THE EFFECT OF CORPORATE SUSTAINABILITY PERFORMANCE ON THE RELATIONSHIP BETWEEN CORPORATE EFFICIENCY STRATEGY AND CORPORATE FINANCIAL PERFORMANCE

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By

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ABSTRACT

Past research has shown the importance of corporate sustainability performance to corporate financial performance. However, little is known about the mediating effect of corporate sustainability performance on the relationship between efficiency strategy and corporate financial performance. This study fills the gap by investigating the relationship between efficiency strategy, sustainability performance and corporate financial performance of the service and the industry sectors in Jordan. Corporate efficiency strategy is measured through two dimensions, namely socio-efficiency and eco-efficiency. Corporate sustainability performance is also measured through two dimensions, namely corporate social performance and corporate environmental performance, while the measurement of the corporate financial performance is based on ROI (return on investment), ROA (return on asset), sales growth and profit growth. The data were obtained by means of a mail survey sent directly to company managers involved in social and environmental performance. The questionnaires were sent to 232 service and industry companies listed on the Amman Stock Exchange in 2011, and 101 or 43.5 percent of them responded. The analysis used the linear and multiple regressions of analysis of the data. The study contributed to the sustainability literature by showing that sustainability performance and efficiency strategy lead to greater financial performance. Corporate sustainability performance was found to be partially mediating the relationship between efficiency strategy and the financial performance model. The findings of this study, while contributing to the body of knowledge of the importance of sustainability performance, also assist the company managers in their sustainability efforts and in applying efficiency strategy to company operations.

Keywords: efficiency strategy, sustainability performance, social performance, environmental performance, corporate financial performance

ABSTRAK

Kajian lampau memperlihatkan peri pentingnya prestasi Kelestarian korporat terhadap prestasi kewangan korporat. Meskipun begitu, tidak banyak yang diketahui tentang kesan perantaraan prestasi Kelestarian korporat terhadap hubungan antara strategi kecekapan dengan prestasi kewangan korporat. Kajian ini memenuhi lompang kajian dengan meneliti hubungan antara strategi kecekapan, prestasi Kelestarian, dan prestasi kewangan korporat dalam sektor perkhidmatan dan sektor industri di Jordan. Strategi kecekapan korporat diukur menerusi dua dimensi, iaitu kecekapan sosio dan kecekapan eko, manakala prestasi Kelestarian korporat diukur menerusi dua dimensi, iaitu prestasi sosial korporat dan prestasi persekitaran korporat. Ukuran prestasi kewangan korporat pula dibuat berlandaskan ROI (pulangan pelaburan), ROA (pulangan asset), pertumbuhan jualan, serta pertumbuhan keuntungan. Data kajian diperoleh menerusi tinjauan secara pos ke atas pengurus syarikat yang terlibat dalam prestasi sosial dan alam sekitar. Borang soal selidik diedarkan kepada 232 syarikat perkhidmatan dan industri yang tersenarai di Amman Stock Exchange pada tahun 2011 dan sebanyak 101 atau 43.5 peratus responden memberikan maklum balas. Analisis kajian dibuat menerusi regresi linear dan regresi berganda. Kajian ini menyumbang kepada kosa ilmu Kelestarian dengan memperlihatkan bahawa prestasi Kelestarian dan strategi kecekapan memacu prestasi kewangan yang lebih baik. Prestasi Kelestarian korporat didapati bertindak sebagai perantara separa dalam hubungan antara strategi kecekapan dengan model prestasi kewangan. Selain menyumbang kepada bidang ilmu tentang kepentingan prestasi Kelestarian, kajian ini turut membantu pengurus untuk melestarikan syarikat dan menerapkan strategi kecekapan dalam urusan pengendalian syarikat.

Kata kunci: strategi kecekapan, prestasi kelestarian , prestasi sosial, prestasi persekitaran, prestasi kewangan korporat,

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LIST OF ABBREVIATIONS

ASE	Amman Stock Exchange
CFP	Corporate Financial Performance
CEP	Corporate environmental performance
CS	Corporate Sustainability
CSP	Corporate Social Performance
CSR	Corporate Social Responsibility
EEA	The European Environment Agency
GCEP	The General Corporation for Environmental Protection
GRI	Global Reporting Initiative
IAG	Insurance Australia Group
IchemE	The Institute of Chemical Engineers
IISD	International Institute for Sustainable Development
JDOS	Jordan Department of Statistics
KLD	Kinder Lydenberg Domini
OECD	Organization for Economic Co-operation and Development
ROA	Return on Assets
ROI	Return on Investment
SD	Sustainable Development
SP	Sustainability Performance
UNCSD	United Nations Commission for Sustainable Development
WBCSD	World Business Cancel for Sustainable Development
WRI	World Resources Institute

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Recently, corporate sectors, environmental organizations, managers and scholars have debated the issue of corporate sustainability (Salzmann *et al.*, 2005). As such, a number of companies attempt to gain lasting benefits and perks by establishing the foundation of corporate strategy through the application of sustainability activities (Porter, 1991; Schaltegger & Burritt, 2006; Chabowski *et al.*, 2011; Goyal, Rahman, & Kazmi, 2013).

As the number of companies that have included sustainability as part of their corporate strategy becomes greater, an assessment of sustainability performance becomes necessary too. In the span of the twenty years, a number of researches have been carried out to establish an efficient and consistent corporate sustainability strategy and performance measurements. (Epstein & Roy, 2001; Epstein, 2008; Goyal, Rahman, & Kazmi, 2013). Therefore, carrying out a study on the impact of corporate sustainability on a firm's performance is imperative.

The World Commission on Environmental and Development (WCED) defines sustainable as “the development that meets the need for the present generation without compromising the ability for future generations to meet their needs” (WCED, 1987, p. 37). The general aspects of sustainable development according to the WCED definition

focus on the need of both current and futures generations. Thus, this appeared to be a conventional description to the term ‘sustainable development’; however, there remain some reservations concerning the importance of defining the idea in certain domains (Seuring et al, 2008). Shifting the sustainable development ideas to business strategies increases the awareness of social and environment responsibility as the focus of sustainable development in protecting the environment and giving more justice across the society. Thus, a new concept of sustainable development related to business appears in the scholarly debate as “corporate sustainability” which mean adoption of business strategies and activities that meet the needs of companies and its stakeholders today while protecting, sustaining and strengthening human and natural resources that will be necessary in the future (Deloitte & Touche, 1992).

The United Nations Conference on Environmental and Development 1992, known as Rio Summit, received the attentions of global concern regarding sustainability generally and the protection of environment specifically (Rio Summit, 1992). As a result, a new agenda was issued to encourage all countries in the world to start protecting the environment and, at the same time, look for strategies to prevent environmental pollution and put pressure on companies to comply with these new rules and strategies.

Jordan was one of the countries that participated in the Rio Summit Conference. Soon after the summit, Jordan outlined the National Agenda 21 (otherwise known as the Jordanian current plan). Among many issues, the Agenda acknowledged and regarded the importance of the environment through the establishment of environmental information

tactics, environmental consciousness, and learning and communication approach – through the hosting of various events and conventions in an effort to respond to the call for sustainable goals.

The Jordanian government understood the observance with the suggestions of the Rio's Summit would help companies achieve sustainable development and provide a positive impact upon the socio-economic growth and the preservation of natural and environmental resources (GCEP, 2002). Following the aims and strategies of The Rio Summit, the Jordanian government started setting out a plan and issued rules through the enactment of Law of Environmental Protection No (12) of 1995. As a result, the General Corporation for the Environment Protection (GCEP) was established as an independent institution, the Environment Protection Council was formed, and more recently the GCEP established the Sustainable Development Office.

GCEP (2002) issued a Jordanian report about sustainable development including the three dimensions of sustainability. These included: the Social dimension (carrying five sub-dimensions which were poverty, population, health, education, and housing), the economic dimension (carrying seven sub-dimensions which were international trade, patterns of consumptions, finance, science and technology, industry, transport and communication, and tourism,) and the environmental dimension or natural resources dimension (carrying eleven dimensions which were agriculture, atmosphere, biodiversity, drought, energy, water, forests, mountains, coastal areas, toxic materials, and hazardous

wastes). The report showed the awareness of the Jordanian government about sustainable development in general and about the environment specifically.

It is understood that as a small country, Jordan has only a certain amount of natural resources and is also one of the countries with limited water supply. As of late, Jordan is looking into possible solutions in developing its restricted water resources by utilizing its present water sources with great efficiency. The country is also dependent on foreign supplies in satisfying its need for energy. In the later decade Jordan's raw petroleum demands were satisfied through supplies from neighboring regions in the Middle East – normally purchased at conceding rates. (Tamimi, 1993).

In the beginning of the twentieth century, Jordan has begun to import petroleum, mainly from the Kingdom of Saudi Arabia (KSA) – purchased at conceding and market rates. Furthermore, a natural gas channel was fixed to source oil from Egypt to Jordan (en route to Aqaba) and has been utilized since. The cylinder has settled in the north of Jordan and further works have been made to link it to Syria. Since then, Jordan formulated a better means to expand varying and recyclable energy resources, namely petroleum shale, nuclear power, air and solar energy (Ministry of Energy and Mineral Resources, 2007).

The World Bank classifies Jordan to be one of the countries with "lower middle income". As a "lower middle income country" the per capita GDP was $4,340 in 2011. In reference to the Jordanian Department of Statistics (DOS, 2011), nearly 13% of the economically-proactive population in the country remained jobless as of 2011. However, informal

sources record an estimation of 30% unemployment rate. Regardless, Jordan has a significantly higher literacy rate and lower crime rates in comparison to countries of similar revenue. The country also suffers from decreasing number of population growth to 2.3% as of 2011, as recorded by the Jordanian Government.

Located in the Middle East, Jordan has tried hard to improve the economic performance but with the limited resources and the political issues in the region during the last two decades, Jordan appears to be in a critical economic situation. The problems faced by Jordan have led the country to experience increasing poverty from year to year. According to GCEP (2002), sustainable development is a way to solve the problems faced by Jordan to decrease poverty and protect the environment, especially with limited resources. The strategies were developed during these periods as displayed in Table 1.1 below.

On 15th of June 2009, a sustainable Jordan workshop was held in Amman in which 40 non-government organizations (NGOs) from different sectors participated. The results of workshop included a declaration that NGOs must develop short-term and long-term sustainability strategies in order to achieve sustainability. The development of sustainability in Jordan requires careful attention and increased initiatives on different sectors and dimensions from both government and non-government sector, Thus, cooperation between them needs to be increased (Jordan Sustainable Workshop, 2009). Clearly, Jordan needs to be more concerned with sustainability studies, especially from a

business point of view encouraging all Jordanian economic sectors to participate in development in ways contributing to sustainability.

Table 1.1
Sustainable Development Policies in Jordan from 1991-2007

Strategy	**Issued by**	**Year of issue**
National Environmental Strategy	Ministry of Municipal, Affairs and Environment	1991
National Environmental Action Plan (NEAP)	Ministry of Planning	1995
Water Strategy and Policies	Ministry of Water &Irrigation	1998
National Agenda 21	General Corporation for Environmental Protection	2000
Poverty Reduction Strategy	Ministry of Social Development	2001
National Strategy for Agricultural Development	Higher Socio-economic council	2002
Biodiversity Strategy and Action Plan	Ministry of Environment	2002
National Strategy for Tourism	Ministry of Tourism	2004
National Youth Strategy	Higher Council for Youth	2004
National Population Strategy	Higher Council for Population	2004
National Energy Strategy	Ministry of Energy	2005
Childhood Strategy	National Council for Childhood	2005
National Strategy and Action Plan to Combat desertification	Ministry of Environment	2005
The National Agenda	Royal National Agenda Committee	2006
POPs National Implementation Plan	Ministry of Environment	2006
National Strategy and Action Plan for Drought Mitigation	Ministry of Agriculture	2007

Source: Ministry of Environment report (2007)

1.2 Problem Statement

The corporate sustainability is an" adoption of business strategies and activities that meet the needs of companies and its stakeholders today while protecting, sustaining and strengthening human and natural resources that will be necessary in the future".(Deloitte & Touche, 1992). Generally, the managers are aware of the impact of social and environmental issues on the company's financial performance. Therefore, environmental problems should be considered even if this means a reduction in profits and the slowing down the introduction of products (Bowman, 1977).

Adopting strategies pertaining to sustainability is difficult because a company often incorporates social and environmental concerns into business operations voluntarily (Marrewijk & Were, 2003). Besides that, the implementation of sustainability strategies in an organization is different compared to the implementation of other strategies. For instance, in achieving operational goals, a clear connection exists between products and profit. However, for sustainability, the intention is to successfully achieve social, environmental and financial performance simultaneously. For the managers, it is easier when actions can improve social, environmental, and financial performance together. Nevertheless, it could be difficult task for the managers to make a decision when it involves significant cost improvement (Epstein, 2008).

Often the implementation of a sustainability strategy leads to better sustainability performance, which includes both social and environmental performance. According to

Epstein and Roy (2001), sustainability strategy is an action taken by companies, and corporate sustainable performance is actually an outcome of the action. Nonetheless, the main aim is achieving better company financial performance. However, an efficiency strategy approach monopolizes business strategy practices in sustainability. Besides being cost efficient in environmental management practices, this approach also claims to minimize resource consumption and waste (Korhonen & Seager, 2008; Jollands & Patterson, 2004; Young & Tilley, 2006).

Sinkin, Wright, and Burnett (2008) have argued about the direct link between efficiency strategy and company performance, saying that efficiency strategy has the potential to enhance competitive advantage and increase market price compared to companies that do not adopt an efficiency strategy. So far, a lack of literature exists quantifying how efficiency strategy can be measured as an enabler in shaping performance with respect to corporate sustainability.

To cover the gap of previous studies, the present study categorizes efficiency strategy into two strategies: socio-efficiency and eco-efficiency related with corporate sustainability performance (Dyllick & Hockerts, 2002). The lack of literature on corporate sustainability performance exists because of the difficulty in identifying corporations that are exercising the three dimensions of sustainability (social, environment, economic) together (Labuschange *et al.*, 2005).

In addition, Baumgartner and Ebner (2010) argued that items measuring the three dimensions of sustainability are still inconclusive. Thus, to overcome this shortcoming, the present study adapts valid items related to corporate sustainability and re-examine it from a managerial perception.

During the last two decades, the effects of sustainability performance on financial performance have been debated increasingly under the cover of social and environmental performance. Previous studies on the effects of social and environmental performance on financial performance have shown mixed results. Some have shown a positive relationship (Dowell, Hart, & Yeung, 2000; Epstein & Schnietz, 2002; Graves & Waddock, 2000; Konar & Cohen, 2001). Some have shown a negative relationship (Hillman & Keim, 2001; Ogden & Watson, 1999; Pava & Krausz, 1996). And, some have shown a neutral or non-significant relationship (McWilliams & Siegel, 2000; Graves & Waddock,, 2000; Reyes & Grieb, 2002).

Margolis & Walsh (2003) reviewed a huge number of papers on the relationship between corporate social performance and financial performance and stated that:

> The reviewers see problems of all kinds in this research. They identify sampling problems, concerns about the reliability and validity of the CSP and CFP measures, omission of controls, opportunities to test mediating mechanisms and moderating conditions, and a need for a causal theory to link CSP and CFP (p. 278).

Goyal, Rahman and Kazmi's (2013) recent review of sustainability performance literature has identified many gaps in the 101 articles dated between 1992 and 2011 that they reviewed. They identified theoretical gaps as well as flawed sampling techniques used in the previous studies. The studies stated the importance of assessing sustainability performance within (and across) different industries (both manufacturing and service) and their relationship with firm performance.

Mediating variable between the relationship of efficiency strategy and financial performance in present studies is sustainability performance. Epstein (2008) in his model of corporate sustainability mentioned that the outcome of strategy related to sustainability must enhance social and environmental performance of the company or the dimensions of sustainability in general. Study also needs to be done to cover the theoretical gap in previous study about mixed results on the relationship between efficiency strategy and financial performance which some authors identified as having a positive effect (Sinkin *et.al*, 2008) and other authors identified as having a negative effect on financial performance (Sarkis *et.al*, 2001).

According to Epstein (2008), corporate sustainability performance must be monitored to determine the effectiveness of sustainability management, as any success for strategies related to sustainability in general must first enhance social and environmental performance. Therefore, the present study considers sustainability performance as a mediating variable in order to examine the indirect effect of corporate sustainability

performance on the relationship between corporate efficiency strategy and corporate financial performance.

Every country has its own needs driving a researcher to find the correct operational definition for his study in the quest to fill the knowledge gap and solve his problem statements (Creswell, 2003; Neuman, 2006). Even though empirical evidence has been provided, this evidence tends to focus on corporate sustainability strategy benefits, the relationship between social, environmental performance and financial performance or environmental issue, and statistical evidence or case studies tending to focus on Western countries (Goyal *et al.*, 2013).

The main problem, which has led to this study, is the need for the study of corporate sustainability, for a country like Jordan that has limited resources, to help the nation identify new solutions for using and managing scarce resources. Because empirical studies on corporate sustainability in the Jordanian context have been less than encouraging, empirical work is needed to overcome this shortcoming. To this researcher's knowledge, to date no studies have addressed the effect of implementing efficiency strategies into companies operation by identifying sustainability performance as mediating factor. The majority of the reports addressing corporate sustainability in Jordan have come from government sectors. (Refer to Table 1.1 above.)

Furthermore, previous studies examine the relationship between social environmental compliance and company financial performance has been found to disregard the

implications of efficiency strategy. Sinkin *et al.* (2008) stated that efficiency could solve the dilemmas with inconsistent results. However, it is also imperative that the financial outcomes of social environmental activities are investigated together with the relationship between corporate social environmental strategies and company financial performance (Sarkis & Cordeiro, 2001). Consequently, the problem that this research addresses is the relationship between corporate efficiency strategy and corporate financial performance through the acting of corporate sustainability performance.

1.3 Research Questions

For the purpose of the present study, the research questions that the study aims to answer are:

- What is the effect of corporate efficiency strategies on corporate sustainability performance?
- What is the effect of corporate sustainability performance on corporate financial performance?
- What is the effect of corporate efficiency strategies on corporate financial performance?
- Does corporate sustainability performance mediate the relationship effect between corporate efficiency strategy and corporate financial performance?

1.4 Research Objectives

Based on the questions posed above, this study has four research objectives.

- To examine the effect of corporate efficiency strategy on corporate sustainability performance;
- To examine the effect of corporate sustainability performance on corporate financial performance;
- To examine the effect of corporate efficiency strategy on corporate financial performance; and
- To examine the relationship effects between corporate efficiency strategy and corporate financial performance through corporate sustainability performance.

1.5 Significance of the Study

This study explores efficiency strategies used in Jordanian companies and the effect of these strategies on corporate financial performance. The main focus of this study is the role of corporate sustainability performance as a mediating variable on the relationship between corporate efficiency strategy and corporate financial performance. The effect of corporate sustainability performance on corporate financial performance provides evidence to managers in Jordanian companies about the importance of developing a strategy related to sustainability in order to improve social and environmental

performance which then, leads to improvements in corporate financial performance as ultimately goal of the managers.

The study has the potential to bring a new understanding to management and stakeholders together with diverse interests in various efficiency strategy activities related to financial performance enhancement. Additionally, the study leads to a better understanding of efficiency strategy on the micro level (company level) as most of the studies done in Jordan are on the macro level.

From the theoretical perspective, the managerial decision of applying efficiency strategy on performance in the context of countries like Jordan remains unclear. Previous research findings on the relationship between corporate sustainability performance and financial performance is also characterized as diverse, fragmented and inconsistence (Goyal *et al.*, 2013). Therefore, the findings of this study should contribute to filling this gap, add to the existing literature and render support for the past theories on the mediating effect of corporate sustainability performance derived from corporate strategies and that may impact corporate financial performance. Previous studies carried out have treated corporate sustainability performance as a dependent variable (Strike *et al.*, 2006; Van Beurden *et al.*, 2008).

The practical implications of this study should be useful for companies, managers and stakeholders in understanding and adopting efficiency strategy towards different contexts and sustainability performance in order to improve company financial performance. In

the same vein, prior studies in sustainability have been conducted in general without investigating further for its strategy (Epstein & Roy, 2001; Epstein, 2008; Porter, 1991; Schaltegger & Burritt, 2006). Thus, this study adopts efficiency strategy as the independent variable because efficiency strategy encompasses three dimensions of sustainable development (economics social and environmental). It is also the basis required to improve corporate sustainability performance (Sinkin *et al., 2008*).

Efficiency strategy includes eco-efficiency and its purpose is to protect the environment by considering its value to the economy. Meanwhile, socio-efficiency aims to safe guard social factors by reducing the negative impact on society and increasing the value to the economy simultaneously (Dyllick & Hockerts, 2002). There are two basic strategies of efficiency as an independent variable. Sustainability performance is integrated with social and environmental performance to company operation. They play a role as the mediator between corporate strategy and corporate financial performance as well as sustainability model as Epstein (2008) suggested.

The hope for the contribution of this study is to improve the corporate sustainability performance empirically and recognize the role of corporate sustainability performance as a mediator factor on the relationship effect between corporate efficiency strategy and corporate financial performance. The contribution of this study can be derived from the managerial perception as most of the previous studies only examined on the shareholder's or stakeholder's perspective. Looking at only these two sides of perspective limits the understanding of managerial perception of the action toward social and environment.

Therefore, considering the manager's perceptions toward strategies is imperative because this consideration will enhance social and environmental performance such as efficiency strategies, as the managers are the ones who have the authority in outlining the strategies on behalf of their companies.

This study contributes to the body of knowledge about the significance of the mediating role of corporate sustainability performance. Measurement scales for variables and instruments were developed to suit the research purpose and their validity was tested. This could provide common ground for future research to use a similar instrument in a different industry. As the scope of previous studies was more inclined towards services and industry sector in developed countries, this study could contribute towards the literature of managerial perception in a developing country like Jordan.

1.6 Scope of the Study

The scope of the present study provides a current and timely description of the corporate sustainability in Jordanian firms. The sample for this study was selected from Jordanian-listed firms in two sectors (industry and service) listed on the Amman Stock Exchange. Combined these sectors contribute more than 65% to Jordan GDP based on Department of Statistics data (DOS, 2011). On the other hand, both sectors have direct relationship in their natural work on social and environment, which means that their products have negative effect on social and environment such as pollution, and waste resources which make both sectors more suitable to be examined in this study.

Applying efficiency strategy to service and industry sectors in Jordan would help both sectors enhance their reputation with respect to social responsibility as well as protect the environment Thus, efficiency strategy would save costs while providing good products and services to stakeholders. This study was a survey, using questionnaires distributed to managers in Jordanian firms to assess the effects of efficiency strategies on corporate financial performance. The questionnaires were distributed to managers of each firm who were believed to be the right person to answer the questionnaires. The total number of companies listed on Amman Stock Exchange on 2011 from two sectors (services and industry) companies was 232.

1.7 Key Terms Definitions

This study examined three major variables, namely, 1) corporate financial performance, 2) corporate sustainability performance, and 3) corporate efficiency strategies. The definition for each major term and their sub dimensions are as followed:

- Corporate Financial Performance (CFP): the measure of the change of the financial state or financial outcome of firms that result from management's decisions and the execution of those decisions by members of the firms (Carton & Hofer, 2006).

- Corporate Sustainability Performance (SP): integrated social and environmental issues to management operation strategy and work toward enhance its practice (Wagner, 2010).

- Corporate social performance (CSP): companies are responsible for meeting their stakeholders' requirement and needs, and responsible for helping to solve predicaments caused as well as social issues related to their business operations and interest (Wood, 1991).

- Corporate environmental performance (CEP): a company promises and contributes to reducing the negative impact that its operations may have on the environment, and facilitating any effort by others toward environmental protection (Strike *et al.*, 2006)

- Socio-efficiency strategy: a company achieves the social goals by contributing to maximum social value and minimizing the negative impact on society (accident and human rights abuse) with concerns for the success of economic growth and adding value to the company (Dyllick & Hockerts, 2002; Schaltgger & Burritt, 2000).

- Eco-efficiency strategy: company protects the environment by using less resources and wasting less of them, and at the same time produces high-quality products and services that cover the need of stakeholders with competitive pricing (adapted from WBCSD, 2000; Abdul Rashid *et al.*, 2008).

1.8 Organization of the Study

Chapter one presents a summary overview and provides a foundation for examining the factors of corporate efficiency strategies in Jordanian firms in terms of contributing to financial performance. In addition, Chapter one reviews the background of the study and presents the problem statement, objectives, research questions, and the significance and scope of the study.

Chapter two provides extensive reviews of relevant materials in the area of study and provides theoretical and empirical evidence of the importance of the study and consequently covers all the variables in the framework. The present study has three major variables, namely, corporate financial performance, corporate sustainability performance and efficiency strategy. The relationship between the variables and the mediating effect are discussed both empirically and theoretically in chapter two, to give the logic for the need of present study.

Chapter three is an overview of the research methodology. This includes the theoretical framework and hypothesis development, research design, measurement and instrument developments, population and sample, and final part covers the data collection procedure and validity and reliability of the measurements.

Chapter four presents the results of data analysis, which include descriptive statistic, profile of respondents and goodness of measurements with reliability and correlation as well the multiple regression analysis to provide answers to the research questions.

Chapter five discusses the findings for the three major variables in this study and also highlights the contributions of the study and managerial and theoretical implications as well as methodological implications. Also, presented in this chapter are the limitations of the study and the recommendations for future research and a summary.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a literature review of the major issues of this study, and establishes a theoretical understanding of the principles of corporate sustainability performance. This theoretical basis is important for supporting the research background of the study. First, the definition of the financial performance is discussed as well as the measurements for that performance drawn from previous related literature. Based on the literature review of financial performance, the two core measurements (market and account-based measures) are discussed to cover all the issues related to financial performance measurements.

Second, the background of sustainability is discussed with its key drivers and concepts to provide an overview of the whole picture of sustainability in general and to reach the purpose of this study, which is sustainability performance. Third, the literature review includes sustainability performance (SP) with its concepts both corporate social performance (CSP) and corporate environmental performance (CEP).

Fourth, there is discussion about the relationship between sustainability performance and financial performance with a comprehensive literature review of previous studies. Finally, efficiency strategy and its relationship to sustainability performance and financial performance are discussed.

2.2 Corporate Financial Performance

Financial performance is a terminology that mostly recurs in the domain of business, no matter what the industry is. In retrospect, a company's achievement was evaluated on its financial performance, regardless of other factors that might have pursued in the quest for market dominance. Daft (1991) defined performance by stating that corporate performance was the ability of a company to reach its goals by using resources effectively and also comprised the output of management operational strategy and the implementation of that strategy into the company plan leading to performance measurement. In line with Daft (1991), Carton and Hofer (2006) defined company performance as "a measure of the change of the financial state of an organization, or the financial outcomes that result from management decisions and the execution of those decisions by members of the organization" (p. 2*)*.

One main reason that financial performance is central to the field of strategic management is because of the focus of for-profit entities. The very nature of a for-profit entity and the role it fulfils in society calls for serious consideration of its financial performance as a benchmark. Carton and Hofer (2006) succinctly highlighted one of the realities regarding a firm's ability to create value through its financial performance:

> Those providing the assets will only commit them to the organization so long as they are satisfied with the value they receive in exchange, relative to alternative uses of the assets. As a consequence, the essence of performance is the creation of value. So long as the value created by the use of the contributed assets is equal to

> or greater than the value expected by those contributing the assets, the assets will continue to be made available to the organization and the organization will continue to exist. Therefore, value creation, as defined by the resource provider, is the essential overall performance criterion for any organization (p. 3).

Consequently, determining company performance is naturally complex because that determination depends upon the company's purpose, which has not been established as a reliability consistent measure. Hofer (1983) mentioned that, the concept of performance is contextual and is associated with the phenomenon being studied. Carton and Hofer (2006) pointed out four critical challenges in assessing company performance: 1) the situational nature of value creation, 2) company performance on multiple dimensions, 3) the understanding of performance are depends upon the observer's perspective, and 4) predictions on ensuing performance impact the understanding of current values.

Within the existing strategy literature there has been minimal justification provided for why existing performance measures have been selected (Capon, Farley, & Hoenig, 1990; Kaplan & Norton, 1992; Murphy, Trailer, & Hill, 1996). Company performance has been studied utilizing a wide range of variables and many of these do not correlate over time (Carton & Hofer, 2006).

There are two types of measures used to indicate a company's financial performance. These two measures look at either the firms' market performance or accounting performance. Luo and Bhattacharya (2006) carried out a study that employed market

measures to identify performance. Meanwhile, Waddock and Graves (1997) used accounting measures in their research. In addition, a few studies have explored both accounting and financial measures (McGuire, Sundgren, & Schneeweis, 1988).

Theoretically speaking, McGuire *et al.* (1988) characterized accounting measures as tools to judge a firm's performance based on its historical report. However, these measures have been deemed more biased towards managerial competencies including its exploitation of accounting-based financial performance such as profit, ROA and ROI. Meanwhile, market measures of performance are perceived to be futuristic. That is because market measures are not contingent on a firm's management accounting procedures but more of investors' perceptions of the firm's ability to provide more profit in the future (McGuire *et al.*, 1988; Rust, Lemon, & Zeithaml, 2004).

Globalization has also impacted financial performance measurement and its importance in adding value to the firm (Bardia, 2008). A business is classified as having a loss when its profits are less than its overall cost of capital. When a business does not generate future profit thus, insolvency may occur (Drucker, 1995).

A holistic approach should be adopted in order to assess a standardized measure of company performance to probe into the question of how management decisions impact firm performance. Nevertheless, as this study is aimed to examine the mediating effect of corporate sustainability performance, namely, 'social and environmental performance' on the relationship between efficiency strategy and company financial performance from

managerial perspective, a market-based measure is dispensable in this context. The basis that grounds this study is that the managers are aware of the concern about how an efficiency strategy affects the perceptions of company financial performance. Thus, this present study uses accounting measures to examine the relationship of efficiency strategy and company financial performance mediated by sustainability performance.

2.3 Corporate Sustainability Backgrounds

Corporate sustainability is a business technique that forms a permanent stakeholder's value through considering and handling consequences that may occur from the growth of finance, society and the environment. The leaders of corporate sustainability often obtain long–term stakeholder's value by gearing their strategies and management to harness the market's potential for sustainability products and services while at the same time successfully reducing and avoiding sustainability costs and risks (Dow Jones, 2002).

Sustainability first appeared in literature after the United Nation's World Commission on Environment and Development published the Brundtland Report in 1987. The main objective of the report was to promote a balance between economic development, environmental protection and social justice and apply a new approach, namely that of sustainable development.

Brundtland report defined “Sustainable development as development that meets the needs of the present generation without compromising the ability of future generation to meet their needs” (WCED, 1987, p.37). The main idea of this definition was creating equity between present and future generations. This definition became widely accepted throughout the management and industries and received attention in many studies (Wilson 2003, Singh *et al.*, 2009).

With participants drawn from both developed and developing counties, the United Nations Conference on Environmental and Development (1992) held the Rio Earth Summit, which was concerned with equity and sharing economic activity by all sections of society to provide benefits for both humans and the environment (Quarrie, 1992).

In terms of a theoretical systems level perspective, Crane and Matten (2004) claimed that sustainability involves long-term system maintenance. Following the Brundtland (1987) definition of sustainability, many versions of sustainability have been elaborated such as social sustainability or environment sustainability. Though several differences exist between sustainability concepts, sustainability is concerned towards the ecology, economy and society (Scott *et al.*, 2000). The multifaceted face of sustainability has made for various optimizations that have resulted difficulties in analyzing it (Spangenberg, 2004).

Bansal (2005) pointed out the three dimensions of sustainability (economic, social and environmental) are vital elements in corporate sustainability. Hart and Milstein (2003)

supported this viewpoint, stressing its role in sustainable development because companies will get profit, which then will be disseminated to society. By having knowledge of their importance in sustainable development, companies have started playing critical roles in development strategy toward social and environmental (Quarrie, 1992), as referred to the growing set of efforts and various kinds of business non-financial feedback such as sustainability-reports or CSR-reports.

With companies gaining awareness, new approaches to better understand their role in sustainable development process have been developed. Though companies might affect all three parts of sustainability, much study of corporate sustainability often revolves only around one part (Russell *et al.*, 2007), environmental management (Crane & Matten 2004; Jennings & Zandbergen, 1995; Shrivastava 1995) not accounting for social and economic fields. Other studies have focused on two of the three parts (Rondinelli & Berry 2000; Sharma & Ruud, 2003).

Bansal (2005) has asserted that further study on corporate sustainability should be carried out to explore company factors that could affect each of the sustainability factors (economic, environmental, and environmental). These factors could be related to businesses as some theorists argue (Gladwin *et al.*, 1995) or to consumers and governments (Shrivastava, 1995). Finding out what the company has to offer in order to meet the goal is paramount. Unfortunately, as sustainability involves society in its development, Kiewiet and Voss (2007) wrote of the difficulties of companies in identifying and finding the concrete steps toward sustainability and the measures needed

to contribute to sustainability. Thus, there is merely a vague estimation that can be measured through the description of the companies' influence on the various sections that are related to sustainable development.

WBCSD (2005) describes sustainability as a way for business to carry out a promising source of development generating profits for the owners or shareholders employment, and income for employees and encouraging innovation (Bowman & Ambrosini, 2000). On corporate level, sustainability not only looks at the product design and processes but also places an emphasis on the design of companies and their value chains (Elkington, 2006).

Conventional organizational models only focus on economic and human performance metrics (Shrivastava 1995). Thus, a framework pertaining to factors affecting corporate sustainability requires substantial development in order to probe into the impact of companies on sustainability as well as the organizational processes both generating and mediating this impact.

With corporate governance and CSR-reporting gaining importance, recognizing the integration of sustainable developments factors (economic, social and environmental) into a theoretical framework theoretically and practical application is vital. This will provide a better understanding of more complete performance reporting issues. This perspective can also be extended to the subject of managing and analyzing corporate sustainability as a whole (Bhimani & Soonawalla, 2005).

Corporate sustainability results from the combination of sustainable development and corporate social responsibility. The two concepts work with each other to complete the cycle for all requirements for corporate sustainability performance (Wilson, 2003). The following section discusses these two concepts in a greater detail.

2.3.1 Sustainable Development (SD)

Sustainable development (SD) defines as the growth that fulfils the demand of the current population without jeopardizing the propensity of later generations to satisfy their own demands (WCED, 1987). SD provides an ethical understanding of three dimensions of sustainability and encourages a company to work towards balancing between economic, environmental and social sectors. SD, after the Rio Summit, became a blueprint for a new approach integrating environmental and social issues in company operations and working towards the triple bottom line (Elkington, 1998).

The new sustainability approach receives attention from most countries and helps translate proposed rules and regulations into action. These rules and regulations establish indicators to determine the sustainability concept to facilitate its application in countries generally and companies specifically. Countries increasingly have adopted SD as the main development strategy to enhance both environmental and social performance to increase economic growth. SD contributes to CS; the ability of managers to set out the main issues they should focus on; environmental, social and economic performance, and

provides general social goals for both companies and governments to work towards with respect to sustainability performance (Wilson, 2003).

The growth of literature debate about SD during the last two decades has shifted from the general aspect of protecting the environment to corporate strategy towards corporate sustainability. Therefore, the literature has brought new definitions of corporate sustainability; evolving from the original definition of SD. Salzmann, Ionescu-Somers, and Steger (2005) defined corporate sustainability in line of a smart and profit-making business counterpart of social and environmental causes, created by the company's main and alternative activities.

Meanwhile, Deloitte, and Touche (1992) defined corporate sustainability from a different perspective. They defined it as adoption of business strategies and activities that meet the needs of companies and its stakeholders today while protecting, sustaining and strengthening human and natural resources that will be necessary in the future". Often, definitions of corporate sustainability have insisted upon including social and environmental issues to a company's activities and concern for stakeholders needs by integrating these issues into business strategies.

The recent wave of academic debate during the last two decades has brought more attention to the concepts of SD. Global organizations and individual companies, such as the Organization for Economic Co-operation and Development (OECD), Insurance Australia Group (IAG), International Institute for Sustainable Development (IISD), and

Global Reporting Initiative (GRI) have been forward looking with respect to the application of SD principles and identifying pertinent strategies and sending them out to fuel best-practices studies of applying sustainable development (Wilson, 2003). Moreover, these organizations have identified areas in which companies should focus upon to reach sustainability and the complicated relationships between and among the three dimensions of sustainable development that were mentioned in the OECD report (Stevens, 2005).

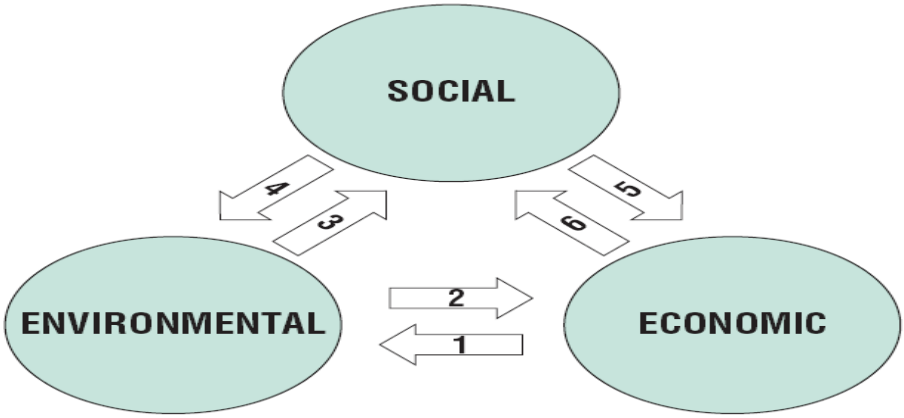

Figure 2.1
Key Dimensions of Sustainable Development
Note: Source, Stevens, 2005

These three dimensions of SD have a causal relationship in which they affect each other. Referring to Figure 2.1 above, the OECD (Organization for Economic Co-operation and Development) illustrates the relationship between three dimensions as follows:

1. Effects of economic activity on the environment (e.g., resource use, pollutant discharges, and waste).

2. Environmental services to the economy (e.g., natural resources, sink functions, contributions to economic efficiency, and employment).

3. Environmental services to society (e.g., access to resources and amenities, contributions to health, and living and working conditions).

4. Effects of social variables on the environment (e.g., demographic changes, consumption patterns, environmental education and information, and institutional and legal frameworks).

5. Effects of social variables on the economy (e.g., labour force, population and household structure, education and training, consumption levels, and institutional and legal frameworks).

6. Effects of economic activity on society (e.g., income levels, equity employment).

The Global Reporting Initiative (GRI) issued guidelines for voluntary use by organizations for reporting the economic, social, and environmental dimensions of their activities, products, and services. The objective of these guidelines is to facilitate the report-making expected from organization and aiding the stakeholders to acknowledge the effort of the parties involved in improving sustainable development. (GRI, 2002).

This structure reflects the most widely accepted approach to monitoring sustainability. GRI recognizes that this categorizing structure simplifies complex relationships between the economy, society and the environment. Figure 2.2 below shows the structure of GRI framework.

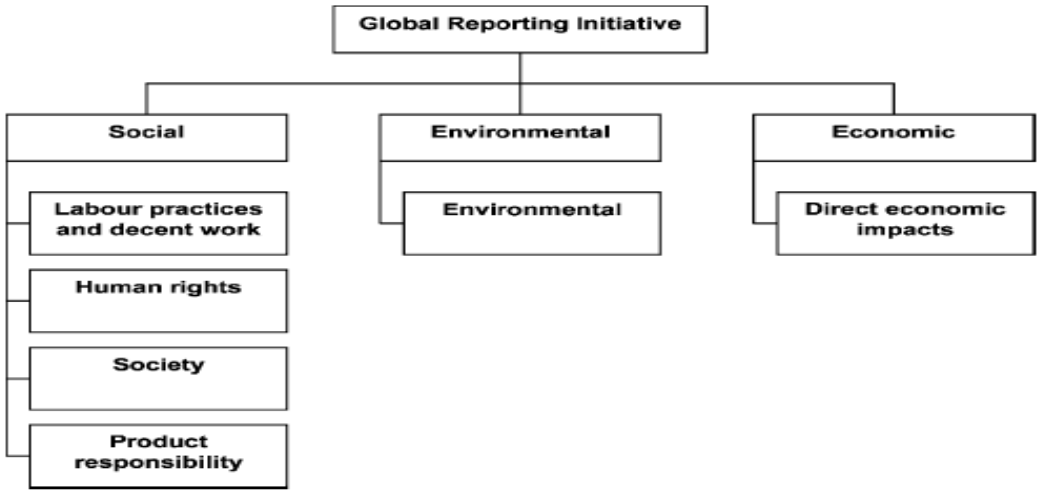

Figure. 2.2
The structure of the Global Reporting Initiative (GRI) framework
Note: Source, GRI, Sustainability Reporting Guidelines, 2002

The guideline has over 100 pointers. Nevertheless, it is difficult to assess all of them as there is no written rule in selecting the right indicator (or pointer). Regardless, the guideline has an indication of the aspects that should be regarded at a lower rate, which is the operational or project level in the organization itself – particularly of companies that provide reports on sustainability using GRI principles. (Labuschagne *et al.*, 2005).

The United Nations Commission for Sustainable Development (UNCSD) issued a framework to identify the criteria of SD and to evaluate the government progress towards

SD goals. The framework is divided into four aspects of SD, namely, economic, social, environmental and institutional. Under these four aspects are 15 main themes.

UNCSD's frameworks differ from GRI's framework by adding one more aspect to SD. That addition is institutional framework, which includes the development of national strategy aimed at integrating social, economic, and environmental priorities, and action to sign and initiate the implementation of global agreements (UNCSD, 1997). Not all aspects addressed by this framework are relevant to the business community. It gives a detailed view of what sustainability does and affects on a national level, including areas in which businesses can make a contribution. (Labuschange *et al.*, 2005).

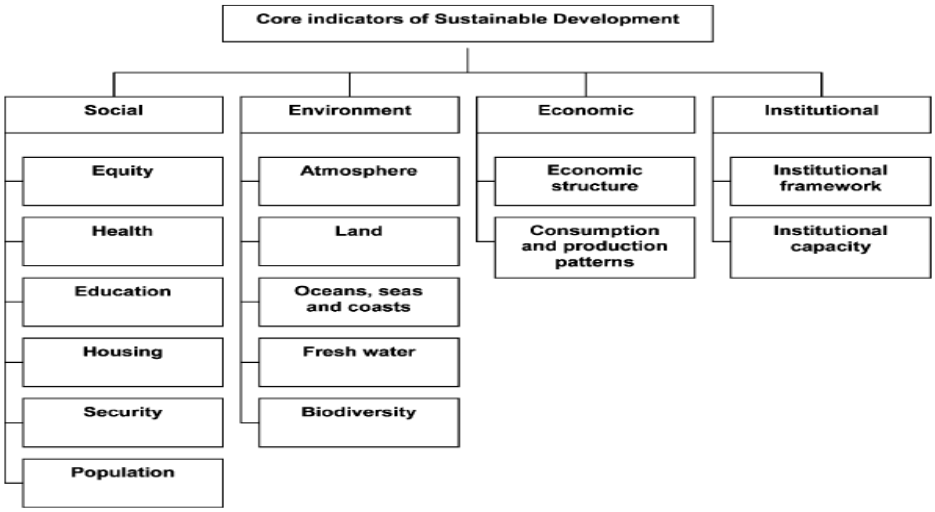

Figure 2.3
The United Nations Commission for Sustainable Development (CSD) theme Indicator Framework.
Note: Source, Labuschange et.al, 2005

Sustainability Metrics of the Institution of Chemical Engineers (IchemE) published a sustainability indicator in 2002. This indicator is divided into three aspects of SD similar

to GRI framework. The aim of this indicator is to measure the sustainability of operations within the process industry. (See Figure 2.4 below.)

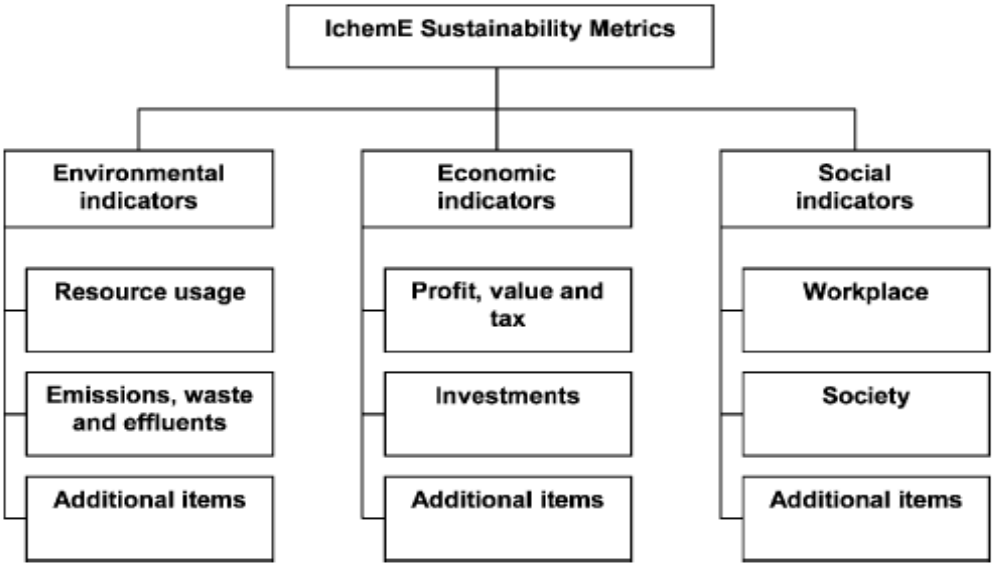

Figure 2.4
The Institute of Chemical Engineers (IChemE) Sustainability Metrics
Note: Source, Labuschange et.al, 2005.

Managers must show concern for all three indicators of social and environmental criteria in order to achieve and enhance sustainability performance. These criteria, which were applied and attached to management strategy, must work together to achieve economic success. In other words, they must work from a single-bottom line to triple-bottom line TBL (Elkington, 1998).

In conclusion, sustainable development guides managers to understand the three concepts of corporate sustainability and the interactions between social equity, environmental protection and economic growth. The next section provides a second driver of corporate

sustainability, well known as corporate social responsibility (CSR) that, together with sustainable development, can make the picture of corporate sustainability clearer.

2.3.2 Corporate Social Responsibility (CSR)

According to Wilson (2003), corporate social responsibility (CSR) is argumentative and is a wide-ranging concept. Carroll (1999) has noted that authors offered more than fifty different definitions and descriptions of CSR from 1950 to 1999. Carroll's cited three typical definitions of CSR from different authors as follows

1. "Corporate social responsibility is the effect of the company's operations and actions on society" (Baver, quoted in Carroll & Buchholtz, 2000, p.28).

2. "Corporate Social responsibility is the obligation of decision makers to take action which protect and improve the welfare of society as a whole along with their own interest" (Davis & Blomstrom, quoted in Carroll & Buchholtz, 2000, p.32)

3. "Corporate Social responsibility in the final analysis that implies a public posture toward society's economics and human resources and a willingness to see that resources are used for broad social ends and not simply for the narrowly circumscribed interests of private persons and firms" (Frederick, quoted in Carroll & Buchholtz, 2000).

Carroll and Buchholtz (2000) contributed their own definition of CSR. They stated that CSR consisted of four types of responsibilities:

1. Economic responsibilities:

   The quality goods and services that society needs and wants are businesses responsibilities; at the same time, they should sell them for fair price to secure profit that ensures the survival of business.

2. Legal responsibilities:

   Businesses have a responsibility to comply with the codified laws that have been approved in the place in which they operate.

3. Ethical responsibilities:

   Businesses are expected to meet the ethical standards and norms of the society in which they operate, or from which they operate, depending on the situation. These ethical standards are society's expectations for company's performance that have not been codified in law or regulation. The standards and norms also often require a higher standard of performance in laws and regulations, and therefore businesses find themselves in a position of having to make decisions on whether to simply comply with the law or to stretch themselves further to meet these higher societal expectations. Also, these standards and norms are fluid; they can change as conditions and value in society change.

4. Philanthropic responsibility:

   Businesses are expected to support good causes in the communities in which they operate. The activity is voluntary and not driven by a sense of moral or ethical responsibility. However, societies expect that businesses will return some profit made back to the community; Carroll refers this responsibility to corporate citizenship.

The concept of CSR's definition is debated, as it refers to companies' voluntary actions. According to Bosshard (2000) and Marrewijk (2003), CSR can be described in many different ways because each company could choose its own specific objectives and approach regarding CSR, matching the companies' aspirations that operate in line with the company's strategy, whichever is deemed fit to the framework upon which they work.

CSR gives out to corporate sustainability through the establishment of ethical debates in regard to the relevance of corporate managers' roles in the field of sustainable development. In other words, if the public generally thinks that sustainable development is an aim worth achieving, then business companies would have the responsibility of supporting the people to work for a better sustainable development.

2.4 Theoretical Assumption of Corporate Sustainability

In this section, the important underpinning concepts of corporate sustainability are discussed from several theoretical viewpoints. These include stakeholder theory, good management theory, social contract theory, corporate accountability theory and contingent theory. The contributions of theory to corporate sustainability are the following:

2.4.1 Stakeholder Theory

A stakeholder is "any group or individual who can affect or is affected by the achievement of the organizations objective" (Freeman's, 1984, p. 43). Stakeholder theory draws upon all internal and external relationships for organizations, and the managed all these relationships that will drive the organization to survive, because survival is the most important goal of any organization.

According to Freeman (1984), managers must understand the needs of stakeholder groups to formulate corporate objectives that would receive necessary support for firm's continued survival. Stakeholder theory states that the managers need support from stakeholder groups and, at the same time, stakeholder groups need to be satisfied by the firm's actions. Freeman (1984) noted that systematic managerial attention to the stakeholder's interest is critical to the success of a firm.

Jonker and Foster (2002) used the stakeholder model, which noted that the objective of stakeholder theory is to understand a stakeholder's need and not to manage them, and a need exists to change a firm's strategies in order to achieve this goal. The other challenge faced by the companies is to determine the stakeholders (Waxenberger & Spence, 2003; Kaler, 2002; Fassin, 2009). This challenge arises from the ambiguity of the definition of stakeholder because the definition of stakeholder depends on who is the important stakeholder upon which the company should focus.

Freeman's (1984) model, which was the original, categorized seven groups of stakeholders: Government, Competitors, Customers, Employees, Civil Society, Suppliers, and Shareholder. In a later study, Freeman (2004) added more external factors to his model, which were NGOS, Environmentalists, Media, Critics, Financiers, Customers, Communities, Employees, Suppliers, and others. There are three aspects of stakeholder theory (descriptive, instrumental and normative), which Donaldson and Preston (1995) and Carroll and Buchholz (2011) introduced. The next part is overview three of these aspects.

1. Descriptive aspect

   The descriptive aspect describes exactly how firms make decisions and how they deal with stakeholders (Donaldson & Preston, 1995). This approach assumes that firms view all stakeholders as having natural legitimacy (Carroll & Buchholtz, 2011).

2. Instrumental aspect

   Basically, the instrumental aspect is Freeman's original argument in which he stated that stakeholder management is a strategic issue and not an ethical issue (Freeman, 1984). The instrumental aspect assumes that firms, which develop strong relationships with their stakeholders, will gain opportunities to achieve their business objectives (e.g., profitability, growth). Freeman (1999, p. 234) stated, "If an organization wants to be effective, they will pay attention to all relationships that can affect or be effected by the achievement of the organization's purposes. That is why stakeholder management is fundamentally a pragmatic concept".

3. Normative aspect

   The normative aspect tries to determine what firms have done and have not done when dealing with stakeholders from an ethical standpoint (Donaldson & Preston, 1995). The normative aspect also focuses on the ethical motivation toward stakeholder relationships. This aspect addresses the issues of whether firms are responsible for integrating stakeholders' needs and interests when there is no apparent business benefit to the firm (Gibson, 2000). This aspect does not widely appear in the literature, as Freeman (1999) said, there are no underlying ethical bases for stakeholder theory.

The focuses of this study are on two parts: the instrumental and the normative. Harrison and Freeman (1999), Berman, Wicks, Kotha, and Jones (1999) developed two models related to the stakeholder theory. The first model, called strategic stakeholder

management, takes an instrumental approach and indicates a perception that it will improve financial performance motivated by concern for stakeholders. The second model, which is the intrinsic stakeholder commitment, believes that business companies have the normative commitment to propel their interest and the commitment would form the companies' strategies, which would navigate the business performance.

Berman *et al.* (1999) explained the use of longitudinal test upon the two differing dimensions in order to understand the accuracy of the data presented. Based on the instrumental approach, companies believe that stakeholders are an integral aspect in the environment that needs to be facilitated in order to guarantee profits and returns to the shareholders. The primary aim of this issue is for the companies to obtain marketability achievement.

Berman *et al.* (1999) mentioned that the intrinsic stakeholder commitment is concentrated upon the normative (moral) commitment, as opposed to the notion that they are only there to expand financial returns, as described in the instrumental model. Leaders of a firm establish certain fundamental moral principles that guide the way the firm does business in relationship to its stakeholders and use those principles to drive the decision-making process.

Stakeholder theory and stakeholder management have become important tools to transfer ethics to management practice and strategy (Fassin, 2009). By contributing to all and not just to shareholders, the organization will be more effective, and get opportunities to

increase its chances to enhance current business statement by being concerned with stakeholder groups needs. In addition, the relationship with stakeholders will help companies to achieve their business goals.

2.4.2 Good Management Theory

Waddock and Crave (1997) characterized good management theory as an explanation of the link between social and environment performance and corporate financial performance. Based on this study, the link between sustainability performance and financial performance is a further articulation of stakeholder theory (Donaldson and Preston, 1995).

Besides the above arguments on stakeholder theory, good management theory suggests that the company should try to satisfy its stakeholders without giving specific attention to its financial condition. As a result of producing this satisfaction, the company will have a good image and reputation. Based on a resource-based perspective, good image and reputation qualities are intangible assets, which offer important contributions to a firm's competitive advantage (Barney, 1991).

The theory encourages managers of companies be forward looking by enhancing and improving competitive advantage, which ultimately can enhance the company's financial performance. Empirically, the theory has been tested and the findings suggested that good

management practices have a strong relationship with social and environment because they can improve a company's relationship with its stakeholders; in turn this improved relationship will improve the company's financial performance (Donaldson & Preston, 1995; Freeman, 1994; Waddock & Grave, 1997). Miles and Covin (2000) argued that the environmental performance functions as a secondary means to fulfil shareholders' demands and can provide the needed leverage in business competitions

The good management theory or resource-based perspective was adopted as a theoretical background of this study because it clearly shows that concern about sustainability performance translated into better financial performance. Such a perspective leads to a strong support of the theoretical framework of this study.

2.4.3 Social Contract Theory

The key idea to the social contract theory refers to the society and how it comprises a set of obvious and vague deals (or contracts) among persons, institutions and companies. (Wilson, 2003; Palmer, 2001). These contracts are developed to make exchange among different groups in a setting of certain level of confidence and agreement.

Based on the theory, corporations, as organizations are involved into these contracts with the public, and in turn receive products and general support to work in favour of their ethical actions. . Carroll and Buchholz (2000) contended that the social contract deal between companies and the public is somewhat depicted through legal principles that

have been decided by the public in the form of a framework – in which the business they operate is outlined (and also through which) shared understanding among groups of society is facilitated.

In this sense, social contract theory stipulates that firms should act as if a social contract existed between an organization and society, and also maximize social welfare among them (Belkaoui & Pavlik 1992).

2.4.4 Corporate Accountability Theory

Corporate accountability is based on Fiduciary model (Gray, Owen, & Maunders, 1988), and this model has its roots in Agency Theory and Agency Law (Brummer, 1991). Agency theory determines the relationship between two parties: first, the managers as agents and second, the shareholders as owners. The agent must work towards maximizing the wealth of owners, and the owners must provide the necessary financial support to managers, making them do their work (Shleifer & Vishny, 1997). Accountability theory expanded the relationship beyond shareholders' wealth. The company must disclose social and environmental issues and its impact in its report (Elkington, 1998).

Gray *et al.* (1988) stated that accountability is a responsibility to provide an account of the actions for which one is held responsible. Accountability is not inherently limited to financial performance but, according to The Institute of Social and Ethical Accountability, accountability is "to explain and to justify the acts and omissions for

which one is responsible to people with a legitimate interest" (ISEA, 1999, p.13). The question is who are the people with a legitimate interest? The duty of organization is to determine this group, and the company must ensure that this group of people will be accounted for when social and environmental issues are involved.

As social contact theory gave power to stakeholders to push the organization to work towards stakeholder's interest in general, accountability theory provided evidence of the nature of the relationship between corporate managers and society or stakeholders in general (Wilson, 2003). Some accountability scholars (Elkington, 1998) have argued that companies should report their environmental, social and economic performance and not just financial performance.

Corporate sustainability is a multilevel concept. All drivers can provide and complete the whole picture of corporate sustainability. However, the challenge of this new paradigm is to shift from the traditional economic model to a new model by integrating social and environmental issues with company action, and working towards stakeholders' interests.

2.4.5 Contingent Theory

Contingent theory refers to organizational performance as good communication between internal organizational designs variables with external context variables (Burns & Stalker, 1994; Thompson *et al.*, 1992). Companies need to identify their organizational resources for business opportunities besides lowering threats in order to determine the

most effective strategy (Andrews, 1998; Hofer & Schendel, 1978). Externally, companies must practice a proper code in responding towards external environment so that the superior performance could be further improved (Miller & Friesen, 1983).

Most current studies in corporate sustainability revolve around contingent theory (Aragon-Correa & Sharma, 2003; Rueda-Manzanares *et al.*, 2008). This theory encompasses both the external business environment and internal mechanisms of a company's operations processes (Rueda-Manzanares *et al.*, 2008). Thus, a company is encouraged to embrace corporate sustainability.

Sustainability is determined by the factors that exist around business environment. According to Dess and Beard (1984) there are a number of components in the business environment: 1) hostility (a business environment that can be hostile to sustained growth, 2) dynamism (turbulence and instability of the environment), and 3) complexity (number of factors in the business environment). Previous studies also revealed that the effectiveness for companies practicing corporate sustainability could be impacted by market dynamism or turbulence (Rueda-Manzanares *et al.*, 2008), environmental uncertainty (Miller and Shamsie, 1999), or change of regulations and public policy (Aragon-Correa and Sharma, 2003).

Although numerous researchers have shown the importance of contingent theory in corporate sustainability, certain limitations have arisen which require future investigations First, the external environmental factors are not regulated by the three

hostile factors: hostility, dynamism and complexity. Thus, further investigations looking into other factors that may ensue in the business environment are pertinent (Rueda-Manzanares *et al.*, 2008). Second, a few studies have explored the interaction between the external and internal factors of business environments (Aragon-Correa & Sharma, 2003). Third, most prior studies delving into corporate sustainability are conducted in developed countries such as Western Europe and North America and have neglected developing countries (Sharma *et al.*, 2007).

2.5 Corporate Sustainability Performance (SP)

Sustainability performance is an integrated achievement of social, environmental and economic performance measures (Schaltegger & Burritt, 2006; Schaltegger & Wagner, 2006). Indeed, the economic performance basically excludes from the presents study as the challenge is to consider the social and environmental issues in company operations

All trials in measuring and facilitating sustainability issues that would result in heightened business achievement should observe the link between a company's sustainability performance as well as its financial performance. There is no doubt that non-market issues such as social and environmental issues can have a substantial impact on a company's economic performance.

Corporate sustainability models of Epstein and Roy (2001) and Epstein (2008) identify SP as the performance of social and environmental factors. SP, in their conceptual papers,

is shown as input and output at same time and also as a mediating effect of the variables in their models. Despite the fact that assessment of bivariate relationships between variables can provide an insight into deciding if a hypothesized relationship remains relevant, this assessment fails to address questions as to why, how and for whom the relationship serves. Analyzing third variables – such as moderators and mediators – allows the investigation of such questions; thus, informing both the theory and practice in scholarly debate (Fairchild & McQuillin, 2010).

Barron and Kenny (1986) clarified the essence of mediation through illustrating a path diagram as a representation of the causal chain. The fundamental causal chain as used in mediation is portrayed in Figure 2.5. This representation describes a three-variable system in which there are two casual routes supplying into the outcome variable: the direct impact of the independent variable (Path c) as well as the effect of the mediator (Path b). It also includes a route from the independent variable towards the mediator. (Path a).

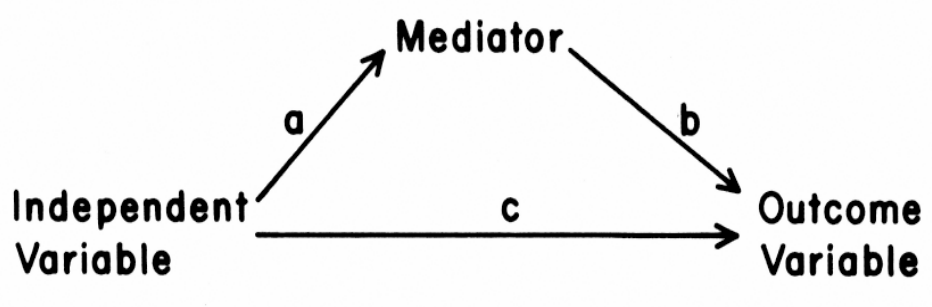

Figure 2.5
Barron and Kenny, 1986: Mediation Model Diagram

A variable serves the role as a mediator once it has these criteria: (a) variations in degrees of the independent variable distinctively relates to the variations in the dependent variable (which is Path a), (b) variations in the mediator distinctively relates to the variations in the dependent variable (that is Path b) (c), whereas in situations where Paths a and b are controlled, a prior significant relationship between these variables cease to be significant, by which the most obvious depiction of mediation happen when Path c is at zero. As such, the researcher may be able to picture a certain sense of range. In regard to the last condition, as Path c is degraded to zero, there is a tangible proof of single, dominant mediator.

If the residual Path c is other than zero, this signals the workings of many mediating aspects. Due to the fact that most fields in psychology – namely the social treat scenario that has multiple causes – the practical objective is to look for mediators that can efficiently reduce Path c as opposed to eliminating the relationship between the independent and dependent variables altogether. From a theoretical perspective, a significant reduction demonstrates that a given mediator is indeed potent, albeit both are not necessary and a sufficient condition for an effect to occur.

The third part model is twofold, in which it either becomes the mediate model or moderate, as referred to Barron and Kenny (1986). A moderator variable is regarded as a third form of variable (Z), which changes the connection between a predictor (X) and a result (Y); hence influencing the form and movement between the two variables. Moderators display the generalizability of the relation between X and Y, depicting the

circumstance(s) in which the connection operates. Moderation effects are generally named as statistical “interactions” in the social science literature; in which the terms are interchangeable and submit to the same phenomenon.

A mediator variable (M) works as a third variable that depicts the manner in which the two other variables operate. In its model, the independent variable (X) foresees the mediator variable (M) that also foresees the result (Y). Thus, a mediator is transitional in the link between X and Y. Through the basis of modelling an intermediate variable in the X–Y relation, the holistic effect between X and Y can be broken down into a variety of components, which are called the direct effect of X on Y and the indirect effect of X on Y through M (i.e., the mediated effect). Investigating both direct and indirect effects often provides more insight than simply evaluating the bivariate X–Y relationship alone, and researchers have proposed several different ways to statistically test mediation using the component parts.

“The managerial actions taken lead to sustainability performance (positive & negative) that ultimately affect long-term corporate financial performance” (Epstein, 2008; p 28). The fundamental aspect of Epstein model is the distinction between intermediate results and financial outcomes. As the model show the impact of various inputs and processes on sustainability performance and also show how the corporate financial performance is impacted by stakeholder reactions to corporate sustainability performance. “Therefore, intermediate output, such as social and environmental performance, must be monitored to determine the effectiveness of sustainability management practices” (Epstein, 2008; p 28).

From other side sustainability action toward social performance based on Epstein model reflects how through stakeholder reactions, the social performance affects financial performance. Thus, sustainability or social performance should be seen as both an intermediate output and an outcome. That is, it's important to understand, measure, monitor, and manage social performance because of concern for societal impacts and for long-term corporate financial performance.

Hence, for the aforementioned reasons, this study takes into account corporate sustainability performance as a form of mediating variable between the efficiency strategy and corporate financial performance. This study also aspires to explain the manner in which the variables are linked to each other through the sustainability performance by assessing both direct and indirect effects.

Sustainability performance (SP) for the purposes of this study follows the previous work done by Schaltegger and Burritt (2006), Schaltegger and Wagner (2006) and Epstein, (2008) by considering sustainability performance as social and environmental performance. To derive a better understanding, the present study discusses both concepts separately as following.

2.5.1 Corporate Social Performance (CSP)

CSP usually refers to corporate social responsibility whereby companies considered social matters in their operation and, at the same time, reduced the negative effects on society or increased benefits to the entire stakeholder not just to shareholders or owners of the company (Elkington, 1998). The debate on CSR issues during the past three decades has brought forth many theories to solve social problems. As mentioned earlier, CSR aims to contribute to the benefit of all stakeholders and also to enhance social performance. However, CSP is viewed as a broad paradigm that includes responsibility, responsiveness and outcome approaches (Wood, 1991). These streams are housed and developed simultaneously in business and society, though often at odds with each other (Wartic & Cochran, 1985).

Wood (1991) defined CSP in her study as the "Configuration of principles of social responsibility processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's societal relationships" (p. 693). This definition has been extended through scholarly debate now including three aspects of responsibility (CSR, social responsiveness, and (outcomes) of the impact of company operations on social performance).

Wood's organizational principle provides more specific areas of responsibility for individual firms. The organizational principle suggests that firms are responsible for outcomes in their "primary" and "secondary" areas of involvement. In other words,

> Businesses are not responsible for solving all social problems. They are, however, responsible for helping to solve problems that they have caused, and they are responsible for helping to solve problems and social issues related to their business operations and interests (Wood, 1991, p. 697).

Social responsiveness refers to the capacity of companies to respond to social pressures (Frederick, 1994). Some authors have viewed the responsiveness approach as defensive or accommodative responses towards social expectations (Carroll, 1979; Clarkson, 1995). Wood (1991) explained that responsiveness contributes to how companies work toward complementing the normative and motivational concept of CSR. Therefore, the responsiveness' arguments made a shift from philosophical discussions of ethical responsibility toward research of a firm's action and strategies toward society.

From the stakeholder perspective, the societal stakeholder groups apply pressure on firms to manage their social responsibility (Waddock & Graves, 1997). As a result, firms are often evaluated based on their corporate social performance. The focus of Wood's (1991) definition on outcome for societal stakeholders is the fact that firms may also reap benefits from engaging in CSP initiatives including: strong positive reputation, enhanced firm legitimacy, ethical image, reduce risk, organization learning, innovation, reduce hostile takeover frequency, enhanced ability to anticipate changes in the external environment, and creative problem solving (Slater & Dixon-Fowler, 2009).

From a social perspective, Freeman (1984) proposed the stakeholder approach that a firm is not only responsible to the shareholders, but also to society. This approach gives way to extra-economic considerations. Though this approach is viewed for additional value creation (Jensen 2002), there is an intrinsic value of the stakeholder groups (e.g., Donaldson & Preston 1995) that should look past profit maximization.

Models of corporate social responsibility characterize companies' contributions to social sustainability. When issues related to the definitional separation of social and environmental sustainability caused by Carroll's definition of environmental issues as social issues (Carroll, 1979) and the lack of normative orientation (Schneider, 2009) are disregarded, further enlightenment may be gained on how companies arrange themselves to function based on the societal issues. In this manner, businesses simultaneously receive profits and impact the ecological and the social spheres in which they could foster sustainable development.

Up until today, scholars have argued about the elements that should be included in social responsibility of the companies (Griffin, 2000). Wood (1991) defines CSP as three levels of response principles of CSR. This results in CSR being able to be measured and put into practice through corporate social performance. Nevertheless, employing CSP is often a daunting process for the managers as employing CSP is a multidimensional approach rendering it extremely difficult to assess. The social factor alone carries a great number of responsibility facets, which makes it dependent upon companies' behaviour (Van Beurden & Gössling, 2008).

CSP has accounted for many discussions over the years. Igalens and Gond (2005) asserted that CSP measurement depends upon researchers themselves to establish their own approaches to social measurements. They have ascertained that there are five approaches to measure CSP:

First, using content in corporate annual report, which focuses on disclosure about issues related to corporate social responsibility in general. Second Pollution indices these indicators are usually put out by State entities that are independent of the companies in question, in an attempt to ensure a modicum of objectivity, as example of this indices is Toxic Release Inventory (TRI). A third approach Perceptual measurements derived from questionnaire-based survey. Corporate reputation indicators are employed as fourth approach by the use of reputation pointers as understood by the peripheral bureaus in a firm. The fifth approach uses data taken by organization using multidimensional measurements.

Nonetheless, these approaches to CSP measurements indexed by Igalens and Gond (2005) remain unclear because they do not provide detailed data. To resolve the particular complications with the classifications of approaches, there are four kinds of measurements techniques suggested by Orlitzky (2003) that can be utilized. The first approach is the disclosure approach analyzing annual report using content analysis. The aim is to find a thematic trait representing the company's social responsible actions.

This approach has been employed by several studies (Degan *et al.*, 2000; Adam & Harte, 1998; Degan & Garden, 1996). The second approach is reputational rating that measures CSP based on stakeholders' perceptions of the company using either single or multidimensional aspects of CSP.. Prior studies believed to have used this approach were carried out by Turban and Greening (1997), Sharfman (1996), and Simerly (1995).

The third approach of measuring CSP refers to the social audit, corporate social performance process and observable outcomes. It is regarded as a more orderly method used by the third party to assess a firm's CSP through the usage of multi-dimensional calculations in order to form a CSP index. The third parties have taken into consideration the KLD (Kinder Lydenberg Domini) and CEP (Council on Economic Priorities). This approach has been employed by researchers such as Brown and Perry (1994), Greening (1995), and Russo and Fouts (1997).

The fourth method in measuring the CSP is through the application of managerial CSP guidelines and regulations. On the basis of this technique, quantitative research is carried out to evaluate a firm's performance by way of values and previously-established CSR as proposed by Caroll (1979). The rate and standards of CSR are mainly divided into four dimensions, which are the economic, legal, ethics, and discretionary aspects. Past researches implementing this technique were Aupple *et al.* (1985), Cowen (1987), and Freedman and Jaggi (1986).

Cochran and Wood (1984) recommended the two means of measuring CSP, which are the content analysis and the reputation index. On the basis of their claim, the final three categories of Orliztky *et al.* (2003) are grouped in the reputation index means. Margolos *et al.* (2003) also supported the method, using the two generally accepted indicators: subjective and behaviour indicators.

Subjective indicator is the reputation index method employed by Cocharn and Wood(1984) , as well as the final three categories of Orliztky *et al.* (2003). Meanwhile, the behaviour indicator portrays the content evaluation means of Cochran and Wood (1984), and the disclosure strategy by Orliztky *et al.* (2003). For the purposes of the present study to investigate managerial perceptions, the approach to measure CSP uses perceptual measurements derived from questionnaire-based survey.

2.5.2 Corporate Environmental Performance (CEP)

Over the previous decades, an increased attentiveness to the environmental state was stimulated by government sectors, policy makers, non-governmental organizations, companies and the public all over the world has grown. Prevention of environmental problems from occurring has influenced business strategies and practices to avoid greater intervention and regulation and also to avoid costly project delays. Innovative companies are beginning to accept that environmental concerns are business concerns and thus should be integrated into their business strategies, policies, and practices (Epstein & Roy, 2001; 2003).

According to Bowman (1977), most of the executives believe that environmental predicament should be given due attention, even at the expense of business profits or slowing down the introduction of products. Heald (1979) concluded that executives were significantly worried about humanitarian activities and community relations.

Strike, Gao, and Bansal (2006) said that CEP is an organization's promise toward reducing the negative environmental impacts of its operation or facilitating any effort toward environmental protection. Environmental problems arise from the actions and operations of firms in the development, manufacture, distribution and consumption of their products and services.

Integrating environmental issues into a firm's strategy is another theme of corporate environmentalism or CEP geared towards enhancing environmental protection and minimizing the negative impact on that environment. The definition above comprises the major themes discussed in the previous section on the importance of environmental issues in a firm's strategy.

Environmental issues can be integrated into different levels of the firm. Schandel and Hofer (1979) divided the management process into four levels, starting with enterprise strategy, followed by corporate strategy, business strategy and lastly functional strategy. Schandel and Hofer (1979) stated that the importance of enterprise strategy was determining the role of a firm's operation in society. Corporate governance and functions

are addressed under enterprise strategy. Corporate strategy seeks to identify which kind of businesses the firm should be in to achieve its enterprise strategy.

On the other hand, business strategy includes the optimal share of sources in obtaining competitive advantage. The functional level of strategy is affected by environmental concern in product development, as well as in pricing decisions. Integration of the corporate environmentalism within corporate strategy framework may enable managers to deal with environmental issues more effectively and avoid the risk from the environment at the same time. There are even some researchers (for example, Entine, 1995) who claim that integrating environmental issues into business strategy does not always result in win-win situations in corporate environmentalism.

Under corporate environmentalism, two themes are identified from the literature: corporate environmental orientation and environmental strategy focus. Corporate environmental orientation refers to the importance of the realization of the firm's impact on the ecosystem and the need to reduce this impact. The objective of corporate environmental orientation is similar to corporate social responsibility (CSR), which is protecting and caring for the environment and being responsible.

Corporate environmental orientation has two sub-themes. The first group focuses on company ethical behavior, company value, and environmental protection (Shrivastava, 1995; Zeffane *et al.*, 1994) while the second sub-theme reflects the manager's awareness

of stakeholder's needs by satisfying their interest and responding to their needs (Gladwin *et al.*, 1995; Hart, 1995).

On the other hand, the environmental strategy focus shows the degree of integration of environmental issues with corporate strategy. Those who focus more on integrating environmental issues into their corporate strategy gain an advantage over those who integrated less. The company can take advantage of the growing market when developing a new product that is less environmentally damaging (Dechant & Altman, 1994). Also, there is a cost saving advantage for those that have integrated environmental issues into corporate strategy, such as superior waste management and the utilization of cost-effective recyclable items (Smith, 1991; Roome, 1992). Studies on corporate environmentalism show a significant correlation between environmental strategy and corporate competitive advantage and corporate profitability.

Previous studies have shown many ways in assessing environmental performance. A plethora of studies measure environmental performance in terms of level of pollution: e.g., the ratio of total releases to sales (Anton *et al.*, 2004), pounds of Biochemical Oxygen Demand (BOD) per day (Magat & Viscusi, 1990), level of wastewater discharges relative to the permitted limit (Earnhart, 2004), total emissions weighted by its toxicity (King & Lenox, 2001; Potoski & Prakash, 2005), and weighted pollution index of Total Suspended Solids (TSS), BOD and pH (Jaggi & Freedman, 1992).

Numerous studies have also measured environmental performance in terms of compliance status: e.g., days of violations (Nadeau, 1997), fines of noncompliance and compliance rate with BOD and TSS (Doonan *et al.*, 2005), and the proportion of months that a firm is out of compliance (Potoski & Prakash, 2005). Also, studies that look into whether firms would join voluntary agreements have also been carried out. The participants in these programs are treated as beyond-compliance behaviour. Finally, in order to measure environmental performance, surveys such as the Fortune Reputational Survey, Investor Responsibility Research Centre survey, environmental awards, and independent third-party ratings are employed.

James (1994) has proposed six well-defined frameworks for the purpose of environmental performance measurement: production, auditing, ecological, accounting, economic and quality. The rising number of corporate reporting has also demonstrated activities in sync with performance measurement and reporting (Azzone *et al.*, 1996; Bartolomeo, 1995; Cica, 1994; Acca, 1997; White & Zink, 1997). There are three underpinning of pressure or standardization that can be allocated: the formalization of environmental management; accountancy practice and interests; and 'right to know' advocacy. The scope of analyzing the environmental performance of firms, and the link between environmental and financial performance is wide.

Azzone and Manzini (1994) and Tyteca (1996) reviews a number of indicators used in analyzing the environmental performance of firms. This performance indicator has been categorized into several classes: environmental management; environmental

achievements; prevention costs and environmental investment; operating environmental costs; contingent environmental liabilities; physical indicators; and compliance indicators. Thus, this study has taken into account the definition of environmental performance measurements as perceptual measurements derived from questionnaires given to the respondents who are among managers.

2.5.3 Relations between Sustainability Performance and Financial Performance

The exploration of the relationship between sustainability performance and financial performance have been a lively debate for many years under corporate social responsibility, which has ultimately resulted in no definitive consensus of whether a positive, negative, or no relationship at all exists between the two variables (Griffin & Mahon, 1997).

The previous research studies on sustainability performance and its effect on financial performance were twofold. First, were theoretical studies that aim to explain the relationship between social, environmental issues on one hand and financial performance on the other Second, were empirical studies, which can be divided into two types: instrumental studies aiming to empirically test the hypotheses in theoretical studies and descriptive studies aiming to measure the best practices of corporate sustainability (Salzmann *at el*., 2005).

The scholarly debate about sustainability performance suggested three types of relationship between CSP, CEP and FP. They are Negative, Neutral and Positive respectively. Neoclassical theory suggested it is not the responsibility of the company to exclude increasing profits to their shareholders and owners, meaning that by increasing social and environmental responsibility costs will be increased cost and profitability will be reduced (Friedman, 1962). Most researchers have claimed that negative relationships depended upon this theory and investigations like those of Vance (1975) who empirically supported Friedman's theory.

On the other hand, Preston and O'Bannon (1997) who examine the managers' behavior toward environmental and social performance found that higher financial performance lead to lower environmental and social performance. The reason being the manager reduced contributions from the company to environmental and social in order to enhance their compensation, which Posner and Schmidt (1992) and Alkhafaji (1989) empirically supported.

By comparing the two groups of companies listed in two different indices (Dow Jones Sustainability Index) and (Dow Jones Global Index), Lopez, Garcia, and Rodriguez (2007) found negative effects of applying sustainability practices on FP on the short term. McWilliams and Siegel (2001), through the use of supply-and-demand theory, recommended that there is no link between the social and environmental performance and financial performance.

Empirically, some studies found no correlation between social and environmental performance on one the hand and financial performance on the other (Anderson & Frankle, 1980; Freedman & Jaggi, 1986).

Soana (2011) investigates the possible connection between social performance and financial performance in the banking sectors of Italy. The eventual correlation between social performance and financial performance was examined, and the results showed no statistically significant link indicating any positive or negative correlation between CSP and CFP.

To assess the causal relationship between CSP and FP, Makni *et al.* (2009) carried out an empirical study and found no significant relationship between CSP and CFP in Canadian firms. Additionally, the authors found a discouraging effect of the environmental aspects of CSP and three measures of FP, such as return on assets, return on equity and market return.

Cornell and Shapiro's (1987) framework suggested a positive link between social, environmental performance and financial performance. Using the social impact hypothesis, they suggested that higher environmental and social performance could lead to higher performance. From another similar empirical study, Stanwick and Stanwick (1998) found that the FP of organization positively impacts the organization level of CSP and CEP. This meant that an organization with higher level of FP has higher level of CSP and CEP which Coenell and Shapiro’s framework supports.

Muralidhar et al (2001) investigated the relationship between CSP and FP by examining how change in CSP is related to change in FP. They a found that positive relationship exists with financial benefits when management meets the demands of multiple stakeholders. At the same time, they also found CSP positively correlated with growth of sales. Orlitzky (2001) found a positive relationship between CSP and FP, as well as a positive correlation showing a "true score" corrected path coefficient.

Bouquet and Deutsch (2007) examined how CSP affects a firm's capacity to achieve profitable sales in foreign markets. In addition, they examined the relationship between CSP and multinationality by hypothesizing a U-Shape between them. The results of their study showed the multinational enterprises needed to be substantially committed to social performance objective in order to recoup the cost of their CSP investment.

The companies engaging in intermediate levels of CSP achieved lower levels of multinationality than did firms operating a continuum in CSP. Significant positive abnormal stock returns were recorded as there were encouraging environmental activities which highlighting the perceive value of strong environmental performance (Klassen & McLaughlin, 1996).

The evidence from the previous study done by (Klassen & McLaughlin, 1996; Bouquet & Deutsch (2007), shown clearly any hope of Jordanian company to be globally growth or being multinational company start with engaging in high levels of corporate social

performance achieved which provide positive image for their reputations and enhancing the change to grow outside of the country.

Table 2.1 includes summary of studies done by Margolis and Walsh (2003), which summaries the three options of the relationship between corporate social performance and corporate financial performance. Based on Margolis analysis for these empirical studies, the reviewer can see many kinds of problem, in terms of sampling, is related to the dependability and strength of the corporate social performance and corporate financial performance measures, diminishing controls, chancing tests in mediating techniques and moderating situations, and the need for a causal theory to link CSP with CFP ,as suggested by Epstein (2001) and Schaltegger & Burritt (2005) who identify the main reason of mixed result due to different methodology and measurements of past studies.

Table 2.1
Empirical Studies of the Relationship between Corporate Social Performance (CSP) and Corporate Financial Performance (CFP)

	Measure	
Study	**Social performance**	**Financial performance**
Positive relationship		
Anderson & Frankle (1980	Disclosure of social performance	Market
Belkaoui (1976)	Disclosure of pollution control	Market
Blacconiere & Northcut (1997)	Disclosure of and expenditures on environmental practices	Market
Blacconiere & Patten (1994)	Disclosure of and expenditures on environmental practices	Market
Bowman (1976)	Disclosure of social performance	Accounting
Bragdon & Karash (2002)	Stewardship, systems thinking, transparency, employee growth, financial strength	market
Bragdon & Marlin (1972)	CEP evaluation	Accounting
Brown (1998)	Fortune reputation rating	Market
Christmann (2000)	Survey of environmental practices	Cost advantage
Clarkson (1988)	Ratings of charity, community relations, customer relations, environmental practices, human resource practices, and org. structures based on case studies	Accounting
Conine & Madden (1986)	Fortune reputation rating	Perception of value as long-term investment
D'Antonio, Johnsen & Hutton(1997)	Mutual fund screens	Market

Table 2.1 (Continued)

Dowell, Hart & Yeung (2000)	IRRC evaluation of environmental performance	Market
Epstein & Schnietz (2002)	Industry reputation for environment and labor abuses	Accounting & market
Freedman & Stagliano (1991)	Disclosure of EPA and OSHA costs	Market
Graves & Waddock (2000)	KLD evaluation	Market
Griffin & Mahon (1997)	Fortune reputation rating, KLD evaluation, charitable contributions, pollution control	Accounting & market
Hart & Ahuja (1996)	IRRC evaluation of environmental performance	Accounting
Heinze (1976)	NACBS ratings	Accounting
Herremans, Akathaporn & McInnes (1993)	Fortune reputation rating	Accounting & market
Ingram (1978)	Disclosure of social performance	Market
Jones & Murrell (2001)	Working Mother list of "Most Family Friendly"companies	Market
Judge & Douglas (1998)	Survey of environmental practices	Accounting & market share
Klassen & McLaughlin (1996)	Environmental awards and crises	Market
Klassen & Whybark (1999)	Survey of environmental practices and TRI	Manufacturing cost, quality, speed, and flexibility
Konar & Cohen (2001)	TRI and environmental lawsuits	Accounting & market
Luck & Pilotte (1993)	KLD evaluation	Market
McGuire, Sundgren &Schneeweis (1988)	Fortune reputation rating	Accounting & market

Table 2.1 (Continued)

Moskowitz (1972)	Observations of charitable contributions, consumer protection, disclosure, equal employment opportunity, human resource practices, South Africa operations, and urban renewal	Personal assessment
Nehrt (1996)	Timing and intensity of pollution-reducing technologies	Accounting
Newgren *et al.* (1985)	Survey of environmental practices	Market
Parket & Eilbirt (1975)	Survey on minority hiring and training, ecology, contributions to education and art	Accounting
Porter & van der Linde (1995)	Waste prevention practices South Africa: divestment Disclosure of social performance Fortune	Accounting
Posnikoff (1997)	reputation rating	Market
Preston (1978)	Fortune reputation rating	Accounting
Preston & O'Bannon (1997)	reputation rating	Accounting
Preston & Sapienza (1990)	FRDC ratings of environmental practices	Market
Reimann (1975)	Survey of attitudes toward national government, suppliers, consumers, community, stockholders, creditors, and employees	Organizational competence
Russo & Fouts (1997)	FRDC ratings of environmental practices	Accounting
Shane & Spicer (1983)	CEP evaluation	Market
Sharma & Vredenburg (1998)	Survey of environmental strategy	Operational improvement

Table 2.1 (Continued)

Simerly (1994)	Fortune reputation rating Fortune reputation rating Fortune reputation rating CEP evaluation	Accounting & market
Simerly (1995)	CEP evaluation	Accounting
Spencer & Taylor (1987)	Survey of environmental strategy	Accounting
Spicer (1978)	Fortune reputation rating Fortune reputation rating Fortune reputation rating CEP evaluation	Accounting & market
Stevens (1984)	CEP evaluation	Market
Sturdivant & Ginter (1977)	Moskowitz ratings of social responsiveness	Accounting
Tichy, McGill & St. Clair (1997)	Fortune reputation rating	Accounting
Travers (1997)	Mutual fund screens	Market
Verschoor (1998)	Espoused commitment to ethics in annual report Explicit statement of an ethics code in annual report KLD evaluation	Accounting & market
Verschoor (1999)	Fortune reputation rating, charitable contributions, corporate crime	Accounting & market
Waddock & Graves (1997)	Awards from U.S. Dept. of Labor for exemplary equal employment opportunity	Accounting
Wright *et al.* (1995)	Fortune reputation rating	Market

Non-significant relationship

Abbott & Monsen (1979)	Disclosure of social performance	Accounting
Alexander & Buchholz (1978)	Moskowitz ratings of social responsiveness	Market

Table 2.1 (Continued)

Aupperle, Carroll & Hatfield (1985)	Survey of social responsibility practices and organizational structures	Accounting
Bowman (1978)	Disclosure of social performance	Accounting
Chen & Metcalf (1980)	CEP evaluation	Accounting& Market
Fogler & Nutt (1975)	CEP evaluation	Market
Fombrun & Shanley (1990)	Fortune reputation rating	Accounting& Market
Freedman & Jaggi (1982)	CEP evaluation	Accounting
Freedman & Jaggi (1986)	Disclosure of pollution	Market
Fry & Hock (1976)	Disclosure of social performance	Accounting
Greening (1995)	EIA reports on conservation practices	Accounting& Market
Guerard (1997a)	KLD evaluation	Market
Hamilton, Jo & Statman (1993)	Mutual fund screens	Market
Hickman, Teets & Kohls (1999)	Mutual fund screens	Market
Hylton (1992)	Mutual fund screens	Market
Ingram & Frazier (1983)	Disclosure of environmental quality control	Accounting
Kurtz & DiBartolomeo (1996)	KLD evaluation	Market
Lashgari & Gant (1989)	South Africa: adherence to Sullivan principles	Accounting
Mahapatra (1984)	Disclosure of capital expenditures on pollution control	Market

Table 2.1 (Continued)

McWilliams & Siegel (1997)	Awards from U.S. Dept. of Labor for exemplary equal employment opportunity	Market
McWilliams & Siegel (2000)	KLD evaluation	Accounting
O'Neill, Saunders & McCarthy1989)	Survey of directors' concern for social responsibility	Accounting
(Patten (1990)	South Africa: announcement of signing of Sullivan principles	Market
Reyes & Grieb (1998)	Mutual fund screens	Market
Sauer (1997)	Mutual fund screens	Market
Teoh, Welch & Wazzan (1999)	South Africa: divestment KLD evaluation	Market
Waddock & Graves (2000)	KLD evaluation	Accounting& Market
Kurtz & DiBartolomeo (1996)	KLD evaluation	Market
Negative relationship		
Boyle et al,(1997)	Compliance with Defense Industries Initiative	Market
Kahn, et al,(1997)	Tobacco-free	Market
Meznar et al, (1994)	South Africa: withdrawal	Market
Mueller (1991)	Mutual fund screens	Market
Teper (1992)	No alcohol, tobacco, gambling, defense contracts, or operations in South Africa; adherence to broad social guidelines	Market
Vance (1975)	Moskowitz ratings of social responsiveness	Market

Table 2.1 (Continued)

Wright & Ferris (1997)	South Africa: divestment	Market
Mixed relationship		
Belkaoui & Karpik (1989)	Disclosure of social performance, Moskowitz ratings of social responsiveness	Accounting & Market
Berman *et al.* (1999)	KLD evaluation	Accounting
Blackburn, Doran & Shrader(1994)	CEP evaluation	Accounting & Market
Bowman & Haire (1975)	Disclosure of social performance	Accounting
Brown (1997)	Fortune reputation rating	Market
Cochran & Wood (1984)	Moskowitz ratings of social responsiveness	Accounting & Market

Table 2.1 (continued)

Diltz (1995)	CEP evaluation KLD	Market
Graves & Waddock (1994)	evaluation Mutual	Accounting
Gregory et al, (1997)	fund screens	Market
Guerard (1997)	KLD evaluation	Market
Hillman & Keim (2001)	KLD evaluation	Market
Holman, New & Singer (1990)	Disclosure of social performance & capital expenditures on regulatory compliance	Market
Kedia & Kuntz (1981)	Interview and survey on charitable contributions, low-income housing loans, minority enterprise loans, female corporate officers, and minority employment	Accounting & Market

Table 2.1 (Continued)

Luther, Matatko & Corner(1992)	Mutual fund screens	Market
Mallin, Saadouni & Briston(1995)	Mutual fund screens	Market

(Sources: Margolis and Walsh, 2003)

Many researchers of empirical studies that focused on the observation of the relationship throughout the literature have stated that the examination of these empirical studies gives a better understanding of the relationship found to exist based on previous research and better supports this research study.

FP measurements of most of these studies have deeply considered both accounting and market-based measurements. Meanwhile, social performance in these studies is taken from KLD evaluation, fortune reputation ratings, and many other measurements of social performance. It was clear from the table above that the researchers consider the environmental performance under the social, meaning that they did not create a separation between both performances. These enhance and support the present study's goal of contributing to the scholar debate about corporate sustainability performance that separated social and environmental performance and covered both concepts separately.

Moreover, studies carried out in the same area of SP and FP has identified many limitations during past decades. Azzone *et al.* (1996) introduced and organized environmental performance metrics with 21 key metrics aiming to ensure that a comprehensive statement is produced and that all significant environmental initiatives

undertaken by the company receive recognition. However, the limitations of his study were that it focused only on environmental performance in his framework and had no multidimensional performance evaluation.

A similar study by Johnson (1998), who integrated the balanced scorecard with environmental performance indicators, is also limited because his method only includes environmental metrics and gives more priority to maximizing shareholder value. Meanwhile, Epstein and Wisner (2001) added new social and environmental metrics to the balanced scorecard but their study's limitation was also that it placed priority maximizing shareholder value.

Epstein and Roy (2001) created a new framework and integrated social and environmental aspects of performance different form than of balanced scorecard, even though that framework was limited by focusing only on social and environmental aspects as drivers of financial performance. Figge *et al.* (2002) recognized that a lack of integration between and among economic, social and environmental performances was a major difficulty for achieving sustainability. Although the importance of the stakeholder is highlighted strongly in the research, the strategies are not linked directly to stakeholders because the balanced scorecard framework is still used.

The review of the previous literature of sustainability and its relationship to financial performance clearly shows mixed results that were found in previous studies due to different methodologies and sampling used (Schltegger & Wagner, 2006; Margolis &

Walsh, 2003). Most ignored the possibility of examining mediating or moderating effect between both variables. The research differs from past researches by way of identifying SP as social and environmental performance, which act as mediating effects between efficiency strategy and financial performance.

2.6 Corporate Efficiency Strategies

Andrews (1998) defined corporate strategies as patterns of decisions of a firm that establishes and discloses the aims, functionality and aspirations. It also creates the main principles and projects in realizing said aims, and establishes a wide spectrum of business plans in supplying economic and non-economic input to its stakeholders, staffs, clients and the masses.

From the sustainability perspective, in order to achieve sustainability goals, companies should consider economic, social, and environmental issues in setting their strategies. Companies should set strategies by integrating corporate sustainability issues and, at the same time, show concern for financial performance that help them to achieve their goals to enhance the sustainability performance.

Deloitte and Touche (1992) defined CS as the “adoption of business strategies and activities that meet the needs of companies and its stakeholders today while protecting, sustaining and strengthening human and natural resources that will be necessary in the

future". This definition does not determine the strategies of CS, but clearly shows the integration of SD dimension into firms operation. Similar to WCED's (1987) definition, Deloitte and Touche said "SD is a development that meets the need of present without compromising the ability of future generation to meet their own needs" (p.37).

According to Schaltegger and Burritt (2005), the strategy for corporate sustainability has two aspects: first, a general sustainability strategy that looks forward to protecting the environment more than any other issue, and second, a strategy related to competitive advantage. For the purposes of this study, the adoptions of the strategies are drawn from the general sustainability strategy with special consideration to efficiency strategy.

The idea of efficiency is to improve ratio between inputs used to produce a desired output by using fewer materials and less energy (Schaltegger & Burritt, 2005). This approach is known as eco-efficiency and has been promoted strongly by the World Business Council for Sustainable Development (WBCSD) which noted that:

> Eco-efficiency is achieved by the delivery of competitively-priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the earth's estimated carrying capacity (WBCSD, 2000, p. 4).

The eco-efficiency concept has been expanded and is accepted through management and global organizations such as OECD, which defines the concept as ecological resources used to meet human needs. The European Environment Agency (EEA) defines the eco-efficiency concept, as "more welfare from less nature". As it functions as a primary idea, eco-efficiency is able to aid government sectors, firms and members of the public in having prolonged sustainability. It works through gather the basic facets of financial and natural growth that are deemed important for financial success by optimizing the usage of resources while reducing the release of harmful chemical waste. The eco-efficiency strategy is concerned with increasing economic development while aiming to lower the impact on the environment (WBCSD, 2000; Abdul Rashid, Evans, & Longhurst, 2008).

The eco-efficiency is the broadest strategy as it aspires to avoid wastage and improve utilization of resource, all the while guarantees minimized effect upon the environment and sustaining planetary resources (Abdul Rashid, Evans, & Longhurst, 2008). Additionally, the concept of eco-efficiency strategy can be viewed from many levels including macro-economic and micro- economic (Mickwitz, Melanen, Rosenström, & Seppälä, 2006).

It is important to implement such strategy, i.e. eco-efficiency, in a company's operations by reducing the negative impact on environment, and working towards the enhancement of the economic success at the same time. Business strategy in relation to sustainability is presently controlled by eco-efficiency means (Korhonen & Seager, 2008). During the last three decades, some companies have begun to see the potential cost savings in their

environmental management practices, and consider eco-efficiency as an essential answer to the global ecological challenge (Jollands & Patterson, 2004). The so-called win-win solution that minimized resource consumption and wastes (Young & Tilley, 2006). According to the World Resources Institute (WRI, 1998), a gap is evident between current and sustainability patterns of consumption, despite the great work being made by businesses to improve material and energy efficiency in different countries like the United States, Germany, and Japan.

Despite all of the beneficial efficiency strategies companies and business sectors have implemented, authors argue that, despite the fact that eco-efficiency may be of value in directing and measuring corporate sustainability, it does not have (in its independence) an ample guideline for business (Welford, 1997; WRI, 1998; Young & Tilley, 2006). Efficiency is a trade-off between economic and environmental summarized in Figure 2.6 below in relationship to SD.

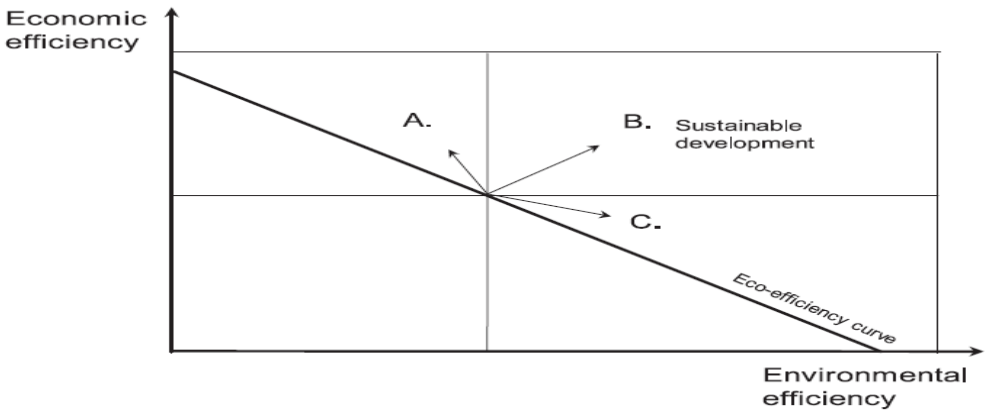

Figure 2.6
Eco-efficiency as an operating principle of SD. Adapted from Schaltegger and Burritt, 2000; Hoffrén and Apajalahti, 2008

Arrows A, B and C, describe the path of development leading to improve eco-efficiency that are available to society. If both economic and environmental efficiency improve, movement is made in the direction of SD. Conversely,, if the improvement change occurs towards economic side, environmental efficiency is lost and vice versa When a change shifts towards environmental efficiency, economic efficiency is lost.

Similar to the eco-efficiency concept but still less explored is socio-efficiency. Socio-efficiency describes the relationship between firms and society and the impact (positive or negative) of this relationship on a firm's added value. The example for positive impact is the creation of employment; meanwhile, negative impacts include accidents and human rights abuses (Dyllick & Hockerts, 2002). The focus of socio-efficiency is either to maximize the positive social impact or to minimize negative social impacts. Based on "fourth capital approach" of the World Bank, the goal dimension of socio-strategy must include: 1) enhancement of the social capital for current and future generations (e.g., social capital, human capital, and produced/physical capital) and 2) equal opportunities within generation.

Social capital include Human capital and societal capital, human capital concerns basically on skills, motivation and loyalty of employees and business partners, from other side social capital includes the quality of public services such as a good educational system, infrastructure or a culture supportive of entrepreneurship.

The idea that the firms have to mange social capital is not new, as it refers to corporate social responsibility (CSR) which started to gain broader interest in 1960s in the USA, UK and then spread to continental Europe in the early 1970s, as "Corporate Social responsibility is the obligation of decision makers to take action which protect and improve the welfare of society as a whole along with their own interest" (Davis & Blomstrom, quoted in Carroll & Buchholtz, 2000, p.32)

To be a socially sustainable company Gladwin *et al*. (2005) require that a firm needs to internalize social cost maintain and grow the capital stock, avoid exceeding the social carrying capacities encourage structures for self-renewal; foster democracy; enlarge the range of people choices and distribute resources and property rights fairly.

From stakeholder perspective, a firm can be viewed as managing social capital in a sustainable way when its stakeholders understand and can broadly agree with why a company is doing something, or acting in that way, if the company can effectively communicate the reasons beyond their act to stakeholders and show the alternatives of that actions then only the company very well be considered as socially sustainable.

Thus, socio-efficiency strategy can be defined as a company achieves the social goal by contributing to maximum social value and minimizing the negative impact on sociality (accident and human rights abuse) with concerns for the success of economic growth and adding value to the company (Dyllick & Hockerts, 2002).

The efficiency strategy, eco-efficiency and socio-efficiency, aims either to increase the positive impact or to reduce the negative impact of environmental and social performance of the company to the added-economic value. In addition, the efficiency strategy can be expressed as a process toward protecting the environment by considering creating added value in any activities performed, and, at the end of the process, the environmental performance can be measured on that activity (Bhone, Brattebø, & Bergsdal, 2008; Penttinen & Pohjola, 2008). WBCSD report of eco-efficiency established in 2003 identified seven areas upon which a company should focus when applying efficiency strategies. It reflects the understanding of efficiency strategies as they apply to companies. The seven areas are as following:

1. Management: Improving your financial performance and competitiveness through eco-efficiency requires leadership from management. Providing incentives and communicating, a commitment to efficiency strategies is necessary to motivate employees, engage stakeholders, and to increase productivity and innovation.

2. Product design and development: Approximately 80% of a product's long-term environmental impacts and costs are established during the design stage. Product design and development are therefore critical considerations when seeking to apply efficiency strategy, as the aim of that strategy is to provide innovative product improvements, decrease costs, and increase productivity and value to customers.

3. Purchasing: By optimizing the total cost of goods or supplies (including use and disposal costs), companies can increase operating and material management efficiency. A relationship between purchaser and supplier that encourages discussion of efficiency strategies will increase the likelihood of improved environmental performance, social performance, and innovation.

4. Accounting: Determining the environmental rates could motivate the drive for a more efficiency strategy development. Educating other economic sectors of these rates could result in better productivity and facilitation, as well as stimulating innovative and creative zeal. The accounting means could also benefit from the knowledge by optimizing cost-efficiency methods.

5. Marketing and communications: There is a growing record of users who seek green products. Thus, the companies must provide environmental information on its products and services that satisfy the information needs of this market segment and for other stakeholders (e.g., suppliers, insurers, investors and employees). Increasing awareness will help to brand the company as one that is committed to innovation, efficiency, and strong social and environmental performance.

6. Production and distribution: Efficiency strategy is about doing more with less. This is achieved by optimizing the inputs (energy and material) and outputs (products and waste) of production and distribution processes. Investigating

the efficiency of company's inputs and outputs provides the motivation for creating innovative solutions and productivity improvements.

7. Facilities management: Developing energy and item processing in the operational and facilitation methods that could minimize expenses. Furthermore, high-efficiency plant layouts, heating and ventilation as well as manufacturing systems could heighten performance level as a result from employees' good health and well being.

Measuring efficiency strategies can be based on enhancing social and environmental performance. Innovest Strategic Value Advisors (Advisors, 2003) created the "Eco-efficiency score" as approach to measure the contribution of eco-efficiency strategy to financial performance throwing enhancing environmental performance. The eco-efficiency aim represents the environmental performance in five different areas. The first being its historical liabilities that take into account the hazards (as well as benefits) a firm bears as a result of past environmental behaviour. This category also encompasses superfund liabilities, state and hazardous waste sites, and toxic tort.

The second area looks into the contemporary operating risks, addressing risk exposures from events that are more recent including toxic emissions, product risk liabilities, waste discharges, and supply-chain management risk. Meanwhile, the third area, which is "sustainability and eco-efficiency risk", covers the deterioration of a firm's material sources of long-term profitability and competitiveness, and the potential future risks this

development creates. This area also includes energy intensity, energy efficiency, the durability and recyclability of the product life cycle, adding with the degree to which companies are exposed to changes in consumer values.

The fourth area applies to managerial risk efficiency. This category reflects the company's aptitude in monitoring environmental hazards efficiently, as proven in the superiority of supply chain management, environmental auditing capacity, and the strength of environmental management systems, training capacity, among others.

The final group refers to the economic potentials that resulted from eco-efficiency, namely in the level of which companies could garner competitive edge from environmentally driven market trends and profit opportunities as long as the company's management has carefully outlined eco-efficiency policies.

Hart and Ahuja (1996) empirically examined the relationship between emissions reduction and firm performance using 127 firms from Standard and Poor's 500. They found a positive relationship, which they explained by stating, "the firm with higher level of emission reduction and pollution prevention will have better firm performance through different industries" (p. 36). Their results provided some weak evidence according to Sarkis and Cordeiro (2001).

Hart and Ahuja stated that the firm have pay green results but only after a time lag, and they found that environmentally conscious business practices such as efficiency strategy took up to two years to improve accounting profitability measures of return on sales (ROS), return on assets (ROA), and return on equity (ROE).

Guenster *et al.* (2011) examined the effects of eco-efficiency on several dimensions of financial performance. They found significant a positive relationship between eco-efficiency and ROA and a significant positive relationship between eco-efficiency and firm value measuring by Tobin's q. Cordeiro and Sarkis (1997) used TRI data in describing the idea that environmental was related negatively to security analyst's earnings performance forecasts for to demonstrate that environmental proactivism was related negatively to security analyst's earnings performance forecasts for 523 firms in 1992.

Cormier *et al.* (1993) examined the linkage between environmentalism and financial performance through the use of a sample containing 78 companies from the annual reports concerning industrial waste as witnessed in the Ontario and Quebec areas between the years 1986 and 1988.They found that higher pollution levels negatively impacted a firm's market valuation. Worrell *et al.* (1995) observed significantly negative stock market reaction to 58 corporate greening announcements over the period from 1988-1993.

Hamilton (1995) explained that stockholders from 463 companies recorded TRI pollution statistics in 1989 experienced statistically significant abnormal negative returns when the information was first released. By observing 110 firms between 1985-1991, Kalssen and McLauglin (1996) found that environmental performance was rewarded through increases in abnormal stock market returns, while environmental crises were accompanied by decreases in this returns.

Morris (1997) found mixed results when examining the relationships between emission reductions on ROS and ROA for competitive advantage and found a negative relationship while a positive relationship was found when violation on ROS, ROA was examined. Sinkin et al (2008) examined the relationship between the adoption of eco-efficiency strategy and firm value and found that a significantly higher value added to the company that adopted this strategy, as compared to a company that do not adopt eco-efficiency strategy.

Sarkis and Cordeiro (2001) investigated the effect of eco-efficiency strategy on short-run financial performance which is measured by return on sales (ROS). They found a negative relationship between ROS and eco-efficiency strategy like pollution prevention and end of pipe efficiencies.

Clearly, previous empirical studies have produced mixed results concerning the relationship between efficiency strategy and financial performance. Different methods and different strategies used in previous studies were the main reason for the mixed result. Also, most negative relationships were on short-term financial performance; therefore, the researchers should distinguish between the long-term and short-term financial performance because they will give different results (Sarkis & Cordeiro 2001).

The possibility exists to identify mediating effects between efficiency strategy and financial performance, as previous studies did not examine this. As the main aim of efficiency strategy is to enhance social and environmental performance and financial performance as the final goal.

According to (Guenster, *et al.* 2011) the result analysis changed when they identified control variables or included dummy variables related to eco-efficiency effect on firm value. Thus, empirical research to be conducted to examine issues regarding the mediating effects between efficiency strategies and financial performance is imperative. Providing for this need enables this study to be unique from other studies conducted in same area.

2.7 Summary

Based on the results of the literature review on efficiency strategy and its relationship with financial performance, the following conclusions can be made:

First, the majority of researchers of efficiency strategy have focused on direct relationship that may influence the financial performance by including most of the studies' controlling variables like firm size and leverage variables as examples. The findings of these studies indicate mixed results based on the different methods and samples used; thus, further empirical research is needed.

Second, similar to efficiency strategy, the impact of sustainability performance on financial performance shows strongly mixed results for the same reasons of methods and sample method. Thus, further empirical research is needed to identify new ways to determine the relationship between the variables.

Third, most of the empirical study account for the stakeholder or shareholder perspectives, or annual reports analysis, and/or global organization environment or social ratings like WBCSD, UNCSD, and GRI with less consideration of managerial perceptions of corporate efficiency strategy or sustainability performance.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses the methodology of the present study, including the theoretical framework, hypotheses development, research design, operational definitions, instrument development and the measurement of variables, the population and sampling frame, as well as data collection procedure. This chapter also reports on the pilot test and statistical techniques used to analyze the data.

3.2 Research Framework

A theoretical research framework of this study enables the academician and industry practitioners to understand the effect of applying corporate efficiency strategy better. It enables observation of the related effects of the variables (corporate efficiency strategies, corporate sustainability performance and corporate financial performance) to be hypothesized and tested.

The model of the present study is conceptualized and adapted based on previous works on sustainability strategies (Dyllick & Hockerts, 2002; Schategger & Wanger, 2005; Epstein, 2008), corporate sustainability performance (Epstein, 2001; Schaltegger &

Burritt, 2005; Schaltegger & Wanger, 2005; Epstein, 2008), and corporate financial performance (Wang & Lin, 2004; Epstein & Roy, 2008; Cornell & Shapiro, 1987; Preston & O'Bannon, 1997). The primary focus of this study is on managers who are responsible for social and environment job scope in two sectors in Jordan (Industry and Services), as both sectors have direct effect to social and environmental performance. The main focus of this study is to examine the mediating effects of corporate sustainability performance on the relationship between corporate efficiency strategy and corporate financial performance.

Based on the literature review and research problems, this study develops a framework as presented in Figure 3.1. This research framework is derived mainly from Epstein's (2008) corporate sustainability model. The original model of corporate sustainability proposed by Epstein (2008) recognizes sustainability performance as a consequence of sustainability activities in companies. Three basics factors, which are sustainability strategy, sustainability structure and system and programs and action, influence the process of applying sustainability activities in companies.

The present study proposes corporate sustainability performance as a mediating variable that affects the relationship between corporate strategy (Dyllick & Hocket, 2002; Schategger & Wanger, 2005) and corporate financial performance. There is a gap yet to fill from prior studies on the relationship between efficiency strategy and financial performance. According to Epstein (2008), sustainability performance should be assessed

in deriving the effectiveness of sustainability management, thus leading to improved financial performance.

Corporate efficiency strategy drawn from previous research was discussed earlier in Section 2.6. Efficiency strategy, which is dominated in business strategy with regards to sustainability (Korhonen & Segger, 2008, Mickwitzeled, 2006), focuses on two types of efficiency strategy, which are socio-efficiency and eco-efficiency. Meanwhile, sustainability performance is divided into two types, which are corporate social performance (CSP) and corporate environmental performance (CEP).

According to Schaltegger and Wanger (2006), the challenge faced by the managers is to integrate social and environmental activities into company operations. Therefore, separating corporate sustainability performance into two aspects allows parallel examination of the various corporate sustainability performances factors. This will enable the researcher to study the relative strength of relationship between corporate sustainability performance and corporate financial performance from one side, and corporate sustainability performance and corporate efficiency strategy from the other side.

The theoretical framework for the present study is based on stakeholder theory and good management theory. The stakeholder's theory said that changes of strategies in a company's operation will benefit all stakeholders, as well as society in which the company operates. These changes can also improve the quality of life in the communities

as well as treating all employees fairly and respectfully. Based on good management theory, the managers should provide equitable benefits to society and protection to the environment without looking at their company's financial situation. Good management theory relies on managers' perceptions and actions in helping to develop society and protecting the environment in which the company operates. In turn, this would lead to enhancing the competitive advantage of a company and increasing financial performance (Waddock & Grave, 1997; Donaldson & Preston, 1995; Freeman, 1994).

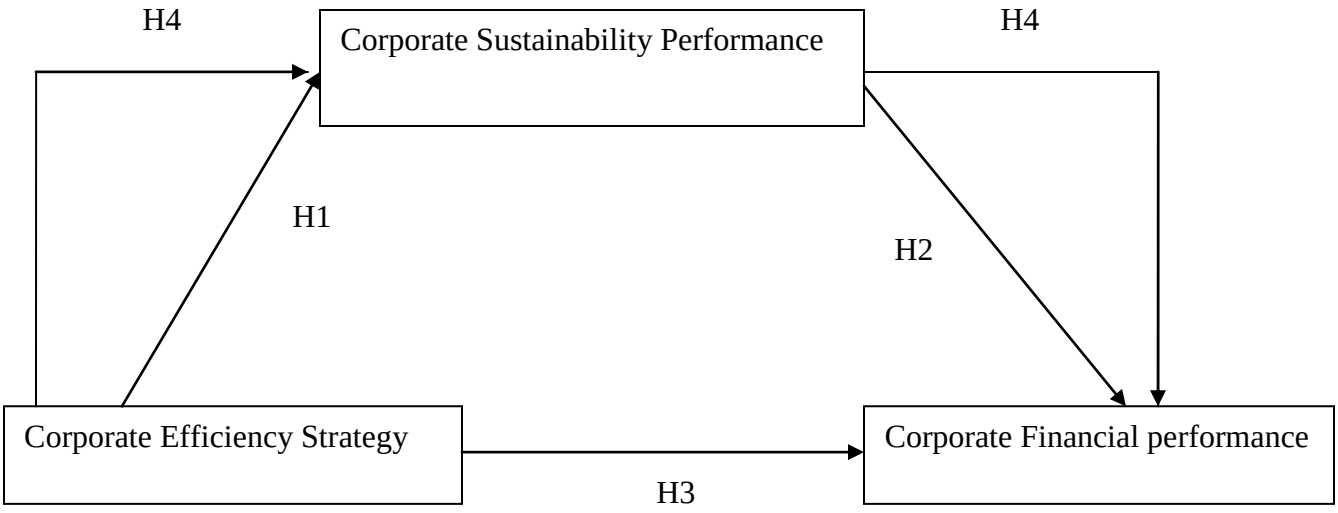

Figure 3.1: Research framework

3.3 Hypotheses Development

Having defined and described the background and the theoretical information of this research, this section provides and discusses the hypotheses of this research. The hypotheses are developed based on the theoretical framework illustrated in Figure 3.1 above. As discussed in Chapter Two, there are four elements considered in this present study, including the mediating variables. They are as follows: socio-efficiency strategy, eco-efficiency strategy, corporate social performance, and corporate environmental performance. The descriptions of the hypotheses for each element are offered in the following subsections.

3.3.1 Corporate Efficiency strategy and corporate sustainability performance

Socio and Eco-efficiency are concepts of efficiency strategy, which aims to protect society and the environment buffeted by increasing economic development (Dyllick & Hockerts, 2002). The eco-efficiency strategy has the ability to achieve sustainability goals in general and protect the environment (WBCSD, 2000; Schaltegger & Burrit, 2000). During the last three decades, some companies began to see the potential cost savings in their environmental management practices, and considered eco-efficiency to be an essential answer to the global ecological challenge (Jollands & Patterson, 2004).

Eco-efficiency was defined as protection of the environment by using less resources and reducing waste of materials, simultaneously producing high-quality products and services that covered the needs of stakeholders with competitive pricing. Meanwhile, socio-efficiency completes the cycle of sustainability performance that considers the social impact accompanying economic development. As Dyllick and Hockerts (2002) said, the positive ecological and social performance of a company can be increased with either economic value creation or reduced negative effects.

Previous empirical study suggested that the importance of taking efficiency strategies more seriously from manager's perspective is to solve social and environmental issues and also confirmed the significance of this strategy to pollution prevention (Penttinen & Pohjola, 2008; Sarkis & Cordeiro, 2001). Theoretically, the needs of efficiency strategy were stressed by the stakeholder theory when it seeks to reap benefits for the stakeholder through social equity and environment protection. Empirically, Klassen and Mclaughlin (1996) reported stakeholders showing positive feedback toward green strategy.

According to Schmidt et al (2004), socio- and eco-efficiency are strategic tools, which can assist companies in selecting the most cost-effective and environmentally sound production processes. Drawing upon the previous empirical and theoretical evidences of sustainability strategies, the present study has hypothesized that efficiency strategy is a key element in sustainability performance.

The above arguments lead to:

H1: Efficiency strategy is positively related to sustainability performance.

H1a: Eco-Efficiency strategy is positively related to corporate environmental performance.

H1b: Socio-Efficiency strategy is positively related to corporate social performance.

3.3.2: Corporate sustainability performance and corporate financial performance

Corporate sustainability performance is defined as the integration of social and environmental issues with management operation strategy toward enhancement and protection of social and environment including activated social and environment practice in a company's strategies while sustaining economic growth (Deloitte and Touche, 1992; Wanger, 2010). The separation of sustainability performance into two variables, which are corporate social performance (CSP) and corporate environmental performance (CEP), provides the opportunity to easily examine and understand the concept of sustainability performance.

Corporate social performance (CSP) is usually understood as the social responsibility of the company toward its stakeholders (Elkington, 1998). Most empirical studies that have examined the effect of corporate social performance upon corporate financial performance have shown strongly mixed results (Muralidhar *et al.*, 2001; Orlitzky, 2001).

Despite the fact that empirical studies have attempted to reveal positive relationships between corporate financial performance and corporate social performance, many studies instead found a negative impact or neutral link between social and company financial performance (McWilliams & Siegel, 2002; Makni, Francoeur & Bellavance, 2009; Soana, 2011).

The most important reason for mixed results of these studies were due to different sampling and data collection method that were used. According to Wood and Jones (1995), the mismatching measurements in corporate social performance and corporate financial performance contribute to inconsistent results of the relationship between corporate social performance and corporate financial performance.

Corporate environmental performance is the second concept associated with sustainability performance and is defined as a company's promise and contribution to reducing the negative impact that its operations may have on the environment, or/and facilitating any effort by others toward environmental protection (Strike, Gao, & Bansal, 2006). Previous studies of corporate environmental performance found mixed results related to financial performance. Lefebvre *et al.* (2003) found a positive impact of environmental performance on innovations of products and process that lead to better competitiveness and financial performance.

On the other hand, some studies have demonstrated strong environmental performance and pollution prevention positively affected a firm's financial performance and market

evaluation strategies (Klassen & McLaughlin, 1996; Montanbon *et al.*, 2000; Klassen & Whybark, 1999). Based on the environmental rules and regulations point of view, a few authors have demonstrated that this effort would prolong economic development. Porter (1991) claimed that early adoption of strict environmental standards would not be a barrier towards a firm's competitiveness against their its rivals but it would lead to the rise of resource productivity and competitiveness.

The above arguments lead to:

H2: Corporate sustainability performance is positively related to financial performance.

H2a: Corporate social performance is positively related to financial performance.

H2b: Corporate environmental performance is positively related to financial performance.

3.3.3 Corporate Efficiency Strategy and Corporate Financial Performance

Efficiency strategies refer to the Management control processes in hopes of minimizing dependency of the environment and heightening social and environmental performance, which would also result in cost effectiveness (Huppes & Ishikawa, 2005). A wide range of previous studies supports the existence of eco-efficiency strategy enhancing competitive advantage and adding great value to the company (Mohr, 2002; Xepapadeaus & Zeeuw, 1999; Epstein & Roy, 1997; Peck & Sinding, 2003). Feldman *et al.* (1997)

posited that, when firms effectively apply eco-efficiency strategy, they are deemed to have given value to shareholders via minimizing their risk profile.

Researchers examine the efficiency strategy by accounting for emissions reduction, end of pipe efficiency, pollution prevention, and violation as strategies related to efficiency (Hart & Ahuja 1996; Cormier *et al.*, 1993; Worrell *et al.*, 1995; Morris 1997). Through the application of effective social and environmental values into a company's strategic planning, the management would be able to determine a direct connection between its social and environment goals and its profitability (Brady *et al.*, 1999; Ekins, 2005).

Most study on the impact of efficiency strategy on financial performance has found a positive significant effect. According to Guenster *et al.* (2011) a significant positive relationship existed between eco-efficiency and return on assets (ROA) and return on equity (ROE). Hart and Ahuja (1996) discovered that a more efficient level of emission control or redactions and pollution prevention would result in heightened company's performance. Cormier *et al.* (1993) examine the effects of pollution degrees on companies' security rates and concluded that the high degrees of pollution produced by companies are in correlation with the companies' marketability negatively. Sinkin *et al.* (2008) stated that adoption of eco-efficiency strategy lead to increased corporate financial performance.

Thus, the above arguments lead to:

H3: Corporate efficiency strategy is positively related to financial performance.

H3a Corporate eco-efficiency is positively related to financial performance.

H3b Corporate socio-efficiency is positively related to financial performance.

3.3.4 Mediating Hypothesis

Underpinning theories of this research include stakeholder and good management theory, both of which benefit stakeholder before financial performance. The consequences of being good to society and the environment are enhancing the competitive advantage of a company, which ultimately can enhance the company's financial performance (Donaldson & Preston, 1995; Waddock & Grave, 1997).

Epstein's (2008) proposed corporate sustainability model characterized the demand to study sustainability performance as a mediating variable, between strategy toward sustainability and financial performance. Because sustainability performance should be observed closely to identify the effectiveness of sustainability management, there are numerous sustainability strategies coupled with its normative nature. There is no standard guideline for determining the specific number of strategies (Porter, 1991; Schaltergger & Burritt, 2006).

Corporate efficiency strategy is divided into two dimensions that are socio- and eco-efficiency, both of which aim to contribute and to enhance social and environmental performance. The ultimate goal is to enhance financial performance by improving sustainability performance. Previous empirical research on this topic found mixed results.

Being good to social and environment performance in general generates a positive effect on financial performance, though some effects are negative and some show no correlation at all.

According to Margolis and Walsh (2003), the mixed results that the researchers found were due to different methods and sampling and most of them have only examined the direct link between variables without examining the mediating or moderating relationship between variables. The positive effect between efficiency strategies and corporate financial performance was found to throw enhancing social and environment in general which make it as conditions of the success in efficiency strategy applied by managers to their company. The above arguments lead to:

H4: Sustainability performance mediates the relationship between corporate efficiency strategy and corporate financial performance.

H4a: Corporate social performance (CSP) mediates the relationship between socio-efficiency strategy and corporate financial performance.

H4b: Corporate environmental performance (CEP) mediates the relationship between eco-efficiency strategy and financial performance.

3.4 Research Design

Research can be defined as "an orderly investigative process for the purpose of creating new knowledge" (Swanson, 2005, p. 4). The choice of methods by a researcher depends upon whether his intent is to specify the type of information to be collected in advance of the study or to allow that information to emerge from participants in the project. A quantitative method is appropriate if the research problem requires identifying factors, which may affect the result or an understanding of the best predictors of the outcomes (Creswell, 2003). A research design is perceived as a map for the researchers and is identified as a blueprint, structure and strategy of the observation in order to gain response to the study's statement of problems (Kerlinger, 1973; Davis, 1996).

This study is conducted with the intention of obtaining a good grasp of sustainability performance as mediating effect of the relationship between efficiency strategy and financial performance among the managers in industry and services sectors in Jordan. Generally, the researcher divided the research based on three main types dependent upon the nature and purposes of the research, namely: exploratory, descriptive research and hypotheses testing (Zikmund *et al.*, 2012; Kumar, 2010; Sekaran, 2006).

As mentioned earlier, the objective of this study is to test the mediating effect of the variables, so the most suitable design will be descriptive and hypotheses testing. Using descriptive statistics to determine the main attributes of population can provide a better understanding of the nature of the population, while testing the hypotheses between variables can provide insight into any differences between (and among) the variables.

Hypothesis testing is well known as a design that employs a testable format in assessing the link among the set of diverse variables (Saunders, Lewis, & Thornhill, 2011). The primary goal of hypothesis testing is to clarify the discrepancy of the dependent variable or predict the end result of the link between independent and dependent variables. (Sekaran, 2006).

According to Zikmund (2012), there is no perfect research method. The approach adopted based on the objectives and research questions of the problems that the researchers seek to answer or solve. Furthermore, the objectives, availability of information and costs for conducting the research are main factors affecting the choice of research design.

To achieve the objectives of the present study, survey research was used because this method is the best adapted for obtaining personal and social facts, beliefs, and attitudes (Kerlinger, 1973). The data obtained from a survey are used to examine the relationships between the dependent and independent variables (Davis, 1996). The survey approach is the most suitable technique with respondents such as managers who are highly educated (Cooper & Schindler, 2003). The huge amount of data provided by a survey gives a chance for the researcher to generalize the results to the population at large. Survey strategies consist of four major approaches, namely, mail survey, personal interview, telephone interview, and an Internet survey (Dillman, 2000). A mail survey is carried out by sending the questionnaire to the respondents through mail service, which is flexible and cost effective (Davis, 1996).

One benefit that can be derived from mail survey is respondent's confidentiality, which can be maintained. However, a few drawbacks also exist. These include: a low response rate; long or complex questions cannot be included in the questionnaire; no face-to-face interaction between the researcher, and the inability to provide better explanations of complex issues (Cooper & Schindler, 2003; Sekaran, 2006).

The second approach is personal interview, which helps the researcher to get respondent's information directly, and survey questions are asked directly from interviewers to the respondents (Cooper & Schindler, 2003). Many ways are used in carrying out this technique, and one is the structured interview. In a structured interview, the interviewer has already prepared questions to be asked. Conversely, , unstructured interviews are conducted with no prepared questions by the interviewer (Sekaran, 2006).

The third approach involves a telephone interview in which data will be derived from the respondents through phone calls (Zikmund, 2012). This technique helps to compensate for the drawbacks of a face-to-face interview such as geographical barriers. Also, the researcher can easily reach respondents and time and costs are low (Saunders *et al.*, 2011). By combining telephone service with computer tools such as Computer-Assisted Telephone Interviewing (CATI), the interviewer can record the respondent's answers directly on the computer, which can be time and money efficient (Zikmund, 2012).

The most obvious benefit of telephone interview method is that it gives room for the respondents to answer private or personal questions because there is no face-to-face

interaction. Besides, the researcher can collect data faster by reaching out to respondents from are widespread geographic area provided they are connected to the telecommunication network via mobile or fixed line telephone services (Zikmund, 2012). The method does have minuses as well. Unfortunately, respondents might end the interview abruptly (Sekaran, 2006). Also, lack of visual interaction means the interviewer cannot see the respondent's expressions while telephone interviews are being carried out (Zikmund, 2012). The respondents might also feel bored if the interview is too long.

The fourth approach consists of an Internet survey conducted by using the Internet network. One benefit is that wide range of respondents can be reached geographically. Time and money can also be saved as the respondents' answers will be instantly recorded into the system (Saunders *et al.*, 2011). An attractive web site design and confidentiality of the respondents can also encourages a higher response rate (Cooper & Schindler, 2003). However, setting up questionnaires on a web site is costly and requires the services of skilled programmers or IT analysts (Cooper & Schindler, 2003).

Zikmund (2012) claimed that no perfect method is available because each method has its own benefits and drawbacks. But, the best method can be easily identified when the researcher can evaluate the advantages and disadvantages for each method (Cooper & Schindler, 2003).

In deciding upon survey method, Kumar (2010) asserted that decision depends upon three major issues: nature of the investigation, the geographical variety of the participants

involved as well as their characteristics. In terms of geographical distribution, the respondents for this research were located in a wide geographical area; hence, a mail survey was deemed to be the most appropriate. Because the targeted population includes managers who are well educated, the assumption was that they could understand and respond to the questionnaire.

Following the Kumar's (2010), criteria suggested, a mail survey was perceived as the best option. Nonetheless, the major drawback in mail survey is that the response rate is sometimes . This calls for an extra measure to increase the response rate, which Sekaran (2006) suggested included a good questionnaire design.

3.5 Operational Definition

The framework of this research is divided into three parts. The first part is corporate efficiency strategy. The second part is corporate sustainability performance, which is divided into two core areas: corporate social performance (CSP) and corporate environmental performance (CEP). The third part is corporate financial performance. The operational definitions of these variables are discussed below

3.5.1 Corporate Efficiency strategies

The present study employs efficiency strategy that consists of two major aspects, eco-efficiency and socio-efficiency, following in the footsteps of previous works done in the similar area (WBCSD, 2000; Abdul Rashid *et al.*, 2008; Korhonen & Seager, 2008;

Sinkin *et al.*, 2008; Dyllick & Hockerts, 2002; Schaltgger & Burritt, 2000). These previous studies account for the importance of efficiency strategy as a successful tool towards gaining sustainability.

The aim of efficiency strategy is to apply the sustainable development (SD) principle at firm's level, which takes into account social and environmental factors. Eco-efficiency is a strategy, which considers the environmental impact of company operation and company value added. On the other hand, socio-efficiency accounts for the social impact of company's operation and value added. In sum, both concepts include the principle of SD and apply it to company operation.

For the purposes of this study, eco-efficiency is operationalised as a strategy that protects the environment by using less resources and wasting, and, at the same time produces high-quality products and services that cover the need of stakeholders with competitive pricing (WBCSD, 2000; Abdul Rashid *et al.*, 2008). Socio-efficiency is operationalized as a strategy that assists company in achieving the social goals by contributing to maximum social value and minimizing the negative impact on society (accident and human right abuses) with concerns about successful economic growth and adding value to the company (Dyllick & Hockerts, 2002; Schaltgger & Burritt, 2000).

3.5.2 Corporate Sustainability Performance (SP)

Sustainability performance was operationalised as integrated social and environmental issues to management operation strategy towards enhancing its practice (Wagner, 2010). Sustainability performance is divided into two concepts: corporate social performance (CSP) which is operationalised as the responsibility of the company to meet its stakeholders' requirement and needs, and the responsibility for helping to solve problems that they have caused and social issues related to their business operations and interests (Wood, 1991).

Corporate environmental performance (CEP) is operationalised as a company's promises and contributions to reducing the negative impact that its operations may have on the environment and facilitating any efforts by others toward environmental protection (Strike *et al.*, 2006).

3.5.3 Corporate Financial Performance

Financial performance is operationalised as a measure of the change of the financial state or financial outcome of firms that results from management's decisions and the execution of those decisions by members of the firm (Carton & Hofer, 2006).

3.6 Instrument Development and Measurement

This section describes the questionnaire design used in this study to measure the variables. The measurements of the major variables of this study and the scale development are discussed by details as the following:

3.6.1 Questionnaire Design

In order to develop good questionnaire Dillman (2000) suggested four guidelines to motivate participants' response:

1. Set the questions in downwards' order of practicality and significance.
2. Put questions of the same theme and content in a group.
3. Construct smooth consistency throughout the set of questions through manipulating the cognitive links in which participants are likely to recognize; and
4. Place easier questions first and ensued by tougher questions.

As the present study is looking to attract the largest response rate, the questionnaire follows Dillman guidelines for structuring and ordering. The questions used in the questionnaire are based upon a literature survey and incorporate all variables discussed in Chapter Two. The questionnaire is divided into four sections as the following:

1. Section **A** comprises a series of questions to elicit background information about the firm. It is chosen as the first section because these questions are easy to answer.

2. Section **B** is designed to explore the application of efficiency strategy in Jordan firms; the questions of this section were adapted from the WBCSD (2003) self-assessment report of efficiency strategy. This section is placed second in view of its intended contributions and importance to this research.

3. Section **C** used questions designed to measure mediating variables (sustainability performance), which are divided into two major issues: corporate social performance (CSP) and corporate environmental performance (CEP). Responses to each question use a 5-point Likert scale.

4. Section **D** is designed to elicit information related to corporate financial performance as a result of applying efficiency strategy into a firm's operation in Jordan.

3.6.2 Instrument Development and Measurement

The instruments questions were developed from previous studies and pre-tested before being adapted in this study. However, the scales validation procedures still was performed using confirmatory factor analysis and coefficient alpha. This process was to ensure that the scales used in the present study scales were both valid and reliable for specific purposes of this study.

Further necessary adjustments and rephrasing of the items was also done to ensure appropriateness for the present study and consistency with the variables. To prevent confusion among respondents, all items were measured using a five–point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

To assess the respondents' perception of the corporate efficiency strategy in Jordanian firms, numerous concerns were adapted from the WBCSD's (2005) report, covering all possible issues related to eco-efficiency and socio-efficiency. The measurement of efficiency strategy accounts for seven issues, namely, management, product design and development, purchasing, accounting, marketing and communications, production and distribution, and facilities management.

Respondents were chosen from among the managers whose jobs were related to social and environment responsibilities of the companies. They were deemed to have the ability to understand both concepts of efficiency strategy and to answer all of the items questions. Eighteen (18) items were chosen to measure the efficiency strategy as shown in Table 3.1 below to cover both eco- and socio-efficiency strategies.

Table 3.1
Items for Efficiency Strategy Measure

	Items
1	Write policy, supported by senior management that link environmental performance with economic performance;
2	Set environmental performance and efficiency targets and measures progress toward them, for our products/business areas;
3	Meet regularly with our stakeholders to inform them of our improvements in eco-efficiency and productivity;
4	Encourage suggestions to improve resource, energy, and material efficiency;
5	Provide information to customers on how to improve their environmental performance;
6	Provide training in environmental management for our managers and staff;
7	Assign a person(s) to be responsible for environmental and eco-efficiency matters;
8	Work with other business functions to discuss and improve purchasing procedures, specification, criteria and efficiency;

Table 3.1(Continued)

9	Meet all environmental legislation and regulations that apply to our company's operations and products;
10	Monitor the environmental innovations and productivity improvements of competitors and within our industry sector;
11	Determine the main environmental impacts and costs of our products throughout their lifecycle (production, use and disposal);
12	Have an environmental management system (e.g., ISO 14001) in place;
13	Require our suppliers to provide environmental information on their company and products;
14	Measure the environmental costs associated with our activities;
15	Include environmental information in our marketing and communications material;
16	Track current and proposed environmental regulations and legislation that may impact our business;
17	Take measures to reduce material, water and energy use; and
18	Use reusable/ recyclable materials.

Note: Source, adapted from WBCSD (2005)

As stated earlier, corporate sustainability performance is defined as integrated social and environment issues to management operation. Corporate sustainability performance contains two factors, namely, corporate social performance and corporate environment performance (Epstein, 2008; Schategger &Wanger, 2006).

Corporate social performance covers a wide range of issues and can include corporate social responsibility (CSR) or corporate responsibility towards society. On the other side, corporate environment performance shows corporate responsibility toward the environment. In order to measure the sustainability performance for the companies, 12-items adapted from Rettab *et al.* (2009) were employed to cover issues such as

community responsibility, employee responsibility, investor responsibility, customer responsibility. The second part of the section included 13-items that measured the corporate environmental performance (CEP) adapted from Rettab *et al.* (2009) and Sharma & Vredenburg (1998) which covered many issues related to the environment such as reducing waste and emissions, material used, environment regulations, and environment issues.

The respondents were asked to answer the questions to determine the current situation of sustainability performance in their companies using five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items reliability was investigated by Rettab *et al.* (2009) and Sharma & Vredenbur (1998) who showed that the scales were reliable with alpha coefficients up to 0.87. Table 3.2 below shows the items used as sustainability measures.

Table 3.2
Items for Sustainability Performance

	Items
Corporate social performance (CSP)	
1	Give money to charities in the communities where we operate;
2	Help improve the quality of life in the communities where we operate;
3	Treat all employees fairly and respectfully, regardless of gender or ethnic background;
4	Provide all employees with salaries that properly and fairly reward them for their work;
5	Provide all customers with very high quality service;
6	Provide all customers with the information needed to make sound purchasing decisions;
7	Adapt products or services to enhance the level of customer satisfaction;

Table 3.2 (Continued)

8	Provide all suppliers of products and services with a commitment to a future relationship;
9	Incorporate the interests of all suppliers of products and services into business decisions;
10	Provide all investors with a competitive return on investment;
11	Seek the input of all our investors regarding strategic decisions; and
12	Meet the needs and requests of all our investors.
Corporate environmental performance CEP	
1	Incorporate environmental performance objectives in organizational plans;
2	Voluntarily exceed government environmental regulations;
3	Financially support environmental initiatives;
4	Measure the organization's environmental performance;
5	Invest in pollution/emission control equipment;
6	Implement new technology to reduce wastes;
7	Create recycling programs;
8	Protect and withdrawal from ecologically sensitive habitats;
9	Dispose and treatment of hazardous/toxic wastes;
10	Compensate local communities, employees, and other impacted parties for injury;
11	Reduce total materials used;
12	Substitute by renewable materials; and
13	Use recycled/waste materials

Sources: Adapted from Rettab *et al.* (2009) and Sharma & Vredenburg (1998).

Researchers have offered a variety of measures of financial performance. Two perspectives can measure financial performance: an objective concept measure of performance and a subjective concept measure. The subjective approach was adopted in

this study whereby the respondents were asked to state their company's financial performance on criteria like ROI, ROA, sales growth, and profit growth relative to their competitors.

The advantage of using subjective approach is that: 1) a selected multi-item subjective measure is more accurate than a single quantitative factor (Govindarajan & Gupta, 1985); 2) subjective measures may increase the response rate in case objective data either are not available or firm is unwilling to reveal this information (Dess & Robinson, 1984), and 3) subjective measures have been shown to be correlated strongly to objective measures of performance.

This study adapted four items from Samiee and Roth (1992), and Rettab *et al.* (2009) to measure performance. These were return on investment, return on assets, sales growth, and profit growth. The alpha coefficient for items based on Rettab *et al.* (2008) study was 0.85. The respondents were asked to answer questions to rank and determine the current financial performance in their company. Items measured used a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Table 3.3 below shows the items to measure financial performance.

Table 3.3
Financial Performance Measures

	Items
1	Our return on investment has been substantially better.
2	Our return on assets has been substantially better.
3	Our sales growth has been substantially better.
4	Our profit growth has been substantially better.

Source: adapted from (Samiee & Roth, 1992; Rettab et al, 2009)

3.7 Population of Study and Sampling Frame

The population of the present study was based on the total of industry and services firms registered with the Amman stock exchange (ASE), which were 232 firms (ASE, 2011). The industry sector consisted of 78 firms meanwhile; the service sector consisted of 154 firms. The focus was upon industrial and services sectors because of their reputation of being competitive, quickly changing, and being innovative. Services and industry sectors require diligence on the part of its members to create and maintain sustainability competitive advantages through value-added products and solutions. Moreover, this study examines sustainability as a major issue, which is much related to both sectors as they affect the environment and society more strongly than financial sectors such as insurance and banking. Also, it is believed that the managers of these sectors were better able to understand the questionnaire than other sectors' managers especially on the items related to efficiency strategy and its effects on environment because this issue is a challenge to any manager working in industry or services companies.

According to Kumar (2010), the sampling frame can be regarded as the process for the research units as derived from the population of the study, in which it refers to the tangible portrayal of the research population. McMillan and Schumcher (2001) mentioned that the sample size must be sizeable for the study, in which it has to be sufficiently big to predict the aspects of the population in hopes of a valid result.

The choice of sample size is usually governed by: 1) the confidence that the researcher needs to have in the data, 2) the margin of error that the researcher can tolerate, 3) the types of analysis that the researcher is going to undertake, and 4) the size of the population from which sample is being drawn (Hair *et al.*, 2006).

There was no statistical data established by companies of Jordan related to the number of managers working in positions with social and environment responsibilities. Therefore, the selection of the simple random sampling method was employed as sampling design. The reason simple random sampling was chosen is because this method enables generalization of the findings to population (Bryman & Bell, 2003). Also, due to its ability of provide much information of a given simple size.

As suggested by Saunder *et al.* (2011), based on the total population of 232 firms registered with Amman stock exchange (ASE, 2011), the appropriate sample size for this study was 132, However, to overcome the non-response rate in a mail survey that can be as high as 80% (Malhotra, 2008), the number of questionnaires sent was more than the sample needed. Thus, the questionnaire was sent to all 232 firms in the sample, which were also the population. The present study justified this step by the following:

1. The population for this study is not too large. Gay and Diehl (1992) said that a large sample size would be better for any study, especially for the purpose of generalization.
2. The appropriate sample size for most research ought to be more than 30 and less than 500 (Sekaran, 2003).
3. The sample size should be sufficiently large for the purpose of conducting specific data analysis such as multivariate analysis.

Some authors have stated that a sample size of less than 100 is regarded as small, a medium sample size is between 100 and 200, and a large sample is more than 200 (Hair *et al.*, 2006; Hulland, Chow & Lam, 1996; Kline, 1998). Thus, the sample size for this study was accepted as appropriately representative and sufficient for further analysis.

3.8 Validity and Reliability of the Measurement Instrument

Assessment of the validity and reliability of the items was conducted before the questionnaires were distributed to the respondents. These steps were carried out to ensure the items were suitable to use in this study. A measure is valid when it actually measures what it is intended to measure (Nunnally, 1978), and therefore, the measures were used in this study necessarily should be valid too. The validity of the instrument can be classified into two main categories, namely, content validity and construct validity. Content validity is to determine if it measures the proposed entity accordingly .As such, the measuring can

be attained via adopted items that have been utilized in previous studies (Saunders *et al.*, 2011).

To assess content validity, Hair *et al.* (2007) proposed to source ideas and recommendations from experts and academicians. Select persons from the public can also be chosen to obtain the feedback on the questionnaire items. For the purposes of this study, the meanings to the main variables have been closely re-examined based on the recommendations in relevant literatures as suggested by Saunders *et al.* (2011). A pre-test was conducted by seeking feedback from experts, academicians, and firm's managers Based on their feedback, adjustment to questionnaire items were done to ensure awareness, wording, and clarity of the questionnaire items.

Meanwhile, construct validity relates to the theoretical and hypothetical development of the link among the variables (Pallant, 2007). As stated by Hair *et al.* (2007), construct validity is determined by the application of two techniques – first being the convergent validity that assesses the construct validity and determines if it links in positive manner with different measures of this construct. The second technique would be discriminate validity that evaluates the correlative existence among the study constructs and a variety of different constructs. For the purposes of the present study, factor analysis was conducted to measure the construct validity as shown in chapter four of this research.

The second criterion for assessing the measurement scale is the reliability of measurement. While validity is related to accuracy, reliability is related to consistency

(Hair *et al.*, 2007). Reliability is the degree to which similar results can be obtained when repeating the same course of action under different circumstances (Crowther & Lancaster, 2009). Two approaches can be used to assess the reliability of the measurement, namely, test-retest, which is appraised by administrating the questionnaire to the sample in different circumstances and comparing the differences of their correlations.

The second measure of reliability is examining the internal consistency between items using Cronbach's coefficient alpha (Pallant, 2007). Cronbach's coefficient alpha value is the most widely used statistic to determine the reliability of the measurement (Crowther & Lancaster, 2009; Hair *et al.*, 2007; Leedy & Ormrod, 2001; Pallant, 2007; Saunders *et al.*, 2011; Sekaran, 2003).

The value of Cronbach's coefficient alpha ranges from 0 to 1. Acceptance of the appropriate value for reliability depends on the nature and the research objectives. Commonly accepted values for reliability at approximately 0.7; however, the value could be minimized to 0.5 in the context of investigative study (Hair *et al.*, 2007). The force of connections for Cronbach's coefficient alpha value is illustrated in Table 3.4 below. The next section includes the pilot test of the study variables, which consider the reliability of this study instrument.

Table 3.4
Alpha Coefficient Ranges and Strength

Alpha Coefficient Range	Strength of Association
< 0.6	Poor
0.6 to < 0.7	Moderate
0.7 to < 0.8	Good
0.8 to < 0.9	Very Good
≥ 0.9	Excellent

Source: *Hair et al. (2007)*

3.9 Pilot Test

The pre-testing research tool would be the pilot study, whereby it is carried out prior to the gathering of data. It is believed to bear a number of important benefits that owe to the achievement of the research by allowing the researcher to reflect upon certain domains that are initially vague. Eventually, the study would result in having a refined and improvised questionnaire that would be used to trace the timing without any problems of receiving answers from respondents. (Bryman & Bell, 2003).

In this research, the pilot study was carried out during August and September 2010 among Jordanian company managers of unlisted companies. A pilot test was carrying out before the questionnaires were distributed to the target respondents. The major objective

of the pilot test was to examine the goodness of the measurement in terms of validity and reliability. The research aims to achieve a number of objectives:

1. To make certain that the participants' understood the information required.
2. To guarantee that the questionnaire could be completed within a minimal duration in avoiding respondents' exhaustion or gradual lack of interest; and
3. To filter the set of questions in order for the candidates to answer them with minimal obstructions as wells as making sure that the recommended methodology used fit the study's framework.

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To achieve this objective, a total of 50 questionnaires was sent to managers from unlisted companies to obtain their feedback. According to Cooper and Schindler (2003), a range from 25 to 100 is a suitable size for pilot test in general. After ten days from the date of sending the questionnaire to the respondents, a total of 11 questionnaires were returned; This represented a return rate of 22%. After another ten days, another 10 questionnaires were received. After a couple of weeks, another 6 questionnaire were returned, making the total number of returned questionnaires number 27. This made the response rate for the pilot test above 50% which was sufficient for such research (Sekaran, 2003).

The 27 questionnaires were analyzed to get feedback about the reliability of the instrument. Analysis was conducted on efficiency strategy, sustainability performance, and the financial performance. These are the three major concepts in this study.

One criteria of selection of past instruments was the internal consistency of the scales, as measured by Chronbach's alpha reliability coefficients. The pilot study produced reliability estimates ranging from 0.82 to 0.94, which according to Sekaran (2006) is considered sufficient for the research purpose. Based on that, the scales are regarded as relatively reliable as shown in Table 3.5 below.

Table 3.5
Cronbach's alpha reliability test

	Alpha	**Number of items**
Corporate Efficiency Strategy	94.4	18
Corporate Sustainability Performance	85.6	25
Corporate Financial Performance	82.4	4

3.10 Data Collection Procedure

The main focus of this study is to examine the mediating effect of sustainability performance on the relationship between efficiency strategy and financial performance in two active sectors in Jordanian economy, which are industry and services sectors. Therefore, unit of analysis for this study is a company, represented by managers, who are responsible for social and environment activities.

To achieve the objectives of this research, a questionnaire was developed to collect data from the respondents to provide answers to the research questions. Mail survey strategy was employed for this study. Therefore, a formal request was sent seeking permission

from top management to distribute questionnaires via the public relations office to the respective managers.

3.11 Data Analysis

For the purpose of data assessment and hypotheses evaluation, a number of statistical means and techniques were used through the SPSS program. These included descriptive statistics, factor analysis, test of differences, correlations and multiple regressions, which were conducted to provide answers to the research objectives.

3.11.1 Descriptive Statistics

According to Pallant (2007), descriptive statistics aims to portray the varying features of the data, to validate all kinds of breaching of the main predictions for the means to be employed in the research and to acknowledge certain study questions. Transforming raw data transformed into descriptive statistics make them easier to understand and interpret. The descriptive statistics (mean values and standard deviations) for all variables were considered.

3.11.2 Factor Analysis

One important step included in the data assessment is to know the features of the variables in the recommended model or relationships in empirical research (Hair, Anderson, Tatham, Black, 1998). Factor analysis was conducted in present study in order

to determine the build of the interrelationship between two or more larger items, which is conducted through describing similar fundamental features, otherwise known as factors (Hair *et al.*, 1998). In this study, factor analysis was used to determine the dimensions of the three major concepts, namely, efficiency strategy, sustainability performance, and financial performance factors.

Three main steps suggested by Pallant (2007) were considered while applying factor analysis in this present study. These steps consisted of

1. The acknowledgement of the proper data in application to the factor analysis through satisfying the needed assumptions, namely sufficient sample sizes, establishment of ample correlations among the variables within the same factor, completing linearity state and inspection of outliers.

2. Factor extraction through the use of proper methods in validating the most minimal amount of factors. The research employs the principle component analysis (PCA) as the method has been comprehensively utilized by other researchers (Pallant, 2007). PCA functions through the grouping of smaller linear variables and examining all the common variance through a mathematical form (Tabachnick & Fidell, 2007). PCA become a choice application for its user-friendly attributes, unlike other analyses. Moreover, Tabachnick and Fidell (2007) regarded this method as the select method in searching for a tentative review of the variables. Hence, PCA was employed for the progress of the research.

3. The final stage of the factor analysis would be the factor rotation and description (or explanation). In certain situations, it would be necessary to reiterate the rotation, especially when there are high loadings more than one factor.

After the factor analysis, reliability tests were undertaken to assess the goodness of the measurement. Specifically, reliability analysis determines the internal consistency of the measurement items after factor analysis. The most widely measurement for the reliability of the scale is Cronbach's alpha value that ranged from 0 to 1. According to Hair *et al.* (2007), a value of 0.7 is an acceptable alpha value for research in general.

3.11.3 Test for Differences

Three statistic analyses are employed in this study to measure the differences of variables, namely, the T-test to examine if there is a statistically significant difference in the mean scores for two groups of variables in terms of their level of acceptance of the study variable. The T-test is the suitable method to use in the present study. First, this study examines the prediction of homogeneity of variance via Levene's test for the leveled variance. Should the prediction of equality variance is breached; the T-value report is then not to be used.

3.11.4 Linear Regression Analysis

As the first, second and third research questions of this study examine the direct relationship effect of the independent variables on dependent variables. Linear regression analysis is the most appropriate tool to be adopted (Sekaran, 2003). To achieve this, the following analytical models were developed:

- **Corporate Eco-efficiency strategy and financial performance:**

$CFP = \alpha \{ECO\}$

- **The regression model for this association is as follows:**

$CFP = \alpha + \beta\ ECO + \varepsilon$

Where:

CFP = Corporate financial performance

ECO = Eco-efficiency strategy

α = Constant

β = Regression coefficient

ε = Error

- **Corporate Socio-efficiency strategy and financial performance:**

$CFP = \alpha \{Socio\}.$

- **The regression model for this association is as follows:**

$CFP = \alpha + \beta\ SOCIO + \varepsilon$

Where:

CFP = Corporate financial performance

Socio = Corporate socio-efficiency strategy

α = Constant

β = Regression coefficient

ε = Error

- **Corporate sustainability performance and financial performance:**

$CFP = \alpha \{CSP\}.$

$CFP = \alpha \{CEP\}.$

- **The regression model for this association is as follows:**

$CFP = \alpha + \beta\ CSP + \varepsilon$

$CFP = \alpha + \beta\ CEP + \varepsilon$

Where:

CSP = Corporate Social Performance

CEP = Corporate Environment performance

α = Constant

β = Regression coefficient

ε = Error

- **Corporate efficiency strategy and corporate sustainability performance:**

CSP = α {Socio}.

CEP = α {Eco}.

- **The regression model for this association is as follows:**

$CSP = \alpha + \beta\ SOCIO + \varepsilon$

$CEP = \alpha + \beta\ ECO + \varepsilon$

Where:

CSP = Corporate Social Performance

CEP = Corporate Environment performance

SOCIO = Corporate socio-efficiency strategy

ECO = Corporate eco-efficiency strategy

α = Constant

β = Regression coefficient

ε = Error

3.11.5 Multiple Regressions

Multiple regressions are linear regression involving more than one independent variable (Veal, 2005). Multiple regression is a group of means that could be utilized to look into the connection among one continuous dependent variable and a number of independent variables. Furthermore, it is founded upon a corresponding link but is open to more advanced study of the interconnection between the variables (Pallant, 2007).

Multiple regression includes three major types, namely, standard, hierarchical, and stepwise multiple regression. This study aims to examine the mediating effect of sustainability performance on the relationship between efficiency strategy and financial performance, thus, the hierarchical multiple regression was the suitable method to determine the mediating effect of sustainability performance. To achieve this, the following analytical models were developed:

- $CFP = \alpha + \beta 1\ SOCIO + \beta 2\ CSP + \varepsilon$
- $CFP = \alpha + \beta 1\ ECO + \beta 2\ CEP + \varepsilon$

Where:

CFP = Corporate Financial Performance

CSP = Corporate Social Performance

CEP = Corporate Environment performance

SOCIO = Corporate socio-efficiency strategy

ECO = Corporate eco-efficiency strategy

α = Constant

β = Regression coefficient

ε = Error

3.12 Summary

This chapter highlighted the methodology adopted for this study. It discussed the hypotheses development for the framework, research design and the rationale for choosing the method used in this study. The population of the study and the sampling were also described. This was followed by data collection procedures and the development of the instrument. Lastly, the data analysis means as employed to assess the data was explained. The following section describes the findings and outcome from the output of the analysis.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the results of data analysis. SPSS Version 15 was utilized to assess the data. Generally, this section provides the results of the study in accordance with the objectives mentioned in the first chapter. The chapter initiates with an explanation of the data collection and response rate followed by data cleaning and screening, and a profile of the respondents. Analysis of goodness of measures to test the validity and reliability of the variables is discussed next. Finally, the test results related to the relationships between the variables are also presented.

4.2 Overview of the Data Collected

This section presents an overview of the data collected – beginning with the response rate of the returned questionnaires and the effort for achieving the rate's percentage. Secondly, the data screening and cleaning is illustrated, including the missing value analysis, outlier and normality test. Finally, this section also discusses the non-respond bias test performed to examine any significant differences between early and late responses by using the T-test technique.

4.2.1 Response Rate

There were 232 companies listed in the Amman stock exchange on June 2011, under the service and industry sectors. For data collection purposes, 232 questionnaires were distributed to managers in the social and environmental fields of both service and industrial sectors in Jordan. Given the fact that those in top management are responsible for the holistic workings of the companies – including social and environmental protection – managers (and company executives) are also well informed about the companies' income statement. Frequently, social environment managers are responsible for carrying out effective planning, delegating, staffing, organizing, and making decisions in order to gain desirable profit for the organization through avoiding social and environment risks.

Beginning on June 9, 2011 the questionnaires (inclusive of a cover letter) were placed in an envelope and sent to the managers via postal service. Towards the end of August 2011, 118 questionnaires had been returned – 17 of which were excluded because they was incomplete. Hence, the present study regards them as missing values due to the fact that the unanswered sections from the respondents impede the research flow.

Thus, a total of 101 responses were usable for subsequent analysis giving a response rate of 43.5 percent. This response rate required hard work and extra financial cost including weekly follow up through calling the managers, as well as face-to-face interaction with said managers in an effort to explain the necessity of the surveys. According to research

methodology, the accepted response rate for mail survey is ranged from 20 to 30 percent (Lambert & Harrington, 1990). Furthermore, Saunders *et al.* (2011) considered that a response rate of 30 to 50 percent for mail survey is reasonably high. Thus, the overall response rate in the present study is considered to be high and viable for the commencement of the research.

Table 4.1
Summary of Data Collection

Data Collection	
Number of questionnaires distributed	232
Number of questionnaires returned	118
Respond rate	50.8
Number of usable questionnaires	101
Usable response rate	43.5%

4.2.2 Data Screening and Cleaning

Data screening and cleaning for the present study was conducted through three steps, namely, the missing value test, data outliers test, and a normality test.

4.2.2.1 Missing Value Test

Hair *et al.* (2006) defines missing data as information unavailable for a subject (or case) about which other information is available. Missing data often occur when a respondent fails to answer one or more questions in a survey. Missing data occurs for several reasons. In general, missing data falls into two categories: known missing data caused by certain procedural factors such as errors in data entry that create invalid codes or failure to complete the entire questionnaire.

The second type of missing data is defined as 'unknown missing data', which is more difficult to identify and accommodate as most of it is related directly to the respondent(s). Such forms of missing data comprise the respondent's refusal to answer certain questions or no opinion by the respondent or insufficient knowledge to answer the questions (Hair *et al.*, 2006). The missing data for this study were identified and sorted out from the rest by checking for errors in all variables that fell outside the range of possibility at the point of time that they were collected; incomplete surveys were removed to ensure that the questions were fully answered and to avoid missing data.

Because 17 questionnaires were found with incomplete answers, they were deleted as there was a non-random pattern of the missing data (Tabachnick & Fidell, 2007). However, there were usable samples for further analysis after the elimination of the incomplete questionnaires. In ensuring that the data was clean, the researcher double-checked data entry and the frequency of distribution and the missing value analysis for

each variable was conducted. (Refer to appendix B.) As a result no missing data was reported.

4.2.2.2 Data Outlier Test

An outlier test is a case or data that have unique characteristics, and they differ in terms of form and presentation from other observations. They also appear in the form of extreme values for a single variable or combination of variables (Ghozali, 2005; Tabachnick & Fidell, 2007). With the outlier test, deletion is made if there was: 1) any incorrect data entry; 2) a failure to specify missing values that may have been read as real data; and 3) outliers or respondents who are not members of the population.

To gain the study's objectives, the data were subject to descriptive analysis in search of any discrepancy. The results from the tests – including the mean, minimum and maximum significance, in addition to box plots shown in Appendix C, found no multivariate outliers. Standardized Z-score values indicated that none of the data set in the cases exceeded the range, for which the value of the standard scores with expressed outliers should range from ±3 to ± 4 (Ghozali, 2005). Test results of the outlier data using Z-score values found no multivariate outliers. (Refer to Appendix C.)

As such, none of the survey questions were omitted from the final analysis. As such, the final usable questionnaires totaled 101, which represented a 43.5 per cent response rate. Any individual item with Mahalanobis Distance (D^2) scores greater than Chi-square

values ($X^2 = 90.57$) are considered as multivariate outliers (Hair *et al.*, 2006). After checking the Mahalanobis Distance (D^2), all the variables scores were in the range of less than Chi-square values ($X^2 = 90.57$). Checks on the Cook Distance indicated that all variable values were in a range lower than 1.0 Tabachnick &Fidell (2007), suggesting that there was no potential problem. (Refer to Appendix D.) Therefore, no outliers were deleted from this study.

4.2.2.3 Data Normality Test

A normality test was performed to determine whether the population data was normally distributed or not. A large number of statistical methods can be applied to scrutinize the normality distribution of the data prior to any extensive analysis. For the purposes of this study, an assessment of the normality distribution of the data was carried out using Skewness and Kurtosis. In the research, Skewness' value portrays the regularity of the total achievement; and a skewed variable's will not be at the middle of this distribution, whereas Kurtosis gives information of the 'peakness' of the distribution, which can be either too peaked or too flat (Tabachnick & Fidell, 2007).

Conclusively, the data groups with a higher Kurtosis would have an obvious peak that sets closer to the mean, decline rather rapidly, and have heavy tails. Data groups with a low kurtosis would have a flat top near the mean rather than a sharp peak (Hair *et al.*, 2006).

Distribution is considered normal, if the value of Skewness and Kurtosis is at zero (0). A positive Skewness value will have a cluster of cases inclined to the left at a low value, while negative Skewness will have the score cluster or pile at the right hand with a long left tail (Tabachnick & Fidell, 2007). Kurtosis that have values below zero (0) will indicate a relatively flat distribution known as 'platykurtic', and the Kurtosis' values that are above zero (0) indicate a peak distribution – otherwise known as 'leptykurtic'. Researchers have recommended that samples should be large enough (200 and above) to prevent underestimation of variance. However, seldom do the results achieve perfect normality assumptions. The results of Kurtosis and Skewness for the variables statements are presented in Table 4.2 below.

Table 4.2
Results of Skewness and Kurtosis for Constant Variables

	Skewness		**Kurtosis**	
Variables	Statistic	Std. Error	Statistic	Std. Error
Socio-efficiency	-.450	.240	-.021	.476
Eco-efficiency	-.742	.240	.768	.476
CEP	-.554	.240	.291	.476
CSP	.596	.240	.396	.476
CFP	-.217	.240	-.693	.476

As illustrated by the outcome, none of the values went beyond the accepted range of skewness as recommended by Hair *et al.* (2006) that should be within the range of 2.58 and 2.58, at the 0.01 significance level or between 1.96 and 1.96 at 0.05 significance level. As for kurtosis, the normal range is between -3 and +3. On the basis of these

results, there were no major issues surfaced concerning the normality distribution of the data for ensuing assessment in this research.

4.2.3 Non-Response Bias Test

Because it took several weeks to receive a reasonable number of questionnaires from the surveyed respondents, a comparison was made between those who responded early and those with a delayed response. This method involved breaking the samples into the early responses' category (received within the first month) and late responses' category (received after the first month).

For the purpose of this study, and as recommended by Armstrong and Overton (1977), 31 respondents were classified as early responses who returned the questionnaires within first month and 70 were classified as late responses. Then, independent sample t-test was conducted to determine if there were any significant differences in the major variables between early and late responses.

The results for test of non-response bias showed that there were no significant differences between early and late response. (Refer to Table 4.3.) The entire p-values were set beyond the significance level of 0.05. Hence, the outcome proved that there is no main obstruction to the matter of unresponsive bias among the early and delayed answers to the research. Thus, unresponsive bias did not serve an impact upon the research's generalization of its findings – and the analysis was conducted upon the 101 answers. Upon acknowledging the matter, the ensuing descriptive analysis of data was carried out.

Table 4.3
Result of Non Respond Bias Test

	Levene's Test	**Sig**	**Significance at 95% level**
Socio-efficiency	1.668	.200	**Not Significant**
Eco-efficiency	.102	.750	**Not Significant**
Corporate Environmental Performance	.147	.702	**Not Significant**
Corporate Social Performance	2.851	.094	**Not Significant**
Corporate Financial Performance	.191	.663	**Not Significant**

4.3 Profile of the Respondents

Table 4.4 below presents the profile of the respondents. The vast majority (88.1%) of the respondents were males. According to Al-Gahtani, Hubona, and Wanf (2007) this is common in the Middle East where there are rigid, gender-specific restrictions for the employment of managers in Middle Eastern-based companies. Hence, only a limited number of women are in top management positions in such organizations

Table 4.4 also shows that, most respondents were between the ages of 50 years and above, as they represented 42.6% of the total number of respondents. Respondents of age group of 40-49 years old made up 32.7% of the sample, followed by the group age 31-39 with 14.8% of the total number of respondent. The last category is the group age was less than 30 years of age, which represented 5% of the total respondents of the sample.

Table 4.4
Profile of the Respondents (N=101)

Variable	**Categories**	**N**	**(%)**
Gender	Male	89	88.1
	Female	12	11.9
Age (year)	<30	5	5.0
	30-39	20	19.8
	40-49	33	32.7
	>50	43	42.6
Manager Experience (year)	<5	10	9.9
	5-9	40	39.6
	10-14	36	35.6
	>15	15	14.9
Academic Qualification	Diploma or Below	5	5.0
	Bachelor Degree	70	69.3
	Master Degree	15	14.9
	PHD	11	10.9
Company Sector	Industry	38	37.6
	Services	63	62.4
Portion of budget allocated to Social and Environmental Responsibility	<5%	47	46.5
	5-10%	33	32.7
	Over 10%	21	20.8

The result shows that most of the managers (75.3%) were more than 40 years old. This could be due to the fact that business manager is primarily a senior position, which is often given to staff with credible and seasoned experience in the field.

As shown in Table 4.4 – in terms of working experiences in current position as social and environmental managers – 9.9% of the respondents had less than 5 years of experience, followed by 39.6% of respondents who had experience of 5 to 9 years, and 35.6% who had experience between 10 and 14 years, and 14.9% who had experiences of 15 years and more.

The results indicate that the vast majority of respondents had 5 to 14 years worth of experience, which simultaneously indicated that the respondents were 40 years of age or older. Due to the retirement regulations in Jordanian companies at age of 65 years old, older respondents with more than 15 years of working experience only make up 14.9% of the entire results.

Table 4.4 displays the higher education level of the respondents. The result shows that 5% of the respondents had at least completed diploma courses, while the majority of the respondents (at 69.3%) had bachelor degrees, 14.9% had master's degrees and 10.9% were PhD holders. It is clear from the results that academic qualifications play an important factor in seeking employment in these firms, specifically for senior positions in firms.

Table 4.4 above shows 62.4% of the respondents came from services sector and 37.6% from industrial sector. It also indicated the percentage of social and environment responsibility for the position. The majority of managers, 46.5%, responded that the percentage of budget allocated for social and environmental responsibilities was less than 5%; 32.7% of the respondents responded that the percentage of budget allocated for social and environmental responsibilities was between 5 and 10%; and 20.8% responded that the percentage of the budget allocated for social and environmental responsibilities was more than 10%. The results support some findings that business has placed low priority on social and environmental responsibility spending due to increasing costs that

was reflected in their relatively low annual social and environmental budget (Artiach, Lee, Nelson, & Walker, 2010).

4.4 Goodness of Measurement of Instruments

As mentioned in chapter 3, the items used to measure various factors in this study have been adapted from the literature. Even though the previous literature has been confirmed its validity, the researcher felt the necessity of re-examining the validity of these measures. This is because the Middle Eastern region (Jordan specifically) and its context may differ from that of the United States and other countries. The existing literature on the efficiency strategy and corporate sustainability in general have been conducted in different regions, specifically in the United States that has specific rules and guidelines with a surrounding that is almost holistically foreign compared to Jordan.

As to determine if the measurements method utilized in the research contain construct validity – which is to measure what needs to be measured – factor analysis was carried upon all the items measuring the constructs of corporate efficiency strategy, corporate sustainability performance, and Corporate Financial Performance.

4.4.1 Factor Analysis Assumptions

For the purposes of this study the validity of the scales were analyzed using factor analyses. The results of the factor analysis are used to determine the unidimesionality of constructs. The relevance of using factor analysis for this study is to merge the large

number of statements into a small set of factors to represent the efficiency strategy, as well as the other variables of this study.

There are two measures utilized to determine the result of factor analysis of this study, and they are the Kaiser Meyer-Olkin (KMO) and Factor loading. KMO is an index to determine if the result of factor analysis is useable for further analytical steps. According to Kaiser (1974) KMO values are 0.90 and above are considered excellent, those between 0.80 and 0.89 are good, between 0.70 and 0.79 are fair, those between 0.60 and 0.69 as deficient, those between 0.50 and 0.59 are poor, and those below 0.5 are deemed unacceptable. The second measure is factor loading which Hair *et al.* (2006) defined as the amount of the variance in an original variable as described by a factor. Factor loading is a correlation between the original variables and the factor, and a key to understanding the nature of a particular factor.

Hair *et al.*, (2006) indicated that the minimum requirement for factor analysis would include having a minimum of observations amounting to ten times as the number of variables that must be assessed. As of this research, it contains 5 variables; hence, the minimal number of sample size required would be 50 observations. This research is comprised of 101 respondents; thus, the data is suitable for further factor analysis. The other test is conducted to determine the appropriateness of factor analysis – to evaluate if it is the appropriate kind of data applied for the factor analysis or otherwise. Hair *et al.* (2006) stated that the data used in factor analysis must be applied using metric

measurements. For the purpose of conducting this research, the entire variables were applied using metric measurements in order to conduct the factor analysis.

Following the appropriateness of valuables for factor analysis, factor analysis was then carried out with reference to certain number of guidelines. The initial step would be establishing the factor loading for the attaining of initial factors. During this stage, the procedure would need to comply to certain guidelines – the factor loading needs to be at 0.5 or higher, and that there should not be any clash among the variables. Also, every component must contain more than a single variable. To derive the amount of factors (or dimensions), three main codes were applied namely; latent root criterion, screen test and percentage of variance explained criterion.

Second, Varimax rotation was used as suggested by Tabachnick and Fiddell (2011:

> Perhaps the best way to decide between orthogonal and oblique rotation is to request oblique rotation (promax) with the desired number of factors and look at the correlations among factors…if factor correlations are not driven by the data, the solution remains nearly orthogonal (Varimax). Look at the factor correlation matrix for correlations around .32 and above. If correlations exceed .32, then there is 10% (or more) overlap in variance among factors, enough variance to warrant oblique rotation unless there are compelling reasons for orthogonal rotation (p. 646).

Thus, as the Promax rotation is used for larger set of data, the suitable method in this study would be the Varimax rotation in order to ensure the presentation of the correlated variables were grouped together. Lastly, latest factors were labelled on the basis of their components in defining the factors.

4.4.2 Results of Exploratory Factor Analysis

To achieve the point of factor analysis in this study, the questionnaire items were grouped into three components. The first component is corporate efficiency strategy, consisting of items in section B of the questionnaire. The second component would be the corporate sustainability performance items as presented in section C of the questionnaire, and the third part would be the Corporate Financial Performance. The steps were carried out by following the factor analysis for every group separately, in order to identify clearly the new variables created after the factor analysis and to clarify any cross loading of the variables.

4.4.2.1 Factor analysis on Corporate Efficiency Strategy

Factor analysis was conducted on corporate efficiency strategy to establish the amount of extracted factors via initial, un-rotated factor matrix, including the Scree plot aspects. The second one would be to rotate the number of factors in rotation – from the first factor matrix, which navigates the process to the minimizing the amount of variables; while

thirdly, the researcher must scrutinize the necessity of removing any variable on the basis of cross loading as suggested by Hair *et al.* (2006).

Table 4.5
KMO and BTS for Corporate Efficiency Strategy

KMO and BTS Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.785
Bartlett's Test of Sphericity	Approx.Chi-Square	2217.880
	Df	153
	Sig.	.000

To test whether factor analysis was appropriate, on corporate efficiency strategy variables, KMO, MSA and BTS were carried out on the variables. The results are shown in Table 4.5 above. The KMO value for efficiency strategy variables was 0.785 indicating that the data were 'middling', and hence appropriate for factor analysis (Kaiser, 1974). The observed BTS value is very large (2217) and its associated significance value is very low ($p < 0.001$).

The results of the KMO MSA and BTS clearly indicated the eighteen efficiency items fulfilled the conditions required and were thus suitable for subsequent factor analysis. In addition to KMO, the result of extracted components for efficiency variables, two factors with eigenvalues exceeding one are shown in Table 4.6 below. These two factors were adopted using the latent root criterion, which explained about 70.73% of the variance.

Table 4.6
Results for Extraction of Components for efficiency factors.

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	8.205	45.586	45.586	8.205	45.586	45.586	6.506	36.144	36.144
2	4.527	25.149	70.735	4.527	25.149	70.735	6.226	34.591	70.735

In addition, Scree Plot in Appendix E supports the extraction result, which the curve flattens out from factor two indicating that there are two new factors created after component the 18 efficiency variables. The final factor structure of component the variables indicated that there are two varying factors in every factor. However, the entire rotated variables were restored since there was no sign of cross loading of variables that were beyond 0.5.

Table 4.7
Loadings on Final Two Factors Using Varimax Rotation

	ITEMS	**Component**	
		1	2
Efficiency 15	Company marketing and communications material includes environmental information enhancing corporate efficiency strategy	.892	
Efficiency 13	Requiring the suppliers to provide environmental information on their company and products enhancing corporate efficiency strategy	.890	
Efficiency 14	Company measures the environmental costs associated with it activities enhancing corporate efficiency strategy.	.887	
Efficiency 17	Taken measures to reduce material, water and energy use enhancing corporate efficiency strategy	.883	
Efficiency 16	Following the current and proposed environmental regulations and Legislation that may impact our business (i.e. ourselves, our customers, and our suppliers) enhancing corporate efficiency strategy	.881	

Table 4.7(Continued)

Efficiency 12	Holding environmental management system (e.g., ISO 14001) in place enhancing corporate efficiency strategy.	.855	
Efficiency 11	Determining the main environmental impacts and costs of the products throughout their lifecycle (production, use and disposal) enhancing corporate efficiency strategy	.823	
Efficiency 10	Monitoring the environmental innovations and productivity improvements of competitors enhancing corporate efficiency strategy	.676	
Efficiency 18	Using recyclable materials enhance corporate efficiency strategy	.667	
Efficiency 4	Encouraging (through rewards, bonuses, etc.) suggestions to improve resource, energy, and material used enhancing corporate efficiency strategy		.892
Efficiency 3	Meeting stakeholder regularly to inform them of the improvement achievement on social and environmental responsibility enhancing corporate efficiency strategy		.871
Efficiency 8	Working with other business functions to discuss and improve purchasing procedures, specification, and criteria enhancing corporate efficiency strategy		.868
Efficiency 5	Providing information to customers on how to improve their environmental and social performance enhancing corporate efficiency strategy		.843
Efficiency 7	Assigning a person(s) to be responsible for social matters enhancing corporate efficiency strategy.		.842
Efficiency 2	Setting environmental performance and measures progress toward it, for the products/business areas enhancing corporate efficiency strategy		.802
Efficiency 6	Providing training in social management for our managers and staff enhancing corporate efficiency strategy.		.795
Efficiency 1	Written policy, supported by senior management that links social performance with economic performance enhances corporate efficiency strategy.		.770
Efficiency 9	Applying all social legislation and regulations into company's operations and products, enhancing corporate efficiency strategy		.613

The new two factors were labeled based on the meaning of the variables in each factor. Factor 1 comprised that were more related to the environment and the economy. Based on these items, the most fitting description would be 'eco-efficiency', as identified in chapter 2 of this study. The eco-efficiency strategy is concerned with increasing

economic development, while aiming to minimize the impact on the environment (Abdul Rashid, Evans, & Longhirst, 2008). Therefore, Factor 1 is labeled as Eco-Efficiency.

Factor 2 consists of items that are more relevant to social and economic development. With this, the best-described terminology would be 'socio-efficiency', as identified in Chapter 2 in this study. Socio-efficiency describes the relationship between firms and society and the impact of this link on a firm's added value (Dyllick & Hocerts, 2002). Therefore, Factor 2 is labeled as Socio-Efficiency.

4.4.2.2 Factor analysis on Corporate Sustainability Performance

For the sustainability performance factors, factor analysis was conducted based on the 12 questions concerning corporate social performance, from a total number of 13 questions that were constructed based on corporate environmental performance. As shown in Table 4.8 below, the overall value of Kaiser Meyer-Olkin was found to be 0.654 for all the 25 items,. A close inspection of the individual MAS value shows that all 25 items have values within the acceptable range that is between 0.51 and 0.90. Furthermore, the result of the Bartlett's test was highly significant ($p = .000$), which indicates that assumption of factor analysis was met.

Table 4.8
KMO and BTS for Sustainability Performance Variables

KMO and BTS Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.654
Bartlett's Test of Sphericity	Approx. Chi-Square	2050.054
	df	300
	Sig.	.000

As can be seen in Table 4.9 below, the result of extracted components for sustainability performance variables showed two factors with eigenvalue exceeding 1. These two factors were adopted using the latent root criterions, which explain about 38% of the variance.

Table 4.9
Results for Extraction of Components for Sustainability Performance factors

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	5.788	23.152	23.152	5.788	23.152	23.152	5.261	21.043	21.043
2	3.760	15.041	38.194	3.760	15.041	38.194	4.288	17.151	38.194

In addition, the eigenvalues for each factor in the Scree plot further support the extraction results. As results show in Appendix E, the curve flattens out from factor two, which indicates that there are two factors. The final factor structure of component the variables, indicates that two factors with the variables in each factor were identified. Although, all rotated variables were returned as there were five cross loading of variables of more than .05 observed as shown in Table 4.10 below, which was removed from further analysis and computation of variables.

Table 4.10

Loadings on Final Two Factors Using Varimax Rotation

Code	Items	Component	
		1	2
EP8	Protection of, and withdrawal from, ecologically sensitive habitats enhancing environmental performance.	.757	
EP11	Reduction in total materials used enhancing environmental performance.	.736	
EP9	Disposal and treatment of hazardous/toxic wastes enhancing environmental performance	.722	
EP13	Use of recycled/waste materials enhancing environmental performance.	.673	
EP2	Voluntarily exceed government environmental regulations enhancing environmental performance.	.661	
EP12	Substitution by renewable materials enhancing environmental performance.	.642	
EP3	Financially support environmental initiatives enhancing environmental performance.	.620	
EP6	Implemented new technology to reduce wastes enhancing environmental performance.	.568	
EP1	Incorporate environmental responsibility objectives in organizational plans improve environmental performance.	.562	
EP5	Investment in pollution/emission control equipment enhancing environmental performance.	.552	
EP4	Measure the organization's environmental responsibility enhancing environmental performance.	.543	
EP7	Recycling programs enhancing environmental performance.	.509	
SP12	Meet the needs and requests of all our investors enhancing social performance.		.763
SP11	Seek the input of all our investors regarding strategic decisions enhancing social performance.		.727
SP8	Provide all suppliers of products and services with a commitment to a future relationship enhancing social performance.		.699
SP9	Incorporate the interests of all suppliers of products and services into business decisions enhancing social performance.		.691
SP10	Provide all investors with a competitive return on investment enhancing social performance.		.663
SP6	Provide all customers with the information needed to make sound purchasing decisions enhancing social performance.		.601
SP5	Provide all customers with very high quality service enhancing social performance		.530
SP7	Adapt products or services to enhance the level of customer satisfaction enhancing social performance.		.530

The new two factors are labeled based on the meaning of the variables in each factor. Factor 1 consists items more related to environmental performance based on what best described it which was corporate environmental performance (CEP). As identified in chapter 2 from this study, efficiency strategy is concerned with reducing negative impact on environment and enhancing the environmental performance of companies. Thus, factor 1 was labeled as Corporate Environmental Performance (CEP).

Factor 2 consisted of items more related to social performance, which was based on what best described which was Corporate Social Performance as was identified in chapter 2 in this study. societal concerns are one of the company responsibilities in order to enhance the relationship between the company and its stakeholders. Therefore Factor 2 was labeled Corporate Social Performance (CSP).

4.4.2.3 Factor analysis on Corporate Financial Performance

For the Corporate Financial Performance factors, factor analysis was conducted based on the 4 questions of the Corporate Financial Performance. As shown in Table 4.11 below, the overall value of Kaiser Meyer-Olkin was found to be 0.812 for all the 4 items. A close inspection of the individual MAS value revealed that all 4 items had values within the acceptable range that is between 0.51 and 0.90. Furthermore, the result of the Bartlett's test was highly significant ($p = .000$), which indicated that assumption of factor analysis was met.

Table 4.11
KMO and BTS for corporate financial Performance Variables

KMO and BTS Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.812
Bartlett's Test of Sphericity	Approx. Chi-Square	178.898
	Df	6
	Sig.	.000

As can be seen in Table 4.12 below, the results of extracted components for Corporate Financial Performance variables showed one factor with an eigenvalue exceeding one. This one factor was adopted using the latent root criterions, which explained about 70.482% of the variance.

Table 4.12
Results for Extraction of Components for Financial Performance factors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.819	70.482	70.482	2.819	70.482	70.482

In addition, the eigenvalues for each factor in the Scree plot further support the extraction results. As shown in Appendix E, the curve flattens out from Factor 1 which indicates that there is one factor. The final factor structure of the components the variables, indicates that one factor with the variables in each factor was identified. Although, all rotated variables were returned as there was no cross loading of variables of more than .05 observed as shown in Table 4.13.

Table 4.13
Loadings on Final Factors Using Varimax Rotation

Code	Items	Component
		1
FP4	Our profit growth has been substantially better	.880
FP2	Our return on assets has been substantially better	.846
FP3	Our sales growth has been substantially better	.824
FP1	Our return on investment has been substantially better	.806

In general, results of the exploratory factor analysis on the main variables proposed in this study framework (as discussed in chapter 3) indicate dimensions that are different from the original dimension. Variables such as efficiency strategy, corporate sustainability performance produced more than one dimensions. On other hand, variables such as Corporate Financial Performance remained as one separate dimension on its own; Table 4.14 below compares the original dimension and the final dimension after factor analysis.

Table 4.14
Comparison of the Original Dimension to the Final Dimension after Factor Analysis

Original Dimensions	N. Items	Dimension Derived after Factors Analysis	N. Items
Corporate Efficiency Strategy	18	Eco-Efficiency	9
		Socio-Efficiency	9
Sustainability Performance	25	Corporate Environmental Performance	12
		Corporate Social Performance	8
Corporate Financial Performance	4	Corporate Financial Performance	4

4.5 Reliability Test

The reliability of the scale indicates how free it is from random error. There are two, often-used of a scale's dependability, which are the test-retest reliability and the internal consistency (Pallant, 2010). The test-retesting reliability of a scale is evaluated through applying it on a same single individual during two separate situations as well as counting in the correlation among the two scores obtained. Higher number of test-retest link is a sign of a more reliable scale. Secondly, internal consistency that determines and measures the items that are suitable in making up the scale, are all measuring the same underlying attribute. The factor analysis established above demonstrated the construct validity of the study variables. Upon determining the variables that were fit enough to be used in the last factors, every scale reliability score was later counted and reviewed for the utilization in reliability test.

The internal consistency can be assessing through certain methods, in which the frequently used one would be the Cronbach's coefficient alpha. This statistic provides an indication of the average correlation among all of the items that make up the scale. Values that are measuring from 0 to 1 (or higher) represent bigger reliability. The next step was to test the internal consistency of each factor, using Cronbach's alpha. Table 4.15 below summarizes the reliability test of the measures. As shown, the Cronbach alphas of the measures were all comfortably above the lower limit of acceptability that is alpha > .50. Hence, all the measures were highly reliable.

Table 4.15
Reliability Coefficients for the Variables in the Study

Variables	**N.Items**	**Alpha(a)**
Eco-Efficiency	9	0.940
Socio-Efficiency	9	0.948
Corporate Environmental Performance	12	0.832
Corporate Social Performance	8	0.757
Corporate Financial Performance	4	0.859

4.6 Descriptive Analysis

A descriptive analysis test was performed to determine the state of agreements of the variables of this study among company's managers in two sectors in Jordan (industry and service). The final main variables in this study were shown in Table 4.15 above after factor analysis and alpha reliability test. The next part illustrates the finalized set of variables that were subject to the descriptive statistics in identifying their features.

In particular, mean value and standard deviation values were recorded. Generally, the strength of the level of compliance with the statements is in correlation with the level of the mean value; while the density of the data around the mean is dependent on the smaller size of the standard deviation (Field, 2009). The range of five-point Likert-scales was categorized into equal-sized categories of low, moderate, and high. Hence, scores of less than 2.33 are considered low; scores of 3.67 are considered high, and those in between are considered moderate (Hair *et al.*, 2006).

The mean and standards deviations for the two factors of Efficiency strategy are reflected in Table 4.16 below. Clearly, the table shows that the respondents had high scores of on Socio-efficiency variables while the respondents had moderate scores in Eco-efficiency More specifically, the results shows the highest mean score of 3.93 was related to Socio-efficiency strategy as how often managers met regularly with stakeholder to inform them of the improvement achievement on social and environmental responsibility. The lowest mean score was 3.52, which were related to eco-efficiency strategy dimensions and was about monitoring environmental innovations and productivity improvements of competitors. From other side the Chi-Square tests show that there is no significant difference of the annual budgets and industry type to applying efficiency strategies and CSP as shown at appendix F.

Also One-Way between-groups analysis of variance (ANOVA) was conducted to explore the impact of demographic variables on the level of efficiency strategies, CSP and CFP. The post-hoc comparisons using the Tukey's Honestly Significant Difference (HSD) test indicated that the mean score for analysis shows that respondent aged under 30 years show significantly lower socio and eco-efficiency strategies than the other groups. In addition, male respondents are more positive than female respondents on the effects of efficiency strategies on financial performance. Lastly respondents who are diploma holders apply less eco-efficiency strategy compared to the other groups (bachelor, master and PhD degree).

Table 4.16
Descriptive Statistics for Corporate Efficiency Strategy

Statement	N	Mean	SD
Socio-Efficiency			
Encouraging (through rewards, bonuses, etc.) suggestions to improve resource, energy, and material used enhancing corporate efficiency strategy.	101	3.83	.825
Meeting stakeholder regularly to inform them of the improvement achievement on social and environmental responsibility enhancing corporate efficiency strategy.	101	3.93	.972
Working with other business functions to discuss and improve purchasing procedures, specification, and criteria enhancing corporate efficiency strategy.	101	3.83	.884
Providing information to customers on how to improve their environmental and social performance enhancing corporate efficiency strategy.	101	3.83	.861
Assigning a person(s) to be responsible for social matters enhancing corporate efficiency strategy.	101	3.81	.796
Setting environmental performance and measures progress toward it, for the products/business areas enhancing corporate efficiency strategy.	101	3.93	.908
Providing training in social management for our managers and staff enhancing corporate efficiency strategy.	101	3.82	.899
Written policy, supported by senior management that links social performance with economic performance enhances corporate efficiency strategy.	101	3.83	.849
Applying all social legislation and regulations into company's operations and products, enhancing corporate efficiency strategy.	101	3.72	.885
Eco-efficiency			
Company marketing and communications material includes environmental information enhancing corporate efficiency strategy.	101	3.62	.823
Requiring the suppliers to provide environmental information on their company and products enhancing corporate efficiency strategy.	101	3.62	.811
Company measures the environmental costs associated with it activities enhancing corporate efficiency strategy.	101	3.55	.889
Taken measures to reduce material, water and energy use enhancing corporate efficiency strategy.	101	3.57	.876
Following the current and proposed environmental regulations and Legislation that may impact our business (i.e. ourselves, our customers, and our suppliers) enhancing corporate efficiency strategy.	101	3.57	.898
Holding environmental management system (e.g. ISO 14001) in place enhancing corporate efficiency strategy.	101	3.58	.852
Determining the main environmental impacts and costs of the products throughout their lifecycle (production, use and disposal) enhancing corporate efficiency strategy.	101	3.54	.911

Table 4.16 (Continued)

Monitoring the environmental innovations and productivity improvements of competitors enhancing corporate efficiency strategy.	101	3.52	.856
Using recyclable materials enhance corporate efficiency strategy.	101	3.52	.820

Frequency distribution and measurements in the form of means and standard deviations for the two sustainability performance factors are shown in the Table 4.17 below. First, the table shows that the respondents have a high Corporate Social Performance (CSP) mean reach at 4.09 with a standard deviation 0.861 about the products or services adapted to enhance the level of customer satisfaction. Second, the respondents were high in the corporate environmental performance (CEP) with a mean score of 3.89 with a standard deviation 0.871 about financially supporting environmental initiatives.

Table 4.17
Descriptive Statistic for Corporate Sustainability Performance

Statement	**N**	**Mean**	**SD**
Corporate social performance			
Meet the needs and requests of all our investors enhancing social performance.	101	3.62	.823
Seek the input of all our investors regarding strategic decisions enhancing social performance.	101	3.62	.811
Provide all suppliers of products and services with a commitment to a future relationship enhancing social performance.	101	3.55	.889
Incorporate the interests of all suppliers of products and services into business decisions enhancing social performance.	101	3.57	.876
Provide all investors with a competitive return on investment enhancing social performance.	101	3.57	.898
Provide all customers with the information needed to make sound purchasing decisions enhancing social performance.	101	3.91	.850

Table 4.17 (Continued)

Provide all customers with very high quality service enhancing social performance	101	4.04	.761
Adapt products or services to enhance the level of customer satisfaction enhancing social performance.	101	4.09	.861
Corporate environment performance			
Protection of, and withdrawal from, ecologically sensitive habitats enhancing environmental performance.	101	3.44	.713
Reduction in total materials used enhancing environmental performance.	101	3.40	.694
Disposal and treatment of hazardous/toxic wastes enhancing environmental performance	101	3.47	.715
Use of recycled/waste materials enhancing environmental performance.	101	3.30	.819
Voluntarily exceed government environmental regulations enhancing environmental performance.	101	3.83	.873
Substitution by renewable materials enhancing environmental performance.	101	3.26	.820
Financially support environmental initiatives enhancing environmental performance.	101	3.89	.871
Implemented new technology to reduce wastes enhancing environmental performance.	101	3.58	.852
Incorporate environmental responsibility objectives in organizational plans improve environmental performance.	101	3.72	.873
Investment in pollution/emission control equipment enhancing environmental performance.	101	3.54	.911
Measure the organization's environmental responsibility enhancing environmental performance.	101	3.78	.912
Recycling programs enhancing environmental performance.	101	3.52	.856

Table 4.18 below shows that the respondents had high scores on corporate financial statement with a mean score 3.80, with a standard of deviation 0.928. The standard deviation of all variables was less than one, which indicates variability in the data (Sekaran, 2006). (See also Table 4.19 for descriptive analysis.)

Table 4.18
Descriptive Statistics for Corporate Financial performance.

Statement	N	Mean	SD
Corporate Financial performance			
Our return on investment has been substantially better	101	3.68	.882
Our return on assets has been substantially better	101	3.80	.928
Our sales growth has been substantially better	101	3.64	.976
Our profit growth has been substantially better	101	3.71	.898

Table 4.19
Summary of Descriptive Analysis for Major Variables

	N	Minimum	Maximum	Mean	SD
Socio-efficiency	101	2	5	3.84	.720
Eco-efficiency	101	1	5	3.57	.722
Corporate social performance	101	3	5	4.05	.529
Corporate environmental performance	101	3	5	3.59	.503
Corporate financial performance	101	2	5	3.71	.773

4.7 Correlation Analysis

Table 4.20 below provides a summary of the results from correlation analysis. The Pearson correlation coefficients were carrying out to achieve the goal of understanding of the relationship between the variables in this study. Based on (Dillon, Madden, & Firtle, 1993), Pearson correlation coefficients range between the limits of value -1 to +1.

Positive 1 indicates a perfect positive correlation and negative 1 indicates a perfect negative correlation. A correlation of zero (0) refers to the absence of correlation. Benny and Felman (1985) suggested a rule of thumb that correlation coefficients exceeding 0.8 were very strong and would likely to result in multicolinearity.

Pallant (2007) states that Cohen (1988, pp. 79-81) suggests guideline on the effect sizes of the correlation coefficients in social science studies as: small effect size, r = 0.1 – 0.29, medium, r = 0.30 – 0.49, and large, r = 0.50. Results of the correlation analysis indicate no violation of the assumption as the absolute value is between the ranges of .021 as small to 0.478 as medium.

Firstly, the correlations between the corporate efficiency strategy variables were significantly positive, with a medium-sized range up to .313. In regards to correlation between efficiency strategy variables and sustainability performance variables, socio-efficiency records positive correlations with the CSP that are considered as a medium-sized correlation with a .357 score. The eco-efficiency variables showed a positive correlation with the CSP in medium size with a 0.308 score.

With regard to corporate environmental performance (CEP), the correlation indicated a small effect size for both of efficiency strategy, which a 0.258 for the correlation between socio-efficiency and CEP, and 0.221 correlation between eco-efficiency and CEP. With regard to financial performance, the variable of efficiency strategy shown in Table 4.20 below indicates a medium size effect on the correlation between the variables with a socio-efficiency score .423 and a significance level of < 0.01. From other side, the eco-efficiency indicates positive a correlation with a significance level of < 0.01 with a score of .348 as conceder medium size effect.

Finally the correlation between the sustainability performance variables and financial performance indicates positive relationship between the variables and significant on <0.01 level which indicated 0.478 the Correlation values between CSP and CFP. From other side the correlation between CFP and CEP indicated 0.429 with significant level on <0.01, which is considered a large size effect.

Correlation tests were made to fill full the assumptions of the further data analysis related to the relationship between the variables. As the variables have positive relationships between each other that gives a reasonable reason for proceeding with the of the intention of this study which is to look at sustainability performance as a mediating variable. That is because the mediating requirements suggested by (Baron & Kenny, 1986) in which all the variables were a have relationship with each other, has been met.

Table 4.20
Study Variables and their Intercorrelation Coefficients

	Social-efficiency	Eco-efficiency	CSP	CEP	CFP
Social efficiency	1				
Eco-efficiency	.313(**)	1			
CSP	.357(**)	.308(**)	1		
CEP	.258(**)	.221(*)	.369(**)	1	
CFP	.423(**)	.348(**)	.478(**)	.429(**)	1

Note: *Correlation is significant at the 0.05 level; ** Correlation is significant at the 0.01 level

4.8 Assumptions of Multiple Regression Analysis

In order to proceed with the hypothesis testing for the present study, statistical techniques such as Multiple Liner Regression (MLR) were utilized based on certain condition such as: 1) one dependent variable that was continuous, and 2) two or more independent variables were continuous variables. Hypotheses were tested by using the correlations and multiple regressions as because the study was seeking to determine the relationships between corporate efficiency strategy (independent variables) and Corporate Financial Performance (dependent variables).

The main objective of correlation analysis was to inspect the relationship between two variables, while the correlation coefficient specifies the power of this relationship (Hair *et al.*, 2006). In order to know the contribution of this relationship between the variables, multiple regressions were conducted. Hair *et al.* (2006), Saunders *et al.* (2011) and Sekaran (2006) described multiple regressions as a statistical technique to predict the variance in a single dependent variable caused by the effect of more than one independent variable. In other words, correlation is the existence of relationship between the variables while the multiple regressions specify the most crucial variables for this relationship.

However, the need to ascertain that the data meet the requirements for the MLR, certain assumption have to be fulfilled such as sample size, multicollinearity, outliers, normality, linearity and homodescedascity of residuals (Tabachnick & Fidell, 2007). The first assumption is the sample size, which it uses to generalize the population understudy

(Green, 1991). The formula for calculating the number of cases or samples for testing multiple correlations is: n=50+8K where K= number of predictors. This study has two predictors so, the minimum cases required were 50+8(2) =66 cases. The usable sample size for this study was 101, meaning the first requirement was fulfilled.

Outlier assumptions were met in data screening and cleaning section 4.2.2 above from this chapter, which found no multivariate outliers. The rest of assumptions are discussed in next section. Before the assessment for regression can be carried out, all three assumptions, normality, linearity and homoscedasticity, of the variable data were assessed simultaneously through the analysis of residuals (Tabachnick & Fidell, 2007). They presented the distribution of scores and the underlying correlations between the variables.

4.8.1 Normality

While normality is generally related to data distribution, the idea can be assess through the application of various tests, namely a histogram of remaining plots and the normal probability plot of the regression. In this context, a histogram refers to illustrations that show the consistency of the record values in scrutinizing the distributive form. (Hair *et al.*, 2006). In this research, the two techniques were applied in evaluating the assumption of normality. An example of the results of the histogram of residual plots is shown in Figure 4.1 below, while the rest are presented in Appendix G.

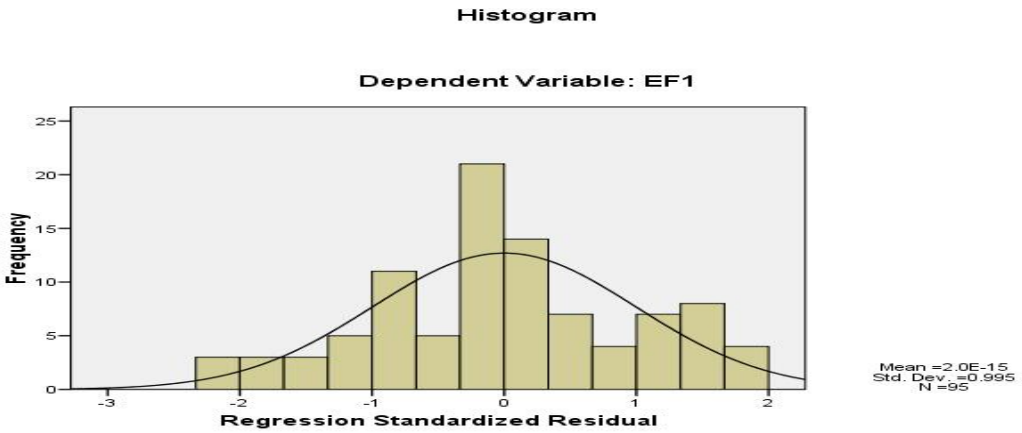

Figure 4.1
Example of the histogram of residual plots

The results indicate that the assumption of normality was not violated. The figures show that the distribution appeared normal, and there was no skewness. These results supported the normal distribution of data as regression standardized residual lie around the instantly sloping line from the bottom left to top right as shown in figure 4.2 as example and the rest shown in Appendix H.

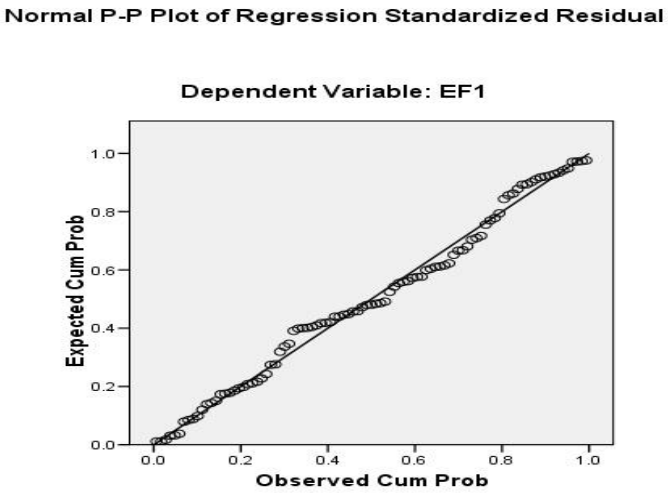

Figure 4.2
Example of P-P plot normality

4.8.2 Linearity

Linearity of the variables serves as the second assumption of the regression. Linearity is the degree of how the relationship between the variables can be portrayed in a straight line (Johnson & Wichern, 2002; Tabachnick & Fidell, 2007). In evaluating the assumption, linearity residual plots, as recommended by Hair, were incorporated into the study. The conclusion of the histogram in the residual plots, as depicted in Figure 4.3 (and Appendix I) disclosed that the assumption of linearity was fulfilled – as illustrated in the numbers of scattered set around the core of the graphic. The outcome of the linearity assumption validates the utilization on the use of multiple regressions in looking into the link among the dependent and independent variables.

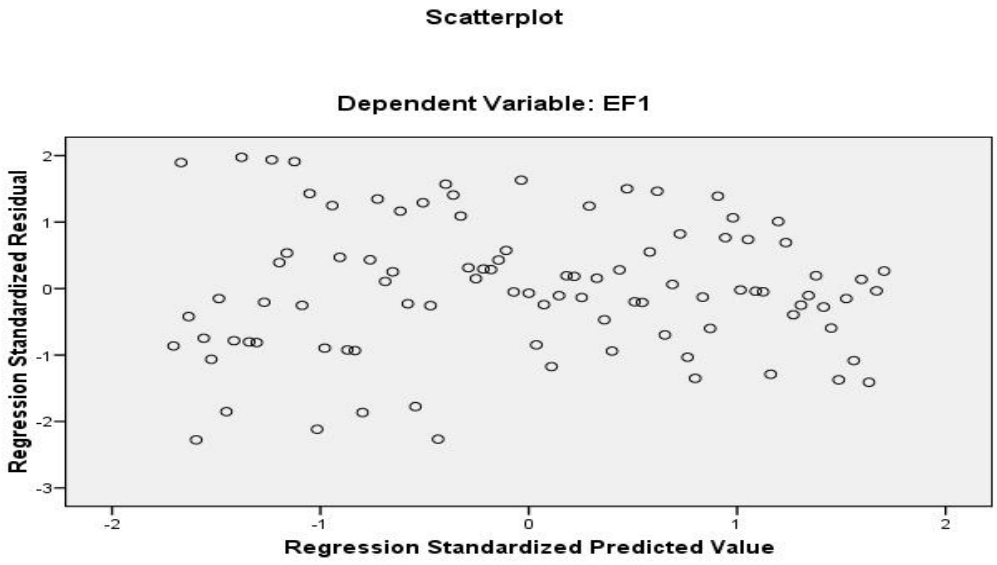

Figure 4.3
Example of Scatter plot Homodescedascity & Linearity

Table 4.21
Linearity test of the main variables

Variables	R2	F	Sig F	β	B
Eco-efficiency	0.179	21.576	.000	0.423	0.454
Socio-efficiency	0.121	13.604	.000	0.348	0.372
Social performance	0.228	29.241	.000	0.478	0.697
Environment performance	0.184	22.267	.000	0.429	0.659

Note: Dv=Corporate Financial Performance; β=Beta coefficient; B=unstandardized coefficient beta

4.8.3 Homoscedasticity

The state of homoscedasticity comes into view at the time when there is a consistency in the variance over a variety predictor variable. In essence, the values of the variance of the dependent variable focus upon a limited degree of the independent variable (Hair *et al.*, 2006). The homoscedasticity assumption was evaluated via the residual plot and was fulfilled, since there was no trace of growing or declining residuals. As shown in Figure 4.3 above and Appendix I, the assumption of homoscedasticity was fulfilled, and a concern about using multiple regression analysis no longer existed.

4.9 Testing for Multicollinearity

According to Pallant (2007 multicollinearity exists when the independent variables are highly correlated (r = .9 and above). To test for multicollinearity in the regression model, collinearity diagnostics based on variance inflation factor (VIF) and tolerance statistics were used. There is a lack of stringent rules regarding the values of VIF, but Field (2009),

based on Myers (1990), said that VIF of 10 and over would pose a problem. It has been reported that when this happens, the regression coefficients would not be significant due to high standard error. Tolerance values approaching zero (0) specify the presence of high multicollinearity (Tabachnick & Fidell, 2007).

However no violation of the assumption is expected in this study as the each independent variable for this study, the range of correlation was less than .8 and had no tolerance value of less than 0.10 and was below the cut-off point the of the variance inflation factor (VIF) value of 10 (Tabachnick & Fidell, 2007). Table 4.22 below shows the results of the multicollinearity test of the present study.

Table 4.22
Collinearity Statistics

Model	**Collinearity Statistics**	
	Tolerance	**VIF**
Socio-Efficiency	.801	1.248
Eco-efficiency	.791	1.265
Corporate Social Performance	.846	1.183
Corporate Environmental Performance	.814	1.229

In the table, the tolerance for all predictors had values above 0.3. The results did not indicate any evidence of collinearity occurring among the predictor variables (Menard, 2002). The VIF values for all the predictor variables also had values of less than 10. The results of multicollinearity tests provided further confidence in interpreting the outcomes generated from regression. Overall, inspection of data revealed no serious violation of the

basic assumption. Therefore, the use of the data in regression for subsequent analysis is appropriate. The interpretation of the regressions is based on the standardized coefficient beta (β) and R Square, which provides evidence about whether to support or not the hypotheses stated in the present study.

4.10 Regressions analysis and Hypotheses Testing

After fulfilling the requirements of multiple regressions for all variables, linear regressions were performed to examine the relations of the variables in hypotheses 1, 2 and 3 continually. For the mediating hypothesis, hierarchical regression analyses were performed.

4.10.1 Efficiency strategy and Sustainability performance

In order to answer the first research questions about the effect of corporate efficiency strategy on corporate sustainability performance, regression analyses were conducted to test the hypothesis 1, that corporate efficiency strategy was related positively to corporate sustainability performance. In this analysis, efficiency strategy was treated as the independent variable, which was divided into two concepts: Eco-efficiency and Socio-efficiency. Whereas the sustainability performance as the dependent variable including both variables CSP and CEP.

Through regression analysis procedure, the Eco-efficiency was first regressed on with respect to Corporate environmental Performance (CEP) and then Socio-efficiency was regressed on with respect to corporate Social performance (CSP). Table 4.23 below shows the regression analysis of all the hypotheses 1, which included two sub-hypotheses that looked at the relationships between efficiency strategy and sustainability performance.

Hypothesis 1 a: Eco-efficiency positively related to corporate environmental performance (CEP).

Hypothesis 1a explains the influence of Eco-efficiency strategy on corporate environmental performance (CEP). A F value of 5.060 indicates that socio-efficiency strategy was significantly influencing the CEP. This indicated that the more Eco-efficiency strategy was applied the better was the corporate environmental performance. The coefficient of determination measured by R-square is at 0.049. This indicates that Eco-efficiency strategy helps explain 4.9% of the variance of corporate environmental performance. Furthermore, Table 4.23 shows the strength of the relationship between two variables is 0.221 as measured by r-value of p-value of 0.05 which considered as only have low effect. Therefore hypothesis 1a is supported.

Table 4:23
The Effect of eco-Efficiency Strategy on environment Performance

Model	Beta	t-value
Constant		12.253
Eco-efficiency	.221	2.249
R^2	.049	
F-statistics	5.060	
Sig-F	.027	
N	101	

Note: Sig F=.00 **P<0.05; DV= corporate environment performance (CEP)

After examine the details of the sub-hypotheses it is clear that the hypothesis 1 that efficiency strategy was positively related to corporate sustainability performance was accepted.

Hypothesis 1b: Socio-efficiency is positively related to Corporate Social Performance (CSP)

An F value of 14.496 and sig F = .000 indicates that socio-efficiency strategy significantly influenced Corporate Social Performance (CSP). This indicates that the more socio-efficiency strategy was applied the more Corporate Social Performance was increased. The coefficient of determination measured by R-square was at 0.128. This indicates that socio-efficiency strategy helps explain 12.8% of the variance of corporate social performance. Furthermore, Table 4.24 below shows the strength of the relationship between two variables is 0.357 as measured by r-value of a p-value of 0.05 which

considered as only have moderator effect which is within r = 0.30 to 0.49 (Cohen, 1988). Therefore, hypothesis 1 b is supported.

Table 4:24
The Effect of Socio-Efficiency Strategy on Social Performance

	Model	
	Beta	t-value
Constant		11.313
Socio-efficiency	.357	3.807
R^2	.128	
F-statistics	14.496	
Sig-F	.000	
N	101	

Note: Sig F= .00 **P<0.05; DV= Corporate Social Performance (CSP)

4.10.2 Corporate Sustainability Performance and Corporate Financial Performance

In order to answer the second research question of the present study, the regression analysis of the effect of corporate sustainability performance on financial performance was performed. Corporate Sustainability Performance with its two main variables was treated as the independent variable, whereas financial performance was the dependent. Because checks of validity and all the required assumptions for regression analysis such as (sample size, multicollinearity, outliers, normality, linearity and homodescedascity) were met, the data was ready for simple liner regression to indicate the influence of corporate sustainability performance on Corporate Financial Performance,

Hypothesis 2: Corporate Sustainability Performance is positively related to Corporate Financial Performance.

Hypothesis 2 a: Corporate Environmental Performance (CEP) is positively related to Corporate Financial Performance.

Hypothesis 2 b: Corporate Social Performance (CSP) is positively related to Corporate Financial Performance.

The hypotheses above aimed to examine the effects of sustainability performance on financial performance. Thus, liner regressions were performed. First CEP variables were regressed to financial performance, and then CSP variables were regressed to financial performance. Tables 4.25 and 4.26 below summarize the relationships of all the variables.

Table 4.25
The Effect of Corporate Environmental Performance on Corporate Financial Performance

	Model	
	Beta	t-value
Constant		2.651
CEP	.429	4.719
R^2	.184	
F-statistics	22.267	
Sig-F	.000	
N	101	

Note: Sig F=.00 **P<0.05; DV= Corporate Financial Performance

As shown in Table 4.25, the hypotheses were supported by regressions tests of the variable. More specifically, corporate environmental performance at first was regressed on Corporate Financial Performance. This indicates that F-value of 22.267at significance level of .000 supported the hypotheses as it positive influenced the Corporate Financial Performance. The coefficient of determination measured by R-Square was .184; this indicated that the corporate environmental performance helped explain 18.4% of the variance of Corporate Financial Performance. The strength of the relationship of these two variables was .429 as measured by r-value of p-value of 0.05, which considered as only has moderator effect.. Therefore, hypothesis 2 a was supported.

Table 4.26
The Effect of Corporate Social Performance on Corporate Financial Performance

	Model	
	Beta	t-value
Constant		1.676
CSP	.478	5.407
R^2	.228	
F-statistics	29.241	
Sig-F	.000	
N	101	

Note: Sig F=.00 **P<0.05; DV= Corporate Financial Performance (CFP)

Second, Corporate Social Performance was regressed to Corporate Financial Performance. As shown in Table 4.26, the F-value 29.241with a significance level of .000

indicated the positive influence of CSP on Corporate Financial Performance. The coefficient of determination measured by R-Square was .228; this indicated that the corporate environmental performance helped explain 22.8% of the variance of Corporate Financial Performance. The strength of the relationship of these two variables was 0.478 as measured by r-value of p-value of 0.05 which considered as only has moderator effect. Therefore, hypothesis 2 b was supported.

4.10.3 Corporate Efficiency Strategy and Corporate Financial Performance

Hypothesis three indicates that corporate efficiency strategy is positively related to financial performance as following:

Hypothesis 3a: Eco-efficiency is positively related to Corporate Financial Performance

Eco-efficiency, as the second item of efficiency strategy, was regressed on Corporate Financial Performance to test hypothesis 3 b. With a F-value 13.604 at significance level of .000, it showed positive influence on Corporate Financial Performance. The coefficient of determination measured by R-Square was .121; this indicated that the socio-efficiency strategy helped 12.1% of the variance of Corporate Financial Performance. The strength of the relationship of these two variables was 0.348 as measured by r-value of p-value of 0.05 which considered as only has moderator effect. Therefore, (3a) was supported as shown by Table 4.28 below.

Table 4.27
The Effect of Corporate Eco-Efficiency Strategy on Financial Performance

	Model	
	Beta	t-value
		6.485
Constant		
Eco-efficiency	.348	3.688
R^2	.121	
F-statistics	13.604	
Sig-F	.000	
N	101	

Note: Sig F=.00 **P<0.05; DV= Corporate Financial Performance (CFP)

Hypothesis 3b: Socio-efficiency is positively related to Corporate Financial Performance

First, socio-efficiency was regressed to financial performance. As shown in Table 4.28 below the F-value indicated positive influence on financial performance with a score of 21.576 at a significance level of .000. The coefficient of determination measured by R-Square was .179; this indicated that the socio-efficiency strategy helped explain 17.9% of the variance of Corporate Financial Performance. The strength of the relationship of these two variables was 0.423 as measured by r-value of p-value of 0.05, which considered as only has moderator effect. Therefore, hypothesis (3b) was supported.

Table 4.28
The Effect of Corporate Socio-Efficiency Strategy on Financial Performance

	Model	
	Beta	t-value
Constant		5.161
Socio-efficiency	.423	4.645
R^2	.179	
F-statistics	21.576	
Sig-F	.000	
N	101	

Note: Sig F=.00 **P<0.05; DV= Corporate Financial Performance (CFP)

4.10.4 Mediating Hypotheses

Mediating hypothesis sought to assess the effect of the corporate efficiency strategy on financial performance with sustainability performance acting as the mediator. Sustainability performance has been examined in two variables, namely Corporate Social Performance and Corporate Environmental Performance. To test the mediating effects, the mediating assumption as suggested by Baron and Kenny (1986) must be fulfilled.

The following guidelines indicate the assumption of mediating which indicates first the independent variables (efficiency strategy) should make significant effects to the mediator variables (sustainability performance) as indicated in Table 4.20 the corporate efficiency strategy is correlated to corporate sustainability performance at P<0.05 and P <0.01.

The liner regression analysis in Tables 4.23 and 4.24 shows the significant effect of corporate efficiency strategy on corporate sustainability performance as whole and each of the elements sustainability performance. The results show that efficiency strategy explained a significant amount of the variance of sustainability performance. Baron and Kenny (1986) suggested that if the independent variable is assumed to affect the mediator, these two variables should be correlated. Thus, the first requirement for mediation was supported.

Second the independent variable (efficiency strategy) should make a significant effect the dependent variable (financial performance) as suggested by Baron and Kenny (1986). As shown in Table 4.27 and Table 4.28 above corporate efficiency strategy is significantly affects Corporate Financial Performance. Thus, the second requirement for mediation was confirmed.

The third assumption is that the mediator (sustainability performance) should make a significant contribution to the dependent variable (financial performance) when controlling for the independent variable. Perfect mediation holds when the independent variables no longer relate to independent variable after mediator is included and regression coefficient is reduced to a non-significant (near zero) level. Partial mediation is when the beta coefficient of the independent variables value is reduced but still statistically significant after the inclusion of the mediator (Lok & Crawford, 2004). To examine the third assumption for mediation, hypothesis four was was tested as following:

H4: Corporate Sustainability Performance affects the relationship between Corporate Efficiency Strategy and Corporate Financial Performance.

H4 a: Corporate Social Performance affects the relationship between Socio-Efficiency Strategy and Corporate Financial Performance.

H4 b: Corporate Environmental Performance affects the relationship between Eco-Efficiency Strategy and Corporate Financial Performance.

H4 a: Corporate Social Performance affects the relationship between socio-efficiency strategy and Corporate Financial Performance.

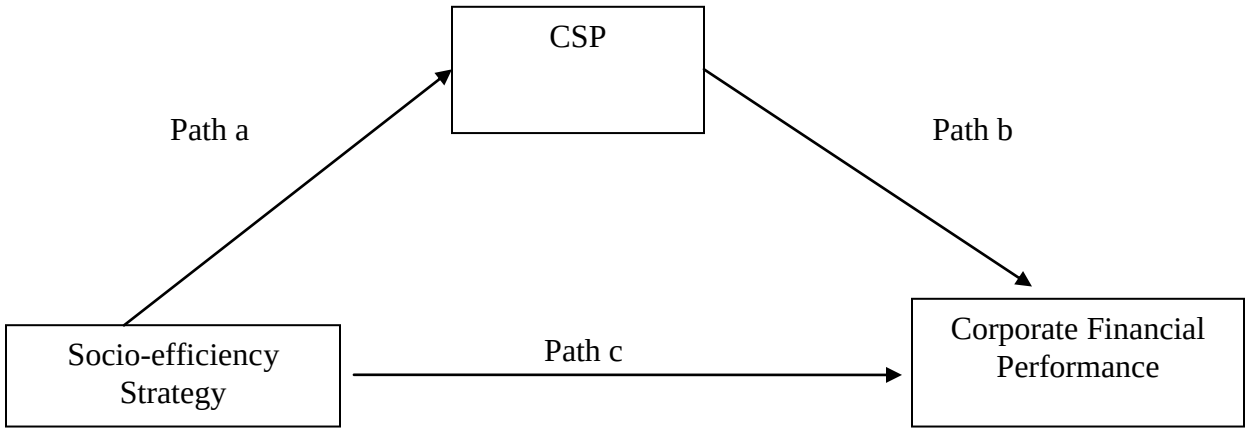

Figure 4.4
Model of analysis: Corporate Social Performance mediates the relationship between Socio-Efficiency Strategy and Financial Performance

Before the hypothesis test was performed all the assumption were conducted and were reported to have no serious violations. The tolerance statistics revealed that entire variables under study were in an acceptable range cut off of .10 as suggested by Tabanchnick and Fidell (2007).

The hierarchical multiple regression analysis was then employed to check whether CSP effect the relationship between Socio-efficiency Strategy and Corporate Financial Performance. Hypothesis 4 a was tested following the guidelines for the mediation analyses established by Baron and Kenny (1986) as mentioned above. Corporate Social Performance (CSP) was expected to mediate Socio-efficiency Strategy and Corporate Financial Performance relationship. The results of the regression analysis summary in Table 4.29 below of the analysis that was carried out.

Table 4.29
Regression analysis of mediating variable Corporate Social Performance (CSP) on the relationship between corporate efficiency strategy and Corporate Financial Performance

	Step1	Step2	Step3
	Beta	Beta	Beta
Independent variable: Socio-efficiency	.423	.289	
Mediate variable CSP			.374 (p)
R^2	.128	.179	.301
Adjusted R^2	.119	.171	.287
F change	14.496	21.576	17.117
Sig F change	.000	.000	.000
F-statistic	14.496	21.576	21.103
Sig-F statistic	.000	.000	.000

Note: Step1 (IV and MV), Step 2 (IV and DV), and Step 3(IV, MV and DV). (P) Refers to partial mediating effect

Path a and path b were assessed on previous section on testing hypothesis 1 and 2. Therefore the next step was to determine if the Corporate Social Performances effected the relation between socio-efficiency strategy and Corporate Financial Performance. To test it path c were analysis using hierarchical analysis technique.

Table 4.29 indicates that in path c, when path a and b were controlled before the inclusion of the mediator as previously revealed, as indicated in model one, the R-Squared was at .179 which significant at 0.001 level. Previously, it was found to be significantly correlated at (Beta= .289). However, after the inclusion of the mediator variable of corporate social performance, in term of significant level was decrease from .000 to .002 but still significant relationships. However the strength of the relationship indicated a decrease (Beta=.374)

The R-Squared was .179 significant at 0.000 levels. When the mediator was included, the equation for R-square reveled a significant (F-change=0.000) increase from .179 to .301, indicating an improvement of 12.2 percent in the variance of the financial performance. As indicated in table 4.26 the beta coefficient of the independent variable value was reduced but still was statistically significant after the inclusion of the mediator. Therefore it can be concluded that Corporate Social Performance (CSP) only partially mediates the relationship between Socio-efficiency Strategy and Corporate Financial Performance.

Hypothesis four b: Corporate Environmental Performance affects the relationship between Eco-efficiency Strategy and Corporate Financial Performance.

In hypothesis 4 b, Corporate Environmental Performance was expected to effect on the relationship between Eco-efficiency strategy and Corporate Financial Performance. To test the mediating effect, the hierarchical multiple regression analysis were employed.

Table 4.30 below reports the results of the analysis that was carried out. Before the test was performed, the multiple regression assumption was conducted and had no serious violations. The tolerance statistic is included as shown in Table 4.22, because multicollinearity could be the limiting factor. The tolerance statistic revealed that the entire variables under study were in an acceptable cut off range of .10 as suggested by Tabanchnick and Fidell (2007).

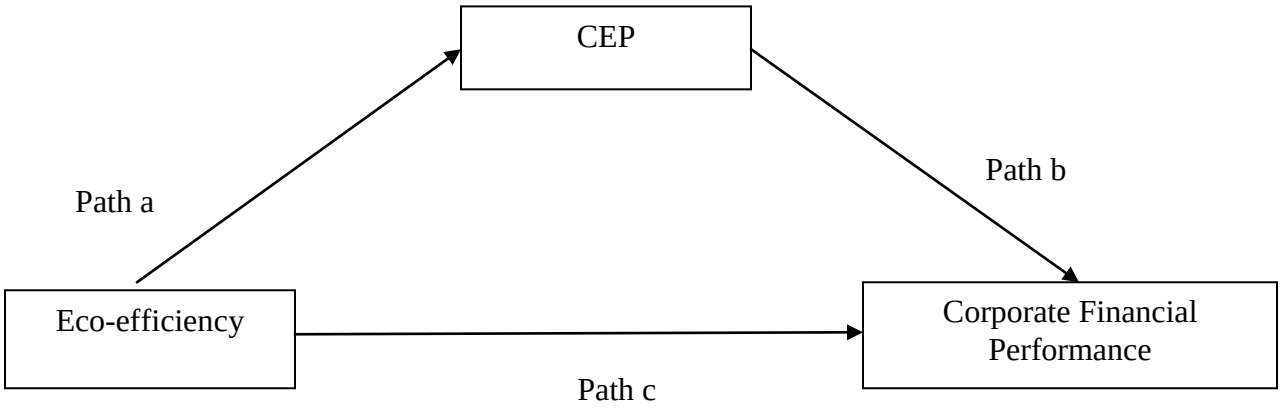

Figure 4.5
Model of analysis: Corporate Environmental Performance mediates the relationship between Socio-Efficiency Strategy and Corporate Financial Performance

Path a, and path b were indicates in previous section. Next step to determine corporate environmental performance is effect the relation between Eco-efficiency Strategy and Corporate Financial Performance. To assess path c, the results shown in Table 4.30 indicated that: the regression step for path c, (when path a and b were controlled) before the inclusion of the mediator as previously revealed indicated in model one, the R-Squared was .121 which was significant at the .000 level. Prior to this, it was found to be significantly correlated at (Beta= 0.266)

Table 4.30
Regression analysis of mediating variable Corporate Environmental Performance (CEP) on the relationship between Corporate Efficiency Strategy and Corporate Financial Performance

	Step1	Step2	Step3
	Beta	Beta	Beta
Independent variable: Eco-efficiency	.348	.266	
Mediate variable: CEP			.370 (p)
R^2	.049	.121	.251
Adjusted R^2	.039	.112	.236
F change	5.060	13.604	17.026
Sig F change	.027	.000	.000
F-statistic	5.060	13.604	16.416
Sig-F statistic	.027	.000	.000

Note: Step1 (IV and MV), Step 2 (IV and DV), and Step 3(IV, MV and DV). (P) Refers to partial mediating effect

After the inclusion of the mediator variable of Corporate Environmental Performance, as in model two, the previous significant relationship remained but with a decrease of the significant to level .004 for Eco-efficiency. However, the strength of the relationship indicated a decrease (Beta=0.370).

The R-Squared was 0.121, significant at 0.000 levels. When the mediator was included, the equation for R-Square revealed a significant (F change=0.000) increased from 0.121 to 0.251, indicating an improvement of 13% in the variance for financial performance. Therefore it can be concluded that corporate environmental performance only partially mediates the relationship between Eco-efficiency Strategy and Corporate Financial Performance.

4.11 Summary

Chapter 4 analyzed the data and presented the results obtained through statistical testing as proposed in the previous chapters had discussed. Data screenings were discussed. Descriptive statistics and hypothesis testing results were presented. Factor analysis was carried out in testing the construct validity of the entire scale variables. Reliability was tested, too, for the entire interval scale variables to determine the manner in which they were absolved of error. Moreover, the study examined the assumptions of normality, homoscedasticity and linearity in order to prove that the assumptions were fulfilled. The findings in this chapter are discussed and conclusions reached in the next chapter, along with recommendations based on these findings.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter discusses the results of the study presented earlier in chapter 4. This chapter starts with a recapitulation of the study, followed by a discussion of the key finding and the results of the hypothesis will be discussed in some detail in relationship to services and industry sectors in Jordan, theoretical and managerial implications, limitations of the study, contributions of the study, and finally suggestions for future research will be presented.

5.2 Recapitulation of Study

Based on corporate sustainability model by Epstein (2008), this study investigates the relationship between corporate efficiency strategy and corporate financial performance. The relationship between corporate efficiency strategy and corporate financial performance were also posited to be mediated by corporate sustainability performance. Therefore, the first objective of this study was to examine the effects of corporate efficiency strategy on corporate sustainability performance.

The second objective was to examine the effect of corporate efficiency strategy on corporate financial performance. The third objective was to examine the effect of corporate sustainability performance on corporate financial performance. Finally, the fourth objective was to examine whether corporate sustainability performance mediates the relationship between corporate efficiency strategy and corporate financial performance.

The theoretical framework (see Figure 3.1) for this study was adapted from the previous disciplines work in same area, with prominence given to the industry and services sectors in Jordan. Stakeholder theory by (Freeman, 1984) was adopted to explain how managerial decisions to improve financial performance are effected by stakeholder interest, so the focus should be on all stakeholders. The Freeman, (2003) model determines it not only on shareholder only. By stakeholder theory, the ultimate objective is to improve the financial performance of the company via strategies that can cover all stakeholders need and demanding.

Therefore, it is expected that managers applying strategies that related to stakeholder interest based on stakeholder theory, which gave the framework of this study strong, prove of theoretical part. On the other hand, the good management theory was applied in this study with respect to the theoretical argument of the mediating variables place between corporate efficiency strategy and corporate financial performance. The theory argue that good management practice have a strong relationship to social and

environment because they can improve a company's relationship with all its stakeholders which, in turn, will improve the company's financial performance.

The target population for this study consisted of two listed sectors in Amman Stock Exchange, namely, the industry and services sectors. Due to the geographical dispersion of the potential respondents, questionnaires were distributed by using mail survey; the survey took approximately two months and received a total of 118 responses. After excluding incomplete questionnaires, the total usable respond rate was 43.5% of 101 questionnaires returned (see Table 4.1) which is considered a high and sufficient respond rate according to Saunders et al (2007).

The Cronbach's coefficient alpha of the variables utilized for this study recorded excellent reliability with coefficients of more than 0.7, ranging from 0.757 to 0.948. Some items-to-total correlations values in this study exceeded 0.8 which are considered very strong correlations and might result in multicollinearity as suggested by Benny and Felman, (1985). Thus, the multicollinearity test was performed. (See Table 4.22.) After making the tests, no serious concerns about multicollinearity were seen. The correlations of the study variables ranged between small and medium size effects following Pallant (2007) guidelines on effect sizes of correlation coefficients in social science studies as shown in Table 4.20.

Data screening and cleaning were conducted by testing outlier and normality of the variables. The result of this analysis showed clearly no serious concern about outliers which indicated that no multivariate outliers were found, and the distribution of data was normal. (Refer to Appendix B and C.) T-tests conducted to examine differences between the variables due to a gap between early responds and late responds indicated no significant differences between the variables. (See Table 4.3.)

Factor analysis techniques were performed to check on the validity of the study variables, and the analysis produced various dimensions of corporate efficiency strategy factors and corporate sustainability performance factor. (Refer to Appendix E.) Simple liner and multiple regression assessments were employed in this study to assess the relationship of the variables and the mediating effects of corporate sustainability performance. (Refer to Appendix J)

Normality, linearity and homoscedascity tests were carried out to ensure no violations occurred on the assumptions before statistical assessments were carried out. The results of the liner regression analysis revealed that a positive relationship between corporate efficiency strategy and financial performance, and a positive relationship between sustainability performance and corporate financial performance. Also simple regression showed that the direct relationship between corporate efficiency strategy and corporate financial performance was a positive relationship. However, the mediating effect of corporate sustainability performance on the relationship between corporate efficiency strategy and corporate financial performance has only indicated partial mediation.

5.3 Discussion on the Findings

The following section discusses in further detail the effect of corporate efficiency strategy on sustainability performance, the effect of sustainability performance on corporate financial performance, corporate efficiency strategy on corporate financial performance, and, finally, the mediating effect of corporate sustainability performance on the relationship between corporate efficiency strategy and corporate financial performance.

5.3.1 The effect of Corporate Efficiency Strategy on Corporate Sustainability Performance

In order to answer first research question, regression analysis was conducted to examine the effect of corporate efficiency strategy on corporate sustainability performance. Efficiency strategy factors first were regressed to corporate social performance and then second to corporate environmental performance.

The results indicated positive, significant relationships between efficiency strategy factors (socio-efficiency and eco-efficiency) and corporate sustainability performance factors (CSP and CEP). (See Table 4.23 and Table 4.24.) This means that the more these strategies were practiced in companies, the better the social and environment performance was. The explanations for these positive relationships were that the associations between socio-efficiency strategy and social performance and between eco-efficiency strategy and environment performance produced positive results.

The level of sustainability performance was higher when efficiency strategy was applied to company operations, and this phenomenon could be explained by the effectiveness of Eco-efficiency Strategy in reducing environmental impacts while maintaining or increasing the monetary value and the effectiveness of Socio-efficiency Strategy in reducing social impacts while maintaining monetary value (Abdul Rashid *et al.*, 2008; Schmidt, Meurer *et al.*, 2004; Dyllick & Hockerts, 2002). Both strategies completed the cycle of sustainable development (SD).

From the above mentioned discussion, managers clearly prefer to apply strategies to improve social and environment performance of the companies. That was clear from the high level of agreement with applying efficiency strategies to company operations. This finding also supports the stakeholder theory that managers realize the importance of stakeholders reactions toward social and environment (Epstein & Roy 2001; Epstein, 2008) and working towards satisfying stakeholders' needs rather than focusing on shareholders.

According to Freeman, (1984) companies, who are able to develop strong relationship with their stakeholders, will gain opportunities to achieve their business objectives such as (profitability and growth). From this point of view, Jordan managers pay more intention to satisfying stakeholder's needs to reach the final goals of being well financial performance by doing good to social and environment through applying efficiency strategies.

The present study aligns with previous studies that show a positive relationship between efficiency strategy and enhancing social, environmental performance. For Jordanian companies reducing cost by using fewer resources and creating less waste is making the use of the efficiency strategy acceptable by applying that strategy based on the limited resources and small economic growth that Jordanian companies faced (GCEP, 2010).

Correspondingly, the relationships between corporate strategy and sustainability in Jordanian services and industry sectors were similar to previous studies such as Schmited *et al* (2004) who stated that " Socio-Eco-efficient solutions combine a relatively good environmental performance with high social benefit and at the same time low costs for the end customer" (p. 79).

5.3.2 The Effect of Corporate Sustainability Performance on Corporate Financial Performance

In order to answer the second research question about the effect of corporate sustainability performance on corporate financial performance, simple liner regressions were conducted. The corporate social performance first was regressed to corporate financial performance, and then corporate environmental performance was regressed to corporate financial performance.

The result have indicated that positive and significant relationships between corporate social performance ($t=5.407$ at $p<0.05$) and corporate environmental performance ($t=4.719$ at $p<0.05$) to corporate financial performance. It was also found that corporate social performance and corporate environmental performance helped to explain variances of 22.8% and 18.4% respectively of the corporate financial performance. These mean that increased performance upon social and environment issues, would lead to enhanced financial performance of the company. (See Table 4.25.)

Overall the results showed that corporate sustainability performance (social and environmental performance) were important for improving financial performance. These results provided support to previous literature (e.g., Cornell & Shapiro, 1987; Klassen & Mclaughlin, 1996; Stanwick & Stanwick, 1998; Ruf *et al.*, 2001; Orlitzky, 2001; Bouquet & Deutsch, 2007) that found positive influence of corporate social and environmental performance on financial performance.

Furthermore, high corporate social environment performance scores from the managerial perspective (see Table 4.19) indicated that managers in Jordanian services and industry sectors prefers doing a good job with respect to social and environment issues to enhance their financial performance. Maybe that can be explained also by the nature of the effect of social responsibility on a company's reputation and competitive advantage (Elkington, 1998; Porter, 1991) and stakeholders' reactions toward company's goods and services.

This theoretically supported a good management theory that doing well with respect to society and providing the best managerial practices can enhance financial performance. Also, from the theoretical part, stakeholder theory justify the current positive results of the effect of being good to social and environment when stat that systematic managerial attention to the stakeholder interest is critical to success of a firm (Freeman, 1984).

However, these results did not align with previous studies that suggested no relationship between corporate social, environmental performance and corporate financial performance (e.g., Friedman, 1962; Vance, 1975; Preston & O'Bannon, 1997; McWilliams & Siegel, 2001; Soana, 2011). Perhaps different methods and sampling was used in their studies comparing to this study and different theoretical underpinning theory produced this differences in the results and findings. As a recent study by Soana (2011) who investigated the relationship between social performance and financial performance at banking sectors in Italy by using eventual correlation between social and financial performance which lead to the results of no relationship.

5.3.3 The Effect of Corporate Efficiency Strategy on Corporate Financial Performance

In order to answer the third research question about the effect of corporate efficiency strategy on corporate financial performance, simple liner regressions were conducted separately for both corporate efficiency strategy factors (socio and eco-efficiency) to examine the direct effect for both on corporate financial performance.

Corporate efficiency strategy was found to have a significant positive effect on corporate financial performance. This meant the more these practices and strategies were practiced in the companies, the higher financial performance would be.

The strong agreement from managers of Jordanian industry and services companies on the statements with respect to efficiency strategy prove the significant positive relationship toward corporate financial performance. This could be explained by cost savings and improving the reputation of the company as well as increasing competitive advantage by applying efficiency strategy.

This result matches the previous work done in studies of the advantages of using efficiency strategy (Schaltegger & Burritt, 2005; WBCSD, 2000) and also the positive effect of efficiency strategy on financial performance align with study done by Sinkin *et al* (2008) who identify that " firms which adopt eco-efficient business strategies and , as a consequences, achieve reduced costs and increased profits should be more highly valued by the market than similar firms that do not adopt eco-efficient business strategies" (p.167). It is clear by Sinkin et al (2008) the improvement on financial performance of the company who apply efficiency strategies which matching with the present study results.

Overall the result of testing the third research question shows that positive significant effect of corporate efficiency strategy on corporate financial performance. The present results indicated that socio-efficiency were preferred from managers in Jordan companies more than eco-efficiency. That as socio indicated higher mean score (M = 3.84) and β

(42.3%) than eco-efficiency (M = 3.57) and β (34.8%). maybe it can be explained by the higher inter-correlation between socio and financial performance which indicated score of 42.3 while eco-efficiency indicated score of 34.8 as correlation with corporate financial performance. from other side the nature of socio-efficiency is work out fast with social and stakeholder direct rather than working good to environment which mean have to wait to get the results, thus the return of invest in social much fast than invest in environment which make return of investment on social more acceptable to managers.

Barney (1991) stated that applying strategies satisfying stakeholders will provide good image and reputation to the company which enhance corporate financial performance which supported the good management theory who focused on the important of managers to satisfying stakeholder needs without pay attention to their financial performance.

5.3.4 Mediating Effects of Corporate Sustainability Performance on the Relationship between Corporate Efficiency Strategy and Corporate Financial Performance.

To examine the mediating effect of corporate sustainability performance on the relationship between corporate efficiency strategy and corporate financial performance, the Baron and Kenny (1986) procedures were followed. The findings indicate that corporate sustainability performance as being partially mediated the relationship between corporate efficiency strategy and corporate financial performance. This finding also suggests that both socio and eco-efficiency have some influence on corporate financial performance through sustainability performance.

To examine the fourth research question of present study the hypotheses set to be separately of each factors of efficiency strategy and sustainability performance. Thus the mediator factors were the corporate social performance and corporate environmental performance. The results also found that when the mediator of corporate social performance was included to the socio-efficiency the R-square revealed a significant improvement of 12.2% in the variance in corporate financial performance with a decrease of standardized coefficients beta from 0.423 to 0.289 at significant level of less than 0.05. The results indicate partial mediating of corporate social performance on the relationship effect between socio-efficiency and corporate financial performance. (Refer to Table 4.29.)

Corporate environmental performance was found to partially mediate the relationship between Eco-efficiency and corporate financial performance, by improving the variance in corporate financial performance by 13%, and also showing a decrease of beta by 8.2% from 0.348 to 0.266 at a significance level $p< 0.05$. These findings indicated a partial mediating effect of corporate environmental performance on the relationship between Eco-efficiency and corporate financial performance. (Refer to Table 4.30.) The findings also mean that including sustainability performance in the direct relationship between efficiency strategy and financial performance will partially enhance financial performance.

The main reason of partially mediating of corporate sustainability performance on the relationship between efficiency strategies and corporate financial performance that fact is limited it scope to examine the indirect relationships between the variables. and identifying the strategies related to sustainability by efficiency only and examine it empirically on financial performance rather than take it on conceptual way such as Epstein (2008) corporate sustainability model.

In conclusion, this study provides more support for the common notion that corporate efficiency strategies are highly correlated with corporate financial performance. This study also partially confirmed the corporate sustainability model by Epstein (2008), which indicated that sustainability performance as a mediating variable effected the relationship between corporate strategy and financial performance.

This study is consistent with the past relevant studies that suggested a strong link between corporate social and environmental performance and corporate financial performance. With the paucity and inconsistency of research findings in the context of efficiency strategy and corporate sustainability in general, this study offers suitable support and sheds light into mediating variables of sustainability performance on the relationship between corporate efficiency strategy and corporate financial performance in a developing country such as Jordan.

5.4 Contributions of the study

This section concentrates on the research findings that have contributed to the body of knowledge in respect to the theoretical and managerial implications to service and industry sectors in Jordan. Each of the implications is discussed further below.

5.4.1 Theoretical and Methodological Implications

This study mainly examines the relationship between corporate efficiency strategy and corporate financial performance from the managerial perspective of two important sectors in Jordanian service and industry sector companies. Information provided in the study about the mediating effects of corporate sustainability performance could further support managers' understanding of the importance of applying efficiency strategies into company operations. Based on the current study, this research has theoretical implications upon two key areas, namely, the literature of efficiency strategies on financial performance and methodology.

This study symbolizes the efforts to develop a conceptual framework of the corporate financial performance affected by efficiency strategy and mediated by sustainability performance. Basically, it provides the groundwork for integrating green machinery into management operations such as efficiency strategy in service and industry sectors in Jordanian companies.

Past literature on the relationship between efficiency strategy and financial performance has been based on macro level or country economics through suggestions of a global organization such as WBCSD, OECD and EEA. Most of those studies that investigated efficiency strategy limited their investigation to the direct link between efficiency and financial performance (Sinkin *et al.*, 2008; Sarkis & Cordeiro, 2001). The previous literatures also found mixed result of this relationship, which included a negative effect on financial performance when applying efficiency strategy (Worrel *et al.*, 1995; Hamilton, 1995).

This study shed light onto the services and industry sectors in Jordanian companies, making theoretical implication because the previous literature mostly considered Western countries and the United States. Although empirical findings have advanced knowledge on the mediating role of sustainability performance, little is known about employing this mediating role of sustainability performance into relationship between efficiency strategy and financial performance. The results from the findings contained herein were further enhanced by the mediating factor of sustainability performance. Therefore, this study provides more theoretical support for its importance in Jordanian companies. In addition, the study also provides a better understanding of the major effects of the various sustainability performance aspects of the managers in Jordanian services and industry sectors. Ignoring this aspect of sustainability performance effects might adversely impact corporate financial performance.

Past study had mixed views on the support of stakeholder theory and good management theory, in other industry sectors and in other countries. As both theories insist that being good to all not just to shareholders will make the companies more effective and enhance corporate financial performance.

Due the differences found in cultural and in the occupational aspects, the present findings give further support to the view that Jordanian managers were aware of the importance of applying efficiency strategy in their companies to enhance financial performance as an ultimate goal. Thus, findings from this empirical study provided further partial support of the Freeman, (1984) stakeholder theory and also partial support to the Epstein (2008) corporate sustainability model, by indicating that social and environmental issues have a partial effect on the relationship between a company's strategy and its financial performance.

This research also contributes relatively new knowledge to the body of literature in that it incorporates two strategies related to efficiency, namely, socio- and eco-efficiency as main strategies may have effects on financial performance through sustainability performance as Dyllick and Hockerts (2002) suggested

Empirical evidence on this topic has not been extensive, and, therefore, this study highlights some significant contributions to the literature in service and industry sectors in a developing country like Jordan. This study also presents a significant methodological contribution in directing the focus of the study differently. Past studies have limited their

scope to the stakeholders and shareholders perspective; the present study departs from past studies focusing on individual analysis units (social and environment managers) of Jordanian companies.

This study also is concerned with only two sustainability performance factors, namely, corporate social and environmental performance, as Schaltgger and Burritt (2006) suggested. Both offer real challenges to managers who wish to apply them to corporate strategy operation. If this study had not been carried out, managers of Jordanian companies might not have become aware of the impact of sustainability performance on the relationship between a company's strategy and its financial performance.

Some contributions were made to the measurement scales, whereby small alterations of the scales of all the constructs were made to suit the research context. The constructs of efficiency strategy developed by World Business Council for Sustainable Development (WBCSD, 2003) were adapted. The measurement scale for sustainability performance was an adapted from Sharma and Vredenburg (1998) and Rettab *et al.* (2008). Finally, the instruments used to measure financial performance were adapted from Samiee and Roth (1992) and Rettab et al, (2008). These scales were further simplified for better understanding and to encourage a high response rate. The response rate for mail survey in this study was consider high as it reached 43.5%, which gave future researchers in this area the option to retest these scales on a wider scope to further support their validity.

5.4.2 Managerial Implications

The present research results may be important for managers and policy makers related to society and the environment in Jordanian services and industry sectors. Corporate sustainability at Jordan companies is important because of issues related to the current situation of country resources from water and energy usage. With the limited recourses, Jordanian companies faced more costs than other regional country that have the ability to produce their own raw materials. From this viewpoint, managers in general normally closely consider country issues that effect their companies, and they can play a vital role in setting strategies that lead to sustaining their company's profit in any unforeseen circumstances.

From a manager's perspective, this study provides invaluable inputs for managers in the Jordanian services and industry sectors by improving their financial performance and their market niches or competitive advantage either nationally or globally through their efficiency strategies. Based on this study, there are three key aspects those managers at services and industries sectors into which Jordanian companies should look.

First, with present global challenges and the socio-economic-environmental balancing act that Jordan must make in mind, this study suggests that managers adopt both eco- and socio–efficiency strategies, which have a thoughtful impact on enhancing financial performance through sustainability performance. The results of this study also suggest that the managers who practice applying efficiency strategy to their companies should play an important role in transforming their experience to all management levels in their

company and transfer it to outsiders such as stakeholders or the university as a case study of efficiency strategy success leading to corporate sustainability such as the Wal-Mart sustainability case study. Through this transformation of their knowledge and experiences, managers can built a bridge of trust with their stakeholders and have a positive influence on second-line managers in their companies.

Although efficiency strategies would not necessarily create any change in company policies they would be effective in fostering social and environmental change, which increases the competitive advantage of the companies. (Abdul Rashid *et al.*, 2008).

The results of this study found that the Jordanian managers focused more on social issues rather than on environment issues. Also, they have strong feeling towards the application of socio-efficiency strategy applying, perhaps because of a more direct relationship between social issues and stakeholders than for environment issues. From this standpoint, there is also need to look into eco-efficiency strategy more seriously by managers to protect the environment in which they are operating, or to decrease the negative environmental impacts in their operations by designing policies and products based on efficiency strategies. Thus, by doing this, the companies would be able both to create a good image and to have a better competitive advantage which leads to better financial performance (Porter, 1991) by reducing the negative impact on the environment (Mickwitz *et al.*, 2006) and by having a cost-saving advantage (Jollands & Patterson, 2004).

The second implication is in relationship of the managers with respect to sustainability performance. The findings in this study show that managers did not corporate environmental performance the highest priority, and Jordanian managers did not share the same feelings contained in global organization publications about the importance of environmental performance practices on company's success. The win-win approach of sustainable developments indicates that equal focus should be given to three aspects of sustainability: social, environmental and economic. It perhaps a trade off between the three aspects and any defect with respect to balancing will provide a negative effect on the others aspects. Thus, a need exists for the companies research units to be more active in training managers who are less concerned about the importance of these issues toward satisfying stakeholder needs and also the cost- saving advantage of protecting the environment.

On the whole, the results showed a positive relationship between socio- and eco-efficiency strategies and corporate financial performance and an indirect effect on corporate sustainability performance. The strength of the relationship differs for Socio-efficiency strategy and Eco-efficiency strategy as both of these strategies have different requirements. Therefore, these results suggested managers pay more attention to the different focus of these strategies while they are making their decisions to apply efficiency strategies.

Third, the implication that is presented by this study is related to corporate sustainability performance as a mediating variable of the relationship between efficiency strategy and

financial performance. The findings provide empirical evidence from the managerial perspective of the effect of sustainability performance on this relationship. Thus, managers must be aware that enhancements of social and environmental performance will lead to enhancements in financial performance.

Also, managers worldwide are currently placing great importance on sustainability issues and practices that will satisfy stakeholders in general and achieve improvements to their company's financial performance. Thus, Jordanian managers should be aware of the best practices of sustainability, which mean adopting the correct strategies to matching their companies particular abilities and Jordan's trading general environment. Finally, another consideration is that the managers need to pay special attention to their females in managerial positions in Jordanian companies, because females constitute a low percentage of managers.

5.5 Limitations of the Study

This study also has several limitations. First, the main limitation is in the sampling frame, which only considered two sectors of Jordan companies (services and industry). Therefore the results cannot be generalized to sectors such as banking sector and insurance. This limitation is due to fact that the study focused on social and environmental factors, meanwhile banking, and insurance look more towards social responsibility. Therefore, it was more suitable for the present study to consider services and industry sectors only. Secondly, this study does not attempt to investigate all the

strategies leading to corporate sustainability performance. The focus of the study was only on general strategies of sustainability as focusing was made on efficiency strategy where was loudly encouraging of scholar debate about the important of effectiveness strategies as well as efficiency strategies. This limitation was due a lack of literature on effectiveness strategies on the company level. Most scholarly debate on effectiveness strategy was made on the country level, thus the present study, includes only efficiency strategy.

Thirdly, sustainability performance was considered as only the mediating variable although other variables constructs such as stakeholder's reactions could have some degree of influence on efficiency strategies with respect to financial performance. This limitation is due to fact that the present study considers the role of sustainability as a mediating variable and proves it empirically. Suggestions for additional constructs will be treated as supplementary and could be used for future research.

Fourthly, instrument for this study was been adapted from WBCSD (2005) for efficiency strategy. Corporate sustainability performance items were adapted from Sharma and Vredenburg, (1998) and Rettab *et al.* (2008). For financial performance instruments were adapted from Samiee and Roth, (1992) and Rettab *et al.* (2008). Although other important instruments related to sustainability issues and financial performance exists, this study could not cover all the instruments together. This study found that the recent popular efficiency instruments by WBCSD were the most suitable due to the nature of efficiency

strategies aspects as the instruments looked at both socio-efficiency and eco-efficiency strategies.

Last of all, the focus of this study was to investigate the relationship between efficiency strategies and financial performance. Additional empirical attention on the relationship between efficiency strategies and financial performance should be given to conceptual frameworks in the same area. Only selected explanatory variables were being chosen to be represented in the research model. In the reality, there could be many more other factors influencing these relationships.

5.6 Recommendations for Future Research

This present study has found that the Socio-efficiency and Eco-efficiency strategies are important predictors to corporate financial performance among the general managers in selected Jordanian services and industry sectors. However, several considerations can be taken into consideration for future research directions on the understanding of the relationships of the current research model variables.

First, this study could be replicated in other sectors of the Jordanian economy such as banking or insurance companies or could be replicated with a larger sample group that covers all services and industry sectors branch companies in the whole of Jordan. The context of the present study only looked into general managers as a respondent. Future research could also include respondents from other groups, specifically from the

stakeholder perspective or shareholder perspective, or senior managers and business development managers. It would also be interesting to do a comparative study to find out which sectors of Jordanian companies apply efficiency strategies or the best practices of sustainability performance related to financial performance.

Second, future research should also look into other predictor variables as the present results only yielded moderate R-Square. The other variables that could be explored are stakeholder's reactions as suggested by (Epstein, 2008) and more strategies and different types of strategies related to sustainability might yield a higher R-Square, Also, the different focus of these different strategies different might have different effects on corporate financial performance.

Third, the mediating effect of sustainability performance was only considered as helping to conceptualize the relation between the independent and dependent variable (Sekaran, 2005). Better insights would be produced if other variables could be included as moderate variables that affected the relationship of corporate sustainability performance to financial performance as Margolis (2003) suggested. Other control variables effecting the relationship that would be interested topics for future research include demographic variables or firm size. These additional variables may provide richer insights in examining the relationship between efficiency strategies and financial performance.

Fourth, future research should look into developing more robust measurements for sustainability performance based on stakeholder theory for services and industry sectors.

The present study only considers sustainability factors that are related to current research objective, which looked at social and environmental performance. Future research should consider social and environmental performance in more details or examine its effects on services and industry sectors separately. Social and environmental issues taken as moderator variables effecting the relationship between efficiency strategies and corporate financial performance will be an interesting topic for future research. Furthermore, because the measurement of financial performance was based on accounting measurements, a need exists to examine it using market measurements of financial performance.

Finally, future research should consider alternative modes of enquire such as employing the longitudinal methods of data collection design (e.g., experiments, archival data, observations or interviews) to better understand the cause-and-effect relationships at different phases of time (Sakeran, 2005). It would help in gaining a better understanding of how the relationships between efficiency strategies and financial performance outcome operate over time.

5.7 Summary

This study finding indicated that there is a positive significant relationship of the efficiency strategies with corporate financial performance. Sustainability performance was also found to have a partial mediating effect on socio-efficiency and eco-efficiency strategies to corporate financial performance. It was also found that this study partial supported (Epstein, 2008) the corporate sustainability model. In reference to contributions made to the body of knowledge, the findings contribute particularly in the area of literature, theory and research design. Based on these outcomes, among the recommendations made to the general managers in services and industries companies in Jordan were to enhance their social and environmental performance through applying the efficiency strategies of socio and eco-efficiency in order to enhance the financial performance and reach the win-win approach. Finally, a number of recommendations were supplied in improving the facets of ensuing researches, namely the consideration of latest variables, dyadic sampling technique, longitudinal methodology of data collection, as well as the application of certain scales and measurements to fit certain socio-economic framework.

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