based view attributes as core distinctive competencies. The resource-based view theory of the firm stipulates that companies can gain sustainable competitive advantages if they are supported by organization-level competencies (Rugman, and Verbeke, 2003). These competencies reflect unique combinations of resources that are rare, non-substitutable, difficult to imitate, and valuable to customers. These resource combinations may build upon a wide variety of basic components, including physical assets employee skills, and organizational processes (Delmas, 2001).

The resource-based view theory can be used to elaborate competitive strategies. This theory argues that competitive advantage lies in the resources that an organization can access and exploit and not in the ability to manage the environment (Campbell, Stonehouse & Houston, 2004). It maintains that companies are well endowed with a bundle of resources in the form of assets, competencies, processes, and substitutes that provide the organization with competitive advantage. David (2007) denotes that since companies have different attributes at different levels and different bundles of resources, differences in organizational performance are likely to be witnessed. The theory further asserts that firms have three types of resources namely; tangible resources, intangible resources and organizational capabilities. Tangible resources



include financial, physical, technological and organizational assets and thus are easily identified on the other hand intangible resources are more complex to identify and thus difficult to imitate. They include strategies that a firm adopts over time and culminates to improved performance (Barney, 2006). Finally, organizational capabilities are skills and competencies which a firm combines to transform tangible and intangible resources into outputs, for example, outstanding customer service (Dess *et al.*, 2007). The resource-based theory also argues that organizational resources in themselves are not necessarily a source of competitive advantage because rival firms may also possess similar resources. In this case therefore, competitive advantage lies in the resources possessing one or more of other attributes such as valuable substitutes.

A firm has to therefore sustain a competitive advantage as long as other firms are unable to duplicate the same attributes (Dess *et al.*, 2007). The theory argues that a firm needs to harness its resources using organizational repeatable knowledge that ensures it a competitive advantage. Grant (2004) posits that achieving and developing organizational competence is paramount to achieving competitive advantage and therefore competitive advantage is sourced in the organization's ability to learn and apply knowledge rather than simply accessing resources. The theory further argues that competitiveness ought to be supported by a culture that encourages sharing and exchanging skills, competencies and capabilities through organizational learning.

Knowledge has been upheld as the key resource to create sustainable advantage, and its role has been increasingly recognized in the strategic management field. In quest for sustainable performance, theorists in the environmental management domain (Hart and Dowell 2011) advocate taking the learning route. Through higher-order learning,

firms learn to manage different stakeholder expectations; firms learn in an exploratory manner to develop different innovative green products; and firms learn to save up via exploiting different green production processes. Yet, there is little research examining how higher-order learning among suppliers and buyers over environmental practices might affect the firm's international performance.

As an exception, Sharma and Vredenburg's study (1998) however found that environmental practices are associated with some distinct organizational learning capabilities that in turn account for the firm's competitiveness. This implies that a firm's ability to learn from its many stakeholders to come up with shared interpretation of environmental issues and updated environmental responsiveness measure is critical to its competitive strength. This conception of *integration of environmental knowledge*, being built upon the supplier-buyer relationship learning premises: information sharing, joint sense-making, collective organizational memories, is the key missing link between environmental practices and competitive outcomes.

Previous empirical studies examining the direct effect of environmental practices reported that environmental practices using pollution-prevention technologies (Christmann 2000; Stead and Stead 1995), involving innovative proprietary technologies (Porter and van der Linde 1995a, 1995b), and taking place at an early timing of environmental investment (Nehrt 1996, 1998) could lead to marked environmental performance. The extant studies examined the direct effect of environmental practices on a firm's competitiveness and performance and hence ignored the intervening learning processes. This study focuses on this unexplored

issue and proposes a framework for understanding predictors and outcomes of environmental knowledge integration.

Framed within the Resource-based view (RBV) of the firm, the current inquiry investigated into resource inputs as determinants accounting for a firm's environmental knowledge integration, and competitive outcomes deriving out of such integration. The key insights of the RBV for sustainability research are twofold (Connely, Ketchen, and Slater 2011). First, the RBV upholds that sustainability practices, being characterized as firm specific, socially complex, path-dependent and inimitable and non-substitutable, can provide competitive advantage. Second, given firm resources are limited, sustainability efforts should consider how they might be maintained or renewed over time. For instance, the largest pulp and paper company in the world, its ability to remain competitive depends on its ability to nurture and maintain its forestland for future harvesting (Floyd *et al.* 2001). Given the basis for sustainable competitive advantage resides in a firm's resources and in how the firm structures, bundles, and leverages those resources, there is an implied resource capability- competitiveness linkage. Following the resource-capability-competitiveness logic, resources do not directly influence competitive advantage. As a corollary, proactive environmental practices (a resource) could directly influence environmental knowledge integration (a capability), but it should not affect a firm's competitive advantage. Anchored in the RBV, the current inquiry used a sample of Chinese international supplier firms' different environmental practices to account for the varied extent of environmental knowledge integration in those firms. The resultant findings serve to provide empirical substantiation over the linkage between environmental practice resource and environmental knowledge integration capability.

While the RBV shed notable insights on the main effect of resources/capabilities on competitiveness that aims to justify environmental practices and related expenses from a efficiency, rationality or economic perspective (Orlitzky *et al.*, 2003), the Resource Dependence Theory (RDT) focuses much more on the firm's social context (Frooman 1999; Preferr and Salancik 1978). RDT introduced the intriguing notion that organizational strategies pertaining to sustainability may be determined by power dependency rather than by profits.

A firm's ability to implement sustainable practices may be constrained when it is dependent on others (Connely, Ketchen, and Slater 2011). Plambeck, Lee, and Yatsko (2012) explained Nike's varying degree of success of environmental initiatives in China by the resource dependency with its suppliers there. In case of the footwear supplier factories where Nike had a lion's share of the supplier factories' production output, Nike's environmental recommendations were followed up thoroughly. Contrastingly, in case of apparel suppliers where Nike was a small account, Nike's environmental requests may lack teeth. The key insight of RDT for sustainability research is that when one considers the totality of interdependent firms and the limited global resources they share, so firms must learn to forbear and trust if they are going to coexist over time (Connely, Ketchen, and Slater 2011).

Working under a context of trusting stakeholder relationships, it was postulated that firms are more likely to share nuanced information regarding their utility functions and thereby increasing the ability of the firm to allocate its resources to areas that best satisfy the involved stakeholders (Harrison, Bosse, and Phillips 2010). The current inquiry extended the RBV by examining the moderating context of top-green-buyer

initiated communications on the linkage between environmental practices (resource) and environmental knowledge integration (capability).

Employees' skills may be purchased, but are typically developed through education and training on environmental practices efforts. Peng (2001) noted that the resource-based view has helped to specify the nature of resources required to overcome the liability of foreignness and provided a bridge to investigate the resources that provide the foundation for product and international diversification. The resource based view literature has also shown that subsidiary capability building facilitates more knowledge flows within the multinational corporations.

Hahn and Doh (2006) demonstrates that the well-established resource based view could be profitably re-examined and perhaps even reinvigorated by approaching it from a new methodological vantage. Hansen *et al* (2004) shows that new insights were possible in the extant resource based view context and that the implications of established strategy theories still contained many areas for further growth in terms of our understanding of management phenomena. The implication is that manufacturing performance is likely to improve as they increasingly recognize that innovation culture and strategy are closely aligned throughout the innovation process (Narayanan, 2001).

Jordi *et al* (2010) add that; with the resource based view, managers need to turn their attention to the efficient management of a firm's intangible resources, particularly its innovation, human capital, reputation, and culture, which are difficult resources for competitors to match. The opportunity to leverage the firm's excess resources into new markets, according to Wiersema and Bowen (2008), is the basis and motive for corporate strategic choice regarding expansion via product or international

diversification; that industry globalization and foreign-based competition are statistically significant factors explaining the degree and scope of international diversification.

According to Peng (2001) there is, however, a need to ensure that subsidiary managers are sufficiently incentivized to undertake capability development. Significant international experience by top managers represents firm-specific tacit knowledge that is difficult to imitate. The resource-based view contributes to foreign entry mode research by suggesting that such strategies are pulled by the resource capabilities of firms abroad as well as being pushed by the firm-specific advantages possessed by the multinational corporations. More recent research from a resource based view perspective casts doubt on the stage theory of internationalization by suggesting that new and small firms may possess resource advantages that enable successful earlier internationalization.

Manufacturing performance is likely to improve as they increasingly recognize that innovation culture and strategy are closely aligned throughout the innovation process (Narayanan, 2001). (Jordi *et al.*, 2010) add that; with the resource based view, managers need to turn their attention to the efficient management of a firm's intangible resources, particularly its innovation, human capital, reputation, and culture, which are difficult resources for competitors to match. Newbert (2008) concludes that value and rareness are related to competitive advantage, that competitive advantage is related to performance, and that competitive advantage mediates the rareness-performance relationship.

In his article in the special issue, Barney (2001) argued that sustainable competitive advantage derives from the resources and capabilities a firm controls that are

valuable, rare, imperfectly imitable, and not substitutable. He discusses the implications of linking the resource based view to the neoclassical micro-economics and evolutionary economics literatures. Mahoney (2001) provide an alternative perspective on the similarities and distinctions between resource based view and transaction cost economics. Revisiting their managerial rents model, Castanias and Helfat (2001) present an expanded classification of managerial resources and explain how it relates to other classifications of managerial abilities such as those dealing with leadership qualities or functional area experience and the fundamental resource-based characteristics of scarcity, immobility, and inimitability. The implications of this model for firm performance, appropriability of rents from managerial resources, and incentives for managers to generate rents are then analyzed.

Fiol (2001) revisits her identity-based view of sustainable competitive advantage by questioning the premise that it is possible to achieve a sustainable competitive advantage based on any particular core competency, no matter how inimitable. Fiol argues that in the current, more competitive environment, the skills/resources of organizations and the way organizations use them must constantly change to produce continuously changing temporary advantages. Therefore, superior rents are likely to be derived from the ability to destroy and rebuild specialized, inimitable resources or routines over time.

This view is also seen in the work of (Eisenhardt and Martin, 2000). One implication of this view is that there is a need to nurture employees' constantly shifting situated identifications with ever changing organizational identities grounded in a commitment to an unchanging set of values and outcomes, rather than a stable fully elaborated culture. However, Arend (2003) says efficiency improvements help firms perform

better but do not necessarily lead to superior performance. The latter is, ultimately, zero-sum. One firm has higher returns because its rivals, its employees, its suppliers, its regulators, its distributors, and its other affected parties cannot appropriate enough of the value generated by that firm, regardless of how they try. It follows that the specific means for gaining superior performance will always be changing and adapting due to such competitive pressures. Thus, the prediction and control of the dependent variable should always remain difficult from a practitioner's perspective.

The resource based view advocates argues that the heterogeneous market positions of close competitors derive from each firm's unique bundle of resources and capabilities. Moreover, to be a source of sustainable competitive advantage, resources and capabilities must be; valuable to enables a firm to improve its market position relative to competitors. For example, resources acquired at a price below their discounted net present value can generate rents; be rare that is of value in sustaining competitive advantage resources must be available in short supply relative to demand and to be rare, resources need to be immobile, and costly to imitate or to replicate. Manufacturing performance is likely to improve as they increasingly recognize that innovation culture and strategy are closely aligned throughout the innovation process (Narayanan, 2001).

Jordiet *al.*, 2010 add that; with the resource based view, managers need to turn their attention to the efficient management of a firm's intangible resources, particularly its innovation, human capital, reputation, and culture, which are difficult resources for competitors to match. Newbert (2008) concludes that value and rareness are related to competitive advantage, that competitive advantage is related to performance, and that competitive advantage mediates the rareness-performance relationship.



### 2.9.3 Resource Dependency Theory

A stakeholder-based perspective of value is important from a managerial perspective because managers tend to focus attention on things that lead to higher performance based on what actually gets measured (Sachs & Riihli, 2011). Rather than focusing primarily on economic measures of performance, a stakeholder-based performance measure challenges managers to examine more broadly the value their firms are creating from the perspective of the stakeholders who are involved in creating it.

Harrison *et al* (2013) argued that while managers can create economic value may have merit; they could also lead managers to take actions that reduce other types of stakeholder value. This, in turn, not only diminishes the value of the insights, it also raises questions about the ability of the firm to sustain its economic performance over time especially if efforts to focus on financial returns ignore or erode bases of support from some of the firm's stakeholders (Harrison *et al.*, 2013)

Resource dependency theory is premised on the notion that all organizations critically depend on other organizations for the provision of vital resources, and that this dependence is often reciprocal Drees *et al.*, (2013). It predicts that, firms lacking in essential resources will seek to establish relationships—often through formal and informal collaboration—to acquire such resources. According to Hillman, Withers, and Collins 2009,) “Resource dependency theory recognizes the influence of external factors on organizational behavior and, although constrained by their context, managers can act to reduce environmental uncertainty and dependence”.

Two different strategies related to this uncertainty reduction are buffering and bridging strategies. Buffering can be seen as “the regulation and, or insulation of organizational processes, functions, entities, or individuals from the effects of

environmental uncertainty or scarcity” (Lynn, 2005), whereas bridging “occurs as firms seek to adapt organizational activities so that they conform to external expectations”. A firm’s decisions to engage with stakeholders, either through bridging or buffering strategies, is partly a function of the nature and past experience of these dependencies, and the perceived value and significance of the resources these NGOs are able to provide (Yaziji & Doh, 2009). Moreover, the internal power dynamics of the firm and the various bases of power within organizations are also expected to influence how firms choose to engage with external stakeholders on whom they may depend (Hillman *et al.*, 2009).

We therefore expect characteristics of the focal organizations and the management within it to influence the degree to which external stakeholders such as customers, suppliers and government are perceived to be important and valuable resource providers. After all, resource dependency theory also presumes that firms are motivated by the potential to obtain social worthiness and legitimacy. As much of the literature on inter-organizational relationships in the business and society context has been influenced by the resource dependency perspective (Hendry, 2005), and the emerging fields of corporate environmental practices and stakeholder management presume active and frequent interactions—and resource dependency theory perspective as our overarching conceptual foundation.

For instance, Le Ber and Branzei (2010) relied on several related theoretical perspectives regarding the micro processes of organizational realignment to explore the relational processes that underpin social innovation within strategic cross-sector partnerships. One of the critical variables they uncover, relational attachment, a personalized reciprocal bond between partners, which provides a stabilizing buffer in

the face of unexpected contingencies, relates to resource dependency theory view in that it emphasizes the relational dependencies that occur when organizations interact over long periods of time. Drawing from the resource dependency theory framework, enhanced by other relational perspectives, therefore the specific question is what factors determine firms' propensity to engage. The factors outlined here are commitment to corporate environmental practices, resource complementarities, trust, and social network positions.

### **2.10 Conceptual Framework**

For the purpose of this study, the concept of corporate environmental practices was conceptualise to have direct effect on percieved sustainable competitiveness, with moderating effect from collaboration from stakeholders of tea firms in Kenya. Building on instrumental resource based view theory and applying sustainable competitive model, corporate environmental practices was conceived as multidimensional constructs. Corresponding to this, the constructs were measured using generic concepts namely: process adaptation, product adaptation, managerial control mechanism and training.

Since corporate environmental practices was perceived as multi-dimensioned constructs, four key measures of CEP based on extant literature and conceptualized for application on the study were design oriented process, document oriented management, realistic oriented training, content oriented training, cost effective production, result oriented training, prevention oriented management, techno-efficient production, duration oriented training. These latent constructs are generic in nature and refer to respective corporate environmental practices.

First the process adaptation measured variables were identified as raw materials and renewable energy that were being used by the tea firms. These perceptual measures were anchored on the seven point likert scale. From the scale, the higher the scores, the higher the level of process adaptation by the tea firms. The component of low levels of raw materials is reflective of the process adaptation. Similarly; usage of renewable energy is reflective of the corporate concern on corporate environmental practices by the tea firms. The product adaptation indicators were identified as use of life-cycle assessment and waste generation that were being used by the tea firms. These perceptual measures were anchored on the seven point likert scale. From the scale, the higher the score, the higher the level of product adaptation in tea firms. The component of raw use of life-cycle assessment is reflective of the process adaptation.

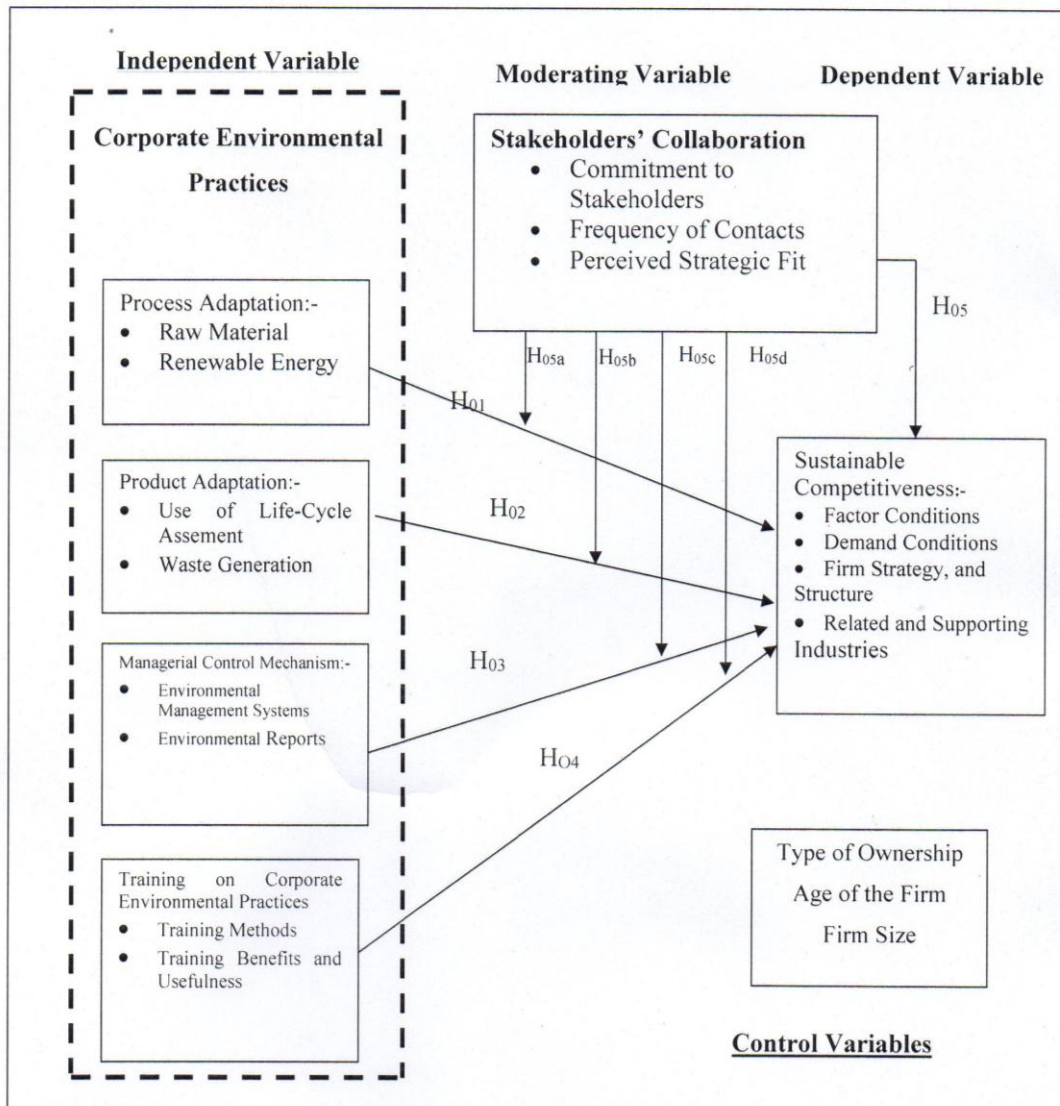
Similarly usage of waste generation reflective of the corporate concern on corporate environmental practices by the tea firms. The managerial control mechanism indicators were identified as environmental management systems and environmental reports that were being used by the tea firms. These perceptual measures were anchored on the a seven point likert scale. The higher the score the higher the level of managerial control mechanism in tea firms. The component of environmental management systems and environmental reports on corporate environmental practices by the tea firms.

Fourthly; the training on corporate environmental practices indicators were identified as training methods and; training benefits and usefulness that were being used by the tea firms. These perceptual measures were anchored on the a seven point likert scale. The higher the score the higher the level of training in tea firms. The component of training methods and; training benefits and usefulness are reflective of the training on

corporate environmental practices by the tea firms. Reciprocity and interdependence is a relational state characterized by power asymmetry, exchange and dependency among parties. In stakeholders' collaboration; level of commitment, frequency of contacts and perceived strategic fit the tea firms are reflective of the stakeholders' collaboration in corporate environmental practices towards achievement of perceived sustainable competitiveness.

Conceptually, stakeholders' collaboration was perceived as multi-dimensional constructs, four key measures of perceived SC based on extant literature and conceptualised for application on the study were *tactical commitment* and *strategic commitment*. These latent constructs are generic in nature and refer to respective stakeholders' collaboration.

Conversely, perceived sustainable competitiveness measured variables were identified as factor conditions, demand conditions, firm strategy, structure and related industries that were being used by the tea firms. These perceptual measures were anchored on the a seven point likert scale. The higher the score the higher the level of perceived sustainable competitiveness of tea firms in Kenya. These relationships are provided in the form of a conceptual framework in Figure 2.1



Source: Developed by the Researcher (2016)

**Figure 2.1: The Moderating Effect of Stakeholders' Collaboration on the Relationship between Corporate Environmental Practices and Sustainable Competitiveness**

The components of factor conditions, demand conditions, firm strategy, structure and related industries were reflective of the perceived sustainable competitiveness of the tea firms in Kenya. The perceived sustainable competitiveness was conceived as multi-dimensional constructs, four key measures of perceived SC based on extant literature and conceptualised for application on the study were *human resource conditions* and *productivity strategy*. These latent constructs are generic in nature and refer to respective perceived sustainable competitiveness.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Overview**

This chapter entails a discussion of the research design and the methodology adopted for the study. This includes research design, study area, target population, sampling procedures and sample size, types of sources of data collection instruments and procedures, validity and reliability of research instruments, measurement of variables, limitation of the study and ethical consideration.

#### **3.1 Research Design**

Explanatory research design was used, to identify the extent and nature of cause-and-effect relationships. It assesses effect of specific changes on existing norms and various processes. Causal studies focus on an analysis of a situation or a specific problem to explain the patterns of relationships between variables (Creswell *et al.*, 2007). Causal studies play an instrumental role in terms of identifying reasons behind a wide range of processes, as well as, assessing the effect of changes on existing norms, processes and offer the advantages of replication if necessity arises (Creswell and Tashakkori 2007). The primary purpose was to explain why events occur and to build, elaborate, extend or test theory and allowed the research to test very specific theories and make amends to previous theories. Thus, since the study was testing the theory based on other scholars that corporate environmental practices might have positive effect on sustainable competitiveness and much higher when stakeholder collaboration was introduced, hence it was appropriate to use explanatory research design in testing the moderating effect of stakeholders' collaboration on the



relationship between corporate environmental practices and sustainable competitiveness (Creswell and Tashakkori 2007).

### 3.2 Study Area

This study was carried out in Kenyan tea growing areas in several counties which include Nandi, Kiambu, Thika, Maragua, Muranga, Kisii, Nyamira, Nyambene, Meru, Nyeri, Kerinyaga, Embu, Kakamega, Nakuru and Trans-Nzoia. In these areas the crop enjoys 80% favorable weather patterns. As indicated earlier production is shared between multinational companies and small-scale growers and; both sectors have benefited from many scientific advances in tea cultivation, although the average yields in the small-scale sector are below those in the estates sector which stands at around 1800 kg per hectare (Willson, 1999; Tea Research Foundation, 2002).

### 3.3 Target Population

The target population was 1883 managers responsible for production, employee relations and finance departmenta in tea firms because they undertood the varous environmental practices (Tea Firms HR database, 2015) that are in place in their own tea firms.

**Table 3.1 Target Population**

Level/Unit of Analysis	Community Owned		Privately Owned		Total	
	Tea Firms.		Tea Firms			
Size of Factory	Managers	Firms	Managers	Firms	Managers	Firms
1-Production Line	210	16	140	6	350	22
2-Production Lines	697	30	468	25	1165	55
3-Production Lines	216	17	144	11	360	28
4-Production Lines	5	1	3	1	8	2
<b>Total</b>	<b>1128</b>	<b>64</b>	<b>755</b>	<b>43</b>	<b>1883</b>	<b>107</b>

**Source:** Researchers' computation, (2015)

### 3.4 Sampling Procedures and Sample Size

#### 3.4.1 Sampling Procedures

Multi stage sampling technique was used because according to Singh (2006); this type of sampling is more comprehensive and representative of the population. In this type of sampling primary sample units inclusive groups; and secondary units are sub-groups within these ultimate units to be selected which belong to one and only one group. This consideration was made because the target population were managers of tea factories registered with Tea Board of Kenya and hence the population was ease to handle. This formed the key informants that were interviewed in the study since they had knowledge of corporate environmental practices, stakeholders' collaboration and sustainable competitiveness of these tea firms. Stages of a population were created, through stratification, that is; according to the number of production line , nature of ownership of the tea firms, that's whether they are community or privately owned tea firms.

#### 3.4.2 Sample Size

The study focused on 107 tea firms in Kenya and to reduce cost, save time and also enable the study to estimate some unknown characteristics of the population and make generalization (Zikmund *et al.*, 2010). Sample size of 484 managers was derived using the sample size formula adopted from Cochran's (1977) for categorical data:-

$$\text{sample size} = \frac{(t)^2 \times (p) \times (q)}{(d)^2}$$

$$\text{sample size} = \frac{(1.96)^2 \times (0.5) \times (0.5)}{(0.05)^2} = 384$$

$t$  = value for selected alpha level of 0.025 in each tail = 1.96. Where  $(p) \times (q) =$  estimate of variance = 0.25.  $d$  = accepted margin of error for proportion being estimated = 0.05 (error study is willing to accept). This was used to calculate the final sample size of respondents.

$$n_1 = \frac{no}{(1+no/population)} = \frac{384}{(1+384/1883)} = 318.94$$

Response rate of 65.89% was used as guided by pilot test:

$$\text{Total respondents were } \frac{318.94}{0.6589} = 484.$$

For example to get managers in tea firms with 1-line tea factory was:

$$\frac{484}{1883} \times 210 = 54.$$

Sample size for managers for example in community owned tea firms with 1-production line was calculated and found to be 54. The same was done for the rest of managers as indicated in Table 3.2.

**Table 3.2 Sample Size**

Level/Unit of Analysis	Community Owned Tea Firms.		Privately Owned Tea Firms		Total	
	Managers	Firms	Managers	Firms	Managers	Firms
1-Production Line	54	16	36	6	90	22
2-Production Lines	179	30	120	25	299	55
3-Production Lines	56	17	37	11	93	28
4-Production Lines	1	1	1	1	2	2
<b>Total</b>	<b>290</b>	<b>64</b>	<b>194</b>	<b>43</b>	<b>484</b>	<b>107</b>

**Source:** Researchers' Computation, (2015)

After determining the sample size the study used proportionate sampling technique to establish the number of tea firms per strata within the sample size as shown in Table

3.2. This was done by drawing random samples from finite populations of tea firms with the aid of random number tables from a list of items made and numbered. This sampling technique was used to select samples from the universe of tea firms registered with Tea Board of Kenya. This procedure ensured that all the tea firms in Kenya were given equal chances of being included in the sample.

The results obtained from probability or random sampling can be assured in terms of probability; that is the errors of estimation or the significance of results obtained from a random sample, and this fact brought out the superiority of random sampling design over the deliberate sampling design. Random sampling ensured the law of statistical regularity which states that if on an average the sample chosen is a random one, the sample will have the same composition and characteristics as the universe. This was the reason why random sampling was considered as the best technique of selecting a representative sample (Kothari, 2008).

Lastly, the study used purposive sampling to administer questionnaires to managers in randomly sampled tea firms. The specific managers being sampled were those who have knowledge and access to information on corporate environmental practices, stakeholders' collaboration and sustainable competitiveness of their firm. The study therefore purposely identified managers responsible for production, employee relations and finance.

### **3.5 Data Collection Instruments and Administration**

This study collected qualitative data using self-administered questionnaires taken to tea firm managers then a follow-up visit after 7 to 10 days to increase of response rate. Four research assistants underwent two weeks training on environmental practices on data collection and thereafter, the study made formal request for approval from

NACOSTI. Upon completion of the data collection, the data was checked, cleaned, coded and analyzed before making final report.

Before this was done the interviewees were inducted through phone on areas where they did not understand. The same questionnaire was used by all the respondents to enhance consistency on the interpretation by all the respondents.

### **3.6 Validity and Reliability of Research Instruments**

This survey employed a structured questionnaire that was pretested in a pilot study in 31 tea firms within Kericho and Bomet Counties. The reliability and validity of instruments was improved using pilot testing in tea firms within Bomet and Kericho counties. Construct validity was carried out to define quality to be measured. This is because Cronbach and Meehl (1955) indicate that, "Construct validity must be investigated whenever no criterion or universe of content was accepted as entirely adequate to define the quality to be measured (Carmines and Zeller,1979). The value of alpha varied from zero to 1, since it was the ratio of two variances. However, depending on the estimation procedure used, estimates of alpha could take on any value less than or equal to 1, including negative values, although higher values of alpha were more desirable.

Content validity was done to determine the degree to which the tested items represent the domain or universe of the trait or property being measured. The study identified the overall content to be representative through randomly choosing items from the contents that accurately represented the information in all areas. By so doing the research became representative of the content of traits to be measured.

Criterion-related validity test was done to detect presence or absence of one or more criteria considered to represent traits or constructs of interest. The reliability test enabled the study to know the extent to which the questionnaires yields the same results on repeated trials, Carmines and Zeller (1979), the tendency toward consistency found in repeated measurements.

### **3.7 Measurement of Variables**

In this study three types of variables were measured namely: independent, moderator and dependent. The independent variable was corporate environmental practices, moderating variable was stakeholders' collaboration and the dependent variable was sustainable competitiveness.

#### **3.7.1 Sustainable Competitiveness**

To measure sustainable competitiveness porter's diamond model was used. He found that sustainable competitiveness is the result of interaction of four key determinants: factor conditions, demand conditions, related and supporting industries and firm structure, strategy and rivalry (Porter, 1990).

**Factor Conditions:** These are the compulsory inputs which are required by an organization to compete in the market. These factors can be grouped into five categories: human resources, physical resources, knowledge resources, capital resources, and infrastructure resources

**Demand Conditions:** These are the most important characteristics that determines the demand conditions are 'the composition of the demand, its size and patterns of the growth and the internalization of domestic demand.'

**Firm Strategy and Structure:** This factor determines the ways, the firms are created, organized and managed.

**Related and Supporting Industries:** The fourth determinant on porter's model is the presence of related and supporting industries. The presence of suppliers accelerates the process of innovation and upgrades the business of the cluster. The presence of related industries gives a better chance to the firms located in the cluster to share information and identify new opportunities.

Twelve items were adopted and slightly modified from (Longinos Martin *et al.*, 2012) on 7 points on likert-scale. Respondents were asked the extent to which they agreed or disagreed with a series of statements about overall sustainable competitiveness for the last ten years in their firm, indicated by 1- Strongly disagree (SD), 2- Disagree (D), 3- Slightly disagree (SD), 4- Neutral (N), 5- Slightly agree (SA), 6 – Agree (A) and 7 – Strongly agree (SA).

### **3.7.2 Corporate Environmental Practice**

To measure corporate environmental practices, Newbert Scott L. (2008) approach was used; ‘compared to other organizations that do the same kind of work, how would you compare your organization’s’ environmental practices and sustainable competitiveness over the past 3 years in terms’ in th following key areas:-

#### **Process Adaptation**

For process adaptation (Keldmann & Olesen, 1994) approach was used and 8 items were adopted and slightly modified to capture types of materials employed. Respondents were asked the extent to which their firm perform on environmental

practices using a series of statements, closely describing their process adaptation on a 7-point likert scale indicated by “much less” (1) – “much more” (7).

### **Product Adaptation**

The measurement for product adaptation that's; the practices related to product design stage (van Hemel and Cramer, 2002; González *et al.*, 2002) was used and 9 items were adopted and slightly modified to capture product design stages. Respondents were asked the extent to which their firm perform on environmental practices for the last ten years, using a series of statements, closely describing their product adaptation on a 7-point likert scale indicated by “much less” (1) – “much more” (7).

### **Managerial Control Mechanism**

The measurement for managerial control mechanism was adopted from (Nakashima *et al.*, 2002; Banerjee, 2001) and scale items were slightly modified to capture control mechanisms that were in place. Respondents were asked the extent to which their firm perform on environmental practices for the last ten years, using a series of statements, closely describing their managerial control mechanism on a 7-point likert scale indicated by “much less” (1) – “much more” (7).

### **Training on Environmental Practices**

The measurement for training on environmental practices was adopted from (Holgado *et al.*, 2006) with 12 items and slightly modified to capture wide opinion of respondents on training methods and overall rating. Respondents were asked the extent to which their firm perform on training on environmental practices for the last ten years, using a series of statements, closely describing their firms' training on a 7-point likert scale indicated by “much less” (1) – “much more” (7).



### 3.7.3 Stakeholders' Collaboration

This study used thirteen key items adopted and slightly modified from (del Hold *et al.*, 2015), to give their opinion on the level of their collaboration with stakeholders for the last ten years in relation with competitors, namely; frequency of contacts, perceived strategic fit, and firms' commitment. Respondents were asked the extent to which they agreed or disagreed with a series of statements, closely describing their firm level of collaboration with stakeholders on a 7-point likert scale indicated by "much less" (1) – "much more" (7).

### 3.7.4 Control Variables

The control variables were firm size, age and type of ownership of tea firms. These were variables that affected both the dependent and independent variable but were not being included in this particular study. Artiach *et al.* (2010) report three reasons: larger companies are more visible and therefore attract more attention from stakeholders, resulting in an increased need to consider stakeholder claims. For instance, larger firms in terms of production lines tend to draw higher level of attention from the public, and have higher level of social impact Cowen *et al* (1987), suggesting that larger firms are more likely to engage in environmental practices.

The larger companies leave a larger impression on their worlds, resulting in more thorough assessments of their activities. Stanwick and Stanwick (1998) provided supporting evidence that firm size is positively related to Corporate Social Performance. Size may result in economies of scale in the implementation of environmental activities as supported by McWilliams and Siegel (2001), the positive correlation between firm size and environmental practices can also be attributed to the scale of economy. These three factors visibility, scrutiny and economies of scale

explain why bigger companies tend to perform better in terms of corporate environmental practices.

### **3.8 Data Analysis and Procedure**

Prior to the data analysis, it was important to consider the data characteristics due to its effect on the results. Tabachnick and Fidell, (1989), provides for an appropriate sequence for screening the proposed data. The order of the screening was important as decisions at the earlier steps influence decisions to be taken at later steps.

Screening would aid in the isolation of data peculiarities and allowed the data to be adjusted in advance of further multivariate analysis. The checklist isolated key decision points which needed to be assessed to prevent poor data induced analysis problems. Consideration and resolution of problems encountered in the screening of a data set is necessary to ensure a robust statistical assessment (Tabachnick and Fidell, 1989).

The study was concerned with various variables and with expressing and analyzing the variation that variables exhibit. Univariate analysis was carried out to know how data were distributed in relation to a single variable using frequency tables, histograms, and associated statistics. For example the study wanted to know how many number of firm's production lines and so on.

Having examined the distribution of values for particular variables through the use of frequency tables, histograms, and associated statistics, a major strata in the analysis of a set of data was bi-variate analysis; how two variables were related to each other. The investigation of relationships was an important step in explanation and

consequently contributes to the building of theories about the nature of the phenomena in which the study was interested.

### **3.8.1 Factor Analysis and Scale Reliabilities**

First and foremost factor analysis was done to reduce the items in the questionnaire that were not valid and reliable with the constructs. Descriptive statistics; mean, standard deviations, reliability coefficients, and inter-correlations were computed to understand the variability and interdependence of the subscales derived from the factor analysis. The hypotheses were tested using hierarchical regression. Because previous study has noted that firm size may influence firms' competitiveness, these variables were controlled in the statistical analysis (Joiner and Bakalis 2006).

A principal component factor analysis with varimax rotation was conducted to cluster the variables the questionnaire into several factors. In order to control the number of factors extracted, a minimum Eigen value of one (1) was used in the factor analysis. Factors with Eigen value less than one were considered insignificant and were excluded. Varimax orthogonal rotation was then used to group variables with large loadings (correlations) for the same factors so that each factor will be represented by a specific cluster of variables. Varimax rotation would ensure that the factors produced are independent and unrelated to each other.

According to Thompson (2004), it is a multivariate statistical procedure that has many uses, three of which were noted here. Firstly, factor analysis reduced a large number of variables into a smaller set of variables. Secondly, it established underlying dimensions between measured variables and latent constructs, thereby allowing the formation and refinement of theory. Thirdly, it provided construct validity evidence of self-reporting scales.

Data analysis method and procedure covered, Kaiser-Meyer-Olkin (KMO) statistics, Test of Sphericity, Factor Analysis, Correlation Coefficient and Hierarchical Regression Model. Brett (2012) found out that prior to the extraction of factors, several tests should be used to assess the suitability of the respondent data for factor analysis. These tests included Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, and Bartlett's Test of Sphericity. The Kaiser-Meyer-Olkin measure of sampling adequacy tests whether the partial correlations among variables are small. The KMO measured the sampling adequacy which should be greater than 0.5 for a satisfactory factor analysis to proceed. The KMO index, in particular, is recommended when the cases to variable ratio were less than 1:5. The KMO index ranges from 0 to 1, with 0.50 considered suitable for factor analysis.

Another indicator of the strength of the relationship among variables is Bartlett's test of sphericity. Bartlett's test of sphericity was used to test the null hypothesis that the variables in the population correlation matrix were not correlated. Sphericity is significant if the associated probability is less than 0.05 hence accepting the null hypothesis. The Bartlett's Test of Sphericity should be significant ( $p < 0.05$ ) for factor analysis to be suitable.

### **3.8.2 Correlation Analysis: Relationships between the Variables**

The correlation analysis was used to give correlation coefficients between the variables measured using seven-item likert scales. The correlation coefficients indicate the strength of the association between the variables. A coefficient was considered significant if the p-value was less than 0.05. There was significant correlation between all the independent variables and there are no high correlations of

0.90 or above. Boon and Arumugam, (2006) suggested 0.80 instead of 0.90 as the threshold..

### **3.8.3 Multivariate Analysis**

Multivariate analysis provided the ability to investigate complex sets of data. This technique was used to test the following hypotheses:- that there was no significant effect of process adaptation on sustainable competitiveness of tea firms; there was no significant effect of product adaptation on sustainable competitiveness of tea firms; there was no significant effect of managerial control mechanism on sustainable competitiveness of tea; there was no significant moderating effect of stakeholders' collaboration on the relationship between corporate environmental practices and sustainable competitiveness of tea firms; in Kenya.

### **3.8.4 Hierarchical Regression Model**

Hierarchical regression was used to evaluate the relationship between a set of corporate environmental practices and sustainable competitiveness of tea firms.

### **3.8.5 Testing Hypotheses**

To test hypotheses  $H_{01}$ -  $H_{07}$ , multiple regression analysis as shown in model 1 was used. In this model sustainable competitiveness is a function of process adaptation, product adaptation, managerial control mechanism and training on environmental practices and controlled variable. To find support for any effect of corporate environmental practice on sustainable competitiveness, the coefficients ( $\beta_1 - \beta_7$ ) were to be different from zero and significant for the respective dimensions. The multiple regression analysis was represented by model 1. Thus;

$$SC = \beta_0 + \beta_1(OW) + \beta_2(AG) + \beta_3(SZ) + \varepsilon \dots\dots\dots\text{Model 1}$$

SC= Sustainable Competitiveness,  $\beta_0$  =Constants, ( $\beta_1 - \beta_2$ ) = Coefficients, OW =Ownership of the Firm, AG =Age of the Firm, SZ= Size of the Firm and  $\varepsilon$  = Error.

To test effects of moderator and interactions with corporate environmental practices, hierarchical regression analysis was conducted on hypotheses H<sub>01</sub>, H<sub>02</sub>, H<sub>03</sub>, H<sub>04</sub>, H<sub>05</sub>, H<sub>5a</sub>, H<sub>5b</sub>, H<sub>5c</sub>, and H<sub>5d</sub>. Hierarchical regression analysis refers to the method of regression in which not all the variables are entered simultaneously but one at a time. In each step the correlation of Y the criterion variable with the current set of predictors is calculated and evaluated. At each stage the R square that is calculated shows the incremental change in variance accounted for in Y with the addition of the most recently entered predictor and is exclusively associated with that predictor. Moderated hierarchical regression analysis determines the extent to which moderator interaction affects the relationship between corporate environmental practice and sustainable competitiveness.

Stakeholders' collaboration plus moderation effects with predictor variables on sustainable competitiveness were included in the hierarchical regression models 2 to 7. Stated by Baron and Kenny (1986) the study considered a moderator effect to exist if the interaction term explains a statistically significant amount of variance of criterion variable. Significant relationship exists between independent variables and moderator variable if the coefficients of  $\beta_2 - \beta_7$  are different from zero. The moderating effect was examined using hierarchical regression analysis procedures described by Baron and Kenny (1986) as shown in model 2 and 7. Thus;

$$SC = \beta_0 + \beta_1(PRA) + \beta_2(PDA) + \beta_3(MCM) + \beta_4(TEP) + C + \varepsilon \dots\dots\dots\text{Model 2}$$

$$SC = \beta_0 + \beta_1(PRA) + \beta_2(PDA) + \beta_3(MCM) + \beta_4(TEP) + \beta_5(STC) + C + \varepsilon \dots \dots \dots \text{Model 3}$$

$$SC = \beta_0 + \beta_1(PRA) + \beta_2(PDA) + \beta_3(MCM) + \beta_4(TEP) + \beta_5(STC) + \beta_{5a}(PRA * STC) + C + \varepsilon \dots \dots \dots \text{Model 4}$$

$$SC = \beta_0 + \beta_1(PRA) + \beta_2(PDA) + \beta_3(MCM) + \beta_4(TEP) + \beta_5(STC) + \beta_{5a}(PRA * STC) + \beta_{5b}(PDA * STC) + C + \varepsilon \dots \dots \dots \text{Model 5}$$

$$SC = \beta_0 + \beta_1(PRA) + \beta_2(PDA) + \beta_3(MCM) + \beta_4(TEP) + \beta_5(STC) + \beta_{5a}(PRA * STC) + \beta_{5b}(PDA * STC) + \beta_{5c}(MCM * STC) + C + \varepsilon \dots \dots \dots \text{Model 6}$$

$$SC = \beta_0 + \beta_1(PRA) + \beta_2(PDA) + \beta_3(MCM) + \beta_4(TEP) + \beta_5(STC) + \beta_{5a}(PRA * STC) + \beta_{5b}(PDA * STC) + \beta_{5c}(MCM * STC) + \beta_{5d}(TEP * STC) + C + \varepsilon \dots \dots \dots \text{Model 7}$$

Where;

$\beta_1 - \beta_7$  = coefficients, PRA = Process Adaptation, PDA = Product Adaptation, MCM=Managerial Control Mechanism, TEP= Training on Environmental Practices, STC- Stakeholders Collaboration,  $\varepsilon$  = Error term, (STC \* PRA) = Z score Stakeholders Collaboration \* Z score Process Adaptation, (STC \* PDA) = Z score Stakeholders Collaboration \* Z score Product Adaptation, (STC \* MCM) = Stakeholders Collaboration \* Z score Managerial Control Mechanism and (STC \* TEP)= Stakeholders Collaboration \* Z score Training.

The study hypotheses were tested using a multiple hierarchical regression model to analyze the relationship between corporate environmental practices, stakeholders' collaboration and sustainable competitiveness in the tea sector of Kenya's economy.

### 3.8.6 Assumptions of Multiple Regression Analysis Model

Statistical tests for this study rely upon four key assumptions about the variables used in the analysis in chapter 4; tables 4.24, 4.25, 4.26 and 4.27. If these assumptions

were not to be met the results would not be trustworthy, resulting in a Type I or Type II error, or over- or under-estimation of significance or effect size(s). As Pedhazur (1997) noted, "Knowledge and understanding of the situations when violations of assumptions lead to serious biases, and when they are of little consequence, are essential to meaningful data analysis".

Therefore the study assumed that variables were normally distributed. Non-normally distributed variables (highly skewed or kurtotic variables, or variables with substantial outliers) could distort relationships and significance tests. There were several options available to the study in testing this assumption: visual inspection of data plots, skew, kurtosis, and P-P plots gave the study information about normality, and Kolmogorov-Smirnov tests provided inferential statistics on normality. Outliers can be identified either through visual inspection of histograms or frequency distributions, or by converting data to z-scores.

Bivariate and or multivariate data cleaning was also equally important (Tabachnick & Fidell, 1989) in multilevel regression. Analysis by Osborne (2001) showed that removal of uni-variate and bi-variate outliers can reduce the probability of Type I and Type II errors, and improve accuracy of estimates. Outlier (uni-variate or bi-variate) removal is not always desirable but in this case transformations (e.g., square root, log, or inverse), could improve normality, but complicate the interpretation of the results and was used deliberately and in an informed manner.

Hierarchical or multilevel regression could only accurately estimate the relationship between dependent and independent variables if the relationships were linear in nature. If the relationship between independent variables and the dependent variable was not linear, the results of the regression analysis would under-estimate the true



relationship. This under-estimation carried two risks: increased chance of a Type II error for the independent variables, and in the case of multiple regression, an increased risk of Type I errors (over-estimation) for other independent variables that share variance with that independent variables.

### **3.9 Limitations of the Study**

As earlier stated hierarchical or multilevel regression could only, accurately estimate the relationship between dependent and independent variables if the relationships were linear in nature. But in real situation the relationship between variables may not be linear hence the results would under-estimate the true relationships. This was resolved by running the analysis using computer SPSS program which take into account these challenges.

The study faced some challenges, for instance 40% of firms were private companies; and since it was not easy to access financial information from those companies then the study had to collect opinion on financial performance by use of seven items likert scale.

Another challenge was the duration for data collection which would effect on the quality of response from the participants. This was handled through piloting testing to determine and estimates the best length of time that would make the participant comfortable to respond to the questionnaires

### **3.10 Ethical Considerations**

The study was concerned with the rights of the participants and the benefit of the research findings. Informed consent ensured that research participants would be informed about the procedure of this study in which they have been asked to

participate. The right of anonymity and confidentiality was guaranteed. This was done through assurance to the respondents that study was only for academic purposes and not for circulation to other parties and also by referring to data by numbers rather than by names. The firm's right to privacy was guaranteed through use of the right kinds questions in the questionnaire that would enable managers to respond without compromising on the firm's rights to privacy to their business. Lastly on the ethical rules of engagement, permission to carry out this study was sought from the School of Business and Economics, Moi University and research clearance permit from National Council for Science and Technology was also obtained.

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF THE RESULTS**

#### **4.0 Overview**

This chapter covers analysis and interpretation of empirical results of data on managerial perspective of corporate environmental practices, sustainable competitiveness and moderation by stakeholders' collaboration; compared with respect to the relationships of the proposed model. In the first section data presentation was on response rate, demographic statistics of the firms. This was followed by descriptive statistics, reliability, validity and factor analysis. Subsequently, it was followed by inferential statistics on correlations, multiple hierarchical regression analysis and finally discussion of empirical results and related literature of the findings.

#### **4.1 Response Rate**

There was only one category of respondents from tea firms registered with TBK and a total of four hundred and eighty four (484) questionnaires were distributed to managers through research assistants. Four hundred and thirty three (433) questionnaire scripts were duly filled and while fifty one (51) were not returned. Therefore; this was a response rate of 89.46% which was within acceptable level in support of Babbie (2007) who asserted that published social research literature suggested that a response rate of at least 50% was considered adequate for analysis and reporting; though, Fowler (2002) stated that there was no agreed upon minimum response rate, the more responses received, the more likely it was that one would be

able to draw statistically reliable conclusion about the target population. Therefore, the response rate was sufficient for the intended purpose (Table 4.1).

**Table 4.1: Response Rate**

Items	Managers
Sample size number	484
Number responded	433
Number not responded	51

**Source:** Survey Data (2016)

#### 4.1.1 Missing Values and Treatment

Data was explored for possible missing data before being subjected to further analysis. In this study, missing data were evaluated with respect to cases as distributed in the seven likert scale points and out 484 respondents only 433 (86.46%) responded by answering all the questions in the questionnaire, and 20 of the respondents (4.13%) had only one missing value, 12 respondents (2.47%) had two missing values, 8 (1.65%) respondents had three missing value and lastly 11 respondents (2.29%) had over three missing values as indicated in Table 4.2.

**Table 4.2: Distribution of Number of Missing Values per Case**

Number of missing values	Number of cases	Managers	Percentage
0	433		89.46
1	20		4.13
2	12		2.47
3	8		1.65
Over 3	11		2.29
Total	484		100.00

**Source:** Survey Data (2016)

#### **4.1.2 Evaluation of Outliers**

Data was analysed for the presence of outliers. The guideline for detecting such outliers was based on Fichman *et al.* (2005) guidelines. In the guidelines, responses which fell over three standard deviations away from the mean score were noted as lying outside the desired boundaries hence outliers. Four outliers were detected and according to Andy Fields (2009), detection of outliers could cause seriously significant skewness (asymmetry) of data distribution and must, therefore, be conscientiously managed. The identified four outliers were managed in accordance with provisions advanced by Field (2009), changing the score of the data through the next highest score plus one method discarded 2 extreme cases clarified.

Before testing regression assumption, univariate and multivariate assessment of outliers was done across all the cases. All the cases had Mahalanobis  $D^2$  scores less than critical value of chi-square ( $\chi^2$ ) 18.467 obtained from the table. Further, subjection to probability for the Mahalanobis  $D^2$  all had values more than 0.001 confirming that there was no outlier. A value of  $D^2$  with low p value ( $< 0.001$ ) was used as the criteria to reject the assumption that the case came from the same population as the rest (Hair *et al.*, 1998). Following the assessment of outliers, the data set was tested for fundamental regression assumptions.

#### **4.2 Descriptive Statistics**

The descriptive was carried out using frequencies, percentages, mean and standard deviation. The descriptive statistics comprised of firm ownership, age and size. This was followed by the study variables concerning corporate environmental practice, stakeholders collaboration and sustainable competitiveness.

Descriptive measures of central tendency and dispersion were computed and the outcome was important for investigating whether or not the variables were normally distributed. Corporate environmental practices was identified as the independent variable for the study. It was measured with 44 items representing four constructs of process adaptation, product adaptation; training and managerial control mechanism components. Managers were asked to indicate their agreement or disagreement to variables items representing the four components on a 7-point Likert scale questionnaire

#### **4.2.1 Profile of Participating Firms**

Profile of the participating firms was considered relevant so as to control the extraneous influence on sustainable competitiveness. The profile of these participating firms was measured in terms of their ownership, age and size. Regarding ownership, the firm's involvement in CEP activities may therefore vary significantly depending on the firm's type of ownership. Majority of the firms (n = 67, 62.6%) were community owned tea firms and (n=40, 37.4%) were privately owned.

Firm age which often indicates the length of time a firm has been in business tend to have an effect on its managerial practices. This is because it can expand over time by accumulating knowledge through learning by doing, increasing confidence in problem solving capability and having the ability to do a better corporate environmental practices plan in order to cope with uncertainty. Most firms (n = 44, 41.1%) have been operating between 10 and 20 years, (n = 30, 28.0%) between 20 and 30 years, (n = 27, 25.3%) between 30 and above years, and (n = 6, 5.6%) below 10 years.

Firm size was measured by the number of production lines which was seen as an important determinant of firm economies of scale and competitive advantage. Where

most firms (n = 66, 61.7%) had two production lines, (n = 21, 19.6%) had three production lines, (n = 15, 14.1%) had one production line, and (n = 5, 4.6 %) had four production lines as shown in Table 4.3.

**Table 4.3: Profile of Participating Firms**

		<i>Frequency</i>	<i>Percent</i>
Ownership	Community Owned	67	62.6
	Privately Owned	40	37.4
	<b>Total</b>	<b>107</b>	<b>100.0</b>
Age of the firm	Below 10 Years	6	5.6
	10 -20 Years	44	41.1
	20-30 Years	30	28.0
	Above 30 Years	27	25.3
	<b>Total</b>	<b>107</b>	<b>100.0</b>
Size of the Firm	1-Production Line	15	14.1
	2- Production Lines	66	61.7
	3- Production Lines	21	19.6
	4 and more Production Lines	5	4.6
	<b>Total</b>	<b>107</b>	<b>100.0</b>

**Source:** Survey Data (2016)

#### 4.2.2 Descriptive Statistics of Variables

##### Process Adaptation

The process adaptation statements were computed to determine the mean score for each item as shown in table 4.4. All the statements used to explain the process adaptation had a mean score of above 5.9718, indicating that the respondents rated highly the process adaptation.

**Table 4.4: Descriptive Statistics on Process Adaptation**

	Mean	Std. Deviation
Use of cleaner transportation methods	6.04	.557
Reduction in raw material (i.e. the use of recycled material) for product manufacturing	6.02	.666
Avoidance of materials that are considered harmful, but not illegal	5.93	.696
We source most of our material from the community	5.91	.674
Our suppliers of material are environmental friendly	5.96	.574
<b>Mean</b>	<b>5.9718</b>	<b>.45261</b>

**Source:** Survey Data (2016)

### **Product Adaptation**

The respondent's perceptions on the product adaptation were sought and their responses presented in table 4.5. The statements that Substitution with renewable materials and Reduction in resource consumption had a mean score of 5.98. While statements that Reduction in waste generation had a score of 5.99. Finally the Recyclable responsible packaging and having a comprehensive policy on re-cycling of materials had a mean score of 5.86 and 5.75 respectively. From the 5 statements used to explain the product adaptation had an overall mean Score of 5.9238, indicating that the product adaptation was rated highly. This implies that the product adaptation was highly rated among the respondents.



**Table 4.5: Descriptive Statistics on Product Adaptation**

	Mean	Std. Deviation
Reduction in waste generation	5.99	.822
Substitution with renewable materials	5.98	.742
Reduction in resource consumption	5.98	.761
Recyclable responsible packaging	5.86	.789
Reusability in resource consumption	5.75	.887
<b>Mean</b>	5.9238	.57178

**Source:** Survey Data (2016)

### **Managerial Control Mechanism**

The respondent's views on the managerial control mechanism were sought and their responses presented in table 4.6. The findings showed that all the statements representing managerial control system had a mean of above 5.8952, indicating that the respondents highly rated the tea firm managerial control system.

**Table 4.6: Descriptive Statistics on Managerial Control Mechanism**

	Mean	Std. Deviation
We recycle of solid waste	5.88	.689
We have Environmental management procedures for internal use	5.86	.665
We use advanced prevention and safety systems at work	5.89	.649
We have policy on clean energy and renewable energy.	5.99	.488
We have positive steps toward preserving our environment	6.00	.531
We have voluntary programs in place, including recycling	5.89	.669
We have major policies to prevent air and water pollution	5.82	.692
We have environmental report, including data on pollution	5.83	.671
<b>Mean</b>	5.8952	.38437

**Source:** Survey Data (2016)

From the 8 statements used to explaining managerial control system characteristics at tea firms had an overall mean score of 5.8952 indicating that respondents agreed on its managerial control system. This implies that the managerial control mechanism was highly rated among the respondents.

### **Training on Environmental Practices**

The respondent's perceptions on the training on environmental practices were sought and their responses presented in table 4.7. The findings showed that all the statements representing training on environmental practices had a mean of above 5.8, indicating that the respondents highly rated the tea firm training on environmental practices.

**Table 4.7: Descriptive Statistics on Training**

	Mean	Std. Deviation
The issues are dealt with in as much in depth as the length of the course allowed	6.09	.910
The length of the course is always adequate for the objectives and content	5.91	.802
The method is always well suited to the objectives and content	5.91	.819
The method used always enable us to take an active part in training	5.87	.835
The training always enables me to share professional experiences with colleagues	5.90	.811
The training is realistic and practical	6.00	.829
The documentation given out is always of good quality	6.02	.747
The training context is always well suited to the training process	6.04	.775
The training is always useful for my specific job	5.99	.806
The training is always useful for my personal development	6.09	.786
The training merits a good overall rating	5.89	.799
Mean	5.9667	.45877

**Source:** Survey Data (2016)

From the 11 statements used to explaining training on environmental practices characteristics at tea firms had an overall mean score of 5.9667, indicating that respondents agreed on training on environmental practices. This implies that the training on environmental practices was highly rated among the respondents.

### **Stakeholders' Collaboration**

From the descriptive results the respondents rated highly the organization on environmental practices in relation to its major competitors with a mean of 5.89 and the look for partnerships with stakeholders that reinforce our core mission and corporate purpose having a mean of 5.87 as summarized in Table 4.8. However, on the statement that company takes seriously environmental practices, there were frequent interactions with stakeholders and eager to show stakeholders how my company can support their goals and objectives was rated highly by respondents each with a mean of 5.79. The company board supported active engagement with stakeholders having a mean of 5.8, they generally open to working with stakeholders on projects of mutual benefit (5.94) and looking for partnerships with stakeholders to reinforce the core mission and corporate purpose having a mean of 5.87. From the 7 statements used to explaining stakeholder's collaboration characteristics at tea firms had an overall mean score of 5.8468, indicating that respondents agreed. This implies that the stakeholder's collaboration was highly rated among the respondents.

**Table 4.8: Descriptive Statistic for Stakeholder's Collaboration**

	Mean	Std. Deviation
My organization ranks high on environmental practices in relation to its major competitors	5.89	.855
My company takes seriously environmental practices.	5.79	.852
The company board supports active engagement with stakeholders	5.80	.764
I have frequent interactions with stakeholders.	5.79	.734
I am generally open to working with stakeholders on projects of mutual benefit.	5.94	.714
I am eager to show stakeholders how my company can support their goals and objectives.	5.79	.791
We look for partnerships with stakeholders that reinforce our core mission and corporate purpose.	5.87	.798
Mean	5.84681	.447341

**Source:** Survey Data (2016)

### **Sustainable Competitiveness**

During the study the dependent variable was the sustainable competitiveness among the tea firms. The respondents were requested to establish the extent they agree or disagree with statements relating to the sustainable competitiveness in tea firms. From the study, the mean of each statement explaining sustainable competitiveness characteristics was computed from a seven point likert scale as summarized in Table 4.9.

**Table 4.9: Descriptive Statistics on Sustainable Competitiveness**

	Mean	Std. Deviation
Our market share grows faster than the market share of the rival tea firms	5.94	.799
Our profitability share grows faster than the profitability of the rival tea firms	6.07	.677
Our productivity grows faster than the productivity of the rival tea firms	5.99	.668
Our clients are more satisfied than the clients of the rival tea firms	5.98	.717
Our suppliers and distributions channels plays important roles towards creating a competitive edge in whole industry	5.99	.700
We have a better public image than the rival tea firms	5.88	.738
The employees' motivation of our tea firms is higher than the employees' motivation of the rival tea firms	6.02	.745
We have less labour absenteeism than the rival tea firms	6.07	.690
Mean	6.0007	.41491

**Source:** Survey Data (2016)

### 4.3 Reliability and Validity of the Constructs

#### 4.3.1 Reliability of the Constructs

Reliability of the items for the study was assessed by determining the items' Cronbach's alpha coefficients. The generally acceptable level of Cronbach's alpha is above 0.70 and it may decrease to 0.60 in exploratory research (Hair *et al.*, 2006) and the desired minimum level of Cronbach's alpha for this study was 0.70. The scores of reliability coefficients for this study were calculated using SPSS software and the results were shown in Tables 4.10, 4.11, 4.12, 4.13, 4.14 and 4.15. In addition,

purification of items was done and items which had corrected item-total correlation of less than 0.30 were being deleted from further analysis as this indicated that the items were measuring something different from the scale as a whole or total score. The purification of items based on the criterion of 0.30 and above as an acceptable corrected item–total correlation was according to Nunnally and Bernstein (1994).

### **Reliability Analysis for Process Adaptation**

The process adaptation construct recorded Cronbach’s alpha reliability coefficient of 0.756. This indicated that all the dimensions in the construct had exceeded the recommended threshold value of 0.70 for Cronbach’s alpha coefficients demonstrating good internal consistency. Given corrected item-total correlation indicated the degree to which each item measuring process adaptation correlated with the total score. Therefore, the five items in table 4.10; were related systematically to one another in a linear manner because they measured the same construct and were consistent with one another to the extent that each item was free from measurement error.

**Table 4.10: Reliability Analysis for Process Adaptation**

<b>Variables</b>	<b>CI-TC</b>	<b>CAID</b>
<b>Process Adaptation</b>		
We source our raw materials form community.	.598	.691
Reduction in raw material	.512	.718
Use of renewable energy sources	.503	.722
Use of energy saving new technology	.463	.736
Our suppliers are environmental friendly	.569	.699

**Reliability 0.756\*\*,**

**Notes: Item deleted \* Corrected Item-Total Correlation < 0.30,**

**\*\*Cronbach’s Alpha > 0.70 , N = 433,**

**Key; CI-TC = Corrected Item-Total Correlation, CAID = Cronbach's Alpha if Item Deleted**

**Source:** Survey Data (2016)

### Reliability Analysis for Product Adaptation

Reliability results revealed that all the items in the product adaptation construct had recorded Cronbach's alpha reliability coefficient of 0.776. This indicated that all the dimensions in the construct had exceeded the recommended threshold value of 0.70 for Cronbach's alpha coefficients demonstrating good internal consistency. Given corrected item-total correlation indicated the degree to which each item measuring product adaptation correlated with the total score. Therefore, the five items in table 4.11; were related systematically to one another in a linear manner because they measured the same construct and were consistent with one another to the extent that each item was free from measurement error.

**Table 4.11: Reliability Analysis for Product Adaptation**

<b>Variables</b>	<b>CI-TC</b>	<b>CAID</b>
<b>Product Adaptation</b>		
Reduction in waste generation	.430	.764
Reduction in resource consumption	.602	.701
Recyclable responsible packaging	.613	.697
Substitution with renewable materials	.493	.738
Prolonging the overall life of the product	.557	.716

**Reliability 0.776\*\*,**  
**Notes: Item deleted \* Corrected Item-Total Correlation < 0.30,**  
**\*\*Cronbach's Alpha > 0.70 , N = 433,**  
**Key: CI-TC = Corrected Item-Total Correlation, CAID = Cronbach's Alpha if Item Deleted**

**Source:** Survey Data (2016)

### Reliability Analysis for Managerial Control Mechanism

As for managerial control mechanism a Cronbach's alpha reliability coefficient of 0.752 was found and, this indicated that all the dimensions in the construct had exceeded the recommended threshold value of 0.70 for Cronbach's alpha coefficients demonstrating good internal consistency. Given corrected item-total correlation indicated the degree to which each item measuring managerial control mechanism

correlated with the total score. Therefore, the eight items in table 4.12; were related systematically to one another in a linear manner because they measured the same construct and were consistent with one another to the extent that each item was free from measurement error.

**Table 4.12: Reliability Analysis for Managerial Control Mechanism**

<b>Variables</b>	<b>CI-TC</b>	<b>CAID</b>
<b>Managerial Control Mechanism-</b>		
Comprehensive policy on managerial control mechanism	0.342	0.747
We have environmental management procedures for internal use	0.464	0.723
We use advanced prevention and safety systems at work	0.431	0.729
We have environmental report, including data on pollution	0.607	0.706
We have positive steps toward preserving our environment	0.575	0.707
We have policy on clean energy and renewable energy.	0.488	0.718
We have major policies to prevent air and water pollution	0.394	0.737
We have voluntary programs in place, including recycling	0.372	0.741
Reliability 0.752**,		
<b>Notes: Item deleted * Corrected Item-Total Correlation &lt; 0.30,</b>		
<b>**Cronbach's Alpha &gt; 0.70 , N = 433,</b>		
<b>Key: CI-TC = Corrected Item-Total Correlation, CAID = Cronbach's Alpha if Item Deleted</b>		

**Source:** Survey Data (2016)

### **Reliability Analysis for Training**

Training had a Cronbach's alpha reliability coefficient of 0.785. This indicated that all the dimensions in the construct had exceeded the recommended threshold value of 0.70 for Cronbach's alpha coefficients demonstrating good internal consistency. Given corrected item-total correlation indicated the degree to which each item measuring training correlated with the total score. Therefore, the eleven items in table 4.13; were related systematically to one another in a linear manner because they measured the same construct and were consistent with one another to the extent that each item was free from measurement error.



**Table 4.13: Reliability Analysis for Training**

<b>Variables</b>	<b>CI-TC</b>	<b>CAID</b>
Training		
The issues are dealt with in as much in depth as the length of the course allowed	0.258	0.791
The length of the course is always adequate for the objectives and content	0.4	0.773
The method is always well suited to the objectives and content	0.365	0.777
The method used always enable us to take an active part in training	0.439	0.768
The training always enables me to share professional experiences with colleagues	0.517	0.76
The training is realistic and practical	0.509	0.76
The documentation given out is always of good quality	0.579	0.754
The training context is always well suited to the training process	0.516	0.76
The training is always useful for my specific job	0.497	0.762
The training is always useful for my personal development	0.435	0.769
The training merits a good overall rating	0.35	0.778
<b>Reliability 0.785**, Notes: Item deleted * Corrected Item-Total Correlation &lt; 0.30, **Cronbach's Alpha &gt; 0.70 , N = 433, Key: CI-TC = Corrected Item-Total Correlation, CAID = Cronbach's Alpha if Item Deleted</b>		

Source: Survey Data (2016)

### **Reliability Analysis for Stakeholders' Collaboration**

In testing for reliability of stakeholders' collaboration a Cronbach's alpha revealed a reliability coefficient of 0.776. This indicated that all the dimensions in the construct had exceeded the recommended threshold value of 0.70 for Cronbach's alpha coefficients demonstrating good internal consistency. Given corrected item-total correlation indicated the degree to which each item measuring stakeholders' collaboration correlated with the total score. Therefore, the seven items in table 4.14; were related systematically to one another in a linear manner because they measured the same construct and were consistent with one another to the extent that each item was free from measurement error.

**Table 4.14: Reliability Analysis for Stakeholders' Collaboration**

<b>Variables</b>	<b>CI-TC</b>	<b>CAID</b>
<b>Stakeholders' Collaboration-</b>		
I have frequent interactions with the stakeholders.	0.427	0.763
My company takes seriously environmental practices.	0.487	0.751
I am eager to show stakeholders how my company can support their goals and objectives.	0.492	0.75
The company board supports active engagement with stakeholders	0.561	0.736
My organization ranks high on environmental practices in relation to its major competitors	0.579	0.734
I am generally open to working with stakeholders on projects of mutual benefit.	0.484	0.751
We look for partnerships with stakeholders that reinforce our core mission and corporate purpose.	0.475	0.753
Reliability 0.776**,		
<b>Notes: Item deleted * Corrected Item-Total Correlation &lt; 0.30,</b>		
<b>**Cronbach's Alpha &gt; 0.70 , N = 98,</b>		
<b>Key: CI-TC = Corrected Item-Total Correlation, CAID = Cronbach's Alpha if Item Deleted</b>		
<b>Source:</b> Survey Data (2016)		

### **Reliability Analysis for Sustainable Competitiveness**

As for sustainable competitiveness a Cronbach's alpha reliability coefficient of 0.775, indicating that all the dimensions in the construct had exceeded the recommended threshold value of 0.70 for Cronbach's alpha coefficients demonstrating good internal consistency. Given corrected item-total correlation indicated the degree to which each item measuring sustainable competitiveness correlated with the total score. Therefore, the eight items in table 4.15; were related systematically to one another in a linear manner because they measured the same construct and were consistent with one another to the extent that each item was free from measurement error.

**Table 4.15: Reliability Analysis for Sustainable Competiveness**

Scale: 1-Disagree Strongly, 2-Disagree, 3-Slightly Disagree,4-Neutral, 5-Slightly Agree,6-Agree, 7-Agree Strongly		
Variables	CI-TC	CAID
Sustainable Competiveness		
Our suppliers and distributions channels plays important roles towards creating a competitive edge in whole industry	0.320	0.78
We have a better public image than the rival tea firms	0.515	0.745
Our profitability share grows faster than the profitability of the rival tea firms	0.547	0.74
Our market share grows faster than the market share of the rival tea firms	0.543	0.739
Our clients are more satisfied than the clients of the rival tea firms	0.553	0.737
The employees' motivation of our tea firms is higher than the employees' motivation of the rival tea firms	0.466	0.752
We have less labour absenteeism than the rival tea firms	0.463	0.753
We have won more environmental certification than the rival tea firms	0.432	0.758
Reliability 0.775**,		
<b>Notes: Item deleted * Corrected Item-Total Correlation &lt; 0.30,</b>		
<b>**Cronbach's Alpha &gt; 0.70 , N = 433,</b>		
<b>Key: CI-TC = Corrected Item-Total Correlation, CAID = Cronbach's Alpha if Item Deleted</b>		

**Source:** Survey Data (2016)

#### 4.3.2 Validity Statistics of Independent, Moderating and Dependent Variables

Validity refers to the extent to which a research instrument measures what it was intended to measure (Zikmund *et al.*, 2010). The goal of the pilot study was to validate the instruments through content validity, face validity, criterion validity and construct validity (Zikmund *et al.*, 2010). Content validity was validated by determining the variables which have been defined and used in literature previously. Construct validity is the extent to which constructs hypothetically relate to one another to measure a concept based on the theories underlying a research (Zikmund, 2000).

In terms of validity, this research tested both convergent and discriminant validity. Convergent validity is the ability of a scale to correlate with other scales that claim to measure the same construct (Schmidt & Hollensen, 2006). Discriminant validity is the magnitude of the relationship between the items and latent construct which should be

statistically different from zero (Byrne, 2001). Validity recommended threshold value was 0.50 according to Hair *et al.* (1995). All the constructs had values greater than 0.50 demonstrating convergent validity and discriminant validity as indicated in table 4.16.

**Table 4.16: Controls, Variables, Means, Standard Deviations, and Correlations**

Control	Variables	Mean	SD	SC	PRA	PDA	MCM	TEP	STC
	SC	6.0007	.41491	1					
	PRA	5.9718	.45261	.739**	1				
Ownership	PDA	5.9238	.57178	.552**	.564**	1			
Size	MCM	5.8952	.38437	.625**	.619**	.403**	1		
Age	TEP	5.9667	.45877	.772**	.732**	.538**	.675**	1	
	STC	5.84681	.447341	.337**	.136**	.053	.057	.104*	1

**\*\*.** Correlation is significant at the 0.01 level (2-tailed). **\*** Correlation is significant at the 0.05 level (2-tailed). N=433 SD = Standard deviation, SCO = Sustainable Competitiveness, PRA =Process Adaptation, PDA=Product Adaptation, MCM=Managerial Control Mechanism, TEP=Training in Environmental Practices, STC= Stakeholders' Collaboration

Source: Survey Data (2016)

### Test of Scale Factorability Adequacy

To check the adequacy of data for factorability, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's test of sphericity were used. The threshold according to Hair *et al.* (1995) as well as Tabachnick and Fidell (2001) KMO of 0.50 is considered suitable for factor analysis. However, Netemeyer *et al.* (2003) stated that a KMO correlation above 0.60 - 0.70 is considered adequate for analyzing the factor analysis output. It is clear that values are usually considered to be acceptable if greater than 0.6 according to Hair *et al.* (2006) and this was the threshold adopted for this study. Bartlett's test of Sphericity should provide a chi-square output that must be significant with indication that the matrix was not an identity matrix and accordingly it should be significant ( $p < 0.05$ ) for factor analysis to be suitable (Hair *et al.*, 2006; Tabachnick & Fidell, 2001).

Results show reasonable factorability of items which provides an adequate basis for proceeding to an empirical examination of adequacy for factor analysis on both overall basis and for each variable. Process adaption was measured using five items and from the results of Kaiser-Meyer-Okin measure of sampling adequacy test of (0.681) and Bartlett's test of sphericity ( $\chi^2 (10) = 613.832$ ,  $p < 0.000$ ) indicated that data was accepted for factor analysis. Five items were proposed to measure product adaptation and results of Kaiser-Meyer-Okin measure of sampling adequacy test of (0.681) and Bartlett's test of sphericity ( $\chi^2 (10) = 312.560$ ,  $p < 0.000$ ) indicated that data was accepted for factor analysis.

To measure training on environmental practices ten items were utilised and results of Kaiser-Meyer-Okin measure of sampling adequacy test of (0.727) and Bartlett's test of sphericity ( $\chi^2 (55) = 1429.309$ ,  $p < 0.000$ ) indicated that data was accepted for factor analysis. Eight items were utilised to measure managerial control mechanism and results of Kaiser-Meyer-Okin measure of sampling adequacy test of (0.694) and Bartlett's test of sphericity ( $\chi^2 (28) = 882.051$ ,  $p < 0.000$ ) indicated that data was accepted for factor analysis. Seven items were proposed to measure stakeholders' collaboration and results of Kaiser-Meyer-Okin measure of sampling adequacy test of (0.720) and Bartlett's test of sphericity ( $\chi^2 (21) = 263.178$ ,  $p < 0.000$ ) indicated that data was accepted for factor analysis. Sustainable Competitiveness was measured using eight items and results of Kaiser-Meyer-Okin measure of sampling adequacy test of (0.724) and Bartlett's test of sphericity ( $\chi^2 (28) = 515.867$ ,  $p < 0.000$ ) indicated that data was accepted for factor analysis as displayed in Table 4.17.

**Table 4.17: Test of Scale Factorability Adequacy**

Scale (N=433)	PRA	PDA	TEP	MCM	STC	SC
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.681	.681	.727	.694	.720	.74
Approx. Chi-Square	613.832	312.560	1429.309	882.051	263.178	515.867
Bartlett's Test of Sphericity	0.000**	0.000**	0.001**	0.000**	0.000**	0.000**
Degree of freedom	df=10	df=10	df=55	df=28	df=21	df=28

**Notes: \*KMO Threshold > 0.6, \*\*Bartlett's Test of Sphericity significant p < 0.05, df = Degree of freedom, PRA = Process Adaptation, PDA = Product Adaptation, TEP = Training on Environmental Practices, MCM = Managerial Consumer Mechanism, STC = Stakeholders' Collaboration, SC= Sustainable Competitiveness.**

Source: Survey Data (2016)

### Composite Reliability

As such, there was need to report indicator composite reliability, as indicated in tables 4.19, 4.21, 4.23, 4.25, 4.27 and 4.29 all the values were larger than 0.6, so high levels of internal consistency reliability was demonstrated among all the four variables, Bagozzi and Yi, (1988); Hair *et al.*, (2012), and Wong, (2013)

### 4.4 Factor Analysis of Corporate Environmental Practices, Stakeholders' Collaboration and Sustainable Competitiveness

Factor analysis was employed in this regard to help in identifying the actual number of factors that actually measured each construct as perceived by the respondents. The variables were validated through factor analysis. The validity of the instrument was measured through Bartlett's Test of Sphericity (Muhammad, 2009). Within this study, the KMO for the statements were all above 0.6 as recommended by Chakraborty (2010), Trent *et al.*, (2009), Nuradliet *al.*, (2008) and Dahal (2004). Before performing the analysis, the suitability of the data was assessed through two tests; Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's Test of Sphericity. The KMO should be greater than 0.50 and Bartlett's Test of Sphericity be significant.

The Principal component factor analysis with varimax rotation was conducted on stakeholders' collaboration, corporate environmental practices and sustainable competitiveness variables to extract factors from the scales of each construct. Based on the previous works of (Hair, Black, Anderson and Tatham, 2006) all items loading below 0.50 were deleted and those with more than 0.50 loading factor chosen (Daud, 2004). All items were loaded well into their various underlying variable structure of dimensions based on the theoretical framework of this study without prior specification. The principle component analysis and Varimax rotation were performed in all the items that had factor loadings lower than 0.50 were eliminated as postulated by Hair *et al.*, (2006). Only statements with a loading value of above 0.5 were considered.

### **Factor Analysis of Sustainable Competitiveness**

The factor analysis results of sustainable competitiveness, indicated that the KMO was 0.724 and the Bartlett's Test of sphericity was significant ( $p < .05$ ). The varimax rotated principle component resulted in two factor loading on sustainable competitiveness variable that explained 49.14% of variance with Eigen values larger than 1 (table 4.18). Only the market share grows faster than the market share of the rival tea firms was deleted and the other statements retained, computed and renamed for further analysis.

**Table 4.18: Total Variance Explained of Sustainable Competitiveness**

<b>Total Variance Explained</b>									
Component	Initial Eigen values			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	Loadings		Total	Loadings		Total	Loadings	
		% of Variance	Cumulative %		% of Variance	Cumulative %		% of Variance	Cumulative %
1	2.484	31.051	31.051	2.484	31.051	31.051	2.036	25.447	25.447
2	1.447	18.092	49.143	1.447	18.092	49.143	1.896	23.696	49.143
3	.925	11.557	60.700						

**Extraction Method: Principal Component Analysis.**

**Source:** Survey Data (2016)

When rotated using Varimax with Kaiser Normalization reveals that four items of the scale: “the skill of adjustment to the changeable needs of the markets in our tea firms is better than in the rival tea firms,” “we have a better public image than the rival tea firms”, “the employees’ motivation of our tea firms is higher than the employees’ motivation of the rival tea firms”, and “we have less labour absenteeism than the rival tea firms” were loaded on the first factor renamed *human resource conditions* explained 25.447% of the total variance.

Secondly, three items: “our profitability share grows faster than the profitability of the rival tea firms”, “our productivity grows faster than the productivity of the rival tea firms”, and “our clients are more satisfied than the clients of the rival tea firms” were loaded on factor two renamed *productivity strategy* which explained 23.696 % of the total variance. All the items had loadings greater than threshold value of 0.60 and their CR exceeded the recommended 0.7 level (see Table 4.19). It was therefore concluded that training on environmental practices can be measured by seven items and were used in subsequent multiple and hierarchical regression analysis.



**Table 4.19: Rotated Factor Loadings of Sustainable Competitiveness**

	Loadings	Variance explained
Sustainable Competitiveness		49.143
Human Resource Conditions		25.447
Suppliers and distributions channels plays important roles towards creating a competitive edge.	.516	
We have a better public image than the rival tea firms	.764	
The employees' motivation of our tea firms is higher than the employees' motivation of the rival tea firms	.768	
We have less labor absenteeism than the rival tea firms	.748	
Productivity Strategy		23.696
Our profitability share grows faster than the profitability of the rival tea firms	.695	
Our productivity grows faster than the productivity of the rival tea firms	.750	
Our clients are more satisfied than the clients of the rival tea firms	.683	
KMO = .724; Bartlett's Test of Sphericity = .000; Eigen value = 1.00; Percentage of variance Explained = 49.14; Composite Reliability=.673		

**Source:** Survey Data (2016)

### **Factor Analysis of Corporate Environmental Practices**

From the factor analysis the corporate environmental practices had a KMO of .750 and significant ( $p < .05$ ) Bartlett's Test of sphericity (table 4.20). The varimax rotated principle component resulted in one factor loading explained by 62.338% of the variance. All the statements used were retained, computed and renamed for further analysis. corporate environmental practices was subjected to factor analysis and nine components with Eigen values greater than 1 were extracted which explained 62.338% of variance on corporate environmental practices as shown in Table 4.20.

**Table 4.20: Rotated Factor Loadings of Corporate Environmental Analysis**  
**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
				Loadings			Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.265	18.155	18.155	5.265	18.155	18.155	2.537	8.749	8.749
2	2.895	9.982	28.137	2.895	9.982	28.137	2.497	8.611	17.360
3	2.106	7.262	35.399	2.106	7.262	35.399	2.338	8.061	25.421
4	1.708	5.889	41.288	1.708	5.889	41.288	2.195	7.571	32.992
5	1.609	5.548	46.836	1.609	5.548	46.836	2.185	7.534	40.526
6	1.276	4.402	51.238	1.276	4.402	51.238	2.029	6.996	47.522
7	1.129	3.892	55.130	1.129	3.892	55.130	1.883	6.492	54.014
8	1.074	3.702	58.832	1.074	3.702	58.832	1.260	4.344	58.358
9	1.017	3.506	62.338	1.017	3.506	62.338	1.154	3.980	62.338
10	.948	3.268	65.606						
11	.862	2.973	68.579						
12	.840	2.898	71.477						
13	.786	2.710	74.187						
14	.746	2.574	76.761						
15	.709	2.443	79.204						
16	.703	2.424	81.628						
17	.635	2.189	83.817						
18	.569	1.961	85.778						
19	.538	1.855	87.634						
20	.494	1.704	89.338						
21	.479	1.650	90.988						
22	.440	1.519	92.507						
23	.398	1.372	93.879						
24	.366	1.261	95.140						
25	.352	1.214	96.354						
26	.328	1.131	97.485						
27	.295	1.016	98.501						
28	.223	.770	99.272						
29	.211	.728	100.000						

**Extraction Method: Principal Component Analysis.**

**Source: Survey Data (2016)**

### **Total Variance Explained of Corporate Environmental Practices**

When rotated using Varimax with Kaiser Normalization reveals that four items of the scale: ‘we source our raw materials form community’, ‘reduction in raw material’, ‘use of renewable energy sources’, and ‘our suppliers are environmental friendly’ were loaded on the first factor renamed *design oriented process* explained 18.155% of the total variance.

Secondly five itemms namely ‘We have environmental report’, ‘including data on pollution’, ‘We have positive steps toward preserving our environment’, ‘We have policy on clean energy and renewable energy’, ‘We have major policies to prevent air and water pollution’, and ‘We have voluntary programs in place’ were loaded and the factor renamed *document oriented management* explained 9.982% of the total variance. The items ‘The method used always enable us to take an active part in training’, ‘The training is realistic and practical’, and ‘The documentation given out is always of good quality’ were loaded on the third factors and renamed *realistic oriented training* explained 7.262% of the total variance.

Fourthly the statements ‘The length of the course is always adequate for the objectives and content’, ‘The method is always well suited to the objectives and content’, and ‘The training always enables me to share professional experiences with colleagues’ were loaded on the fourth component, renamed *content oriented training* explained 5.889% of the total variance.

Fifthly four items ‘Reduction in waste generation’, ‘Reduction in resource consumption’, ‘Recyclable responsible packaging’, and ‘Prolonging the overall life of the product’ were loaded on the fiveth factor and was renamed *cost effective production* explained 5.548% of the total variance. Three items ‘The training is

always useful for my specific job’, ‘The training is always useful for my personal development’, and ‘The training merits a good overall rating’ were loaded on the sixth factor and renamed *result oriented training* explained 4.402% of the total variance.

Another three items ‘Comprehensive policy on managerial control mechanism’, ‘We have environmental management procedures for internal use’, and ‘We use advanced prevention and safety systems at work’ were loaded on the seven component and were renamed *prevention oriented management* explained 3.892% of the total variance. Eightly two items ‘Use of energy saving new technology’, and ‘Substitution with renewable materials’ were loaded on eight component and renamed *techno-efficient production* explained 3.702% of the total variance. Lastly the item ‘The issues are dealt with in as much in depth as the length of the course allowed’ were loaded on the ninth factor and was renamed *duration oriented training* explained 3.506% of the total variance.

All the items had loadings greater than threshold value of 0.60 and their CR exceeded the recommended 0.7 level (see Table 4.21). It was therefore concluded that environmental reporting can be measured by nine items and were used in subsequent multiple and hierarchical regression analysis.

**Table 4.21: Rotated Factor Loadings of Corporate Environmental Practices**

	Loading	Variance Explained
Corporate Environmental Practices		62.338
Design Oriented Process		18.155
We source our raw materials form community.	.807	
Reduction in raw material	.736	
Use of renewable energy sources	.642	
Our suppliers are environmental friendly	.654	
Document Oriented Management		9.982
We have environmental report, including data on pollution	.692	
We have positive steps toward preserving our environment	.691	
We have policy on clean energy and renewable energy.	.704	
We have major policies to prevent air and water pollution	.670	
We have voluntary programs in place, including recycling	.634	
Realistic Oriented Training		7.262
The method used always enable us to take an active part in training	.648	
The training is realistic and practical	.766	
The documentation given out is always of good quality	.735	
Content Oriented Training		5.889
The length of the course is always adequate for the objectives and content	.830	
The method is always well suited to the objectives and content	.754	
The training always enables me to share professional experiences with colleagues	.680	
Cost Effective Production		5.548
Reduction in waste generation	.575	
Reduction in resource consumption	.721	
Recyclable responsible packaging	.694	
Prolonging the overall life of the product	.720	
Result Oriented Training		4.402
The training is always useful for my specific job	.614	
The training is always useful for my personal development	.756	
The training merits a good overall rating	.704	
Prevention Oriented Management		3.892
Comprehensive policy on managerial control mechanism	.654	
We have environmental management procedures for internal use	.785	
We use advanced prevention and safety systems at work	.659	
Techno-Efficient Production		3.702
Use of energy saving new technology	.548	
Substitution with renewable materials	.687	
Duration Oriented Training		3.506
The issues are dealt with in as much in depth as the length of the course allowed	.741	

**Source:** Survey Data (2016)

### Factor Analysis of Stakeholder's Collaboration

The factor analysis results of stakeholder's collaboration, indicated that the KMO was 0.720 and the Bartlett's Test of sphericity was significant ( $p < .05$ ). The Varimax

rotated principle component resulted in two factor loading on stakeholder's collaboration variable that explained 45.44% of variance with Eigen values larger than 1 (table 4.22). Only the statement having frequent interactions with stakeholders was deleted and the other statements retained, computed and renamed for further analysis.

**Table 4.22: Total Variance Explained of Stakeholder's Collaboration**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.150	30.719	30.719	2.150	30.719	30.719	1.651	23.588	23.588
2	1.031	14.723	45.442	1.031	14.723	45.442	1.530	21.854	45.442
3	.968	13.833	59.275						
4	.809	11.564	70.839						

**Extraction Method: Principal Component Analysis.**

**Source:** Survey Data (2016)

When rotated using Varimax with Kaiser Normalization reveals that three items of the scale: "I am generally open to working with stakeholders on projects of mutual benefit", "I am eager to show stakeholders how my company can support their goals and objectives", "We look for partnerships with stakeholders that reinforce our core mission and corporate purpose" were loaded on the first factor renamed *tactical commitment* explained 23.588% of the total variance.

Secondly, three items: "my organization ranks high on environmental practices in relation to its major competitors", "my company takes seriously environmental practices", and "The company board supports active engagement with stakeholders," were loaded on factor two renamed *strategic commitment* which explained 21.854 % of the total variance.

All the items had loadings greater than threshold value of 0.60 and their CR exceeded the recommended 0.7 level (see Table 4.23). It was therefore concluded that training on environmental practices can be measured by eight items and were used in subsequent multiple and hierarchical regression analysis.

**Table 4.23: Rotated Factor Loadings for Stakeholders' Collaboration**

	Loadings	Variance explained
Stakeholder's Collaboration		45.442
Tactical Commitment		23.588
I am generally open to working with stakeholders on projects of mutual benefit.	.689	
I am eager to show stakeholders how my company can support their goals and objectives.	.663	
We look for partnerships with stakeholders that reinforce our core mission and corporate purpose.	.772	
Strategic Commitment		21.854
My organization ranks high on environmental practices in relation to its major competitors	.646	
My company takes seriously environmental practices.	.763	
The company board supports active engagement with stakeholders	.641	
KMO = .720; Bartlett's Test of Sphericity = .000; Eigen value =1.00 Percentage of variance Explained = 45.44: Composite Reliability=..622		

**Source:** Survey Data (2016)

#### 4.5 Test of for Multivarait Analysis Assumptions

In order to proceed with multiple and hierarchical regression sample data was first examined to ensure robust results. In similar vein, Hair *et al.* (1998) stated that meeting the assumptions of regression analysis is essential to ensure that the results obtained were truly representative of the sample so as to obtain the best results possible. The key assumptions to be tested were normality, linearity, multicollinearity and homoscedasticity (Hai *et al.*, 1998; Ghozali, 2005). After meeting key assumptions, this study confidently used the existing sample data to test the hypotheses as explained below

### **Level of Measurement**

Multiple and hierarchical regression requires that the dependent variable be metric and the independent variables be metric or dichotomous. For this study sustainable competitiveness which was treated as dependent variables was ordinal, satisfying the metric level of measurement requirement for the dependent variable. Control variables were interval. Corporate environmental practices and stakeholders' collaboration were ordinal, satisfying the metric or dichotomous level of measurement requirement for independent variables. The ratio of participants to independent variables should be at least 5:1 and ideally 20:1. If the stepwise method is used, the ratio should be 40:1. This is due to the possibility that with small sample sizes, this method can produce results which do not generalize to other samples (Tabachnick & Fidell, 1996). The ratio obtained in this study was 108: 1 which was above 40:1.

### **Normality**

Normality of the distribution was assessed using statistical method. Kolmogorov-Simonov test and Shapiro Wilk was used to test normality of the data because it can handle sample sizes as large as 2000. According to Ghozali (2005), normality can be detected by looking at the p-value of Kolmogorov-Smirnov test. If p-value is greater than the 5% significance level, the residuals are considered as normally distributed. The test statistics of the five variables are shown in Table 4.24 where Kolmogorov-Smirnov and Shapiro Wilk test performed showed that the p-values range from 0.061 - 1.141 which were greater than 0.05.



**Table 4.24: Test of Normality**

Constructs	Kolmogorov-Smirnov (KS) test			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
PRA	0.243	433	0.061	0.849	433	0.087
PDA	0.136	433	1.141	0.912	433	0.091
MCM	0.158	433	0.067	0.887	433	0.070
TEP	0.136	433	1.141	0.912	433	0.091
STC	0.153	433	0.112	0.918	433	0.314
SC	0.206	433	1.02	0.853	433	0.374

**Source:** Survey Data (2016)

### **Linearity**

Testing for nonlinearity was necessary because correlation and regression assume linearity as indicated in table 4.25. The test found out that the F values for the nonlinear component was below the critical value 0.05. and therefore there was significant nonlinearity. It meant that sustainable competitiveness changed by a constant amount every time independent variables: process adaptation, product adaptation, managerial control mechanism and training; and their interaction with stakeholders' collaboration increased by one unit when other factors were held constant.

**Table 4.25: Test of Linearity**

			Sum of		Mean		
			Squares	df	Square	F	Sig.
PRA * Size of Factory	Between Groups	(Combined)	0.216	3	0.072	1.248	0.292
		Linearity	0.047	1	0.047	0.814	0.008
		Deviation from Linearity	0.169	2	0.085	1.465	0.232
PDA * Size of Factory	Between Groups	(Combined)	0.362	3	0.121	1.182	0.316
		Linearity	0.295	1	0.295	2.892	0.03
		Deviation from Linearity	0.067	2	0.033	0.327	0.721
TEP * Size of Factory	Between Groups	(Combined)	0.386	3	0.129	2.091	0.101
		Linearity	0.194	1	0.194	3.159	0.006
		Deviation from Linearity	0.191	2	0.096	1.557	0.212
MCM * Size of Factory	Between Groups	(Combined)	0.229	3	0.076	1.84	0.139
		Linearity	0.078	1	0.078	1.879	0.001
		Deviation from Linearity	0.151	2	0.075	1.821	0.163
STC * Size of Factory	Between Groups	(Combined)	0.39	3	0.13	1.526	0.207
		Linearity	0.281	1	0.281	3.296	0.05
		Deviation from Linearity	0.109	2	0.055	0.641	0.527
SC * Size of Factory	Between Groups	(Combined)	0.073	3	0.024	0.406	0.749
		Linearity	0.002	1	0.002	0.041	0.04
		Deviation from Linearity	0.071	2	0.035	0.588	0.556

**Source:** Survey Data (2016)

### **Multicollinearity**

Multicollinearity is an unacceptably high level of inter-correlation among the independents, such that the effects of the independents cannot be separated. Multicollinearity occurs when more than two independent variables are highly correlated (Cooper & Schindler, 2006). Multicollinearity can be detected with the help of tolerance and its reciprocal variance inflation factor (VIF) as indicated in Table 4.26.

**Table 4.26: Test of Multicollinearity**

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	Collinearity Statistics	
	B	Std. Error	Beta	t		Tolerance	VIF
2	(Constant)	-1.820E-14	.027	.000	1.000		
	Zscore: Size of Factory	.056	.028	.056	2.025	.044	.989
	Zscore(PRA)	.299	.044	.299	6.879	.000	.398
	Zscore(PDA)	.118	.034	.118	3.446	.001	.646
	Zscore(TEP)	.417	.045	.417	9.197	.000	.367
	Zscore(MCM)	.115	.038	.115	2.987	.003	.510
3	(Constant)	-1.353E-14	.025	.000	1.000		
	Zscore: Size of Factory	.033	.025	.033	1.331	.184	.980
	Zscore(PRA)	.263	.040	.263	6.620	.000	.394
	Zscore(PDA)	.125	.031	.125	4.048	.000	.646
	Zscore(TEP)	.403	.041	.403	9.800	.000	.366
	Zscore(MCM)	.128	.035	.128	3.667	.000	.510
4	(Constant)		.025	.075	.940		
	Zscore: Size of Factory	.034	.025	.034	1.354	.177	.978
	Zscore(PRA)	.260	.040	.260	6.519	.000	.390
	Zscore(PDA)	.126	.031	.126	4.064	.000	.645
	Zscore(TEP)	.405	.041	.405	9.810	.000	.365
	Zscore(MCM)	.129	.035	.129	3.682	.000	.509
5	(Constant)		.025	-.012	.990		
	Zscore: Size of Factory	.039	.025	.039	1.549	.122	.976
	Zscore(PRA)	.266	.039	.266	6.745	.000	.389
	Zscore(PDA)	.134	.031	.134	4.352	.000	.641
	Zscore(TEP)	.400	.041	.400	9.805	.000	.364
	Zscore(MCM)	.125	.034	.125	3.612	.000	.508
6	(Constant)		.024	-.076	.940		
	Zscore: Size of Factory	.040	.024	.040	1.632	.103	.976
	Zscore(PRA)	.271	.038	.271	7.032	.000	.389
	Zscore(PDA)	.127	.030	.127	4.232	.000	.640
	Zscore(TEP)	.392	.040	.392	9.860	.000	.364
	Zscore(MCM)	.141	.034	.141	4.173	.000	.503
7	(Constant)		.024	.040	.968		
	Zscore: Size of Factory	.038	.024	.038	1.573	.116	.975
	Zscore(PRA)	.279	.038	.279	7.275	.000	.386
	Zscore(PDA)	.125	.030	.125	4.195	.000	.640
	Zscore(TEP)	.391	.040	.391	9.899	.000	.364
	Zscore(MCM)	.136	.034	.136	4.045	.000	.501

**Source:** Survey Data (2016)

Tolerance should be above 0.20 (Menard, 1995) and this was the cut-off value for this study. Serious multicollinearity occurs when the value of tolerance is smaller than

0.10 and the value of VIF is greater than 10 (Ghozali, 2005). Admittedly, all the variables used in multiple and hierarchical regressions had the tolerance values of above 0.20 showing multicollinearity was not a problem in this study.

### **Homoscedasticity**

Levene's test of homoscedasticity of variance was used to test the assumption that each group of independent variables has the same variance on an interval dependent. If the Levene statistic was significant at the .05 level or better, then the null hypothesis would be rejected that the groups have equal variances. Results in table 4.27 showed that there was homogeneity among variables as indicated by Levene test with p values above 0.05. Hence, the assumption of homogeneity was not violated.

**Table 4.27: Test of Homoscedasticity**

Constructs	Levene Statistic	Sig.
PRA	1.974	0.117
PDA	1.025	0.381
MCM	1.435	0.232
TEP	1.990	0.115
STC	1.482	0.219
SC	0.480	0.696

**Source:** Survey Data (2016)

### **Homogeneity**

The Durbin-Watson statistics was used to test the presence of serial correlation among the residuals. The value of the Durbin-Watson statistic ranges from 0 to 4 and as a rule of thumb, the residuals are not correlated if the Durbin-Watson statistic is approximately 2 and an acceptable range is 1.50-2.50 (Hair *et al.*, 2006).

However, exact acceptable values in Durbin and Watson's (1951) original paper as a very conservative rule of thumb, values less than 1 or greater than 3 are definitely cause for concern. Value greater than 2 indicates a negative correlation between

adjacent residuals; where as a value below 2 indicates a positive correlation. It also depends upon the number of predictors in the model and the number of observations. The Durbin-Watson statistic for this regression was within acceptable limits as shown in Tables 4.33.

#### **4.6 Correlations Analysis of Variables**

Pearson moment correlation was used to describe the relationship between two variables, depending on the level of measurement. The relationship between independent variables and dependent variable (sustainable competitiveness) were investigated using Pearson product-moment correlation coefficient as shown in table 4.28. There was no correlation between the ownership of firms, age and size of the firm and sustainable competitiveness [ $r = 0.004, 0.930, -.010, n = 433, p > .05$ ]. There was a positive relationship between process adaptation and sustainable competitiveness [ $r = .739, n = 433, p < .05$ ]. This indicated a positive correlation existed between the variables and the more the tea firms do process adaptation the higher the sustainable competitiveness. A positive relationship exist between product adaptation and sustainable competitiveness [ $r = .552, n = 433, p < .05$ ]. This indicated a positive correlation existed between the variables and the more the tea firms used product adaptation the higher the sustainable competitiveness.

**Table 4.28: Pearson Moment Correlation Results**

		SC	OW	Age	SF	PRA	PDA	MCM	TEP	STC
Zscore (SC)	Pearson Correlation	1								
	Sig. (2-tailed)									
Zscore: (OW)	Pearson Correlation	.004	1							
	Sig. (2-tailed)	.930								
Zscore: (Age)	Pearson Correlation	-.077	-.035	1						
	Sig. (2-tailed)	.109	.464							
Zscore (SZ)	Pearson Correlation	-.010	-.188**	.073	1					
	Sig. (2-tailed)	.839	.000	.127						
Zscore (PRA)	Pearson Correlation	.739**	.003	-.044	-.043	1				
	Sig. (2-tailed)	.000	.951	.365	.368					
Zscore (PDA)	Pearson Correlation	.552**	-.034	-.073	-.082	.564**	1			
	Sig. (2-tailed)	.000	.479	.128	.089	.000				
Zscore (MCM)	Pearson Correlation	.625**	.048	-.044	-.066	.619**	.403**	1		
	Sig. (2-tailed)	.000	.320	.360	.172	.000	.000			
Zscore (TEP)	Pearson Correlation	.772**	-.001	-.102*	-.085	.732**	.538**	.675**	1	
	Sig. (2-tailed)	.000	.979	.034	.077	.000	.000	.000		
Zscore (STC)	Pearson Correlation	.337**	.004	.007	.087	.136**	.053	.057	.104*	1
	Sig. (2-tailed)	.000	.940	.888	.070	.005	.270	.233	.031	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

N=433

**Source:** Survey Data (2016)

There was a positive relationship between managerial control mechanism and sustainable competitiveness [ $r = .625$ ,  $n = 433$ ,  $p < .05$ ]. This indicated a positive relationship existed between the variables and the more the tea firms enhanced the managerial control system the higher the sustainable competitiveness. A positive relationship exist between training on environmental practices and sustainable competitiveness [ $r = .772$ ,  $n = 433$ ,  $p < .05$ ]. A positive relationship exist between stakeholders' collaboration and sustainable competitiveness [ $r = .337$ ,  $n = 433$ ,  $p < .05$ ]. This indicated a positive relationship existed between the variables and the

more the tea firms enhanced the training on environmental practices the higher the sustainable competitiveness.

#### **4.7 Multiple Regression Analysis**

One control variable, firm size was entered, then followed by the four independent variables hypothesized as follows: there was no significant effect of process adaptation on sustainable competitiveness ( $H_{01}$ ), there was no significant effect of product adaptation on sustainable competitiveness ( $H_{02}$ ), there was no significant effect of managerial control mechanism on sustainable competitiveness ( $H_{03}$ ), and there was no significant effect of training on sustainable competitiveness ( $H_{04}$ ).

Durbin-Watson statistics was used to test the presence of serial correlation among the residuals, the assumption of independence of errors which required that the residuals or errors in prediction do not follow a pattern from case to case. Durbin-Watson statistic should be within the acceptable range of 1.50-2.50 (Hair *et al.*, 1998). According to Menard (1995), the tolerance values should be above 0.2 and VIF less than 10 to avoid multicollinearity.

##### **4.7.1 Model Summary of Control and Corporate Environmental Practices predicting Sustainable Competitiveness**

The results of multiple regression analysis indicated that firm size was insignificant and had negative effect on sustainable competitiveness. The standardized beta regression coefficients results for firms' ownership, age and size ( $\beta = .103$ ,  $t = 1.013$ ,  $P > 0.05$ ,  $\beta = .014$ ,  $t = .269$ ,  $P > 0.05$ , and  $\beta = -.011$ ,  $t = -.145$ ,  $P > 0.05$ ) was not significant predictor of sustainable competitiveness. The variable had tolerance values of above

0.2 and VIF of less than 10 hence multicollinearity was not a problem according to Menard (1995) threshold of 0.2 as displayed in Table 4.29.

Regression model summarise results between the control variable firm size and sustainable competitiveness, indicated that the control variable explained only 0.0% ( $R^2 = 0.002$ ) of the variance on sustainable competitiveness and it was statistically insignificant, as shown in Table 4.30. ANOVA model results as indicated in model 1 shows good model fit as illustrated by overall test of significance with F-test value of .357 with p value  $.784 > 0.05$  (level of significance) was statistically insignificant (Table 4.31). Thus, the model was not fit to predict sustainable competitiveness using corporate environmental practices.

**Table 4.29: Effect of Control Variables, Firms' Ownership, Age and Size on Sustainable Competitiveness**

Model		Unstandardized		Standardized	t	Sig.	Collinearity	
		Coefficients		Coefficients			Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.162	.305		-.532	.595		
	Zscore(OW)	.103	.102	.050	1.013	.311	.953	1.049
	Zscore(Age)	.014	.052	.014	.269	.788	.919	1.088
	Zscore (SF)	-.011	.078	-.007	-.145	.885	.963	1.039

Source: Survey Data (2016)

#### 4.7.2 Model Summary of Corporate Environmental Practices predicting Sustainable Competitiveness

To assess the true impact of process adaptation, product adaptation, managerial control mechanism and training on sustainable competitiveness, the control variables, firm size was entered first, and the independent variables explained only 67.9% ( $R^2 = 0.679$ ) of the variance on sustainable competitiveness contributed an additional  $R^2$  of



(67.9%) where there was no percentage change and found to be statistically significant.

Regression model summary results between corporate environmental practices and sustainable competitiveness, indicates that the four variables explained only 67.9% ( $R^2=0.679$ ) of the variance on sustainable competitiveness and they were statistically significant. The Durbin-Watson statistic for this regression was 1.930 and falls within the acceptable range which indicated that the residuals were not correlated as presented in Table 4.30.

**Table 4.30: Model Summary of Corporate Environmental Practices on Sustainable Competitiveness**

Model	R	Adjusted		Std. Error of the Estimate	Change Statistics				Sig. F Change	Durbin-Watson
		R Square	R Square		R	Square Change	F Change	df1		
1	.050 <sup>a</sup>	.002	-.004	1.00224077	.002	.357	3	429	.784	1.925
2	.824 <sup>b</sup>	.679	.674	.57112244	.673	222.878	4	425	.000	1.930

**b. b. Predictors: (Constant), Zscore(OW) Ownership of firm, Zscore: Age of Firm, Zscore: Size of Firm, Zscore(PRA), Zscore(PDA), Zscore(MCM), Zscore(TEP)**

**h. Dependent Variable: Zscore(SC)**

Source: Survey Data (2016)

### **Analysis of Variance of Corporate Environmental Practices on Sustainable Competitiveness**

ANOVA model results as indicated in model 2 shows good model fit as illustrated by overall test of significance with F-test value of 128.488 with p value  $0.000 < 0.05$  (level of significance) was statistically highly significant (Table 4.31). Thus, the model was fit to predict sustainable competitiveness using corporate environmental practices.

**Table 4.31: Analysis of Variance Model of Corporate Environmental Practices on Sustainable Competitiveness**

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.075	3	.358	.357	.784 <sup>b</sup>
	Residual	430.925	429	1.004		
	Total	432.000	432			
2	Regression	293.373	7	41.910	128.488	.000 <sup>c</sup>
	Residual	138.627	425	.326		
	Total	432.000	432			

a. Dependent Variable: Zscore(SC)

c. Predictors: (Constant), Zscore(OW) Ownership of firm, Zscore: Age of Firm, Zscore: Size of Firm, Zscore(PRA), Zscore(PDA), Zscore(MCM), Zscore(TEP)

Source: Survey Data (2016)

### Effect of Corporate Environmental Practices on Sustainable Competitiveness

The results of multiple regression analysis indicated that corporate environmental practices was statistically significant and had positive effect on sustainable competitiveness. The multiple regression results of standardized beta coefficients indicated that PRA ( $\beta = .300$ ,  $t = 6.873$ ,  $P < 0.05$ ), PDA ( $\beta = 0.118$ ,  $t = 3.443$ ,  $P < 0.05$ ), MCM ( $\beta = 0.114$ ,  $t = 2.955$ ,  $P < 0.05$ ) and TEP ( $\beta = 0.416$ ,  $t = 9.113$ ,  $P < 0.05$ ) were positive and statistically highly significant predictors of sustainable competitiveness. The variables had tolerance values of above 0.2 and VIF of less than 10 hence multicollinearity was not a problem according to Menard (1995) threshold of 0.2 as displayed in Table 4.32.

**Table 4.32: Coefficients of Corporate Environmental Practices on Sustainable Competitiveness**

Model	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
2 (Constant)	-.099	.206		-.480	.632		
Zscore(OW)	-.032	.062	-.015	-.515	.607	.845	1.184
Zscore(AG)	.015	.030	.014	.492	.623	.904	1.106
Zscore (SZ)	.093	.045	.059	2.083	.038	.950	1.052
Zscore(PRA)	.300	.044	.300	6.873	.000	.397	2.521
Zscore(PDA)	.118	.034	.118	3.443	.001	.643	1.554
Zscore(MCM)	.114	.039	.114	2.955	.003	.508	1.969
Zscore(TEP)	.416	.046	.416	9.113	.000	.363	2.754

**a. Dependent Variable: Zscore(SC)**

Source: Survey Data (2016)

#### **4.7.3 Model Summary of Stakeholders' Collaboration predicting Sustainable Competitiveness**

The regression model summary results between environmental corporate environmental practices and sustainable competitiveness, indicates that the three control variables explained only 73.6% ( $R^2 = 0.736$ ) of the variance on sustainable competitiveness contributed an additional  $R^2$  of (5.7%) which was statistically highly significant. The Durbin-Watson statistic for this regression was 1.927 and falls within the acceptable range which indicated that the residuals were not correlated as presented in Table 4.33.

**Table 4.33: Model Summary on Stakeholders' Collaboration predicting Sustainable Competitiveness**

	Model 3		Model 4		Model 5		Model 6		Model 7	
	std $\beta$	VIF	std $\beta$	VIF	std $\beta$	VIF	std $\beta$	VIF	std $\beta$	VIF
Ownership	.017	1.194	.014	1.206	-.003	1.214	.011	1.217	.007	1.218
Age	.013	1.106	.012	1.115	.013	1.115	.019	1.117	.018	1.118
Size	.057	1.062	.058	1.062	.065	1.065	.068	1.066	.065	1.067
PRA	.263	2.544	.261	2.570	.266	2.574	.271	2.576	.279	2.594
PDA	.125	1.555	.126	1.557	.134	1.566	.128	1.569	.126	1.569
MCM	.128	1.972	.129	1.975	.124	1.978	.140	1.997	.135	2.005
TEP	.402	2.757	.403	2.767	.399	2.769	.393	2.772	.393	2.772
STC	.243** *	1.031	.243	1.034	.256	1.057	.258	1.057	.256	1.058
PRAstc			-.014	1.025	.047	1.594	.103	1.868	.138	2.219
PDAstc					-.113***	1.615	-.089	1.657	-.065	1.788
MCMstc							-.128***	1.456	-.078	2.234
TEPstc									-.111*	3.336
R	.858		.858		.862		.870		.872	
RSq- $R^2$	.736		.736		.744		.757		.760	
Adj $R^2$	.731		.731		.738		.750		.755	
$\Delta R^2$	.057		.000		.007		.013		.004	
F	147.922		131.322		122.461		119.127		111.190	
Durbin-Watson	1.927		1.915		1.920		1.901		1.921	

**Source:** Survey Data (2016)

### **Analysis of Variance of Stakeholders' Collaboration on Sustainable Competitiveness**

ANOVA model results as indicated in model 3 shows good model fit as illustrated by overall test of significance with F-test value of 147.922 with p value  $0.000 < 0.05$  (level of significance) was statistically highly significant (Table 4.3). Thus, the model was fit to predict sustainable competitiveness using corporate environmental practices.

### **Effect of Stakeholders' Collaboration on Sustainable Competitiveness**

Results of multiple regression analysis indicated that stakeholders' collaboration was statistically significant and had positive effect on sustainable competitiveness. The standardized beta regression coefficients results were ( $\beta = 0.243$ ,  $t = 9.581$ ,  $P < 0.05$ ), was significant predictors of sustainable competitiveness. The variable had tolerance values of above 0.2 and VIF of less than 10 hence multicollinearity was not a problem according to Menard (1995) threshold of 0.2 as displayed in Table 4.33.

## **4.8 Hierarchical Regression Analysis**

### **4.8.1 Interaction Between Process Adaptation and stakeholders' collaboration predicting Sustainable Competitiveness**

Model summary interaction results shows that model 4 interaction of Z score stakeholders' collaboration \*Z score process adaptation which explained 73.6% ( $R^2 = 0.736$ ) of the variance on sustainable competitiveness which resulted in  $R^2$  change of (0.000%) which was statistically insignificant. The Durbin-Watson statistic for this regression was 1.915 and falls within the acceptable range which indicated that the residuals were not correlated as shown in Table 4.33.

### **Analysis of Variance of Process Adaptation on Sustainable Competitiveness**

ANOVA model results as indicated in model 4 shows good model fit as illustrated by overall test of significance with F-test value of 131.322 with p value  $0.000 < 0.05$  (level of significance) was statistically highly significant (Table 4.33). Thus, the model was fit to predict sustainable competitiveness using corporate environmental practices.

### **Effect of Interaction Between Process Adaptation and stakeholders' collaboration on Sustainable Competitiveness**

Results of hierarchical regression analysis indicated that interaction between process adaptation and stakeholders' collaboration was statistically insignificant and had positive effect on sustainable competitiveness as displayed in Table 4.33.

The standardized beta regression coefficients results for firm size ( $\beta = -0.014$ ,  $t = -0.588$ ,  $P > 0.05$ ), was insignificant predictor of sustainable competitiveness. The variables had tolerance values of above 0.2 and VIF of less than 10 hence multicollinearity was not a problem.

#### **4.8.2 Model Summary of Interaction Between Product Adaptation and stakeholders' collaboration predicting Sustainable Competitiveness**

Model summary interaction results shows that model 5 interaction of Z score stakeholders' collaboration \*Z score product adaptation which explained 74.4% ( $R^2 = 0.744$ ) of the variance on sustainable competitiveness which resulted in  $R^2$  change of (0.7%) which was statistically significant. The Durbin-Watson statistic for this regression was 1.920 and falls within the acceptable range which indicated that the residuals were not correlated as shown in Table 4.33.

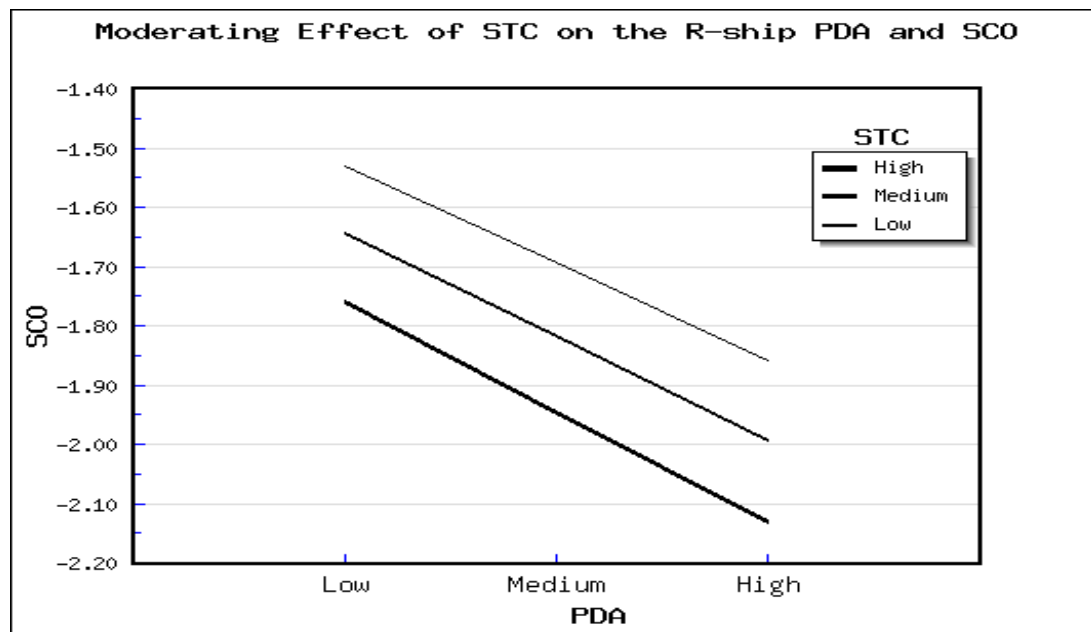
#### **Analysis of Variance of Product Adaptation, stakeholders' collaboration on Sustainable Competitiveness**

ANOVA model results as indicated in model 5 shows good model fit as illustrated by overall test of significance with F-test value of 122.461 with p value  $0.000 < 0.05$  (level of significance) was statistically highly significant (Table 4.33). Thus, the

model was fit to predict sustainable competitiveness using interaction between product adaptation and stakeholders' collaboration.

### **Effect of Interaction Between Product Adaptation and Stakeholders' Collaboration on Sustainable Competitiveness**

Results of hierarchical regression analysis indicated that interaction between product adaptation and stakeholders' collaboration was statistically significant and had negative effect on sustainable competitiveness. The standardized beta regression coefficients results ( $\beta = -0.113$ ,  $t = -3.463$ ,  $P > 0.05$ ), were significant predictor of sustainable competitiveness. The variables had tolerance values of above 0.2 and VIF of less than 10 hence multicollinearity was not a problem, threshold of 0.2 as displayed in Table 4.33.



**Figure 4.1: Modgraph of Stakeholders' Collaboration on the Relationship Between Product Adaptation and Sustainable Competitiveness**

Source: Survey Data (2016)

### **4.8.3 Model Summary of Interaction between Managerial Control Mechanism and Stakeholders' Collaboration predicting Sustainable Competitiveness**

Model summary interaction results shows that model 6 interaction of Z score stakeholders' collaboration \*Z score managerial control mechanism which explained 75.7% ( $R^2 = 0.757$ ) of the variance on sustainable competitiveness which resulted in  $R^2$  change of (1.3%) which was statistically significant. The Durbin-Watson statistic for this regression was 1.901 and falls within the acceptable range which indicated that the residuals were not correlated as shown in Table 4.33.

### **Analysis of Variance of Interaction Between Managerial Control Mechanism and Stakeholders' Collaboration predicting Sustainable Competitiveness**

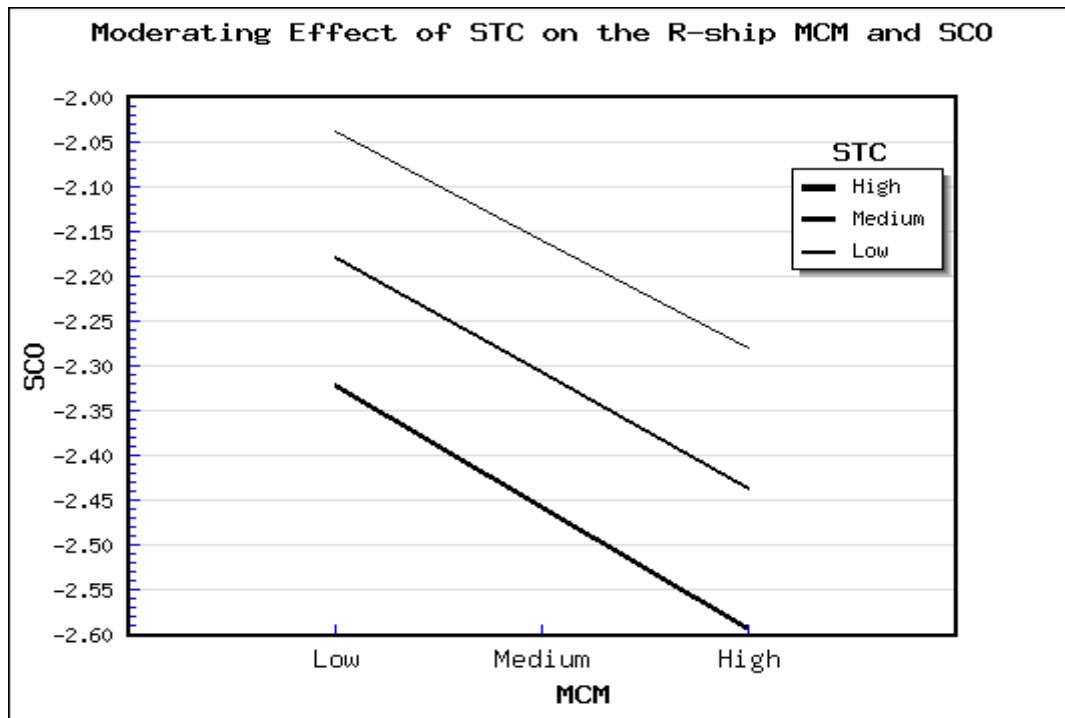
ANOVA model results as indicated in model 6 shows good model fit as illustrated by overall test of significance with F-test value of 119.127 with p value  $0.000 < 0.05$  (level of significance) was statistically highly significant. Thus, the model was fit to predict sustainable competitiveness using interaction between managerial control mechanism and stakeholders' collaboration as shown in Table 4.33.

### **Effect of Interaction Between Managerial Control Mechanism and Stakeholders' Collaboration predicting Sustainable Competitiveness**

Results of hierarchical regression analysis indicated that interaction between managerial control mechanism and stakeholders' collaboration was statistically significant and had negative effect on sustainable competitiveness. The standardized beta regression coefficients results ( $\beta = -0.128$ ,  $t = 4.768$ ,  $P > 0.05$ ), were statistically significant predictor of sustainable competitiveness. The variables had tolerance



values of above 0.2 and VIF of less than 10 hence multicollinearity was not a problem, threshold of 0.2 as displayed in Table 4.33.



**Figure 4.2: Modgraph of Stakeholders' Collaboration on the Relationship Between Managerial Control Mechanism and Sustainable Competitiveness**

Source: Survey Data (2016)

#### **4.8.4 Model Summary of Interaction Between Training and Stakeholders' Collaboration predicting Sustainable Competitiveness**

Model summary interaction results shows that model 7 interaction of Z score stakeholders' collaboration \*Z score training which explained 76% ( $R^2 = 0.760$ ) of the variance on sustainable competitiveness which resulted in  $R^2$  change of (0.4%) which was statistically significant. The Durbin-Watson statistic for this regression was 1.921 and falls within the acceptable range which indicated that the residuals were not correlated as shown in Table 4.33.

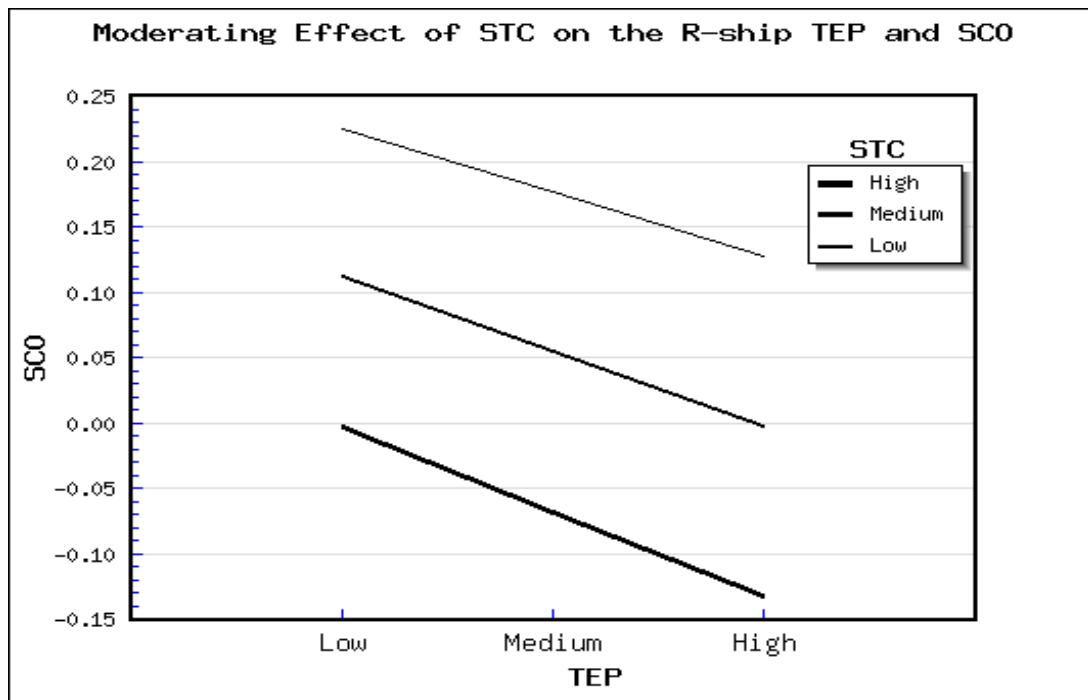
### **Analysis of Variance of Training, Stakeholders' Collaboration on Sustainable Competitiveness**

ANOVA model results as indicated in model 7 shows good model fit as illustrated by overall test of significance with F-test value of 111.190 with p value  $0.000 < 0.05$  (level of significance) was statistically highly significant (Table 4.33). Thus, the model was fit to predict sustainable competitiveness using interaction between training and stakeholders' collaboration .

### **Effect of interaction Between Training and Stakeholders' Collaboration predicting Sustainable Competitiveness**

Results of hierarchical regression analysis indicated that interaction between training and stakeholders' collaboration was statistically significant and had negative effect on sustainable competitiveness as displayed in Table 4.33.

The standardized beta regression coefficients results were ( $\beta = -0.111$ ,  $t = -2.562$ ,  $P > 0.05$ ), were statistically significant predictor of sustainable competitiveness. The variables had tolerance values of above 0.2 and VIF of less than 10 hence multicollinearity was not a problem, threshold of 0.2.



**Figure 4.3 Modgraph of Stakeholders' Collaboration on the Relationship Between Training and Sustainable Competitiveness**

**Source:** Survey Data (2016)

To test the hypothesis H0<sub>5</sub>, the “moderating effect of stakeholder’s collaboration”, all the independent variables (process adaptation, product adaptation, managerial control mechanism and training) were multiplied with the stakeholder’s collaboration and the product item put in the regression equation to establish the model 4, 5, 6 and 7. The results showed that there was significant effect of stakeholder’s collaboration on product adaptation (with  $\beta = -0.113$ ), managerial control mechanism (with  $\beta = -0.128$ ), and training on environmental practice (with  $\beta = -0.111$ ), and as moderator on the relationship with sustainable competitiveness of tea firms. However there was no significant effect on process adaptation (with  $\beta = -0.014$ ). The finding implies that tea firms with good stakeholder’s collaboration affect the relationship between process adaptation on environmental practice in order to enhance sustainable competitiveness.

## 4.9 Discussion and Implication of Findings

Hierarchical regression model was employed to test the proposed hypotheses and to analyze the relationships. Hypotheses of the study were formulated and tested at 5% level of significance. According to Dunn (2001), the beta coefficients indicate the slope in the model that relates independent variables to the dependent variables. The size of the beta coefficient indicated the magnitude in influencing the dependent variable where t-test was used to compare regression coefficient Beta ( $\beta$ ) with 0. Similarly, standardized coefficients were used to explain the hypotheses tested. Discussion was based on both literature and empirical results of hypotheses presented in chapter one and it provided possible explanation as to why hypotheses were supported or unsupported.

### 4.9.1 Effect of Process Adaptation on Sustainable Competitiveness

First hypothesis  $H_{01}$  stated that there was no significant effect of process adaptation on sustainable competitiveness. In support of expectation of the study, findings indicated that process adaptation had positive and highly significant effect on sustainable competitiveness ( $\beta_1 = 0.300$ ,  $P < 0.05$ ) and the hypothesis was therefore rejected. The coefficient of 0.300 implied that 1% increase in process adaptation was likely to result in 30.0% increase in sustainable competitiveness when other factors are held constant. These results supports earlier studies by (Klassen and Whybark, 1999b) which established that process adaptation reduce any negative environmental impact during materials acquisition, production and delivery' improve process efficiency with better input utilization, cleaner process technology, better housekeeping and maintenance procedures, and streamlined operations (Melnik *et al.*, 2003; Sroufe, 2003; Sroufe *et al.*, 2000). As stated by Klassen and Whybark (1999),

‘manufacturing operations, through product [design] and process technologies, have been recognized as a critical driver of environmental performance’.

#### **4.9.2 Effect of Product Adaptation on Sustainable Competitiveness**

Second hypothesis  $H_{02}$  suggested that there was no significant effect of product adaptation on sustainable competitiveness. In support of expectation of the study, findings indicated that product adaptation had positive and highly significant effect on sustainable competitiveness ( $\beta_1 = 0.118$  ( $P < 0.05$ )) and the hypothesis was therefore rejected. The coefficient of 0.118 implied that 1% increase in product adaptation was likely to result in 11.8% increase in sustainable competitiveness when other factors are held constant. In support of expectation these results earlier study had established that by primarily switching to renewable resources in manufacturing and packaging, and altering product designs to facilitate rebuilding, recycling and disposal, product adaptation practices reduce both the consumption of resource inputs and the generation of undesired by-products hence reduce any negative impact on the environment during manufacturing, packaging, use, disposal and reuse’ (Klassen and Whybark, 1999b); save not only the cost of installing and operating clean pollution-control devices, but it also may increase productivity and efficiency, (Smart, 1992). Less waste means better utilization of inputs, resulting in lower costs for raw materials and waste disposal, (Young, 1991).

#### **4.9.3 Effect of Managerial Control Mechanism on Sustainable Competitiveness**

Third hypothesis  $H_{03}$  postulated that there was no significant effect of managerial control mechanism on sustainable competitiveness. In support of expectation of the study, findings indicated that managerial control mechanism had positive and highly significant effect on sustainable competitiveness  $\beta_1 = 0.114$  ( $P < 0.05$ ) and the

hypothesis was therefore rejected. The coefficient of 0.114 implied that 1% increase in managerial control mechanism was likely to result in 11.4% increase in sustainable competitiveness when other factors are held constant.

This was consistent with finding of Schaltegger, (2010) showed that eco-control is strongly based and dependent on the development of environmental management accounting. Sustainability is complex and has a great variety of elements that are relevant to business success. These can operate in both market and non-market processes. In order to better recognize and successfully manage these elements however it is essential that an expanded understanding of management control be developed, as well as a broader but well-structured concept of sustainability management control. Since the Porter's Diamond Model systematically integrates nonfinancial factors into management it offers great potential for structuring a broader concept of management control that also includes non-market aspects.

These findings gave a reflection of Youndt *et al.* (2004) observation that the firm's formal reporting structure, its formal and informal planning, controlling and coordination of systems, is an aspect of organizational capital. This can also be internally or externally focused, require the establishment of formal (or routine-based) management systems and procedures or 'infrastructural investments' (Klassen and Whybark, 1999b) internally focused investments that relate to the tracking of environmental information, the establishment of management control mechanisms and the development of corporate policies and procedures. This is designed to track the information on which proactive and reactive management control mechanisms (e.g., audits, impact assessments and certification) are based.

#### 4.9.4 Effect of Training on Sustainable Competitiveness

Fourth hypothesis  $H_{04}$  indicated that there was no significant effect of training on sustainable competitiveness. In support of expectation of the study, findings indicated that training had positive and highly significant effect on sustainable competitiveness ( $\beta_1 = 0.416$  ( $P < 0.05$ )) and the hypothesis was therefore rejected. The coefficient of 0.416 implied that 1% increase in training was likely to result in 41.6% increase in sustainable competitiveness when other factors are held constant. This was consistent with finding of Lefebvre, Lefebvre, and Talbot (2003) that smaller companies across various industry sectors, employee training was viewed as the most important aspect of environmental management system implementation in their managing of environmental issues .

Also (del Brio, J.A., Ferna' ndez, E., Junquera, B., 2007) noted that management's deep involvement and its strategic integration, as well as employee motivation and participation, has a positive impact on the company achieving a competitive edge based on environmental action; training on environmental practices is meant to aid in this initiative. In addition, findings echoed the call made by Balzarova, M.A., Castka, P, 2008 that training for skills and knowledge development is important not only for the initial implementation and adoption of environmental practices such as environmental management systems, but also for their maintenance and continued operation (Balzarova, M.A., Castka, P, 2008). From an RBV perspective, the weakness of a company's shortcomings in human resources may be important obstacles in the process of corporate environmental action (Daily B.F. and Huang, S., 2001). Even when there are stakeholder and institutional pressures for companies to adopt environmental practices, there are heterogeneous responses to these pressures

(Darnall, 2006) that may be explained by the lack of capabilities as defined by RBV. Arguably, resources are necessary in order for companies to respond to these stakeholder pressures to adopt environmental practices, one of the most important resources is knowledge resources.

#### **4.9.5 The Moderating effect of Stakeholders' Collaboration on the Relationship between Corporate Environmental Practices and Sustainable Competitiveness**

Fifth hypothesis  $H_{05}$  stated that there was no significant moderating effect of Stakeholders' Collaboration on the relationship between corporate environmental practices and sustainable competitiveness. In support of expectation of the study, findings indicated that moderating effect of Stakeholders' Collaboration was positive and highly significant on the relationship between corporate environmental practices and sustainable competitiveness ( $\beta_1 = 0.243$  ( $P < 0.05$ )) and the hypothesis was therefore rejected. The coefficient of 0.243 implied that 1% increase in corporate environmental practices was likely to result in 24.3% increase in sustainable competitiveness when other factors are held constant.

The findings supported what Freeman (1984) stated as, "You must deal with those groups that can affect you, while to be responsive (and effective in the long run) you must deal with those groups that you can affect". So firm's identity orientation Brickson (2007) that's individualist, relational, or collectivist determines the nature of its stakeholder relationships. Although individualistic firms tend to maintain weak ties, relational firms tend to maintain strong ties, and collectivist firms tend to have cliquish (ideological) ties. This was in line with Porter, (2004) argument that competitiveness is a capability and its potential has to be realized in a firm's everyday



operations. He added that says, “Unless there is appropriate improvement at the microeconomic level, macroeconomic, political, legal and social reforms will not bear full fruit”. In other words, macroeconomic conditions influence microeconomic (business) environment and vice versa.

#### **4.9.6 The Moderating effect of Stakeholders’ Collaboration on the Relationship between Process Adaptation and Sustainable Competitiveness**

Sixth hypothesis  $H_{05a}$  stated that there was no significant moderating effect of stakeholders’ collaboration on the relationship between process adaptation and sustainable competitiveness. In support of expectation of the study, findings indicated that moderating effect of Stakeholders’ Collaboration was negative and insignificant on the relationship between process adaptation and sustainable competitiveness ( $\beta=0.014$  ( $P<0.05$ )) and the hypothesis was therefore rejected. The coefficient of 0.014 implied that 1% increase in stakeholders collaboration on process adaptation was likely to result in 1.4% decrease in sustainable competitiveness when other factors are held constant.

This was in line with Jain (2007) who suggested that; the adoption of approaches such as government subsidies to remove impediments and facilitate implementation of clean technologies, knowledge collaboration between government researchers and stakeholders in the industrial enterprise can be useful vehicles to facilitate the diffusion of clean technologies in industrial enterprises (Genaidy *et al.*, 2010).

#### **4.9.7 The Moderating effect of Stakeholders' Collaboration on the Relationship between Products Adaptation and Sustainable Competitiveness**

Seventh hypothesis  $H_{05b}$  stated that there was no significant moderating effect of Stakeholders' Collaboration on the relationship between product adaptation and sustainable competitiveness. In support of expectation of the study, findings indicated that moderating effect of Stakeholders' Collaboration was negative and not significant on the relationship between corporate environmental practices and sustainable competitiveness ( $\beta = -0.113$  ( $P > 0.05$ )) and the hypothesis was therefore accepted. The coefficient of  $-0.113$  implied that 1% increase in stakeholders' collaboration on products adaptation was likely to result in 11.3% decrease in sustainable competitiveness when other factors are held constant.

This was in support of Aoe (2007) who posited that eco-designed products provide greater satisfaction to consumers, who are increasingly sensitive to environmental issues. A growing number of public and private companies are using environmental performance as a criterion for selecting their suppliers. Eco-designed products therefore enable firms to qualify as potential suppliers; In many cases, eco-design, while reducing a product's environmental impact, can lead to its simplification and to a longer lifecycle, thus helping it to stand out from the competition.

This results on product adaptation pointed to the fact that cost reductions can be achieved in various ways such as the use of recycled materials, which can cost less, better use of raw materials (Platchek *et al.*, 2008; Borchardt *et al.*, 2010), improved logistics and energy savings. Usually, these reductions are the result of the optimization of one or several aspects of the life-cycle of the product.

#### **4.9.8 The Moderating effect of Stakeholders' Collaboration on the Relationship between Managerial Control Mechanism and Sustainable Competitiveness**

Eight hypothesis  $H_{05c}$  stated that there was no significant moderating effect of stakeholders' collaboration on the relationship between managerial control mechanism and sustainable competitiveness. In support of expectation of the study, findings indicated that moderating effect of Stakeholders' Collaboration was negative and significant effect on the relationship between managerial control mechanism and sustainable competitiveness ( $\beta = -0.128$  ( $P < 0.05$ )) and the hypothesis was therefore rejected. The coefficient of  $-0.128$  implied that 1% increase in stakeholders' collaboration on managerial control mechanism was likely to result in 12.8% decrease in sustainable competitiveness when other factors are held constant.

This results corroborated Melnyk, Sroufe and Calantone, (2003) who found that formal systems and databases which integrate procedures and processes for the training on environmental practices of personnel and the monitoring, summarizing, and reporting of specialized environmental performance information to internal and external stakeholders of the firm. The documentation of this "environmental" information is primarily internally focused on design, pollution control and waste minimization, training on environmental practices, reporting to top management, and the setting of goals.

#### **4.9.9 The Moderating effect of Stakeholders' Collaboration on the Relationship between Training and Sustainable Competitiveness**

Ninth hypothesis  $H_{05d}$  stated that there was no significant moderating effect of stakeholders' collaboration on the relationship between training and sustainable

competitiveness. In support of expectation of the study, findings indicated that moderating effect of stakeholders' collaboration was negative and significant on the relationship between training and sustainable competitiveness ( $\beta = -0.111$  ( $P < 0.05$ )) and the hypothesis was therefore rejected. The coefficient of  $-0.111$  implied that 1% increase in stakeholders' collaboration on training was likely to result in 11.1% decrease in sustainable competitiveness when other factors are held constant. This result agreed with an RBV perspective that; the weakness of a company's business culture and its shortcomings in human resources may be important obstacles in the process of corporate environmental action (Daily B.F. and Huang, S., 2001).

Even when there are stakeholder and institutional pressures for companies to adopt environmental practices, there are heterogeneous responses to these pressures (Darnall, 2006) that may be explained by the lack of capabilities as defined by RBV. Arguably, resources are necessary in order for companies to respond to these stakeholder pressures to adopt environmental practices. One of the most important resources is knowledge resources, which training on environmental practices helps to build.

In addition, it supports Darnall and Edwards (2006) in that companies that implement pollution prevention practices have also invested in training their employees and therefore can apply their skills to more advanced forms of environmental management.

**Table 4.34: Summary of Test of Hypotheses Results**

Hypothesis		Beta	<i>p</i> – Values	Decision
Hypothesis Ho <sub>1</sub> :	There was no significant effect of process adaptation on sustainable competitiveness of tea firms in Kenya..	0.300	0.000	Reject
Hypothesis Ho <sub>2</sub> :	There was no significant effect of product adaptation on sustainable competitiveness of tea firms in Kenya.	0.118	0.001	Reject
Hypothesis Ho <sub>3</sub> :	There was no significant effect of managerial control mechanism on sustainable competitiveness of tea firms in Kenya.	0.114	0.003	Reject
Hypothesis Ho <sub>4</sub> :	There was no significant effect of training in environmental practices on sustainable competitiveness of tea firms in Kenya.	0.416	0.000	Reject
Hypothesis Ho <sub>5</sub> :	There was no significant moderating effect of Stakeholders' Collaboration on the relationship between corporate environmental practices and sustainable competitiveness of tea firms in Kenya	0.243	0.000	Reject
Hypothesis Ho <sub>5a</sub> :	There was no significant moderating effect of Stakeholders' Collaboration on the relationship between process adaptation and sustainable competitiveness of tea firms in Kenya	-0.14	0.557	Fail to reject
Hypothesis Ho <sub>5b</sub> :	There was no significant moderating effect of Stakeholders' Collaboration on the relationship between product adaptation and sustainable competitiveness of tea firms in Kenya	-0.113	0.001	Reject
Hypothesis Ho <sub>5c</sub> :	There was no significant moderating effect of Stakeholders' Collaboration on the relationship between managerial control mechanism and sustainable competitiveness of tea firms in Kenya	-0.128	0.000	Reject
Hypothesis Ho <sub>5d</sub> :	There was no significant moderating effect of Stakeholders' Collaboration on the relationship between training in environmental practices and sustainable competitiveness of tea firms in Kenya.	-0.111	0.011	Reject

**Source:** Research Data (2016)

#### 4.9.10 Validation of the Conceptual Model

Based on hierarchical analysis results on model 3 could be inferred that, the findings validated the conceptual framework (Fig 2.1) developed for this study as it shed light on the link between corporate environmental practices and sustainable competitiveness as moderated by stakeholders collaboration. Although the seventh interaction was insignificant the overall model: sustainable competitiveness =  $\alpha + \beta_1$  (PRA) +  $\beta_2$  (PDA) +  $\beta_3$  (MCM) +  $\beta_4$  (TEP) +  $\beta_5$  (STC) +  $\beta_6$  (STC \* PRA) +  $\beta_7$  (STC \* PDA) +  $\beta_8$  (STC \* MCM) +  $\beta_9$  (STC \* TEP) + C+ $\epsilon$  Model 7 using F ratio 111.190 with p value  $0.000 < 0.05$  was statistically highly significant and the model was fit to predict sustainable competitiveness.

The findings highlighted implications to resources based view theory, resource dependency theory and stakeholder theory on dimensions which affect sustainable competitiveness. The underlying philosophy that has characterized stakeholder theory emphasizing the "joint-ness" of stakeholder interests and the need for all stakeholders to benefit over time through their cooperation (Freeman, Harrison & Wicks, 2007). While economic returns are fundamental to a firm's core stakeholders, most stakeholders want other things as well (Bosse, Phillips & Harrison, 2009). Attention to these other factors may prove critical to understanding why firms succeed over time, why stakeholders are drawn to and remain with; some firms, and which firms do the most for their stakeholders.

A stakeholder-based perspective of value is important from a managerial perspective because managers tend to focus attention on things that lead to higher performance based on what actually gets measured (Sachs & Riihli, 2011). Rather than focusing primarily on economic measures of performance, a stakeholder-based performance

measure challenges managers to examine more broadly the value their firms are creating from the perspective of the stakeholders who are involved in creating it.

It is important to note that when making a business case for sustainable competitiveness the sheer number of sustainability activities is less important than how sustainability management is organized. Depending on the organization of management, voluntary environmental and social activities will have either a positive or a negative effect on business success. This raises the question about the specific approaches needed to develop a business case for sustainable competitiveness and with the help of management control support it (Schaltegger S., 2010).

Stakeholders' Collaboration "provide for mutually and rewarding transactions and relationships" according to Cropanzano and Marie (2005) through corporate environmental practices "that make stakeholders feel they "have been fairly considered, fairly treated, and fairly rewarded". Hosmer and Kiewitz (2005) thus creating sense of sustainable competitiveness through "controls that are valuable, rare, imperfectly imitable, and not substitutable" Barney (2001) in the tea subsector in Kenya. When a firm collaborates with stakeholders in implementing a value generating environmental practice not simultaneously being implemented by current or potential competitor and when other firms are unable to duplicate the benefits of this practice; observe that; this may create sustainable competitiveness if the gains are experienced over time.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Overview

This chapter discusses summary of the findings, hypotheses tested and why they were supported or unsupported. It was followed by conclusions of the study, implications of the study, implications to practice and theory as well as recommendations for further research.

#### 5.1 Summary of the Findings

The study postulated nine null hypotheses, out of which eight were not rejected and one rejected. First hypothesis stated that there was no significant effect of process adaptation on sustainable competitiveness. The relationship was found to be positive and statistically highly significant and the hypothesis was not rejected. The findings of this study indicated process adaptation that had positive significant effect on sustainable competitiveness.

Second hypothesis proposed that there was no significant effect of product adaptation on sustainable competitiveness. The relationship was found to be positive and statistically highly significant and the hypothesis was therefore rejected. The findings of this study indicated that product adaptation had positive significant effect on sustainable competitiveness.

Third hypothesis postulated that there was no significant effect of managerial control mechanism on sustainable competitiveness. The relationship was found to be positive and statistically highly significant and the hypothesis was therefore rejected. The



findings of this study indicated that managerial control mechanism had positive significant effect on sustainable competitiveness.

Fourth hypothesis postulated that there was no significant effect of training on sustainable competitiveness. The relationship was found to be positive and statistically highly significant and the hypothesis was therefore rejected. The findings of this study indicated that training had positive significant effect on sustainable competitiveness.

Fifth hypothesis stated that there was no significant effect of stakeholders' collaboration on sustainable competitiveness. The relationship was found to be positive and statistically significant and the hypothesis was not rejected. The study found that stakeholders' collaboration had positive but significant effect on sustainable competitiveness. This indicated that stakeholders' collaboration was a pure moderator because it was not related to criterion variable; rather it interacted with the predictor variables to modify the form of the relationship between predictors and criterion as shown by the results in model 3. Although its mean variance was significantly different from those of independent variables, their combinations significantly predicted sustainable competitiveness with F ratio of 133.895, was statistically significant.

Sixth hypothesis proposed that stakeholders' collaboration does not moderate the effect of the relationship between process adaptation and sustainable competitiveness. The results indicated that stakeholders' collaboration had insignificant and negative moderating effect on the relationship between process adaptation on sustainable competitiveness. This revealed that stakeholders' collaboration didnot moderate the

effect of process adaptation on sustainable competitiveness and the hypothesis was supported.

Seventh hypothesis stated that stakeholders' collaboration does not moderate the effect of product adaptation on sustainable competitiveness. The results indicated that stakeholders' collaboration was significant and had negative moderating effect on the relationship between product adaptation on sustainable competitiveness. This revealed that stakeholders' collaboration significantly moderated the effect of product adaptation on sustainable competitiveness and the hypothesis was not supported.

Eighth hypothesis postulated that stakeholders' collaboration does not moderate the effect of managerial control mechanism on sustainable competitiveness. The results indicated that stakeholders' collaboration had significant and negative moderating effect on the relationship between managerial control mechanism on sustainable competitiveness. Therefore, stakeholders' collaboration significantly moderated the effect of managerial control mechanism on sustainable competitiveness and the hypothesis was rejected.

Ninth hypothesis postulated that stakeholders' collaboration does not moderate the effect of training on sustainable competitiveness. The results indicated that stakeholders' collaboration had significant but negative moderating effect on the relationship between training and sustainable competitiveness. Therefore, stakeholders' collaboration significantly moderated the effect of training on sustainable competitiveness and the hypothesis was rejected.

Based on moderated hierarchical regression results, it was evident that stakeholders' collaboration was a pure moderator variable because it was not related to criterion

variable, rather it interacted with the predictor variables to modify the form of the relationship between predictors and criterion. This confirms Cohen and Cohen's (1975) argument that a moderator become pure when entered into interaction with predictor variables while having a negligible prediction on the criterion itself.

Interaction between stakeholders' collaboration and process adaptation on sustained competitiveness was negative and insignificant. However stakeholders' collaboration created an antagonistic effect of product adaptation, managerial control mechanism and training in environmental practices on sustained competitiveness because the effect became negative and significant, yet it was positive initially before interaction according to Lindley and Walker (1993).

There was likelihood that stakeholders could create enhancing, buffering and antagonistic effect on sustained competitiveness. Hence, an indication that stakeholders' collaboration had significant moderating effect on the relationship between corporate environmental practices and sustained competitiveness. The overall F test of 111.190 which was statistically highly significant confirmed the moderating role of stakeholders' collaboration on the relationship between corporate environmental practices and sustained competitiveness. This further provided support for resource based view and resource dependency theory. However, there was need to reassess stakeholder theory to satisfy the interest of key stakeholders to ensure sustained competitiveness.

## 5.2 Conclusions of Study

The study set to evaluate corporate environmental practices as a determinant of sustainable competitiveness of tea firms in Kenya. A number of conclusions may be drawn from the study.

It may be concluded that the tea firms in Kenya are in agreement that corporate environmental practices play a key role in sustainable competitiveness of their business. These practices include process adaptation, product adaptation, managerial control mechanism and training on environmental practices. However, this perspective remains significant but negative when stakeholders' collaboration is brought on board.

It was established that training-oriented environmental practices influenced sustainable competitiveness significantly through training engagements like better training methods, that are realistic and practical, proper documentation and of good quality.

On output-oriented, managerial-oriented and training-oriented CEP there was high approval that it had direct positive influence on sustainable competitiveness. This is demonstrated by the high perceived means of CEP items/scales. The managers feel that the use of cleaner transportation methods, reduction in raw material, reduction in waste generation, policy on recycling of solid waste, environmental management procedures for internal use and training methods really assist them to achieve sustainable competitiveness.

The insignificance of moderated process-oriented CEP and side-by-side significant direct influence on sustainable competitiveness. It could be concluded that the

effect of stakeholders' collaboration of the relationship between process adaptation and sustainable competitiveness was lost because of interviewing one among many stakeholders, namely managers. For instance, despite the high level of direct positive significance of all the four independent variables on sustainable competitiveness, still there was a significant but negative moderating effect of the three variables, namely output oriented, managerial oriented and training oriented CEP

### **5.3 Implication for Practice and Theory**

This covers practical and theoretical implication of the study.

#### **5.3.1 Implication for Managerial Practice**

Results of this study provided valuable information and guidelines that would be useful to tea firms' policy makers and implementers in Kenya, when addressing issues and designing appropriate measures or interventions to positively impact sustainable competitiveness. As earlier noted in chapter four process adaptation was highly significant and positively related to sustainable competitiveness of tea firms.

This involves sourcing of raw materials from community, reduction in raw material, renewable energy sources, energy saving new technology, environmental friendly suppliers of raw materials. This drove producer firms objectives towards stakeholders' collaboration based on the understanding of best quality and cheap raw materials from the community, use of renewable energy like wood fuel that are environmentally friendly from the community and latest technology in the processing and manufacture of tea.

More interestingly, product adaptation had positive and significant effect on sustainable competitiveness of tea firms in Kenya. The sustainability came as a result

of reduction in waste generation, reduction in resource consumption, recyclable responsible packaging, substitution with renewable materials and prolonging the overall life of the product. Through waste reduction the firms will be in position to convert by-products from the production of tea into more beneficial use that reduces overall cost of production

Also, managerial control mechanism had positive and significant effect on sustainable competitiveness of tea firms. On this aspect, the firms would put in place comprehensive policy on production policies and procedures, policies to prevent air and water pollution, environmental report, including data on pollution, positive steps toward preserving environment, and policy on clean energy and renewable energy. This would help to measure the firm in environmental measurements and create obligations that must be complied with by all the parties including the stakeholders.

Further more, training on environmental practices had positive and significant effect on sustainable competitiveness. This means firms developed strong training programs for all the stakeholders on environmental conservation leveraging on stakeholders' collaboration. These firms created training programs that are realistic and practical , with the right content, depth and duration of the course and that guaranteed personal development and professional experiences. This could ensure easy communication and best basis for creating awareness on new global dynamics on environmental issues.

Stakeholders' collaboration had positive and significant effect on sustainable competitiveness. Tea firms in Kenya had engaged in collaboration with the stakeholders on environmental concerns through partnerships with stakeholders that reinforce their core mission and corporate objectives, frequent interactions with the

stakeholders, engaging in serious environmental practices undertaking and involving company board to get supports active supports with stakeholders.

Lastly moderation by stakeholders' collaboration indicated a shift from positive to negative significant effect on the three predictors namely product adaptation, managerial control mechanism and training on sustainable competitiveness which calls for critical look by the management practitioners in order to understand the sudden change from managerial perspective.

### **5.3.2 Implication for Theory**

One of the theoretical implication for this study is centred on a suggested paradigmatic shift from sustainable competitiveness to stakeholders collaboration approach. Resource based view is have been built around four resource dimensions, valuable, rareness, inimitability and substitutability in order to confer competitiveness. The theoretical implication of the current study is that collaboration with stakeholders is a prerequisite for sustainable competitiveness. This implies that should provide for fifth dimension which is the collaboration dimension with stakeholders.

Secondly resource dependency theory should be reviewed because it lacked sustainability dimension. It is clear that resource dependency theory is premised on the notion that all organizations critically depend on other organizations for the provision of vital resources, and that this dependence is often reciprocal. It predicts that, firms lacking in essential resources will seek to establish relationships—often through formal and informal collaboration—to acquire such resources.

Third, the conceptual definition of corporate environmental practices, stakeholders' collaboration and sustainable competitiveness was modified and generic constructs were developed. Four such constructs were depicted as process oriented CEP, product oriented CEP, managerial oriented CEP and training oriented CEP. The corresponding construct were used to measure sustainable competitiveness. These were tactical derived and strategic derived sustainable competitiveness. Theoretically the implication is that corporate environmental practices is multidimensional with possibility of extension depending on particular contextual issues.

#### **5.4 Recommendations for Further Research**

This study focused only on tea firms in Kenya, this might limit generalization of the findings. Accordingly, future studies should examine whether the relationships reported here differ across all sectors of the economy. There may be differences between industries with respect to corporate environmental practices, stakeholders' collaboration and sustainable competitiveness.

Results of this study provided valuable information on the moderating role of stakeholders' collaboration on the relationship between corporate environmental practices and sustainable competitiveness. It therefore recommends that future studies on stakeholders' collaboration should pay close attention to its moderating role on process adaptation as it was insignificant in this study. Also structural equation model can be used to analyze data and compare the results because this study was based on hierarchical regression model.

Despite these findings on the effect of stakeholders' collaboration on the relationship between corporate environmental practices and sustainable competitiveness, there are



varieties of other factors that have not been addressed in this study. Particularly of importance is change of environmental factors. Future studies should explore whether and how change in environmental practices affect the moderating effect of stakeholders' collaboration on the relationship between corporate environmental practices and sustainable competitiveness.

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## APPENDICES

### Appendix I- List Of Registered Tea Factories In Kenya

#### West of Rift Valley

1. Arrocket Factory - Sotik Tea Company Ltd
2. Chagaik Factory - UTK Ltd
3. Changana Factory - JFK Ltd
4. Changoi Tea Factory - WTK Ltd
5. Chebut Tea Factory Co. Ltd
6. Chelal Tea
7. Chemomi Factory - EPK Ltd
8. Chomogonday Factory - JFK Ltd
9. Eastern Produce Kenya Ltd
10. Eberege Tea Factory Co. Ltd
11. Gacharage Tea Factory Co. Ltd
12. Gianchore Tea Factory Co. Ltd
13. Igembe Tea Factory Co. Ltd
14. Ikumbi Tea Factory Co. Ltd
15. James Finlay (Kenya) Ltd
16. Jamji Factory - UTK Ltd
17. Kaimosi Tea Company Ltd - WTK Ltd
18. Kaisugu Tea Factory Co. Ltd
19. Kapchebet Tea Factory Ltd
20. Kapcheluch Tea Factory Ltd
21. Kapchorua Tea Company Ltd - WTK Ltd
22. Kapkatet Tea Factory Co. Ltd
23. Kapkoros Tea Factory Co. Ltd
24. Kapsara Tea Factory Co. Ltd
25. Kapset Tea Factory Co. Ltd
26. Kapsumbeiwa Factory - EPK Ltd
27. Kaptumo Tea Factory Co. Ltd
28. Kebirigo Tea Factory Co. Ltd
29. Kepchomo Factory - EPK Ltd
30. Kericho Factory - UTK Ltd
31. Kiamokama Tea Factory Co. Ltd
32. Kibwari Ltd
33. Kiegoi Tea Factory Co. Ltd
34. Kimari Factory - UTK Ltd
35. Kimugu Factory - UTK Ltd
36. Kipkebe Factory/ Kipkebe Ltd
37. Kipkoimet - EPK Ltd
38. Kiptagich Tea Estate Ltd
39. Kitumbe Factory - JFK Ltd
40. Kobel Tea
41. Koros Factory - JFK Ltd
42. Kymulot Factory - JFK Ltd
43. Litein Tea Factory Co. Ltd



44. Mabroukie Factory - UTK Ltd
45. Makomboki Tea Factory Co. Ltd
46. Mara Mara Instant - JFK Ltd
47. Maramba Tea Factory Ltd
48. Mataara Tea Factory Co. Ltd
49. Mettarora Factory - Sotik Highlands Tea Estate Ltd
50. Mogogosiek Tea Factory Co. Ltd
51. Momul Tea Factory Co. Ltd
52. Nandi Tea Estates - Nandi Hills
53. Nyamache Tea Factory Co. Ltd
54. Nyankoba Tea Factory Co. Ltd
55. Nyansiongo Tea Factory Co. Ltd
56. Nyayo Tea Zones Development Corporation
57. Ogembo Tea Factory Co. Ltd
58. Rianyamwamu Tea
59. Rorok Tea Factory Co. Ltd
60. Sanganyi Tea Factory Co. Ltd
61. Saosa Factory - JFK Ltd
62. Siret Tea Company Ltd Ltd
63. Tagabi Factory - UTK Ltd
64. Tegat Tea Factory Co. Ltd
65. Tinderet Tea Estate (1989) Ltd
66. Tirgaga Tea Factory Co. Ltd
67. Toror Tea Factory Co. Ltd
68. Unilever Tea Kenya Ltd
69. Williamson Tea Kenya Ltd

#### **East of Rift Valley**

1. Chinga Tea Factory Co. Ltd
2. Gachege Tea Factory Co. Ltd
3. Gathuthi Tea Factory Co. Ltd
4. Gatitu Tea Factory
5. Gatunguru Tea Factory Co. Ltd
6. Githambo Tea Factory Co. Ltd
7. Githongo Tea Factory Co. Ltd
8. Gitugi Tea Factory Co. Ltd
9. Imenti Tea Factory Co. Ltd
10. Iriaini Tea Factory Co. Ltd
11. Itumbe Tea Factory Co. Ltd
12. Kagwe Tea Factory Co. Ltd
13. Kambaa Tea Factory Co. Ltd
14. Kangaita Tea Factory Co. Ltd
15. Kanyenyaini Tea Factory Co. Ltd
16. Karirana Estates Ltd
17. Kathangariri Tea Factory Co. Ltd
18. Kimunye Tea Factory Co. Ltd
19. Kinoro Tea Factory Co. Ltd
20. Kionyo Tea Factory Co. Ltd
21. Kiru Tea Factory Co. Ltd
22. Kuri Tea Factory Co. Ltd
23. Michimikuru Tea Factory Co. Ltd

24. Mudete Tea Factory Co. Ltd
25. Mungania Tea Factory Co. Ltd
26. Mununga Tea Factory Co. Ltd
27. Ndimba Tea Factory Co. Ltd
28. Nduti Tea Factory Co. Ltd
29. Ngere Tea Factory Co. Ltd
30. Ngorongo Tea Factory Co. Ltd
31. Njunu Tea Factory Co. Ltd
32. Ragati Tea Factory Co. Ltd
33. Rukuriri Tea Factory Co. Ltd
34. Savani Factory - EPK Ltd
35. Theta Tea Factory Co. Ltd
36. Thumaita Tea Factory Co. Ltd
37. Tombe Tea Factory Co. Ltd
38. Weru Tea Factory Co. Ltd

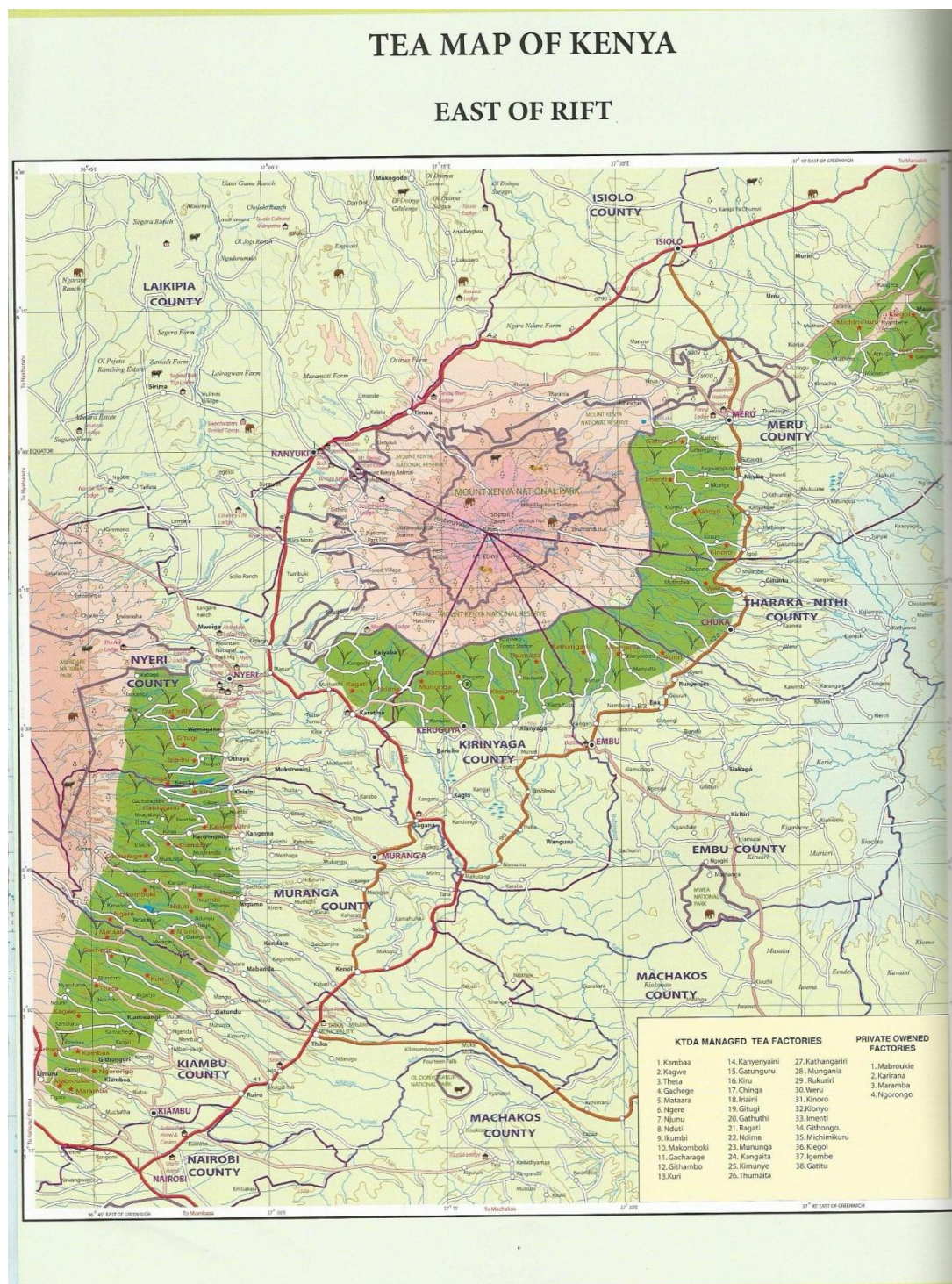
**Source: (Tea Board of Kenya)**

Appendix II : Tea Map of Kenya, West of Rift Valley



Source: Tea Board of Kenya

Appendix III: Tea Map Of Kenya, East Of Rift Valley



Source: Tea Board of Kenya

## Appendix IV: Questionnaire

Dear Respondent,

I wish to thank you for your participation in this survey. This questionnaire is for the purpose of carrying out an academic research on the moderating effect of Stakeholders' Collaboration on the relationship between corporate environmental practices and sustainable competitiveness in tea sector in Kenya. Please do not write your name or name of your tea firm on this questionnaire. Kindly, give your opinion by typing (A) or marking  $\surd$  inside the bracket/ box appropriately.

**A:**

1. Kindly how do you classify ownership of your tea firm?  
 Community owned ( ) privately owned ( )
2. What is the age bracket of your firm?  
 Below 25 Years ( ) 25-35 Years ( ) 35-45 Years ( ) Above 45 Years ( )
3. Please, how many production lines do your firm/ each of your firms have?
  - 1 Line ( )
  - 2 Lines ( )
  - 3 Lines ( )
  - 4 and More Lines ( )
4. How do you classify your firm; on any international environmental certification?
  - Certified ( )
  - Non-certified ( )

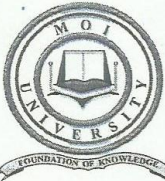
<b>SUSTAINABLE COMPETITIVENESS-SC-8</b>							
Give your opinion on scale 1 to 7; compared to other organizations that do the same kind of work, how would you compare your organisation's sustainable competitiveness over the past 3 years in terms of:- Scale: 1-Disagree Strongly, 2-Disagree, 3-Slightly Disagree,4- Neutral, 5-Slightly Agree,6-Agree, 7-Agree Strongly							
1. Our clients are more satisfied than the clients of the rival tea firms	1	2	3	4	5	6	7
2. Our suppliers and distributions channels plays important roles towards creating a competitive edge in whole industry	1	2	3	4	5	6	7
3. We have a better public image than the rival tea firms	1	2	3	4	5	6	7
4. The employees' motivation of our tea firms is higher than the employees' motivation of the rival tea firms	1	2	3	4	5	6	7
5. We have less labour absenteeism than the rival tea firms	1	2	3	4	5	6	7
6. Our market share grows faster than the market share of the rival tea firms	1	2	3	4	5	6	7
7. Our profitability share grows faster than the profitability of the rival tea firms	1	2	3	4	5	6	7
8. Our productivity grows faster than the productivity of the rival tea firms	1	2	3	4	5	6	7
9. Our prices at mombasa auction are always the best	1	2	3	4	5	6	7
10. We have have international awards in environmental conservation	1	2	3	4	5	6	7
<b>CORPORATE ENVIRONMENTAL PRACTICES-CEP</b>							
Give your opinion on scale 1 to 7: compared to other organizations that do the same kind of work, how would you compare your organisation's level of environmental practices, over the past 3 years in terms of:- Scale: 1-Much less 2-Less 3-Fairly Less 4 -Same 5- Fairly More 6- More 7- Much More							
<b>Process Adaptation –PRA</b>							
1. Avoidance of materials that are considered harmful, but not illegal	1	2	3	4	5	6	7
2. We source most of our material from the community	1	2	3	4	5	6	7
3. Our suppliers of material are environmental friendly	1	2	3	4	5	6	7
4. We do employ energy saving new technology	1	2	3	4	5	6	7
5. We have renewable energy sources	1	2	3	4	5	6	7
6. Our factories use closed-loop systems	1	2	3	4	5	6	7
7. Better maintenance procedures	1	2	3	4	5	6	7
8. Use of cleaner transportation methods	1	2	3	4	5	6	7
9. Preference for green products in purchasing	1	2	3	4	5	6	7
10. Use of cleaner transportation methods	1	2	3	4	5	6	7
11. Reduction in raw material (i.e. the use of recycled material) for product manufacturing	1	2	3	4	5	6	7

<b>Product Adaptation –PDA</b>							
1. Reduction in resource consumption	1	2	3	4	5	6	7
2. Recyclable responsible packaging	1	2	3	4	5	6	7
3. Reusability in resource consumption	1	2	3	4	5	6	7
4. Reduction in waste generation	1	2	3	4	5	6	7
5. Substitution with renewable materials	1	2	3	4	5	6	7
6. Prolonging the overall life of the product	1	2	3	4	5	6	7
7. Disposal or Recycling phase	1	2	3	4	5	6	7
8. Design, and disposal at end of life	1	2	3	4	5	6	7
<b>Training on Environmental Practices –TEP</b>							
1. The training always enables me to share professional experiences with colleagues	1	2	3	4	5	6	7
2. The training is realistic and practical	1	2	3	4	5	6	7
3. The training documentation given out is always of good quality	1	2	3	4	5	6	7
4. The training context is always well suited to the training process	1	2	3	4	5	6	7
5. The training is always useful for my specific job	1	2	3	4	5	6	7
6. The training is always useful for my personal development	1	2	3	4	5	6	7
7. The training merits a good overall rating	1	2	3	4	5	6	7
8. The issues are dealt with in as much in depth as the length of the course allowed	1	2	3	4	5	6	7
9. The length of the course is always adequate for the objectives and content	1	2	3	4	5	6	7
10. The method is always well suited to the objectives and content	1	2	3	4	5	6	7
11. The method used always enable us to take an active part in training	1	2	3	4	5	6	7
12. Training is participatory	1	2	3	4	5	6	7
13. Always there is improvement in environmental practices after training	1	2	3	4	5	6	7
14. All the stakeholders are training on environmental practices	1	2	3	4	5	6	7
<b>Managerial Control Mechanism –MCM</b>							
1. We have positive steps toward preserving our environment	1	2	3	4	5	6	7
2. We have voluntary programs in place, including recycling	1	2	3	4	5	6	7
3. We have major policies to prevent air and water pollution	1	2	3	4	5	6	7
4. We have environmental report, including data on pollution	1	2	3	4	5	6	7
5. We recycle solid waste	1	2	3	4	5	6	7
6. We have environmental management procedures for internal use	1	2	3	4	5	6	7
7. We use advanced prevention and safety systems at work	1	2	3	4	5	6	7

8. We have policy on clean energy and renewable energy.	1	2	3	4	5	6	7
9. We have annual audit by government authorities	1	2	3	4	5	6	7
10. We do have international social audit periodically	1	2	3	4	5	6	7
11. We have few court cases on environmental compliance	1	2	3	4	5	6	7
<b>COLLABORATION WITH THE STAKEHOLDERS-STC</b>							
Give your opinion on scale 1 to 7; compared to other organizations that do the same kind of work, how would you compare your organisation's level of collaboration with stakeholders, over the past 3 years in terms of:- Scale: 1-Much less 2-Less 3-Fairly Less 4 -Same 5- Fairly More 6- More 7- Much More							
1. I am generally open to working with stakeholders on projects of mutual benefit.	1	2	3	4	5	6	7
2. I am eager to show stakeholders how my company can support their goals and objectives.	1	2	3	4	5	6	7
3. We look for partnerships with stakeholders that reinforce our core mission and corporate purpose.	1	2	3	4	5	6	7
4. My organization ranks high on environmental practices in relation to its major competitors	1	2	3	4	5	6	7
5. My company takes seriously environmental practices.	1	2	3	4	5	6	7
6. The company board supports active engagement with stakeholders	1	2	3	4	5	6	7
7. I have frequent interactions with stakeholders.	1	2	3	4	5	6	7
8. We do have better participation with our employees	1	2	3	4	5	6	7
9. We do have better participation with our Suppliers	1	2	3	4	5	6	7



**Appendix V: Research Authorization Letter (Institution)**



**MOI UNIVERSITY**  
SCHOOL OF BUSINESS AND ECONOMICS

Tel: (053) 43620  
Fax No: (053) 43360  
Telex No. 35047 MOIVARSITY

Box 3900  
Eldoret  
KENYA

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**REF: SBE/PGR/STA/20**

**DATE: 19<sup>th</sup> June, 2014**

TO WHOM IT MAY CONCERN

Dear Sir/Madam,


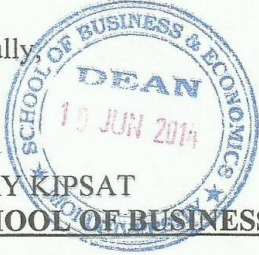
**RE: HENRY KIPLANGAT CHERUIYOT - SBE/DPHIL/BM/004/10**

This is to confirm that the above named person is a bonafide student of Moi University, School of Business & Economics undertaking a Doctor of Philosophy degree in Business Management, Strategic Management Option.

He has completed course work, defended his proposal and currently proceeding to the field to collect data for his thesis titled; *“The Moderating Effect of Stake Holders’ Collaboration on the Relationship Between Corporate Environmental Practices and Sustained Competitiveness in Tea Sub-Sector in Kenya”*.

Any assistance accorded to him will be highly appreciated.

Yours faithfully,

**PROF. MARY KIPSAT**  
**DEAN, SCHOOL OF BUSINESS & ECONOMICS**

**Appendix VI: Research Authorization Letter (NACOSTI)**



**NATIONAL COMMISSION FOR SCIENCE,  
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,  
2241349, 310571, 2219420  
Fax: +254-20-318245, 318249  
Email: secretary@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref: No.

Date:

**11<sup>th</sup> November, 2014**

**NACOSTI/P/14/4040/4131**

Henry Kiplangat Cheruiyot  
Moi University  
P.O. Box 3900-30100  
**ELDORET.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“The moderating effect of stakeholders’ collaboration on the relationship between corporate environmental practices and sustained competitiveness in Tea Sub Sector in Kenya,”* I am pleased to inform you that you have been authorized to undertake research in **all Counties** for a period ending **31<sup>st</sup> July, 2015**.

You are advised to report to **the County Commissioners and the County Directors of Education, all Counties** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
**DR. S. K. LANGAT, OGW**  
**FOR: SECRETARY/CEO**

Copy to:

The County Commissioners  
All Counties.

The County Directors of Education  
The County Directors of Education  
All Counties.

### Appendix VII: Research Permit (NACOSTI)

#### CONDITIONS

1. **You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.**
2. **Government Officers will not be interviewed without prior appointment.**
3. **No questionnaire will be used unless it has been approved.**
4. **Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
5. **You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
6. **The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.**



REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

#### RESEARCH CLEARANCE PERMIT

Serial No. A 3565

CONDITIONS: see back page

#### THIS IS TO CERTIFY THAT:

**MR. HENRY KIPLANGAT CHERUIYOT of MOI UNIVERSITY, 0-200 kericho, has been permitted to conduct research in All Counties**

**on the topic: THE MODERATING EFFECT OF STAKEHOLDERS' COLLABORATION ON THE RELATIONSHIP BETWEEN CORPORATE ENVIRONMENTAL PRACTICES AND SUSTAINED COMPETITIVENESS IN TEA SUB-SECTOR IN KENYA**

**for the period ending: 31st July, 2015**

*[Handwritten Signature]*  
Applicant's Signature



*[Handwritten Signature]*  
Secretary  
National Commission for Science, Technology & Innovation