T.C.
ISTANBUL GEDİK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES

THE EFFECTOF THE VERDANCY MANAGEMENT STRATEGY ON PERMANENT DEVELOPMENT: A CASE STUDY OF ERBIL, IRAQ

MASTER'S THESIS

Husam Awad ABDULLAH

Business Administration Department

Business Administration Master in English Program

DECEMBER 2021

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İSTANBUL GEDİK ÜNİVERSİTESİ

LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ MÜDÜRLÜĞÜ

Yüksek Lisans Tez Onay Belgesi

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DECLARATION

I, Husam Awad ABDULLAH, as a result of this declare that this thesis titled "The Effectof the Verdancy Management Strategy on Permanent Development: A Case Study of Erbil, Iraq" is original work I did for the award of the master's degree in the faculty of Business Management. I also declare that this thesis or any part of it has not been submitted and presented for any other degree or research paper in any other university or institution. (14/12/2021)

Husam Awad Abdullah

DEDICATION

It is in my pleasure to dedicate my thesis work to the soul of my beloved parents (Father and Mother). They taught me many lessons that become the guide of my life. They still encourage me to work hard and achieve my goals. I also dedicate my thesis work to my dear and lovely brothers and sisters. They always stands for me and gives support. I feel so greatly privileged to have them in my life.

PREFACE

First, I would thank Allah for helping me and giving support throughout the compilation of this thesis on time. I would express my thanks to my advisor Prof. Dr. Enver Alper GÜVEL who devoted much of time in making sure that this work piece comes up to standard. I would thank my lecturers and the Dean of Economics, Management and Social Sciences of Istanbul Gedik University and anyone helped me getting to this stage. I would thank my parents (my mother and father) for their help and support throughout my master studies. I also thank my brothers and my sisters for every support they gave. Lastly, I would thank all my friends and all classmates for their sincere encouragement and cooperation.

December 2021 **Husam Awad ABDULLAH**

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ABBREVIATIONS

GMS	: Green Management Strategy
SD	: Sustainable Development
APP	: Appendix
LRM	: Linear Regression Model

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ABSTRACT

The damage in the environment that has happened because of the current economic system requires a transition to the environmental friendly system. The Green Management Strategy (GMS) is committed to achieving completely sustainable financial, social, and environmental benefits. The GMS has also become a significant competitive strategy to get sustainable development (SD). Erbil, which is a city in Iraq, has started a GMS program to achieve sustainable development. This thesis is conducted to investigate the effects of green management on sustainable development in Erbil, Iraq. With the increased industrialization in Erbil, there must be environmental effects are bound to continue happening. There are two main study problems. The first problem is the need to examine the impact of GMS on the SD in Erbil, Iraq. Second, the literature is lack of studies that statistically test the effect of GMS on sustainability development in Iraq. The main goal of this thesis is to explain the relationship between GM and SD in Erbil, Iraq. The study purpose is test the effect of GMS on SD in Erbil, Iraq. The study contribution is to provide statistical analysis to test the impact of GMS on SD, which can be used in future research about Iraq. The study hypothesis is that the GMS has positive and significant impact on SD in Erbil, Iraq. A random sample of 300 employees, who are working in the city government, was drawn, and 215 sample sizes was used. The results of this study showed that motivating for green management strategy, and the challenges of green management strategy have no effects on the sustainable development in Erbil. The results showed that the market and demand, business efficiency and cost savings, and workforce and financial incentives have negative effects on the sustainable development in Erbil. Therefore, the results do not support the study hypothesis. The study suggest that the local government in Erbil must re-design its green management program based on modern experiments that successfully applied in different areas around the world.

Keywords: Green, *Management, Sustainable, Erbil*

YEŞİL YÖNETİM STRATEJİSİNİN SÜRDÜRÜLEBİLİR KALKINMA ÜZERİNDEKİ ETKİSİ: IRAK ERBİL ÖRNEĞİ

ÖZET

Mevcut ekonomik sistem nedeniyle çevreye verilen zarar, çevre dostu sisteme geçişi gerektirmektedir. Yeşil Yönetim Stratejisi (GMS), tamamen sürdürülebilir finansal, sosyal ve çevresel faydalar elde etmeyi taahhüt eder. GMS ayrıca sürdürülebilir kalkınma (SD) elde etmek için önemli bir rekabet stratejisi haline geldi. Irak'ta bir şehir olan Erbil, sürdürülebilir kalkınmayı sağlamak için bir GMS programı başlattı. Bu çalışma, Irak'ın Erbil kentinde yeşil yönetim programının SD üzerindeki etkisini araştırmayı amaçlamaktadır. Erbil'de artan sanayileşme ile birlikte, olmaya devam edecek çevresel etkiler olmalı. İki ana çalışma problemi vardır. İlk sorun, GMS'nin Irak'ın Erbil kentinde SD üzerindeki etkisini inceleme ihtiyacıdır. İkincisi, literatürde GMS'nin Irak'taki sürdürülebilirlik gelişimi üzerindeki etkisini istatistiksel olarak test eden çalışmaların eksikliğidir. Bu çalışmanın temel amacı, Irak'ın Erbil kentinde yeşil yönetim ve sürdürülebilir kalkınma arasındaki ilişkiyi araştırmaktır. Çalışmanın amacı, GMS'nin Irak'ın Erbil kentinde SD üzerindeki etkisini istatistiksel olarak test etmektir. Çalışmanın katkısı, Irak ile ilgili gelecekteki araştırmalarda kullanılabilecek GMS'nin SD üzerindeki etkisini test etmek için istatistiksel analiz sağlamaktır. Çalışma hipotezi, GMS'nin Erbil, Irak'ta SD üzerinde olumlu ve önemli bir etkiye sahip olmasıdır. İl özel idaresinde çalışan 300 çalışandan rastgele bir örneklem seçilmiş ve 215 örneklem büyüklüğü kullanılmıştır. Bu çalışmanın sonuçları, yeşil yönetim stratejisi için motive etmenin ve yeşil yönetim stratejisinin zorluklarının Erbil'deki sürdürülebilir kalkınma üzerinde hiçbir etkisinin olmadığını göstermiştir. Sonuçlar, pazar ve talebin, iş verimliliği ve maliyet tasarruflarının, işgücü ve finansal teşviklerin Erbil'deki sürdürülebilir kalkınma üzerinde olumsuz etkileri olduğunu göstermiştir. Bu nedenle, sonuçlar çalışma hipotezini desteklememektedir. Çalışma, Erbil'deki yerel yönetimin, dünyanın farklı bölgelerinde başarıyla uygulanan modern deneylere dayalı olarak yeşil yönetim programını yeniden tasarlaması gerektiğini öne sürüyor.

Anahtar Kelimeler: *Yeşil Yönetim, Sürdürülebilir, Erbil*

1. INTRODUCTION

1.1 Background

The idea of inexperienced management strategy (GMS) become introduced extra than two decades in the past. However, the literature has constrained statistics on this idea. That make it difficult to agree approximately standard definition. Even researchers have attempted to increase an normal conceptual definition, it nevertheless need more progress (Barbier 2009).

Another underlying obstacle in determining a solid definition to green management is the fact that the phenomenon is labeled with a different nomenclature. For example, the corporate environmentalism, environmental management, and corporate sustainability. These are defined and interpreted by various researchers and practitioners. Green management economy involves different economics approaches that are related to the sustainable development (Pearce et al. 1989)

The GMS has been evolving over the last few decades. The goal of was to develop knowledge of sustainable practices in the fields of business, agriculture, society, the environment, and personal life by managing. It works in a way that can benefit both current and future generations (John 2009).

The GMS, in general, focuses on environment management systems as a means of improving both the environment and economic activities performance (Florida & Davison, 2001).

The GMS practices has described as approaches of producing eco-friendly merchandise and decreasing environmental consequences via inexperienced manufacturing. The research and improvement associated with inexperienced management is considered as one of the current studies (Peng & Lin 2008). The efforts are, therefore, designed to enhance the surroundings management foundation. In addition, design the organization's sustainable future for the longer term by developing personal responsibility for environmentally friendly activities. Changing management policies; innovating Green Products and services; improving

environmentally friendly infrastructure and waste management (Darnall, Jolley, & Handfield, 2008).

Majority of supporters of GMS concept believe that the economic system running now is damaged. Therefore, it requires a transition since it has led to numerous environmental problems. For example, the change in climate, shortage in natural biodiversity, and decrease in natural capital. In addition, high poverty rate , water scarcity, shortage of food and energy, and people inequality (Mohammad et al. 2014).

There is a wide call for various economies all over the world to develop and implement GMS. That is because it can play a great role in reducing carbon emissions, which improves the efficiency of energy and resource usage. As a result, that can promotes Improvement, increase, and making sure the use of belongings for sustainable development, (UNEP, 2011).

The business revolution, of the 18th and 19th century in Britain, USA and later different parts of the world, laid fertile grounds for the scarcity of resources and environmental degradation (Horn, et al. 2010). The major cause of the industrial revolution was the growth in demographics, and the increase in technology. That facilitated the development of trade and rise of business (Wrigley, 2018).

Before the industrial revolution, the world's ecosystem was able to absorb the ecological damage created by the intensive industrialization and development. However, the global population, industrialization accompanied, and demand of natural resources increased rapidly. The earth is no longer able to sustain a healthy and balanced ecosystem (Misra, 2000).

The truth is that those industries rely totally on the herbal assets. The troubles associated with worldwide warming, multiplied pollutants, floods, famine, and environmental degradation had been the inevitable outcomes of such moves. They confined sustainable economic development (Shah et al. 2019).

Worldwide out cries to save the environment have influenced open and transparent discussions for a coordinated approaches. These approaches focus on how well the environment can be best preserved for future use. One of the approaches proposed by is the application of GSM can reduce production costs. The approach can also

increase the economic efficiency and improve the outcomes of organizations (Porter 1991; Porter et al. 1995).

The GMS have remained on the schedule for plenty international businesses and conferences. For example, The Brundtland GMSs Report (1987), the 1992 Rio de Janeiro Earth Summit, Brazil. In addition, Johannesburg World Summit on Sustainable Development in 2002, and the contemporary Earth Summit that held in Rio de Janeiro, Brazil, which has highlighted important sustainability events (Sajna 2021).

The GMS is committed to achieving completely sustainable financial, social, and environmental benefits. Therefore, most companies employ GMS for financial benefits and comparative benefits. The GMS has also become a significant competitive strategy to sustainability and better environmental performance. That is because it can decrease the ecological effect of industrial activities without losing quality, cost, reliability, and Strength efficiency (Tran & Ben 2009).

Many worldwide reviews showed that the fossil fuels-based electricity and climate challenges are critical issues. The sustainable monetary improvement in China has been affecting by means of those problems (Olsson et al. 2020). China has implemented regulatory administrative and political measures to control the problem of greenhouse gas emissions. It did that to meet the challenges of sustainable economy (Wang et al. 2018).

The 2007 National Climate Change Program (NCCP) is a set of policies and strategies utilized by the Chinese government. The program has policies like green renewable energy resources such as solar and wind, shutting down of inefficient thermal power plants, and the use of energy reforms. The goal of the program is to maintain sustainable economic development and environmental conditions of the country (Chang & Wang 2010).

Just like China, the environmental management also played an important role in South Africa. South Africa recognizes the risk of general environmental deterioration. Then, they have developing various methods to address the problem such as developing green policies. One of the formulated policies is the National Climate Change Response White Paper of 2011. This paper includes doing greenhouse gases mitigation interventions through green procurement (RSA 2009).

In 2006, the city of Cape Town in South Africa formed the Integrated Waste Management Policy (IWMP) (City of Cape Town 2012).

Its major aim was to reduce the direct and indirect negative impact of Supply Chain Management (SCM) decisions on the environment. However, there is still limited recognition of green procurement

Amazon has the world's greatest biodiversity, and it represents 40% of the area of Brazil. The Amazon has environmental concerns such as deforestation, air pollution, garbage disposal and waste disposal. Brazil's Amazon forest cover has lost an average of 17,600 kilometers since 1995. The people in Amazon also suffer from inadequate sanitary conditions in Brazil. There are 113 million urban residents, 20 million have no running water, and 60 million have problems with good disposal of waste (Da Silva & Prasad 2019).

Brazil has to establish sustainable development plans and policies such as the Brazilian Agenda 21, a 'social agreement,' signed by the Brazilian President in July 2002. The goal is to securing the sustainable resources of water biodiversity and forestry. Brazil has also implemented, through environmental regulation, various sustainable development actions (Jabbour et al 2012).

These actions are, The 1998 Environmental Offences Act, which establishing a range of administrative and criminal offenses. The fine was $50 million could be imposed for crimes from illicit logging and slaughter of wild animals. In addition, prison terms were imposed on industrial pollution and graffiti. Although attempts to combat environmental concerns have been lifted, there have been other obstacles. For example the prioritization of economic stability above environmental activities that have severely harmed Brazil's sustainability.

Iraq is one of the countries that has suffered from different serious environmental problems. Many reasons have led to this result such as wars and civil conflict. In addition, the climate change and the shortage in water resources. Big part of green areas in Iraq suffer from desertification. Even with this bad situation, the central government of Iraq do not pay attention to the environment damage (Abdulla et al. 2020).

However, the local government of Erbil, which is located in the north part of Iraq, has started a treatment program to the environment. The program is designed based on the principles of GMS. Its goal is to achieve sustainable development in Erbil.

Even this program is not enough, but it still a good attempt to solve the serious environment's problems in Iraq. This study is, therefore, intended to investigate the influence of green management program that is applied in Erbil, Iraq on its sustainable development.

1.2 The Study Problem

The GMS is one of the core objectives of many economies today. Economies that are guided by GMS, specially, green firm initiatives usually aim to solve environmental and social harms. These economies employ ideas and practices, which advance their residents' excellence of life. These techniques are developed to conserve natural resources, minimize greenhouse gas output and lower company owners' expenditures (Xie 2012).

Due to different environmental problems, the demand to become green has grown. That helps leading to the use of green strategies by many organizations across the world. Most countries now working hard to solve problems such as emissions of carbon, global warming. In addition, they try to reduce the use of hazardous materials and the lack of resources,

The recent pollution index in Iraq was reported by the Ministry of Environment in Iraq based on information from Numbeo website, which deals with the standard of living for countries in the world. The report stated that the pollution index in Iraq is high, while pointing out that the quality of green spaces and parks is low. The report stated, according to the latest update last February, that the pollution index in Iraq is 79.43%. The report indicated that the air pollution in Iraq is 71.37%, which is high. In addition, the drinking water pollution is also high at 62.07%.

Going green was one of Erbil's methods to recycle, minimize and re-use natural resources, mostly through industrial use. The goal is to regulate the amount of natural resources lost by human activities. With the increased industrialization in Erbil, there must be environmental effects are bound to continue happening (Abdulla et al. 2020). Hence, there are two main study problems. The first problem is the need to

examine the impact of green management strategies on the sustainability development in Erbil, Iraq. Second, the literature is lack of studies that statistically test the effect of GMS on sustainability development in Iraq.

1.3 The Study General Objectives

This study is to conduct a comprehensive assessment of the influence of the green management approach on long-term growth. The inquiry analyzes a case study of the Erbil, Iraq. Thus, this study is guided by three objectives. The first objective is to identify the benefits of green management to sustainable development (SD) in Erbil, Iraq. The second objective is to identify the challenges encountered while ensuring green management of Erbil, Iraq. Finally, to explore the relationship between green management and sustainable development of Erbil, Iraq.

1.4 The Study Purpose/Importance and Contribution

The purpose of the study is to statistically test the impact of green management strategies on sustainable development in Erbil, Iraq. Therefore, the study will fully examine the benefits of green management, its challenges and its relationship with sustainable Development of Erbil, Iraq. The examine can be accomplished according with a predetermined set of research objectives or questions.

The significance of the examine is to assist the managers of Erbil's GMS application improve their work to get the best results. The study contribution of the study is to provide statistical analysis method to test the impact of GMS on SD, which can be used in future research about Iraq. That can cover the gap of studies in the literature about the role of GMS on SD in Iraq.

1.5 The Study Questions

As per the study objectives in (1.3) above, the study was guided by three questions. These questions are:

1. What are the benefits of green management to sustainable development in Erbil, Iraq? 2. What are the challenges encountered while ensuring green management in Erbil, Iraq?

3. Is there a relationship between GM and SD in Erbil, Iraq?

4. Is there a statistical effect of green management on sustainable development in Erbil, Iraq?

1.6 Research Hypothesis

The study hypothesis is:

H_0: There existed green management program has insignificant impact on sustainable development in Erbil, Iraq.

H_1: There existed green management can positively effect the sustainable development in Erbil, Iraq.

1.7 The Scope of the Study

1.7.1 Content scope

The scope provided for the boundary of the study in terms of depth investigation in line with the general objective, the study assess the following:

- Establishing the benefits of green management on sustainable development.
- The challenges encountered in ensuring green management.
- The relationship between green management strategies and sustainable development.

1.7.2 Geographical scope

This study considered collecting all the necessary data in reference to Erbil city as the study case. Erbil city is the largest province in the part of Iraq. It is the main city of the north part of Iraq. Its population is around 1.5 million people as of 2020 (Wikipedia 2021).

1.8 Significance of the Study

Academics are among those who benefited from this study. The findings of the study would be beneficial in directing students and other readers/researchers for further and future referencing. They can, as a starting place, do similar research on the issue and

contribute to their current knowledge. They can focus their efforts on areas that are not addressed by this study.

Policy makers are also among those who benefited from this study. Green strategies are one of the main initiatives in industries and the world's economy. The study would, therefore be important to various stakeholders.

Specifically, the economists and policy makers as it would largely avail the required information as basis. In addition, it would be a guide to policy formulation and reforms to sustainable development in Urban Cities.

Thus, the recommendations on how green management strategy impacts sustainable development can be of great significance. As feasible policies can be formulated to address those loopholes in the system and streamline sustainable development. As well, the findings of this study would be significant to policy makers to help them formulate policies that would empower economies towards sustainability.

Finally, the academic fraternity would find the study relevant as it would help them recognize the value of green strategies towards sustainable development. Thereby, creating research opportunities in areas that have not been given full coverage.

1.9 Literature Review

This section presented a number of the beyond studies inside the literature which are related to the have a look at topic. Literature on inexperienced control strategies may be mentioned from theoretical and empirical assessment perspectives. The theories and empirical research may be useful in knowledge the beliefs and facts, that may guide this observe. The review includes the benefits of GMS to sustainable development, and reason for green management strategies. In addition, it includes the challenges encountered while ensuring green management strategies. Furthermore, the relationship between green management and sustainable development.

Scholars have reported an upward trend on institution of green strategies in businesses for sustainability. They presented different related theories in their studies. The goal of these theories is to provide better understanding to the greening management. In addition, to help the practitioners in green practices success in their tasks. Examples of these theories are the natural resource-based, the resource-based theory, and the institution theory.

1.9.1 Resource based view theory

The Resource Based View (RBV) model says that it adds to the capacity of a company to develop and sustain competitive advantages.

In addition, its achievements are via identification and possession of internal strategic resources (Madhani 2010).

Penrose (1959) maintains that the resource-based perspective theory views the company as a resource package. In this package, the organizations must have the proper resource setup and flow to sustain and improve their performance from their surroundings.

Crook et al. (2008) further stressed that resource is recognized as strategic when it satisfies certain requirements. It should be valuable, non-replaceable, uncommon or particular, and be distinctive in order to help enhance the company's operations. Value refers to the degree to which resources are matched with the outside world to benefit from opportunities and reduce risks.

The level to which rivals are unable to provide similar resources is non-substantivizes. The RBV model argues that companies strive to discover strategic ways of enhancing competitiveness. In addition, using these resources to exploit their value (Sirmon, Hitt & Ireland, 2007). Resources also require effective management and exploitation in a competitive business climate. That should be in light of the changing external circumstances facing a company (Lippman & Rumelt 2003).

Hart (1995) stated that RBV model may be used to illustrate the benefits of implementing green strategies and environmental efforts in industry. In the future, companies will inevitably be restricted and environmentally reliant. Strategy and competitive advantage will probably be strengthened by the competencies. That could enable a natural resource-based vision of the company to achieve sustainable economic activity.

1.9.2 Institutional theory of the firm

According to Hirsch (1975), the institutional theory examines how external variables affect a business. This theory says that institutions functions are inside a social structure. It indicates that a major attraction driving the behavior of a firm is a social

element, and it is built into institutions and unified networks (Lacobucci & Hopkins 1992).

Institutional theory drivers are coercive, regulatory and mimetic, according to (Powell et al. 1983). The stimuli employed by powerful people, particularly governmental entities, are coercive isomorphism (Rivera & De 2004). Companies adapt to be considered legal, particularly in relation to environmental management practices as a consequence of isomorphic regulatory drives (Ball & Craig 2010).

On the other hand, Mimetic isomorphic drives occur when organizations in an effort to emulate their success, duplicate the actions of successful competitors (Aerts et al. 2006).

Institutional theory describes how a company deals with greening problems because of external forces. Businesses submit to institutional restrictions, while yet striving for economic production to retain their social validity. Environmental guidelines cover environmental legislation, performance and many defined administrative rules. Companies in the conduct of green projects must follow these rules (Jennings & Zandbergen 1995).

This model is also useful to show how different companies are under pressure to become ecologically friendly in industry. This includes customer demand, increasing environmental regulations, managerial concerns with ethics, and customer satisfaction.

1.9.3 Examples of studies related to the study topic

The paper by Dao et al. (2011) showed that the sustainability has become very important to businesses over the past decades. The reason for that is the rapid decrease in natural resources and increase in social responsibility. The main objective of the study is to evaluate the effects of businesses' performance on the environment. The study used the resource-based view as the theoretical method. It developed sustainability framework including the integration of human, supply chain, and IT resources.

These issues can help firms develop sustainability capabilities and deliver sustainable Values to stakeholders. In addition, it helps companies advantage sustainable aggressive benefits. The examine tests the function of statistics transform, and IT

infrastructure resources within the developing sustainable capabilities. The results of the have a look at showed that IT has big role in sustainability through the reduction in energy consumption.

The paper by Alfred and Adam (2009) showed that the green management is not only for businesses, but also for school students. The study indicated that green management should be formally in curriculum, instructional materials, and faculty careers. The paper showed that green management is very important for many reasons. First, it is important because it helps managers to use resources efficiently, and protect the environment. Second, Adopting green management could reduce the air and water pollution. Third, It can save energy, minerals, and other materials that are used in the consume goods. Fourth, it can help recycle and reuse these goods.

The paper by Albino et al. (2009) showed that green management could play an important role in the environmental sustainability.

The paper investigated the impact of green products that were adopted by some companies on sustainable development. The study developed a measure for environmental strategies and for the green product development.

The study methodology depended on the analysis of companies' websites and related documents. For example, it used the reports of environmental and sustainability. The results of the study indicated that green product developers were adopting different environmental strategic more than non-green product developers. The results also showed that the green strategies of green product developers vary depending on the economic sector.

The study by Amrutha and Geetha, (2020) was focusing on the recent progressions in Green Human Resource Management. The study investigated the role of green practices in achieving the social sustainability that are required by organizations. The study particularly focused on practices of the green human resource. Specifically, it set workplace with green behavior at the organization. The results of the study showed that role of applying green behavior at workplace is moderate in term of the relationship between green human resource and the sustainability of organizations.

The study by Çankaya and Sezen (2019) tested the impact of the green supply chain management on corporate sustainability. The corporate sustainability was represented by three dimensions, which have been financial, environmental and

social overall performance. The examine confirmed that 8 dimensions represented green supply chain control. The eight dimensions were green purchasing, green manufacturing, and green distribution. In addition, green packaging, green marketing, environmental education, and internal environmental management. The study used questionnaire to collect data. The results showed that all eight dimensions (except green purchasing) were related with one or more of the sustainability dimensions.

The study by Midilli et al. (2006) tested the role of green energy strategies in sustainable development. The study used seven green energy strategies to determine their effects on Sectoral, technological, and application effect ratios. The take a look at evolved new measure for as the inexperienced energy impact ratio.

The outcomes confirmed that the sustainable power techniques should have an crucial contribution to green energy including wind and sun, tidal. The examine counseled that countries should investing green energy for more sustainable development.

The study by Hwang and Tan (2012) indicated that green building construction had significantly increased over time in Singapore's construction industry. The study aimed to determine the obstacles facing green construction projects in Singapore. It also aimed to provide solutions to overcome the barriers. The results of the study showed that project cost is the main barrier in green building construction. However, Singapore's construction industry has good sustainable knowledge. The study suggested that government incentives could be good solution to the cost problem.

1.10 The Study Plan

This Chapter offered contextual history and described the problem announcement. In addition, it provided the objective of the examine and hypothesis, the potential contribution of the have a look at, in addition to the literature assessment. Chapter two expounds at the theoretical literature related to the GMS. Chapter three presents the theoretical literature related to the sustainable development. The development of the conceptual framework, the research methodology will be presented in chapter four.

2. GREEN MANAGEMENT STRATEGY

2.1 Introduction

There has been little study on the definition and meaning of green management. When it is given in the literature, the notion is usually imprecise or incomplete. Rather, many Teachers have centered on environmental control and Environmental Management Systems (EMS). These techniques are used to improve environmental and commercial overall performance (Florida & Davison 2001).

Green control terminology additionally contains a diffusion of practices which includes company environmentalism, environmental management, and company sustainability. That makes it difficult to have a universally accepted definition because other authors also define these terminologies independently (Darnall et al. 2008).

However, some writers who have defined this idea highlighted in their studies that green management comprises methods that generate ecologically friendly goods. In addition, it reduces environmental effects through green production, green research and development (Peng & Lin 2008).

Green management has been defined by means of a continual training and development that incorporates the environmental goals and strategies, fully integrated with the goals and strategies of the organization, as an organizational process of applying innovation to achieve sustainability and waste reduction and social accountability.

2.2 Scope of Green Management

Green management refers to problems such as ecological concerns, conservation (both of The earth and of animals). It additionally refer to Corporate Social Responsibility (CSR), humanitarian issues, clean water, equality, and sustainability. Each of these subjects is vast and complicated on its own. Green Management

Strategies (GMS) encompass a extensive range of specialists from many disciplines (Cruz & Pedrozo 2009).

In terms of health and medicine, GMS may indicate harm to human health, nevertheless, for business professionals.

The idea may additionally relate to aligning corporate environmental overall performance with stakeholder expectations. Furthermore, the usage of inexperienced in products has sparked a controversy wherein things deemed inexperienced can be friendly in certain ways. However, dangerous is disregarding them as green in nature (Chías & Abad 2017).

Compliance with regulatory standards or a simple initiative to reduce paper consumption (i.E., requiring that every one photocopying be double sided) is viewed as inexperienced control through some researchers. However, others may additionally trust that inexperienced management involves corporate strategies, organizational restructuring, or a whole overhaul of manufacturing procedures (Merino et al. 2020).

According to Banerjee (2001), environmentally primarily based techniques evolve from reactive to proactive with companies. They are either resisting or simply complying with environmental regulations. They may be the use of environmental issues as a chance to be inventive and reap a aggressive part.

Researchers have recognized all environmental strategy fashions, typologies, and classifications of green management. When a study uncovers additional information regarding green management, it means that a single fundamental definition cannot adequately represent the idea. It may be built of multiple forms of green management (Hass 1996; Freeman, Pierce, & Dodd, 2000).

2.3 Green Management and Sustainability

Environmental or green management has emerged as a key objective for every firm seeking a competitive edge. Green management techniques participates in recycling to minimize the amount of pollution, and trash thrown in landfills. In addition, utilize renewable energy to reduce emissions in the air. It have proven successful in reducing the detrimental consequences of human activities on our environment (Haden et al. 2009).

Green control is an organization-extensive technique of making use of innovation to attain sustainability, waste reduction, and social obligation. In addition, to attain competitive advantages thru continuous getting to know and development. Finally, it is embracing environmental goals and strategies which can be fully included with the business enterprise's desires and strategies.

The concept of GMS clearly underlines that green management has various names. For example, corporate sustainability, sustainable development, and social responsibility. Sustainable development is described as a development that meets the requirements of the present. It should be achieved without risking the capacity to respond to our own needs. In addition, it works at three levels, which are conservation of the environment, economic growth, and social equity (Hage & Taruna 2016).

Green management decreases pollutants and carbon emissions, both of which contribute significantly to the warming impact on Planet Earth. Green management, which includes recycling, reducing, and reusing, aims to decrease the burden of pollution caused by human activity, particularly industrial operations. Therefore, a modified green technology with environmentally acceptable corporate strategies is needed.

2.4 Approaches of Green Management

Green management examines how industrial operations are made to be environmentally friendly with nature. For example, the have limiting emissions and minimum organizational wastes. Renewable energy and recycling initiatives are two of these approaches.

2.4.1 Recycling waste as a green management strategy

Recycling is mainly concerned with the collection of valuable waste materials. These waste materials can be paper, glass, plastics and metals, which can be used in new products. Thereby, reducing the necessary quantities of fresh raw material. Generating recycled white paper generates 74% less air pollution than virgin fiber paper and 35% less water pollution. The use of used canisters to make aluminum containers instead of mining can decreases air pollution of 95% and water pollution by 97%. Recycling and remanufacturing are 194 times more effective in reducing

greenhouse gas emissions than waste disposal and new production (IDEM Fact Sheet, 2021).

Recycling is one of the most important green management techniques since trash has a huge negative influence on the natural environment. Waste that is not recycled releases hazardous chemicals and greenhouse gases into the environment. That can sometimes damage the society's climatic circumstances due to global warming. Recycling helps to minimize pollution produced by trash, and lessens the demand for raw materials. It can also preserving rain forests for future use and the welfare of the community (Yang et al. 2012).

Recycling is a simple approach for individuals to minimize trash, conserve energy, and protect natural resources. Three aspects must be balanced, collecting, manufacturing, and procurement recycled, to completely achieve recycling is advantages. This includes recycling (Hopewell et al. 2009):

1. Collection, sorting and processing of waste items.

2. Transformation into new commodities of discarded resources.

3. Purchase of recycled materials items.

The Community collections and the private recycling facility often take consumer items such as aluminum, plastics, glass, cardboard and steel. Recycling and purchasing recycled goods help to create jobs in the recycling and manufacturing industries. In addition, conserve water and other natural resources, and reduce pollution generated during raw material harvesting. It can also reduce energy needs for the manufacturing of many new products, and reduce the number of waste materials sent to landfills and incinerators (Steel 1999).

2.4.2 Renewable energy as a green management approach

Renewable energy is energy derived from renewable resources that are regenerated naturally on a human timeframe. For example, sunshine, wind, rain, tides, waves, and geothermal heat. The global warming problem and other economic problems have spurred the motivation to utilize 100 percent renewable energy. They are used for power, transportation, or perhaps complete primary energy supply globally (Bull 2001).

According to REN21 (2010), renewable energy usage has risen significantly quicker than Predicted. Renewable electricity debts for extra than 20% of world electricity supply in as a minimum 30 nations.

According to the International Energy Agency (2012), the renewable technologies totaled more than $286 billion in 2015. The United States and China substantially investing in wind, hydro, solar, and biofuels. These investments provided about 7.7 million jobs. These jobs are linked to the renewable energy businesses. The solar energy has the largest share of renewable employment.

Rapid renewable energy and energy efficiency deployment is bringing in considerable energy security, climate change mitigation, and economic advantages.

Rapid deployment of renewable power and power efficiency, at the side of technical diversification of power sources, could result in financial and safety blessings.

It might also lessen environmental pollution, such as air pollutants because of the combustion of fossil fuels. It can enhance public health with the aid of reducing premature mortality because of pollution and saving related fitness prices. That can store quantity of numerous hundred billion bucks per yr in the United States on my own (Lund 2007).

Renewable energy sources receive their electricity directly or circuitously from the solar. The heat from the sun are projected to render the earth's surface too hot to have liquid waters. For example, hydro and wind are expected to provide humanity's energy for almost another billion years (Heidari et. al., 2016).

2.5 Benefits of Green Management Strategies

Inconsiderable businesses have continued to drain the earth's natural resources in the name of profit maximization. As a result, firms have created alternate means of meeting the requirements of their consumers via the employment of green initiatives (Kinoti 2011).

According to Kinoti (2011), the significance of becoming green is to rescue the arena by way of decreasing dangerous waste, sewage, deforestation, and air pollution. That can lead to maintain and conserve finite resources for future generations. After

understanding the relevance and advantages of green management techniques, the majority of worldwide businesses have adopted them.

Majority of international firms have resorted to green management strategies. They did that after realizing their importance and their benefits. For example, some big companies such as Tata Steel is using nanotechnology in its products to reduce the emissions (Kumar 2011). The International Labor Organization in Geneva (2015) indicates the following as the benefits of operating a green business or going green:

2.5.1 A growing market and heightened desire

There is increasing demand for green products and services for a number of reasons. Customers are increasingly concerned about clean production techniques, appropriate environmental inputs and how companies dispose of their waste owing to ethnic issues. In addition, the market wants very quickly material and energy-efficient as well as environmentally friendly goods and services.

This is based on the fact that clients are aware of the reduced operating costs of highly efficient products. This is caused not only by lower cost for the use, but also by other advantages For example, energy-efficient light bulbs reduce the power charges for users and require lower frequencies. In addition, solar lanterns provide higher and more pure light than kerosene light bulbs and can also be recharged for free. Therefore, green enterprises supply green technology that may profit on this growing need on the market.

2.5.2 Enhanced efficiency and reductions in company costs

A green approach can cut expenses and increase the productivity of the company. In other words, it can generate more with the same number of inputs. A company that decreases material costs, energy expenses, water costs and other wastewater costs becomes more efficient, less expensive and more productive. For example, if the company is able to cut energy expenses via efficient equipment or technology and its overall cost of production, it may increase its profit margin or reduce its prices to attract new consumers.

2.5.3 A healthier and more productive workforce

Workers working in an ecologically harmful company will generally have less health problems than those working in traditional enterprises. For instance, indoor air pollution may create acute health concerns in companies using harmful chemicals. The health problems can be sickness, headache and dizziness, as well as long-term health effects such as lung damage.

If the problems are handled, the manufacturing processes will not stop. The business will not waste time and resources with minimal interruption. Workers will also be more productive due of health risks that they are not worried about. The greening of the processes can therefore lead to fewer absences in the form of a sick leave or to a reduced incidence of job loss, since the personnel can work in healthy condition.

2.5.4 Access to financial incentives and other support measurement

Different nations have created laws and initiatives aimed at transferring them to an economy with a decreased environmental adverse effect.

Policies, legislation and regulations were established to save the environment. Their goals are to deter conventional companies from excessive energy consumption, and high pollution.

Polluting activities in some nations might be subject to penalties, and taxes can be levied on fuels like diesel or petrol. However, there are now growing favorable incentives for promoting cleaner corporate processes and encouraging burgeoning green sectors. For example, renewable energy, eco-agriculture and green tourism. As a result, green firms may frequently benefit from a variety of initiatives aimed at promoting green growth.

This might, for example, include tax cuts, access to attractive financial instruments. In addition, it can be low-interest loans for green enterprises or incentives for the changeover to environmentally friendly new technology. Sellitto et al. (2020) had also identified the following as advantages for a green process in its commercial operations by an organization or country:

- Sustainable development; assembly the desires of the present with out compromising the capability of destiny generations to fulfill their wishes.

- Personal Rewards; green products offer customers with the blessings of healthier, extra fulfilled lives and strength to make the world a better region.
- Competitive gain; businesses that are first to put their environmental innovation at the shelf enjoys aggressive benefit.
- Profitability; green based totally merchandise create less waste, use fewer raw substances, and saves electricity.
- Increased market share; emblem loyalty is close to all-time low. Consumers regarded enterprise's record on the environment as an vital determinant of their buy choice.
- Better merchandise; Green based merchandise are better in quality in phrases of energy saving, overall performance, comfort, protection, to mention.
- Better bodily surroundings; nicely-coordinated use of all inexperienced advertising strategies will bring about better bodily environment. That is in terms of reduced air and water pollution, waste energy depletion, global warming, deforestation, depletion of natural resources, and rate of landfills.

2.6 Reasons for Green Management

With increasing air pollution worldwide, many countries have chosen to green up by putting green management techniques into practice. Hage & Taruna (2016) underline that certain causes for the fast growth of these statistics are;

2.6.1 Social responsibility

Morally and ethically, every business entity has an obligation to examine the welfare of its society. In other words, they focus on issues that have an impact on the company, and thus contribute to a solution to the problem.

The business entity must take precedence. Today, the globe is facing challenges of environmental deterioration of air, land and water. That has been generated since its creation in the eighteenth century by the exploitation of the industries. Companies must choose green programs and plans to address social needs from now on.

For example, Shell committed to pay approximately $84 for the disastrous consequences of the spills. In 2015, Shell Petroleum Development Company in Bodo

village in the Nigen Delta region cleared up large crude oil waste for roughly $500 million, which will take up to 10 years (Yomi, 2018).

2.6.2 International standard norm

In order to decrease further pollution emissions, the ISO has legislated on various rules and regulations. Its members should follow in order to minimize further pollution emissions. In this connection, they have adopted a number of rules and regulations. Certification is given to improve compliance with environmental standards.

Specific types of new green and clean technical innovations consisting of new goods. The goal is to decrease environmental burdens of the environmental product and process innovations. ISO certificate contains a statement and comment on the efficacy and effectiveness of business operations.

2.6.3 Statutory law

Laws to preserve and prevent natural environments have been modified by numerous environmental and regulating state organizations. These regulations are important to safeguard society's interest and play a major part in green management strategies.

The firms must be given the capacity to produce and revise air and water quality standards. In addition, effluent restrictions control of hazardous chemicals. In addition, control the other kinds of environmental and sanitary contamination to meet government policies. These regulations also restrict the release into the environment of dangerous chemicals.

2.6.4 Growth and opportunity

Normally, firms that tend to conquer the requirement of their customers and society more environmentally friendly. Environmental organizations, which establish another section of the niche market, gain greater market share. In addition, they increase the growth of the company. Many firms have identified a new revenue stream or finally new product through sustainable initiatives. It helps to generate a kind of environmental pressure, by becoming green, that some of them are a booster of the company's endeavor.

2.6.5 Competition

Companies are obliged to embrace green management because of growing competition, and retain a competitive position in the market. Greening leads the competitive arena of businesses, and also enables firms to manage risks better. In addition, to use the resource more effectively in entering a new market and enhance their competitive position.

2.7 Challenges in Green Management

Green management undertakes to safeguard environmental quality and the management of resources. During the implementation of green management strategies, many literatures point out problems for companies. Therefore, they need to bear in mind certain counter-activities in the workings of the green initiative. The following are the problems discovered after a comprehensive examination of related information and literature:

1. The execution of a green plan requires a very high degree of management and technical know-how with qualified specialist personnel. That is one of the main problems facing green management (Callenbach et al., 1993). When companies copy the strategy of rival in green, they will commit the same faults their leader made (Polonsky & Jay 1994). Bradley et al., (1993) states that companies need to establish a program and event with new environmental initiatives.

That should have a strong and effective influence on sustainable competition.

2. Daily & Huang (2001) said that the environmental management system could only be implemented effectively if the company has the appropriate people with the correct skills and competence at the right time.

3. Green management is an important long-term investment opportunity. Therefore, investors should consider the long-term advantages of this new green imitation. This indicates that it requires a lot of patience and effort as there will be no quick benefits. That is because the concept takes time to embrace it in company (Mendelsonand & Pillai 1999).

4. Since green management is a new idea for many individuals all over the world, care, control and expenses are needed to manage and execute it in an appropriate way (Collins & Clark 2003)

5. A difficulty is the knowledge gap in green management among the most underdeveloped and developed nations. Therefore, it is difficult to execute such green management strategies in their countries. That is because these nations lack the expertise and knowledge of green management methods. Green management is a novel idea for a wide range of publics and so awareness and information on environmental dangers and impacts has to be created and educated.

6. Finally, most of the consumers may not embrace the green marketing idea employed by companies (Polonsky & Jay, 1994).

2.8 Relationship of Green Management and Sustainable Development

Green literature indicates that there is a substantial link between GMS and sustainable development strategies. Environmentally sound companies are achieving stronger and better outcomes in the total conservation of resources. However, those with no green management methods are simply experiencing bad environmental health effects. Empirical research examining the link between Green and Sustainable Development are divided into several industries (McCrea 2010).

Murphy (2002) said that green management had a major impact on sustainable development. That is because the improvement on green gas emissions to environmental pollution that could lead to global warming would have an impact on the environment. In addition, it can support the industries.

Thomas & Suhong (2014) research of green businesses' impact on sustainability performance of top 500 American firms. The paper revealed that manufacturing businesses have achieved less in terms of environmental impacts and more in terms of the green reputation they have achieved.

Most research show that the positive connection between green management and organizational sustainability. However, some of the conclusions are inconsistent. For example, Kiernan (2001) and Derwall et al. (2005). Found unclear connection between green management and organizational sustainability

Thomas & Suhong (2014) suggest that integrating environmental efforts creates unrecoverable costs, distracting resources. In addition, unsustainable from other profitable expenditures. Recently, most companies are working under high competition, and high community pressure. That can lead to put more pressure on the environmental sustainability, which requires special strategies to deal with these challanges.

The goal is to reduce the environmental effects by the inconsistency in empirical research on how green administration affects sustainable development. This was why the study carried out was necessary.

2.9 Summary of the Literature Review

For sustainable growth, the future of green management seems hopeful. Green management is part of the revolutionary movement, which brings together the usefulness and the promotion of human growth in terms of sustainability. Its main value is to transform green anarchists and intentional environmental justice into other livelihoods owing to the cultural exploitation of commercial activities.

Greening also provides the employers with a valuable role in making them aware and concerned about preserving natural resources. It adds to the management of polluting carbon emissions. It currently serves an important role in balancing human progress and the natural environment. Nevertheless, numerous prominent reasons, facilitators and obstacles affect employers' interest about the protection of natural resources.

They may give reasons for discrepancies found in earlier research. The research informs, however, of the key predictors of sustainable development green management techniques. In this manner, it helps policymakers, authorities and managers to formulate and implement green procurement policies to improve development sustainability.

3. SUSTAINABLE DEVELOPMENT

3.1 Introduction

The second half of the twentieth century was associated with rapid increase in the scientific and technical developments. The processes of created a basic rule to form the new human civilization were characterized by superior achievements. For example, the use of computer technologies and means of communication. In addition, the other technical achievements that have gained the attention of many observers. However, the processes of getting these amazing technologies neglected for long time the problems that are related to the human survival under safe conditions (Elliott 2012).

The crises in the global environmental aspects introduced new situation. In other words, the interest in these problems has decreased by scientific and political communities. The absence of good tools to solve these problems has made the situation to be worse. The uncontrolled developments accompanying industrial development contributed greatly to the increase in environmental problems such as desertification, poverty and inequality (Blewitt 2012).

After the exacerbation of these problems, most developed countries, in cooperation with international organizations concerned with environmental issues. They started a series of policies that aimed at stopping or reducing these problems. That was the first point of starting the concept of sustainable development (SD).

Today, sustainable development has become one of the ways and patterns of life. It was adopted by most countries of the world, which is characterized by rapid changes. Most countries Started protecting their resources, while spreading environmental awareness. In addition, the work on achieving the optimal use of natural and human resources (Sachs 2015).

3.2 The Concept of SD

The term development is defined as the ability of government and organizations to increase the available resources.

For example, increase the economic resources, and the human resources. It is also includes the consolidation of these resources. The aim is to achieve higher production results to meet the basic needs of the majority of people. It aims to enable them to present their demands and rights to governments (Chichilnisky 1997).

The concept of development is applied at the populist and societal level. It can also be applied at the level of individuals. For example, developing the individual himself, developing his cognitive, cultural, and productive capabilities. In addition, enriching them in proportion to the requirements of modern civil life. Understanding issues such as sustainable development is important and necessary in understanding a large part of the broad concept of development (Sneddon et al. 2006).

The concept of sustainable development (SD) has become more familiar and used. The World Commission on Environment and Development (WCED) reported a general definition to SD. Its definition presents SD as development that meets the needs of the present generations, without compromising the ability of future generations to meet their own needs. This definition helped to understand that SD has several pillars to achieve, (Blewitt 2012). Thy are:

- Keep the environment safe.
- Working hard to satisfy the needs of people.
- Applying and keeping social justice.
- Maintaining the social unity.

This definition indicates that SD has different areas. For example, it has economic, social and ecological areas. The main concept of SD represents deep dimension at individual level. That is because it is considered as an investment in the human capital.

Investing and developing them from the social, cognitive and economic aspects can lead to create a unity in the society. It also can help achieving high level of society well-being. This can happen under some conditions, such as the existanceof property

rights. That is because they can encourages development and economic growth (Hardi & Zdan 1997).

The SD is also defined as the enables the satisfaction of the needs of current generations and their well-being (including the poor). That must not be associated with compromising the ability of future generations to satisfy their needs.

It is taking into account the challenges of preserving ecosystems and the limited renewable natural resources (Rao 1999).

Historically, the term (sustainable development) first appeared in a publication issued by the International Union for Conservation of the Environment in 1980. However, it was not widely known until after it was reused in the report that is known as the "Brundland Report". The Commission Global Environment and Development Organization of the United Nations issued this report in 1987. It was under the auspices of the then Prime Minister of Norway Gro Harlem Brundtland (Keiner 2005).

The report defined SD as the process of development that responds to the present generation needs. The process should keep the future generations ability to meet their needs. This definition focuses on two important ideas. The first idea is the need itself. That refers to the basic needs of different social groups. The second idea focuses on the limited ability. It refers to the limited ability of the environment in responding to people current and future needs. This limitation is coming from the shortage in production and consumption, and available of new technologies.

The economic definition of SD is related to traditional ideas of development in several ways. It includes the value of environmental assets, the importance of maintaining services, and the basic environment and natural capital. Thus, the involvement of the environment dimension in the concepts of development has become necessary (Gechev 2005).

Some economic definitions of sustainable development focus on the optimal management of natural resources. In other words, focusing on maximizing the gains from economic activities. However, that must be under the condition of keeping the quality of natural resources preserved for long time.

Robert Solow, who's winner of the 1989 Nobel Prize in Economics, described SD because the technique that make sure now not harming the productive capability of

destiny generations. In addition,leaving these resources in the state inherited by the current generation. Robert Solow indicated an important idea. He indicated that SD is not only taking care of the resources for future generations, but also paying attention to the quality of the future environment.

In the social concept of SD, the human rights constitute an indispensable basis for achieving sustainable development.

The Declaration on the Right to Development emphasizes that the right of every individual and all peoples to free, active and purposeful participation (Hediger 2000).

The UN Guiding Principles on Business and Human Rights indicated the responsibilities of governments and private companies to ensure that business does not violate human rights. Civil, cultural, economic, political and social rights and the right to development are interdependent and advance together.

The freedom of individuals does not depend only on the extent of freedom they enjoy in expression and objection. The individuals are not truly free without food, education and adequate housing. Individuals who have access to basic social safeguards, resources, and economic opportunities are less vulnerable to societal division and the spread of extremism.

Many countries neglected social protection and concentrated wealth and political power in the hands of a small group of people. That can increase the wasteful growth and environmental degradation. In addition, it accelerates climate change with adverse effects on health, access to water, sanitation, food, housing and land rights. The poorest groups, which contribute the least to climate change, pay the highest price for its effects.

3.3 The SD Dimensions

The SD has three main dimensions, which are shown in figure (3.1). They are discussed as following (Pawłowski 2008):

1. The economic dimension:

It is related to the production of all human needs, and people well-being. In other words, it requires increasing productivity and available technologies. That can be

done by supporting research. It also requires that businesses invest and adopt new management methods that can increase their productivities.

2. The social dimension:

This dimension is focusing on ensuring growth by fair distribution of wealth between people. For example, using fair taxes, and provide good social protections. That can provide the rights for all people within a society. In addition, it can prevent discrimination in getting resources and services and reduce the life risks.

3. The environment dimension:

This dimension focuses on lowering the bad results of manufacturing strategies on surroundings. Doing that calls for rational use of non-renewable assets, expand the use of renewable resources, and recycling the waste.

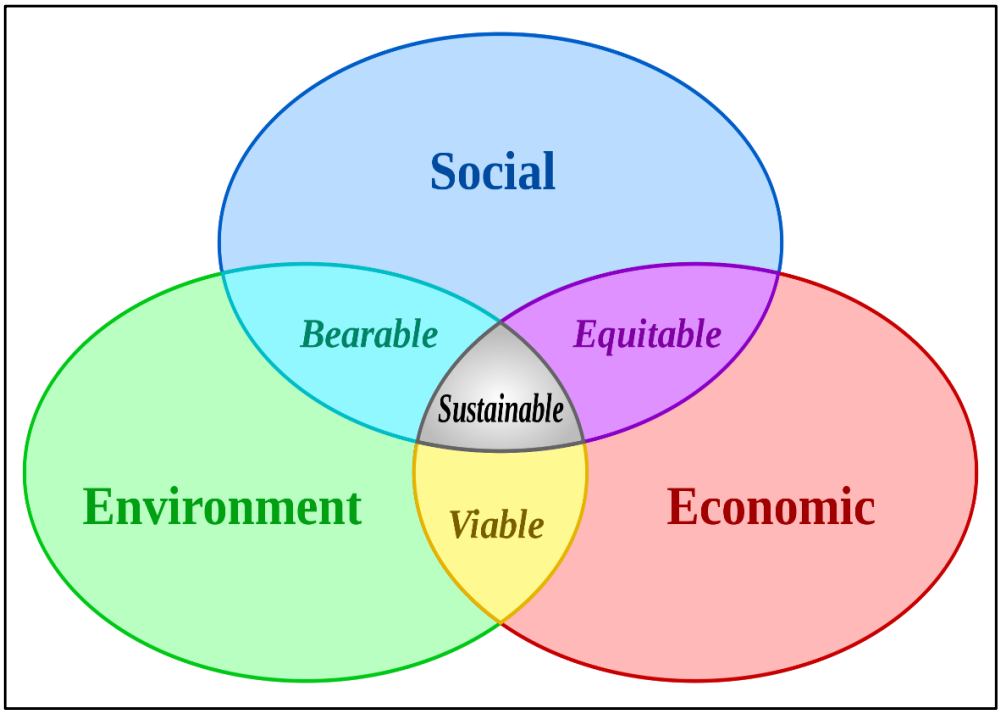

Figure 3.1: The sustainable development dimensions.
Source: https://commons.wikimedia.org/wiki.

3.4 The Differences between Growth and SD

It is important to understand the differences between economic growth and SD. Economic growth does not necessarily mean an improvement in the welfare. As the results of economic growth may affect part of society members without others. That

is because of the unfair distribution of wealth, and the predominance of corruption in some economies, that would increase the size of inequality within a single society (Soubbotina 2004).

As a result, part of that society will feel exclusion and marginalization in exchange for a few monopolizing wealth. In addition, there will be manifestations of extreme wealth and manifestations of misery and extreme poverty in some areas.

All of these will lead societies to lose their cohesion and ability to coexist. In addition, threatens to lose their political, security, and therefore economic stability as well.

That will prevents the sustainability of growth in itself as well as development due to the turmoil and revolutions that may occur.

Growth can often take place at the expense of the environment, specifically air, water, climate, soil and biodiversity. That is due to the emissions resulting from some industrial activities of polluting gases that cause global warming.

In addition, it cause over exploitation of the soil, pollution of the waters of lakes, valleys, and oceans and groundwater (Hess 2016).

These activities lead to severe damage to the quality of the environment that current and future generations will have to live with and with the consequences of these damages. For examples, the outbreak of diseases, poor crops in quantity and quality, and economic costs. Excretion of harmful environmental phenomena such as drought, desertification and soil erosion.

The depletion of non-renewable natural resources also reduces the volume of natural capital that will be inherited by future generations. Thus, jeopardizing their ability to satisfy their basic needs as well as their health.

3.5 The Importance of Sustainable Development

Sustainable development is one of the goals that is difficult to achieve, and hard to remove Its boundaries. That is because it has many necessities, which considered as challenges. Therefore, it's miles vital to apprehend the significance of SD a good way to address it.In this regard, people are considered as the main element that derive the sustainable development.

The importance of sustainable development can be represented as following (Nunes et al. 2016):

1. Providing human needs

Providing human needs such as food, water, shelter are important human needs elements that have to be available for everyone.

2. Agricultural requirements

The agricultural requirements can be represented by the use of farming tools and techniques that lead to sustainability. For example, the use of effective seed, and crop rotation technologies. That can contribute in reducing soil erosion and keeping it healthy. In addition, it can increase the fertility and productivity.

3. Climate management

The Climate management means working on reducing the use of fossil fuel sources. For example, reducing the use of oil, coal, and natural gas. Doing that can reduce the dab effect of using them on climate.

4. Financial stability

Applying sustainable development can lead to the financial stability. For example, developing the renewable energy technologies can create new job opportunities, which provides different types of financial resources.

5. Biodiversity Protection

Applying sustainable development usually related to the investment in renewable energy. That can lead to reduce air pollution and keep plant diversity. One of these application is the organic farming practices, which do not introduce any greenhouse gases.

6. Others:

Preserve the human race and the well-being of future generations. Preserving the human and civilizational progress that has been achieved so far. Reducing the environmental degradation. Promoting the regeneration of natural resources. Reducing all kinds of pollution. Addressing social challenges such as poverty and illiteracy. Harnessing innovation and creativity to serve man and nature (Duran et al. 2015).

Furthermore, reducing the long-term financial and economic cost of environmental degradation. Forcing market experts and policy makers to include social priorities when promoting the private sector and businesses. Changing the role of companies into environmentally committed members of society. Emphasis on sustainable economic growth.

Promoting gender equality, workers' rights and job creation. Promoting healthy lifestyles and nutrition. Supporting the emergence of a circular economy based on recycling and reuse. Targeting better practices of human behavior through conscious consumption. Creating new job opportunities and markets such as recycling and clean energy. Providing responsible investment and business practices. Finally, introducing new environmentally conscious products and services.

From the remarkable global interest in sustainable development, some points can clarify the importance of sustainable development. These points are based on the view of the goals it seeks to achieve and the areas that address their problems, which are (Holmberg & Sandbrook 2019):

- Comprehensiveness of development goals

The SD is not concerned with a specific field alone. Therefore, it can be found in development work intertwining. In addition, in mutual influence between different areas of development. For example, the economic development will have an impact on social development. The industrial development may negatively affect the environmental field. Based on that, the SD will be integrated and in various fields.

- The global need for sustainable development solutions

Today’s world has problems at all environmental, social, economic, food, health and population levels. It is in dire need of immediate and future solutions to these problems. The sustainable development with the comprehensiveness of its objectives and areas of interest can be the ideal solution to the world’s problems.

- The long view to the future

It becomes clear that the sustainable development goals do not target the present only at the expense of the future and future generations. On the contrary, caring for the future and not depleting the present is the essence of the sustainable development process and its main dimension.

- International partnership

One of the most important features of SD is that its programs, plans and objectives are not limited to a specific country or continent. In addition, they are not conflict with the interest of any country. They are not affected by international political differences. It is a global plan that all countries of the world believe in and participate in.

3.6 The Goals of Sustainable Development

Many efforts were implemented to ensure the achievement of SD. These efforts were performed by many international organizations.

For example, the United Nations, and some non-government organizations.

The global sustainable improvement dreams have been introduced through the United Nations General Assembly, resolution 70/1. They constitute a fixed of motion for humans and the planet towards luxury. Their effective implementation has begun in January 2016 (Assembly 2015).

The goals have been designed to include economic, social and environmental challenges that are interconnected on a large scale. They include 17 goals and 169 targets, intended to become a package of commitments for states, societies and even individuals, to address the critical issues of humankind. It is expected that these goals and targets will be achieved by 2030. Therefore, there are concerted and vital global efforts and diligent work to achieve them.

To facilitate the achievement of these goals, localization procedures and prioritization are welcomed and encouraged by countries, institutions and societies. The most important permanent SD goals identified by these organizations are the following:

- Reducing the natural resources draining.
- Protecting the sustainability without damaging the environment.
- Investing in projects that are friendly to the environment.
- Reducing poverty.
- Ensuring good health and high-level of well-being.
- Providing high quality education for people.

- Providing pure water and develop the clean water resources.
- Building new infrastructure that support industries and innovations.
- Reducing the costs of energy without damaging the environment.
- Ensuring the social equality.

The sustainable development goals, otherwise known as the Global Goals, are a global call to action to end poverty, protect the planet. They also aim to ensure that all people enjoy peace and prosperity. These 17 goals build on the successes of the Millennium Development Goals (Hák et al. 2016).

That including new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice. Figure (3.2) shows the SDGs.

Figure 3.2: The seventeen sustainable development goals.
Source: https://tnsdg.tn.gov.in.

3.7 domains and Elements of Sustainable Development

Sustainable development is a complete concept in terms of its targets and the domains. Its goal is to create a better condition for the planet on which we live. It does that by rationalizing the use of its resources, improving the quality of living for

people. In addition, by improving the human dealings with the environment, and searching for renewable energy resources in it and not depleting its capabilities. Based on that, defining the most imortant areas of SD can be as follows (Nara et al. 2014):

1. Sustainable development in education

Within the framework of its social programs, sustainable development aims to improve education worldwide. That can be done through different programs such as eradicating illiteracy in cooperation with relevant countries. Increasing opportunities for those wishing to obtain educational attainment. Setting laws that give the right to education for children in the world.

2. Natural resources

Using natural resources and how to exploit them is one of the areas of concern for SD. The SD encourages the constant search for resources in various forms such as food, water, energy and others. It also attempts to rationalize the use of these resources in the most optimal way. That goal of that is to avoid their depletion or depletion at the expense of the future.

3. Sustainable development of energy sources

Every day, the world’s need for energy increases, as it has become the nerve and engine of modern life. The need for energy is for servicing of people and improving the quality of their lives, or for industrial, civilized and other goals. This requires preserving energy resources, searching for new resources, and investing in renewable energy sources.

4. Improving income

The sustainable development is concerned with improving people's material income. That is part of the framework of social development processes as one of the dimensions of economic development. It is also part of the need to combat poverty and poor living. However, improving income should not be leading to cases of economic inflation or financial crises.

5. The food fields

One of the important development areas is to improve the global food situation. That can done by fighting famines, achieving global food security and helping countries afflicted by wars or natural disasters.

6. Environmental fields

It is the third dimension of the SD plan, and one of its main areas. Environmental development is achieved through programs to protect the environment, maintain order and ecological balance and not influence it.

Figure (3.3) shows the areas of SD. The figure shows that the social dimension of SD includes different areas. For example, it has equal opportunities, welfare, and international solidarity. The economic dimension of SD has areas such as efficiency and economic growth. In addition, it includes flexibility and stability, production, consumption, employment and international trade.

The environment dimension of SD includes areas such as consumption of resources, materials and wastes, risks, rate of change, natural and cultural landscape.

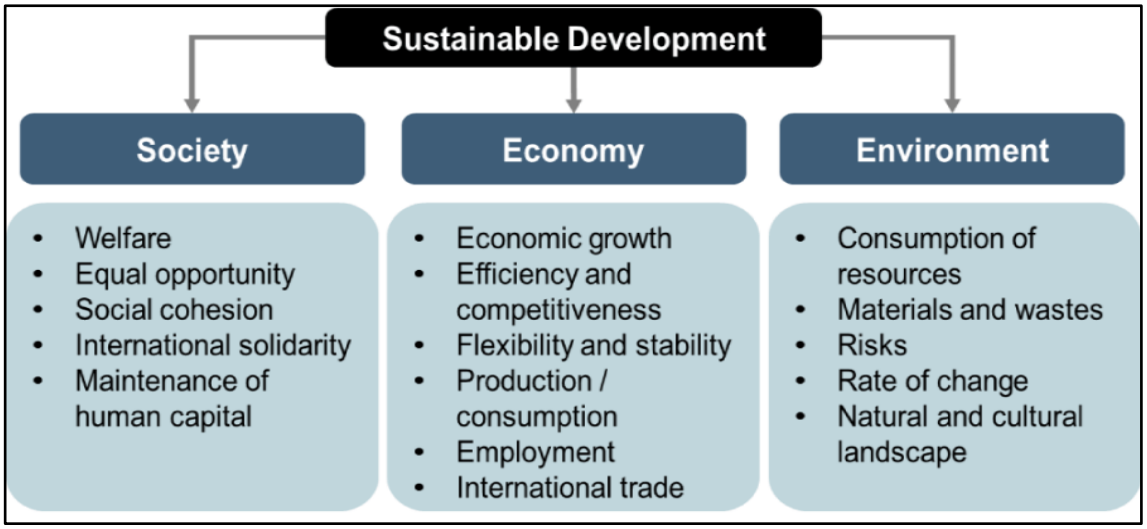

Figure 3.3: The areas of sustainable development.
Source: https://transportgeography.org.

Figure (3.4) shows the elements of SD and who they affect each other (Sustainable development Triangle).

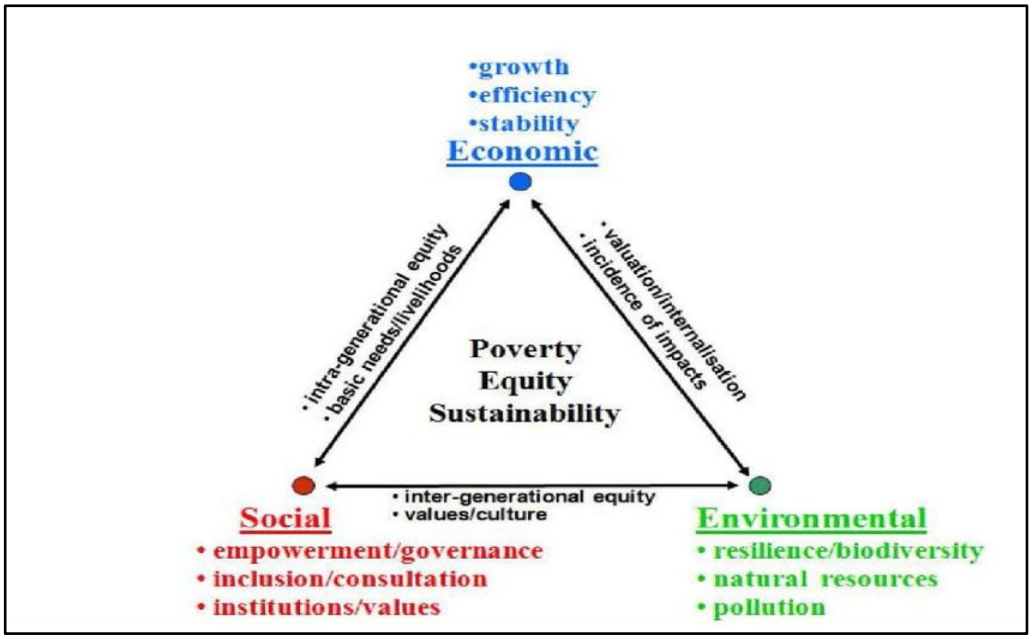

Figure 3.4: The elements of SD (Sustainable development Triangle).
Source: https://www.researchgate.net.

3.8 The Requirements of Sustainable Development

Sustainable development is a global goal that requires a lot of faith, efforts and cooperation to be achieved.

Each of the areas targeted by sustainable development needs a kind of planning. In addition, it needs an understanding of reality and a study of the future (Davidson 1996). This section summarizes some of the conditions and requirements that help in reaching this end (Griese et al. 2005; Davidson 1996; Rocha et al. 2007).

1. Creativity and innovation

No one claims that the application of the idea of SD with all its different objectives and fields is an easily accessible issue. At the same time, it is not an impossible or unrealistic issue, but rather requires serious thinking about problems. It also needs creativity in finding real solutions to these problems. For example, creating new inventions for work, improving energy, discovering new agricultural means to achieve food security, and searching for solutions to economic problems.

2. Not affecting the future

The idea of SD itself is based on the continuity of the development process in the future. This requires that no development plan or program, or development conflict

with the interests and needs of future generations. However, it requires hard work to pave the way for these generations to complete the path that started today.

3. Balance between the areas of development

As we mentioned, the SD process must be integrated in terms of the areas of development. The development process in a particular field should not negatively affect another. Development in the technological or industrial field should not negatively affect the environmental or social field.

4. Belief in the importance of sustainable development

People should have awareness of the need to achieve SD on a large scale that includes all countries of the world. This awareness and belief will motivate everyone from to implement development plans in their work to reach the goals of sustainable development.

5. The SD is a technique and not a situation

It is important to keep in mind that the SD is a manner, but not a condition.

Therefore, it's miles continuous and escalating, an expression of renewed desires of society and their boom.

6. The SD is a social process

The SD process consists of the participation of anybody, and sectors. It additionally does now not rely on one class or one resource.

7. The SD is a conscious technique

That approach, it isn't a random technique, however rather a process with specific goals. It is a protracted-time period method with interim dreams, plans and programs.

8. The SD is a system directed by way of a developmental inclined

It is important to remember that SD calls for an attention of societal desires and a way to attaining them. It has the capability to obtain the efficient use of society's assets, manufacturing and distribution.

9. Making structural adjustments

This characteristic is the principle distinction among the complete improvement process and the manner of monetary increase. These structural shifts can be inside

the political and social framework, as they may be in capacity, era and physical creation of the production base.10. Creating self-productive capacity

This SD process requires building strong production base and renewable energy systems. These actions should be performed locally, and should be integrated. In addition, they should be able to deal with the changes in SD elements. This required base should be connected with social organization. In addition, with strong institutional capacity and human resources. It also should include motivated workers, self-technical ability, and good capital accumulation.

11. Increasing the average productivity of the individual

The well-known economic indicator can express this, which is the average annual income per capita. The SD requires increasing the average productivity of the individuals

12. Increasing social, political, economic and technical capabilities of society

The SD requires that the growth of those indicators must be in balance with the common comparative relative increase in other international locations' societies.

13. Linking to social and political framework

The SD should be linked to the social and political framework through stimulus and encouragement. That can be achieved by the incentive system based on the link between effort and reward. In addition, it should be based on confirming the individual's belonging to his society. That can be through the application of the principle of participation in its broad sense.

14. The justice in the distribution of the fruits of SD

It is important to guarantee the justice in the distribution of the fruits of SD, and the affirmation of the vital existence of individuals and groups, and of society itself. These aspects represent development goals. In addition, they are sources of the strength of SD means, and sources of effectiveness and efficiency of SD performance.

Most countries reports were submitted to the UN Secretariat on the implementation of their governments for sustainable development plans. These reports focused on enumerating projects that have been implemented and agreements that have been implemented, or were signed and approved. However, most of these reports were

evaluated theoretically and structurally, and subject to the mood of the institutions, that prepares the report (Costanza et al. 2016).

The institutions are always government institutions interested in focusing on the positives and the lack of real evaluation. That led the United Nations Commission on Sustainable Development to come up with indicators that accredited for sustainable development. However, these indicators have not yet spread worldwide. In addition, there has not been developed a comparison study between countries in the field of SD except through the indicators of environmental sustainability.

3.8 The Obstacles and Challenges of Sustainable Development

All countries around the world have warned of the limited of natural and economic resources on the planet worldwide. They also have warned that the continuing to use them without guidance may expose them to attrition (Leal et al. 2017).

That can lead to inability to meet the needs of future generations. Therefore, it is necessity To create an ethical courting among human and the environment. Based in this relation, the protection of the environment is achieved.

It is also vital to address natural and economic resources with excessive performance, and gain social justice among humans. That can be through ensuring same opportunities in the regions of education, health and development, and poverty eradication.

Despite the worldwide efforts to obtain the sustainable improvement in all nations and societies of the arena, there are nonetheless in large part poor. That is due to some reasons,obstacles, and Challenges facing SD. The most important and prominent of them are (Dahlman & Mealy 2016):

- The steady increase in the world's population. The statistics indicated that more than six billion people inhabiting this land. It is also expected that the world population will reach nine billion people in the near future, which will double the complexities of SD.
- The extreme poverty in the world, as statistics indicate that one fifth of the world's population is forced to live on less than one dollar a day. In addition, about 1.1 billion people do not have safe drinking water, polluted drinking

water and insufficient water supply. That have caused about 10 percent of all diseases are in developing countries.

- Instability in many regions of the world resulting from the absence of peace and security.
- The problem of poverty in some countries of the world, which is exacerbated by illiteracy. In addition, high population and unemployment, the accumulation of debts and their benefits, and the irrational exploitation of natural resources.
- The migration from rural to urban areas and the unfold of the phenomenon of slums. That has put pressures on ecosystems and on city centers and offerings, and air pollutants, and growth the buildup of wasteBig parts of the world are exposed to harsh climatic conditions. Specifically, low rates of rain, higher summer temperatures and evaporation rates. That has led to the recurrence of drought and increased desertification.
- Limited natural resources and their misuse such as the extreme shortage and pollution of water assets. The shortage of lands suitable for use in diverse agricultural activities. In addition, the deterioration of their fine, and the dearth of non-renewable energy in some international locations of the world.The lack of compatibility of some technologies and experiences imported from developed countries with economic conditions. The social and environmental conditions in Some developing international locations, and the shortage of countrywide skills able to dealing with it.
- According to the reviews from worldwide organizations concerned with SD, coping with those challenges and barriers is vital to acquire SD. Most countries must work on poverty comfort, mainly in rural groups, in which maximum of the negative stay. Improving the capacity of all international locations, in particular developing countries, related to addressing the challenges of globalization and dependence on self-potential constructing. Encouraging responsible consumption and production styles to lessen waste of herbal and monetary sources. The removal of fitness issues, particularly incurable diseases and epidemics which include cholera

3.9 The Participants in Sustainable Development process

Most people think that SD process is one of the governments' responsibilities. Even governments paly crucial role in SD process, they are not the only participant in this process. In fact, achieving SD in its holistic concept and approach requires the participation of different parties (Bardos et al. 2011).

First of all, there should be political and societies willingness to achieve it. That is because sustainable development is a social process that must be achieved by all groups, sectors that contribute in a consistent manner. It is not acceptable to depend on a small group or one resource. Without participation, it is inconceivable that society accepts adequate commitment the objectives of development. To achieve sustainable development, the following parties must be participate and play significant role:

3.9.1 Individuals participation in SD

The SD is an ethical concept, which depends on a change in behavior patterns. The individuals are responsible for feeling about others around them as well as about who will come after them (Bexell & Jönsson 2017).

The SD is at the center of the human being and the provision of a better life for them. Therefore individuals must takes into account their own needs, the needs of their children, and neighbors. In addition, the need of environment in which they live.

The employees must perform their duties honestly to achieve the best for all beneficiaries of their services. The decision-maker must set the policies that would ensure well-being and the ability to meet the needs of the present and the future.

3.9.2 Family participation in SD

The family can play significant role in conscious generation creation, which is connected to its society. The family has a great role in ensuring that everyone enjoys and accepts the standard of living. Perhaps the family is the guide in the behavior that the individual acquires from childhood. If the family takes care of its surroundings and environment, its members will be as well. The family is the first teacher of the principles of SD in terms of refining and increasing awareness to care for others.

3.9.3 The society participation in SD

The society can play a very important role in SD process. It is the main driver and pivot in the SD process. The society role in SD is through the existence of a conscious society and understanding everyone's rights and duties. That can be done through an integrated society in which equality and justice are achieved (Payne & Raiborn 2001).

The society can prepare generations that preserve their environment and surroundings, and are keen to enjoy the healthy environment. Society has an important role in creating the environment investment for sustainable economic growth through community initiatives of economic activities. In recent years, the role of the participation of social organizations has a noticeable increase. They highlight their need to work with governments and international organizations. They seek increase the organizations' participation in their activities of achieving SD.

Civil society has found new and effective forms of expressing feelings and concerns. Hence, it has become the best way to promote the purposes of sustainable development. Society can play an important role in drawing the attention of politicians to emerging environmental issues, and public awareness. In addition, promoting innovative ideas and approaches, and advocating transparency.

3.9.4 The private sector participation in SD

The private sector is an essential partner through which the development goals are renewed.

It is an important part of SD since it provides different sustainable programs and activities. The economic aspect of SD is strongly related to the private sector and its tendency to long planning duration (Darkoh 1999).

The investments of private sector can play significant role in serving the community through providing job opportunities. These opportunities take in account the appropriate professional conditions including safety and security of the employee and worker occupation and health conditions. It also take into account the environmental safety for the work environment and the outside environment.

The investment and development policies of the private sector must be clean production and reduce pollution of all kinds. They must ensure the continuity of these investments and provides popular and official support.

The private sector institutions have a social mission that supports local communities in a material and moral way. It makes a structure and a pillar of the development of societies and the advancement of their members. The private sector has emerged as a global player with an important influence on environmental trends. They have had this role through decisions made on investment and technology.

3.9.5 The government participation in SD

The government is the policy maker, the decision maker, and one of the most important conditions for achieving sustainable development. The government policies and plans follow are comprehensive and complementary so that they do not conflict with laws. However, they're in their entirety in the framework of growing.

These guidelines keep in mind the elements of SD, so the environmental and social component isn't separated from monetary plans (Gorica et al. 2012).

The principal position of the authorities and its institutions is to play the supervisory and observe-up role in all components of improvement. That can be accomplished thru certified employees who're aware about the standards of SD and its applications within clear and particular applications. It is also the obligation of the authorities to take care of the scenario of SD. The internal improvement system must be in line with international directives to obtain sustainable improvement.

3.10 The Disadvantages of SD

The idea that the SD is a purely positive process is not true. In other words, ignoring the negative side of SD can lead to bad results. The SD process may require the distribution of the necessities energy of modern life. In addition, it requires the building and improving of infrastructure. Providing these requirements will cost great amounts and burdens. The disadvantages of sustainable development are as following (Dotsenko et al. 2021):

- Unemployment: Stopping some industries and their activities as required by the SD process increase unemployment. The increase in unemployment is

most likely among individuals who work in one sector such as the coal industry.

- Lack of commitment: The movement towards the environmental industries may create risks. The lack of commitment made to society can be one of the serious risks.
- More requirements: Keeping the safety of the environment requires that companies and authorities to change their responsibilities. Specifically, they need more obligations and requirements for work. For example, they need to reduce carbon emissions, and improve waste treatment. That will affect the work efficiency of these parties due to many legal requirements.

4. GREEN MANAGEMENT AND SUSTAINABLE DEVELOPMENT

This chapter presents the processes to statistically test the impact of the green management strategy on sustainable development in Erbil, Iraq. The study methodology has the following steps, which will be discussed one by one. The first step is describing the case study. The second step is determining the sample size. Then, identifying the conceptual model of the study. The next step is describing the method of collecting data.

Descriptive statistics of the data including normality assessment, Skew and Kurtosis assessment, and checking for outliers and influencers. Factor analysis following by reliability Assessment (Cronbach alpha test) are also two important steps. Correlation analysis and Multi-Collinearity analysis are steps that must be done before regression analysis strep.

4.1 Describing the Case Study

This study was applied on Erbil, which is a province located in the north part in Iraq. Erbil, which is also called Hawler, is the main city of north part of Iraq. Erbil is one of the largest Iraqi cities in terms of area after Baghdad, Basra and Mosul. The city's population, according to 2014 estimates, is about 1.4 million (Mustafa & Szydłowski 2020). Figure (4.1) shows the city location on Iraqi map.

Erbil's economy depends mainly on agriculture and industry. There are lands where wheat, barley, sunflower, corn, vegetables and other crops are grown. Agriculture depends on rainwater and springs, and some people work by raising sheep and goats.

After 2003, the city become one of the most stable Iraqi cities and its economy has achieved growth rates of about 10% annually during the past decade. The city tended to lure major investment contracts in the field of real estate, infrastructure and oil exploration by international oil companies. The investment law issued in 2006 prompted foreign companies to obtain investment opportunities in the city. The city of Erbil witnessed a great development in different fields of the green management.

Figure 4.1: Erbil's location on Iraqi map.
Source: https://thearabweekly.com.

For example, the city local government renewed the public streets and contributed to its expansion. In addition, the establishment of public green parks, and the renovation of old buildings. Furthermore, giving investment rights to international and local companies to build giant projects and green residential complexes. The new buildings was designed according to modern standards including green issues. The city started using many different sources of clean power, and this city has become a center for applying green projects.

After doing all of these green projects, it is important to test their effects on the sustainable developments of the city.

4.2 Determining the Sample Size

The sample size is calculate according to Slovin's formula (Isip 2015). The sample population was 300 employees who are working in the city government.

A random sample method was used to draw the sample. The sample population are the top managers, and employees from different management departments. The sample size is calculated as following:

$$n = N/ (1+Ne^2)\ldots \quad \ldots.\text{Slovin's formula} \qquad \textbf{(4.1)}$$

Where,

n: the sample size

N: the sample population = 300

e: the confident level which is 95% (the error is 5%)

n = 300 / (1+ (300*0.0025))

n = 300 /1.75= 171

4.3 The Conceptual Sample

Figure (4.2) indicates the conceptual version of this look at. The parent shows that making use of green management strategy (GMS) can affect the sustainable development (SD) of Erbil. It is important to note that this model is a formed based on the literature. Many studies indicated that GSM have positive and significant effect on SD (Midilli et al. 2006). The study model indicates that the GMS could positively affect the SD.

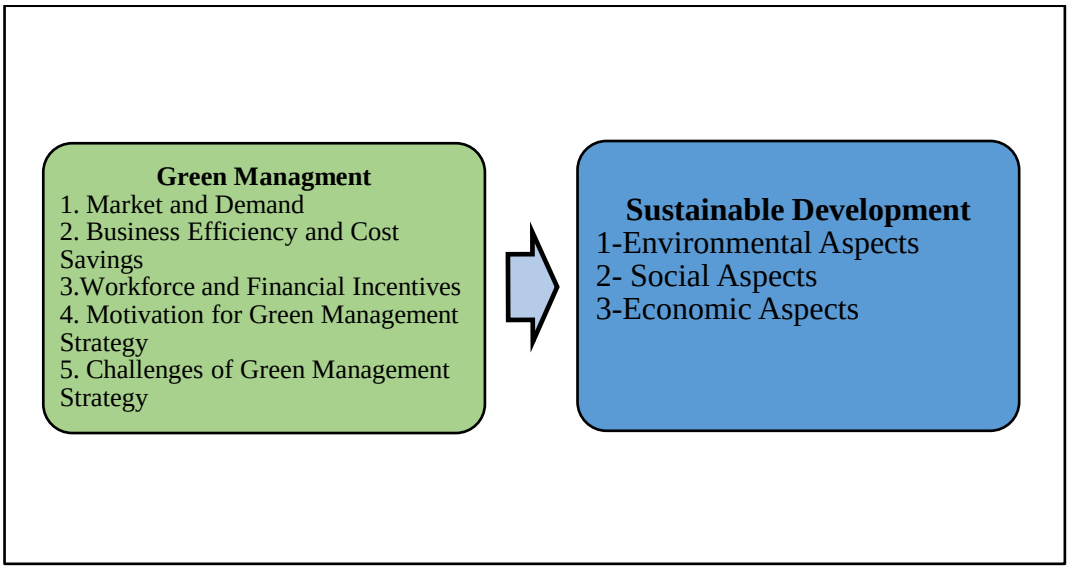

Figure 4.2: The conceptual model.
Source: Student made.

4.4 The Study Data

4.4.1 The method of collecting data

The questionnaire method was used in this study to collect data. The questionnaire method was selected since it provides cheap, quick and large amounts of information. It also allows using large sample. The questionnaire was formed based on the study conducted by Ling (2019) for both GMS and SD dimensions. A sample of the questionnaire is shown in appendix A.

The questionnaire was used to get information about both GMS and SD of the city of Erbil. In addition, to get demographic information about the respondents. The items in the questionnaire were designed to have five Likert scales. Specifically, each item of GMS and SD dimensions has five options to answer. These options are weighted as (1. Strongly Disagree, 2. Disagree, 3. Normal, 4. Agree, 5. Strongly Agree).

The items were coded in the data as GM_i for GMS and SD_i for sustainable development. The study dimensions and the number of items for each dimension are shown in table (4.1). The table shows that GMS dimension has 29 item, while the SD dimension has 10 item.

Table 4.1: The study dimensions, and the number of items for each dimension.

Dimensions	Number of items	The sources
Green Management Strategy (GMS)	29	(Ling 2019)
sustainable development (SD)	10	(Ling 2019)

The 300 employees in the sample received the questionnaire sheets by hand. Only 221 sheets were returned. The neglected sheets were 6. They were neglected because of missing data. Therefore, 215 sample sizes is used, which is fine since the calculated sample size is 171.

4.4.2 Demographic statistics

The Microsoft Excel and the SPSS 17.0 software are used to provide all statistics, statistical tests, and statistical analysis. The next few tables show the demographic information of data.

The demographic information about the respondents in the sample are shown in table (4.2) shows. It shows the working type and gender of respondents. The table shows

that the number of managers in the sample is 57, which represent 27% of the sample. The number of employees is 158 which represent 73% of the sample. The table shows that the number of males in the sample is 140 (65%), while the number of females is 75 (35%).

Table 4.2: The demographic information

Item	Number of individuals
Managers	57 (27%)
Employees	158 (73%)
Male	140 (65%)
Female	75 (35%)

Table (4.3) shows the age, working experiences, and education levels of respondents. The table shows that the education levels are good since 90% of the respondents have BA or higher level of education. The working experiences are also good since 62% of respondents have experiences more than 7 years.

Table 4.3: The age, working experiences, and education levels

Age (year)	**20-30**	**31-40**	**41-50**	**> 50**		**Total**
Statistics	55 (26%)	116 (53%)	38 (18%)	6 (3%)		215
Experiences (year)	**1-3**	**4-6**	**7-9**	**10-12**	**>12**	
Statistics	27 (13%)	54 (25%)	37 (17%)	40 (19%)	57 (26%)	215
Education	**HS**	**Diploma**	**BA**	**Master Degree**	**PhD**	
Statistics	2 (1%)	16 (7%)	114 (53%)	69 (32%)	14 (7%)	215

4.5 The Descriptive Statistics of the Study Data

This section describes the study data including the distribution of the data and the descriptive statistics.

4.5.1 The data distribution

This section tests whether the data is normally distributed or not. The normality check is done using SPSS software. Before testing for normality, the first step is computing the scales averages, which creates new variables.

The new variable are coded as GS for GMS dimension and SS for SD dimension. For example, GS1 represent the average of the GM1 and GM5, which are the items of

first scale of GMS (Market and Demand). The new variables (GSi and SSi) will be used for the next analyses.

The normality assessment is based on Kolmogorov-Smirnova and Shapiro-Wilk tests. If these two tests were statistically significant, the hypothesis of normal distribution is rejected. That means, the data is not normally distributed (Pallant 2013).

Table (4.4) and table (4.5) show the results of Kolmogorov-Smirnova and Shapiro-Wilk tests for GS and SS variables. The results in these tables indicate that all items of GS and SS are not normally distributed. That is because all the results of both tests are statistically significant at 1% confidant level.

Figure (4.3) show an example of the data distribution of one of GS variables. Figure (4.4) shows an example of the data distribution of one of SS variables. The figures confirm the results of Kolmogorov-Smirnova and Shapiro-Wilk tests for both GS and SS variables.

Table 4.4: The normality test for GS items

	Kolmogorov-Smirnova			**Shapiro-Wilk**		
Item	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
GS1	0.078	215	0.003	0.985	215	0.025
GS2	0.096	215	0.000	0.985	215	0.019
GS3	0.088	215	0.000	0.977	215	0.001
GS4	0.102	215	0.000	0.983	215	0.011
GS5	0.068	215	0.017	0.992	215	0.054

Table 4.5: The normality test for SS items

	Kolmogorov-Smirnova			**Shapiro-Wilk**		
Item	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
SS1	0.068	215	0.019	0.986	215	0.032
SS2	0.113	215	0.000	0.956	215	0.000
SS3	0.091	215	0.000	0.982	215	0.009

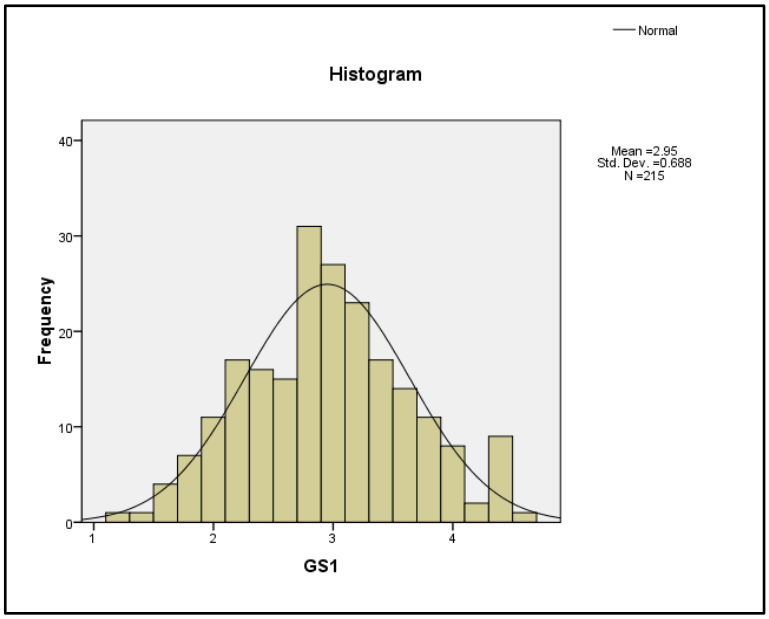

Figure 4.3: An example of the data distribution of GS variables

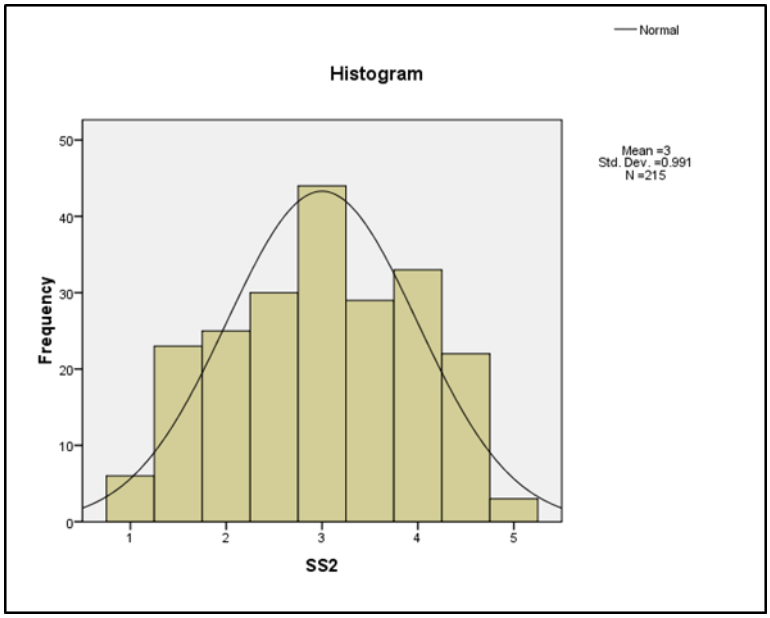

Figure 4.4: An example of the data distribution of SS variables

4.5.2 Descriptive Statistics of the Data

Table (4.6) shows the frequency of the answers (in average) for each scale in the questionnaire that are related to GMS. For example, the answer (Disagree) appeared 55 times, in average, of scale 1 (GS1). In other words, 55 respondents, in average, disagree about the idea that their city management work on green markets.

Another example is that the answer (Normal) appeared 108 times, in average, of scale 4 (GS4). That is, 108 respondents, in average, are normal about the idea that their city management work on motivating the green management strategies.

Table 4.6: The frequency of each scale related to GMS.

Item	Strongly Disagree	Disagree	Normal	Agree	Strongly Agree	Total
GS1	2	55	113	44	1	215
GS2	1	42	104	66	2	215
GS3	3	31	141	38	2	215
GS4	2	54	108	48	3	215
GS5	1	46	131	34	3	215

Table (4.7) shows the frequency of the answers (in average) for each scale in the questionnaire that are related to SD. For example, the answer (Agree) appeared 62 times, in average, in scale 2 (SS2). That means, 62 respondents (in average) think that their city management take care of social aspects in its green projects. Another example is that the answer (Disagree) appeared 49 times (in average) in scale 1 (SS4). That is, 49 respondents, in average, disagree about the idea that their city management take care of Environmental aspects in its green projects.

Table 4.7: The frequency of each scale related to SD

Item	Strongly Disagree	Disagree	Normal	Agree	Strongly Agree	Total
SS1	2	49	105	53	6	215
SS2	6	48	74	62	25	215
SS3	3	37	109	61	6	215

Table (4.8) shows the descriptive statistics of data related to GMS scales. The table shows the mean and the standard deviation, and the skewness with its stander error. In addition, it shows the kurtosis with its stander error. The mean is statistics that measure the central tendency of the probability distribution. It also represents the expected value. The standard deviation measures the dispersed of the data from the mean. When the value of the standard deviation is close to zero, that data is close to the mean (Livingston 2004).

However, when the value of the standard deviation is above or below zero (far from zero), the data is above or below the mean.

Table 4.8: The descriptive statistics of GMS scales

Item	No. Statistic	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
GS1	215	2.94	0.691	-0.006	0.166	-0.669	0.330
GS2	215	3.14	0.736	-0.013	0.166	-0.696	0.330
GS3	215	2.70	0.800	-0.461	0.166	-0.110	0.330
GS4	215	2.95	0.715	-0.086	0.166	-0.633	0.330
GS5	215	2.57	0.877	-0.600	0.166	-0.501	0.330

The table shows that the minimum mean value is 2.57 at GS5, and the maximum value is 3.14 at GS2. The table shows that the minimum standard deviation value is 0.691 at GS1, and the maximum value is 0.877 at GS5.

The skewness measures the quantity and course of information distribution departure from the horizontal symmetry. The skewness value may be fine or negative. The high quality fee of skewness indicates that the tail on the proper facet of the distribution is longer or fatter. The bad cost of skewness suggests that the left side tail of the distribution is lengthyer or fatter (Blanca et al. 2013).

In general, if the skewness value is less than -1 or greater than 1, the data distribution is highly skewed. If the skewness value is between -0.5 and -1, or between 0.5 and 1, the data distribution is moderate skewed. If the skewness value is between ±0.5, the data distribution is symmetric. Based on that, GS1, GS2, GS3, and GS4 variables, which have a skewness values between ±0.5 are symmetric. However, the GS5, which has the skewness value of -0.6 is moderate skewed.

The kurtosis degree the combined sizes of the two tails of statistics distribution. If the price of kurtosis is near to 3, the distribution is everyday. If the cost of kurtosis is extra than 3, the distribution has heavy tail than normal distribution. If the value of kurtosis is less than 3, the distribution has light tail than normal distribution (Blanca et al. 2013). Based on that, all the GS variables, which have kurtosis values less than 3, have light tail than normal distribution.

Table (4.9) shows the descriptive statistics of data related to SD scales. The table shows the mean and the standard deviation, skewness and kurtosis with their standard errors. The table shows that the minimum mean value is 3.07 at SS1, and the maximum value is 3.17 at SS3.

Table 4.9: The descriptive statistics of SD scales

Item	No. Statistic	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
SS1	215	3.07	0.764	0.255	0.166	-0.405	0.330
SS2	215	3.24	1.017	0.010	0.166	-0.684	0.330
SS3	215	3.17	0.736	0.151	0.166	-0.330	0.330

The table shows that the minimum standard deviation value is 0.736 at SS3, and the maximum value is 1.017 at SS2. The table shows that all the SS variables, which have a skewness values between ±0.5 are symmetric. The table also shows that all the SS variables, which have kurtosis values less than 3, have light tail than normal distribution.

4.5.3 Testing for the existence of outliers

This section test whether the data has outliers. If they exist, it is important to fix them. The test for outliers shows that all GS variables have some outliers' cases. However, the test for outliers shows that SS1 has some outliers' cases, while SS2 and SS3 do not have. Figure (4.5) and (4.6) shows an example of the existence of outliers. Figure (4.5) shows that GS1 has outliers in the upper limit, which are the case (193).

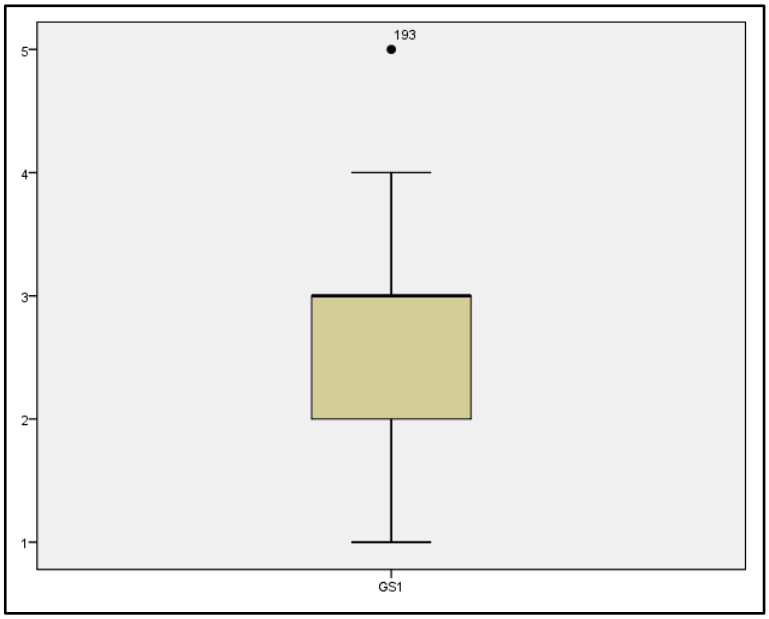

Figure 4.5: An example of the existence of outliers in GS variables

Figure (4.6) shows that SS1 has two outliers in the lower limit, which are the cases (71, and 142).

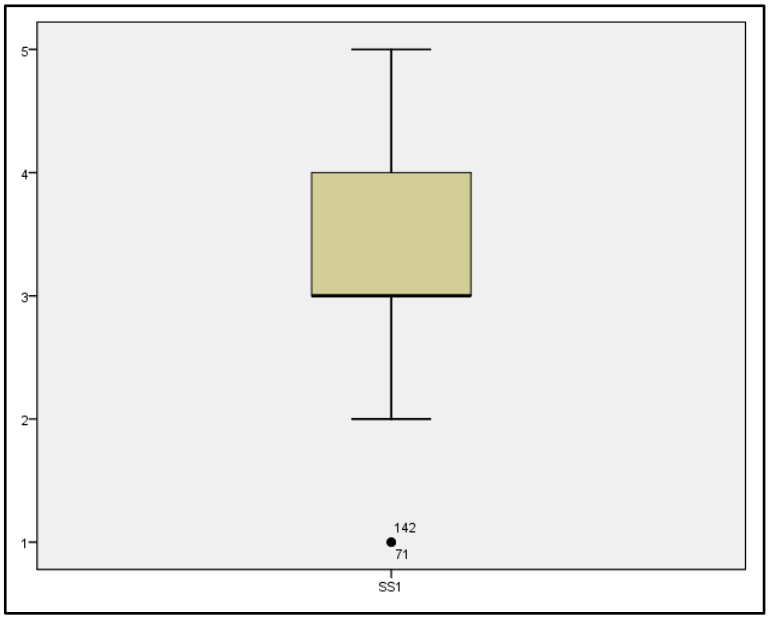

Figure 4.6: An example of the existence of outliers in SS variables.

The outliers were fixed using the Z-Score method and by replacing their values with the average values of the variables. The Z-Score method is a method that find the standardized variable with a mean of zero and standard deviation of one. It is used to identify the outliers, which helps fixing them (Kannan et al. 2015). Figure (4.7) and (4.8) shows GS1 and SS1 after fixing the outliers.

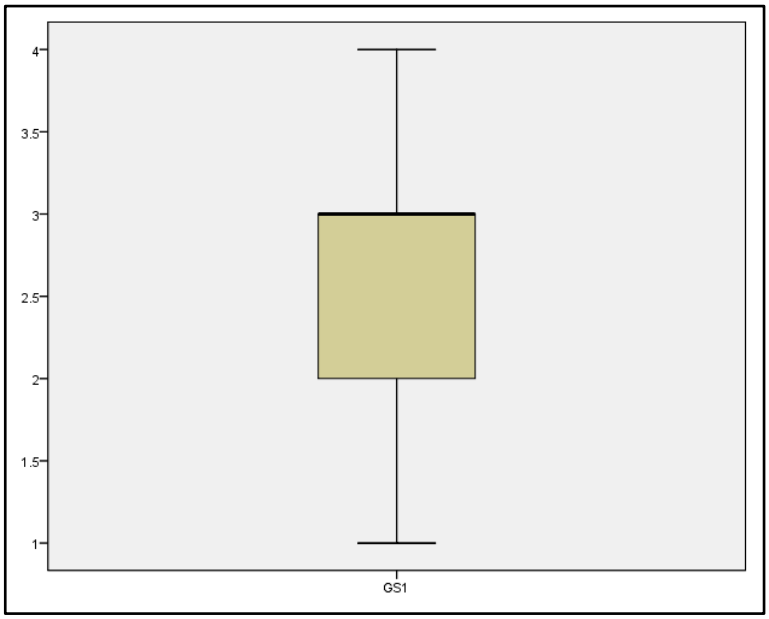

Figure 4.7: The GS1 after fixing the outliers.

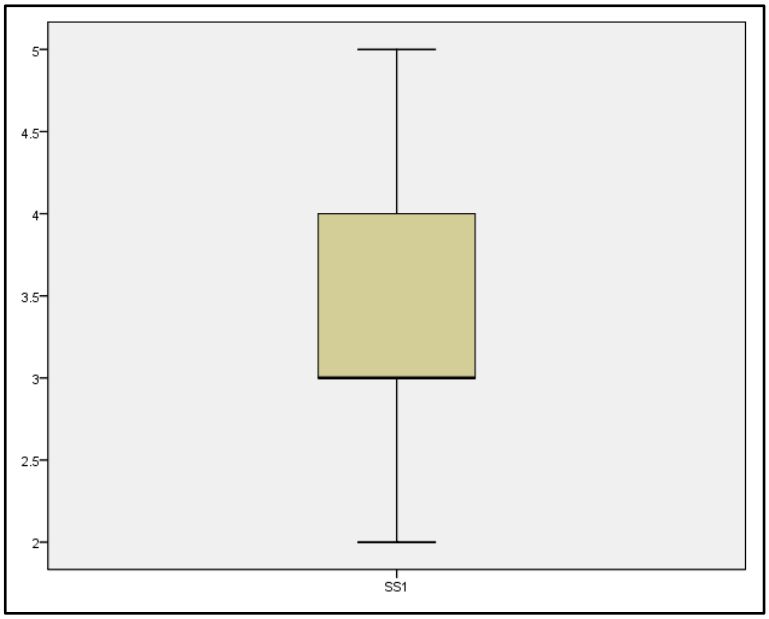

Figure 4.8: The SS1 after fixing the outliers.

4.6 Factor Analysis

4.6.1 Background

Using SPSS software, the factor analysis is performed based on principal components. The principal components is a statistical technique that used to reduce the dimension of a set of variables. For example, if a scale has 5 variables, they can be reduced to one or more components. The extracted components or factors explain the relationship among these variables within that scale (Pallant 2013).

In other words, the factor analysis shows the relationships between variables and determine the minimum number of factors that can explain these correlations. The components extracted from factor analysis should explain the highest value of the total variance of the dimension

4.6.2 Factor analysis

The Factor analysis of GMS dimension is run based on principal components analysis using SPSS (Swaminathan & Jawahar 2013). The result of this factor analysis are shown in table (4.10). The table shows that there are 2 components extracted from the factor analysis. These components can be used instead of GS variables of GMS dimension. The results indicate that these components explain about 50% of total variance of GMS.

These components are coded to be CG1, and CG2, which will be the independent variables. Figure (4.9) shows the scree plot of factor analysis, and it indicates same results.

Table 4.10: Total variance explained of GMS variables

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.310	26.209	26.209	1.264	25.284	25.284
2	1.143	22.867	49.076	1.190	23.793	49.076
3	0.977	19.537	68.614			
4	0.947	18.949	87.563			

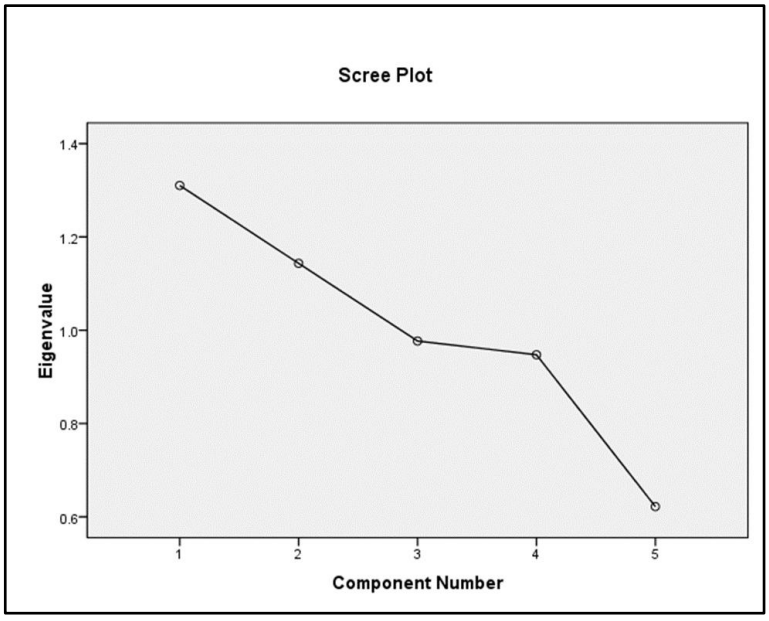

Figure 4.9: The scree plot of factor analysis related to GMS dimension.

Table (4.11) shows the factor loading for each GS variable. The table shows that the first component is related to GS4 and GS5. The GS4 represents the motivation for green management strategy. The GS5 is the challenges of green management strategy. The second component is related to GS1, GS2, and GS3. The GS1represents market and demand, the GS2 is business efficiency and cost savings, and GS3 is workforce and financial incentives.

Table 4.11: The rotated components matrix of GS variables

Item	Component	
	1	2
GS4	-.814	
GS5	.767	-.312
GS3		.773
GS2		.471

It is also important to test the overall measurement quality of GMS factor analysis. Table (4.12) shows the KMO and Bartlett's Tests. Since Kaiser-Meyer-Olkin measure of sampling adequacy is more than 60%, and Bartlett's test of Sphericity is significant at 1% level of confidance, the measurement quality is good (Pallant 2013).

Table 4.12: The KMO and Bartlett's tests for GMS

Test Name		Test Result
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.635
Bartlett's Test of Sphericity	Approx. Chi-Square	91.317
	df	10
	Sig.	0.001

The Factor analysis of SD is run based on principal components analysis using SPSS. The result of this factor analysis are shown in table (4.13).

Table 4.13: Total variance explained of SS variables.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.099	36.618	36.618	1.099	36.618	36.618
2	.968	32.250	68.868			
3	.934	31.132	100.000			

Table (4.13) shows that there are only one component extracted from the factor analysis. The component can be used instead of using SS variables of SD dimension. The results indicate that this components explain about 36% of the total variance of SD dimension. This component is coded to be CS, which will be the dependent

variable. Figure (4.10) shows the scree plot of factor analysis of SD, and it indicates same results.

Since there is only one component extracted, the solution cannot be rotated. It is also important to test the overall measurement quality of SD factor analysis. Table (4.14) shows the KMO and Bartlett's tests. Since Kaiser-Meyer-Olkin measure of sampling adequacy is more than 60%, and Bartlett's test of Sphericity is significant at 10% level of confidant, the measurement quality is good.

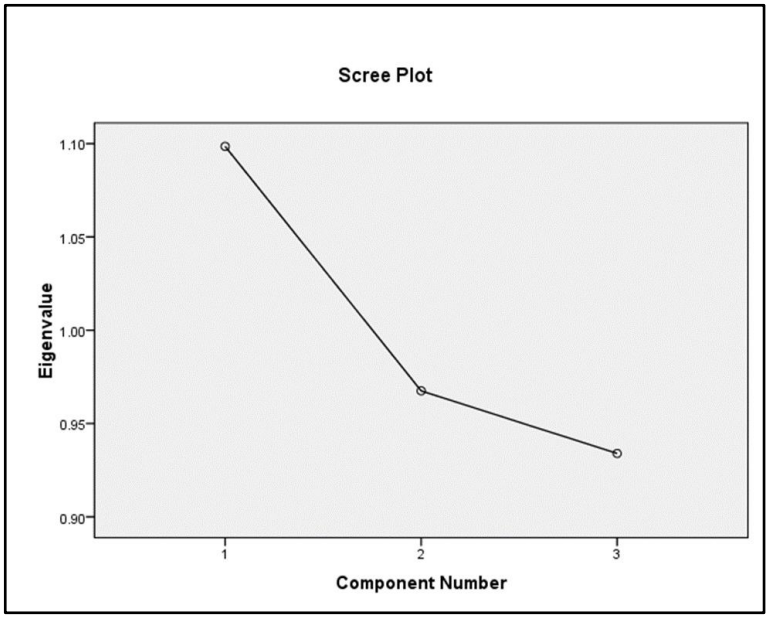

Figure 4.10: The scree plot of factor analysis related to SD dimension

Table 4.14: The KMO and Bartlett's tests for SD dimension.

Test Name		**Test Result**
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.620
Bartlett's Test of Sphericity	Approx. Chi-Square	34.881
	df	3
	Sig.	0.067

4.7 The Reliability of the Data

The data reliability is checked using Cronbach's Alpha. The Cronbach's Alpha is define Because the measures of the inner consistency among objects in a scale. The internal consistency method that the respondents respond to the questionnaire items of a scale in consistence way. If the Cronbach's Alpha (alpha coefficient) is close to (1), the reliability is at a higher level (Pallant 2013).

More specifically, when the alpha coefficient is between (0.50-0.80), the data is reliable.

If alpha coefficients was between (0.81-1.00), the data is highly reliable. The data reliability results are shown in table (4.15). The table indicates that the coefficient alpha is greater than 0.5 for both GMS and SD scales. These results indicate that the data are reliable and good for analysis.

Table 4.15: The Cronbach's Alpha coefficients

The Component	Loading Items	Cronbach's Alpha
CG1	GS4 (Motivation for green management strategy) GS5 (Challenges of green management strategy)	0.519
CG2	GS1 (Market and demand) GS2 (Business efficiency and cost savings) GS3 (Workforce and financial incentives)	0.538
CS	SS1 (Environmental aspects) SS2 (Social aspects) SS3 (Economic aspects)	0.601

4.8 Correlation and Multi-Collinearity Analyses

It is important to analyze the correlation between the variables of each dimension. The Pearson correlation coefficient is used to test the strength and direction of the linear relationship between variables. The coefficient value is between −1 and +1. When the value is close to absolute one, the relationship between the variables is strong. The absolute value of 1 indicates a perfect linear relationship. The value that is close to zero indicates no or very week linear relationship between variables (Good 2009).

The correlation coefficient sign shows the direction of the relationship. If the two variables increase or decrease together, the coefficient is positive, and the slope line of correlation is upward. If the coefficient sign is negative, one variable tends to increase as the other decreases, and the slope line of correlation is downward.

The diagonal values of the correlation matrix are usually ones. There values are ones because they represent the correlated between the variable and itself. The off-diagonal values represents the correlations of the variables with each other.

The correlation between the variables are performed using SPSS. Table (4.16) show the Pearson Correlation matrices of the variables of both GMS and SD dimensions. The results indicate that the variables are weakly correlated.

Table 4.16: The Pearson Correlation matrix.

Item	CG1	CG2	CS
CG1	1	0.000	0.101
CG2		1	-0.162*
CS			1

*. Correlation is significant at the 10% level (2-tailed).

It is important to check for Multi-Collinearity problem since the existence of this problem can negatively affect the regression analysis. Multi-Collinearity problem happens when an independent variable is highly correlated with other independent variables. It is considered as a problem because it undermines the statistical significance of the independent variables (Alin, 2010).

If the VIF was less than 3, the probability of existence Multi-Collinearity problem is very low. The VIF is the variance inflation factor, which measures the amount of Multi-Collinearity in the multiple regression variables. The VIF is the ratio of the overall model variance to the variance of a model that includes only that single independent variable.

The results of Multi-Collinearity tests are shown in table (4.17). The results indicate that all VIF coefficients are between 1.000 to 1.027, which are less than 3. Therefore, the probability of existence Multi-Collinearity problem is very low. In addition, the variables can be fit in a linear regression model.

Table 4.17: The Multi-Collinearity Coefficients (VIF)

Dependent Variable	CG1	CG2	CS
CG1	-	1.027	1.027
CG2	1.010	-	1.010
CS	1.000	1.000	-

4.9 Regression Analysis

4.9.1 The regression model

This study uses Liner regression model (LRM) to do the regression analysis. The LRM is a statistical method that used to test the impact of GMS on the SD. The LRM is statistical method that modeling the relationship between two or more variables. One of them is the response variables (dependent variable). The other variables are the explanatory variables (independent variables) (Krämer & Sonnberger 2012).

With one explanatory variable, the model is called simple linear regression. With more than one explanatory variable, the model is called multiple linear regression. In this model, the relationships are modeled using linear predictor functions whose unknown model parameters are estimated from the data. The goal of using LRM is for prediction, forecasting, and error reduction. That is because linear regression can be used to fit a predictive model to an observed data set of the response and explanatory variables.

The model used in this study is:

$$Y_i=\beta_i + \alpha_i X_i + \epsilon_i \quad \text{(4.2)}$$

The variable (Y) is the **dependent variable** that represents the SD (CS). The variable (X) is the **independent variable (or variables)** that represent GMS (CG1 and CG2). The (β and α) represent the model parameters. The (ϵi) represent the estimation error.

4.9.2 The results and discussion

The regression method has some assumption that need to be checked. More specifically, running the regression analysis required the following assumptions (Pallant 2013):

1. The dependent is normally distributed:

The dependent variable is the extracted factor from factor analysis of SD variables (CS). Kolmogorov-Smirnova and Shapiro-Wilk tests are used to check for the normality of CS. The tests' results were statistically insignificant, which indicate the dependent variable is normally distributed. In addition, figure (4.11) sews the normal distribution of that variable.

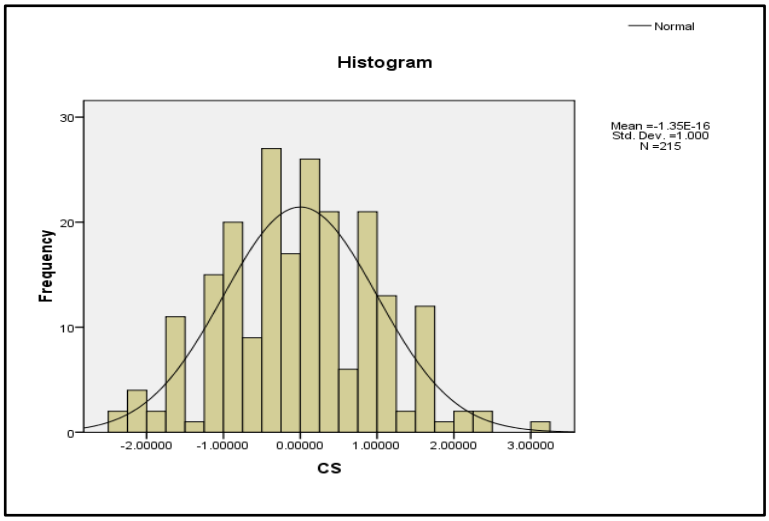

Figure 4.11: The distribution of the dependent variable (CS).

2. The linearity assumption:

The linearity assumption means that all independent variables have linear correlation with the dependent variable. Figure (4.12) shows that all independent variables have liner correlation with the dependent variable. Therefore, this condition is met.

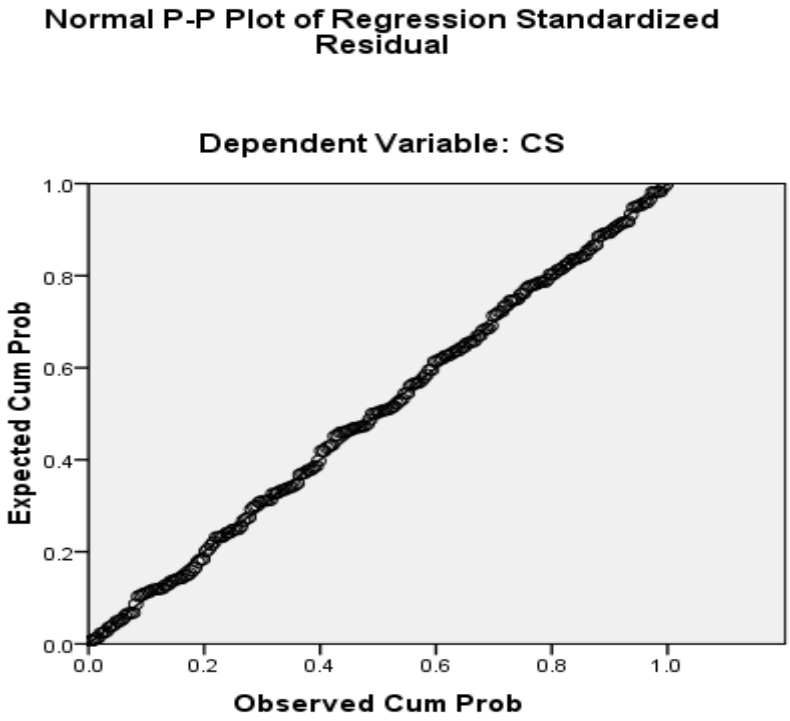

Figure 4.12: The regression standardized residuals.

3. The stander residual and Cook's Distance should be within the required rages:

The required stander residual is between ±3, and Cook's Distance is less than one. The results indicate that the minimum value of stander residual is -2.483, and the

maximum value is 2.876. The results indicate that the minimum value of Cook's Distance is 0.001, and the maximum value is 0.089. Therefore, the required conditions are met.

4. No outlier is the dependent variable

Figure (4.13) shows the scatterplot for all residuals, which are in the range (±3). Therefore, there is no outliers in the dependent variable.

Based on these results, all the required condition for regression analysis are met. The results of regression analysis are shown in table (4.18).

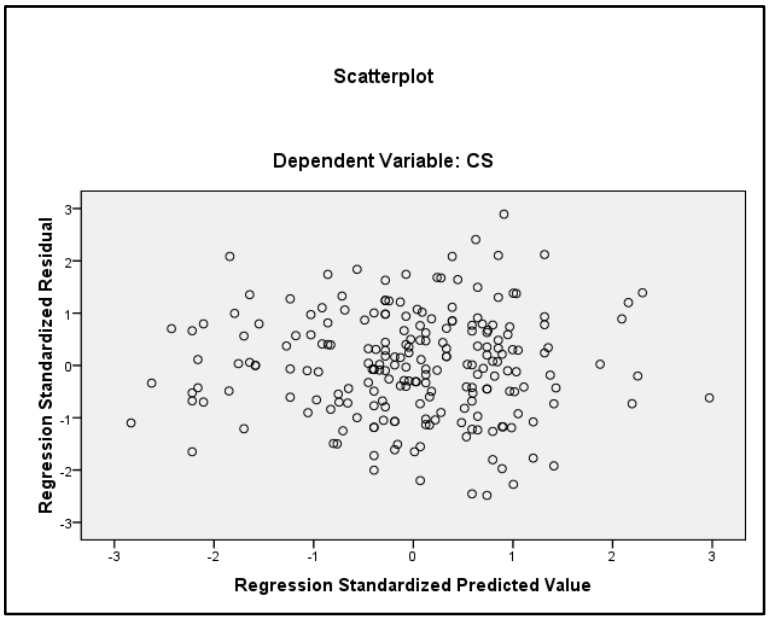

Figure 4.13: The scatterplot for outlier check

The results in table (4.18) showed that the CG1 has positive but insignificant effects on CS. Specifically, motivating for green management strategy, and the challenges of green management strategy have no effects on the sustainable development of Erbil. The results showed that the CG2 has negative and significant effects on CS. That means, the market and demand, business efficiency and cost savings, and workforce and financial incentives have negative effects on the sustainable development of Erbil.

For example, the business efficiency and cost savings strategy of GM reduces the sustainable development of Erbil by 0.162. Even it is small effect but it reflects negative direction, which is not as required. The results in table (4.18) showed that

the green management strategy in Erbil could not enhance its sustainable development. Therefore, the results do not support the study hypothesis.

Table 4.18: The results of regression analysis

Variable	Coefficient	Significance
CG1 (Motivation for green management strategy, and Challenges of green management strategy)	0.101	0.134
CG2 (Market and demand, Business efficiency and cost savings, and Workforce and financial incentives)	-0.162**	0.017

*** Significant at 1% level, **. Significant at 5% level, *. Significant at 10% level.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The concept of green management strategy (GMS) has appeared over the last few decades. The goal of it was to develop knowledge of sustainable practices in the different fields. These fields include agriculture, society, environment, and personal life. The works of GMS can benefit both current and future generations. The GMS focuses on environment management systems as a means of improving both the environment and economic activities performance. The GMS practices has described as ways of producing eco-friendly products and reducing environmental consequences through green production.

The supporters of GMS believe that the current economic system running now can damage the environment. Therefore, it requires a transition to be environmental friendly. Doing that can play a great role in reducing carbon emissions, and improves the efficiency of energy usage. As a result, that can promotes economic growth and development. The GMS have remained on the agenda for many international organizations and meetings, which has highlighted important sustainability aspects. The GMS is committed to achieving completely sustainable financial, social, and environmental benefits. The GMS has also become a significant competitive strategy to sustainability and better environmental performance.

Iraq is one of the countries that has different serious environmental problems. Many reasons have led to this result such as wars, the climate change, and the shortage in water resources. The local government of Erbil, which is a city in Iraq, has started a treatment program to the environment. The program is designed based on the principles of GMS, which aims to achieve sustainable development in Erbil. This program is a good start to solve the serious environment's problems in Iraq. This study is, therefore, intended to investigate the influence of green management program that is applied in Erbil, Iraq on its sustainable development.

Erbil is an Iraqi province located in the north part of Iraq. Erbil is the main city of north part of Iraq.

Erbil is one of the largest Iraqi cities in terms of area after Baghdad, Basra and Mosul. The city's population is about 1.4 million. Erbil's economy depends mainly on agriculture and industry.

After 2003, Erbil become one of the most stable Iraqi cities and its economy has achieved growth rates of about 10% annually. Erbil witnessed a great development in different fields with more focus on the green management aspects. For example, it renewed the public streets and contributed to its expansion. In addition, the establishment of public green parks, and renovation of buildings.

The city started using many different sources of clean power, and this city has become a center for applying green projects. After doing all of these green projects, it is important to test their effects on the sustainable developments of the city. Going green was one of Erbil's methods to recycle, minimize and re-use natural resources.

With the increased industrialization in Erbil, there must be environmental effects are bound to continue happening. There are two main study problems. The first problem is the need to examine the impact of green management strategies on the sustainability development in Erbil, Iraq. Second, the literature is lack of studies that statistically test the effect of GMS on sustainability development in Iraq.

This study is to test the influence of the green management approach on sustainable development in Erbil, Iraq. Thus, this study is guided by three objectives. The first objective is to identify the benefits of green management to sustainable development (SD) in Erbil, Iraq. The second objective is to identify the challenges encountered while ensuring green management of Erbil, Iraq. Finally, to explore the relationship between green management and sustainable development of Erbil, Iraq.

The purpose of the study is to statistically test the impact of green management strategies on sustainable development in Erbil, Iraq. The study contribution is to provide statistical analysis to test the impact of GMS on SD, which can be used in future research about Iraq. The study hypothesis is that the green management program has positive and significant impact on sustainable development in Erbil, Iraq.

A random sample of 300 employees, who are working in the city government, was drawn. The sample size is calculate according to Slovin's formula, and 215 sample sizes was used. The questionnaire method was used in this study to collect data.

The questionnaire was used to get information about both GMS and SD of the city of Erbil. In addition, to get demographic information about the respondents. The items in the questionnaire were designed to have five Likert scales. The Microsoft Excel and the SPSS 17.0 software are used to provide all statistics, statistical tests, and statistical analysis.

The results of this study showed that motivating for green management strategy, and the challenges of green management strategy have no effects on the sustainable development in Erbil. The results showed that the market and demand, business efficiency and cost savings, and workforce and financial incentives have negative effects on the sustainable development in Erbil. The results in showed that the green management strategy in Erbil could not enhance its sustainable development. Therefore, the results do not support the study hypothesis.

5.2 The Study Recommendations

1. The study suggest that the local government in Erbil re-design its green management program based on modern experiments that successfully applied in different areas around the world.

2. It is important to fix any problem in market and demand, business efficiency and cost savings, and workforce and financial incentives aspect since they negatively affect SD.

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APPENDICES

Appendix A: Questionnaire form

Table A.1: A copy of the study questionnaire

PART 1: Background Information	
Gender	( ) Male ( ) Female
Age	( ) 21 - 30 ( ) 31 – 40 ( ) 41 – 50 ( ) More than 51
Highest academic level	( ) High school ( ) Diploma ( ) BA (4 years collage) ( ) Master Degree ( ) PhD Degree
Designation in the organization	( ) Manager ( ) Employee
Working Experience with this organization	( ) Less than 1 year ( ) 1-3 year ( ) 4-6 year ( ) 7-9 year ( ) 10-12 year ( ) 13-15 year ( ) More than 15 year

PART 2: Green Management Dimension

In this part, you have five options that represent the degree of your answer about the benefits of green management. Please select only one option for each question.

Question	Strongly disagree	Disagree	Normal	Agree	Strongly agree
A. Market and Demand					
1. Having good environmental credentials provides a competitive edge when tendering for contracts					
2. Create a balance between higher sales and profits, and concern for the environment.					
3. Eliminate pollution and reduce green gas emission to open new markets.					
4. Use green issues to sell new lifestyles and ideas					
5. Advertise green initiatives effectively to acquire a greater market share.					
B. Business Efficiency and Cost Savings					
6. Reduce raw materials, energy use and toxic waste for businesses savings					
7. Recycle waste products to increase operating income and consider expansion of production capacity.					
8. Consider input costs in terms of regulations, energy use, storage and disposal.					
9. Minimize emissions, effluents and accidents and use non-renewable forms of energy.					
10. Enhance consumer environmental awareness of green products.					
C. Workforce and Financial Incentives					
11. Planting indigenous trees, using rainwater or recycled grey water to reduce ecological damage.					
12. Find green alternatives for harmful products, at the same or improved level, at lower cost					
13. Minimize emissions, effluents and accidents and use non-renewable forms of energy.					
14. Create more favorable risk profiles and improved relations with financial institutions using green business practices					
15. Develop more effective environmental auditing systems					
16. Improve the business's bottom line by conserving resources and cutting down on waste.					
17. Expand board members and accountants' responsibility to include the triple bottom line.					

D. Motivation for Green Management Strategy					
Question	**Strongly disagree**	**Disagree**	**Normal**	**Agree**	**Strongly agree**
18. A business going green makes customers feel that it is a trustworthy business and promotes social responsibility.					
19. Meet statutory obligations imposed by state to protect and prevent natural environment					
20. Businesses go green to meet International standard norms					
21. Businesses go green to create opportunities and growth					
22. Businesses go green to meet competition					
E. Challenges of Green Management Strategy					
23. Lack of knowledge and technical know how					
24. Lack of training for top business officers and entrepreneurs at large					
25. Insufficient qualified staff to handle green strategy					
26. Lack of enforcement by government state agencies					
27. Lack of awareness about green management strategies and their benefits					
28. Lack of top management commitment to green management strategies					
29. Lack of proper guideline on implementation of strategy					

PART 3: Sustainable Development Dimension

In this part, you have five options that represent the degree of your answer about the sustainable development in your city, Please select only one option for each question.

Question	Strongly disagree	Disagree	Normal	Agree	Strongly agree
A. Environmental					
1. The city uses environmentally friendly operating processes.					
2. The city uses eco-friendly materials, procedures and processes.					
3. The city recycle waste material					
4. The city has strict rules regards saving the environment.					
B. Social					
5. The city has clean water					
6. The city has applied different education programs for literacy					
C. Economic					
7. The city has green business practices in overall corporate message to attract new customers.					
8. The city uses green marketing that gain public approval and cut costs.					
9. The city ensures optimal raw materials usage					
10. The city has renewal energy projects					

RESUME

EDUCATION:

- Bachelor in Business Administration, University of Mosul, 2009 - 2010

WORK EXPERIENCE:

- Department Manager, private trade company.

Previous training and obtained

- Certificate of Internet from Computer and internet center, University of Mosul
- Working on different computer software related to office, engineering, electronic, image processing, Photoshop, photo impact, etc.
- I worked in a Mercy Corp.