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ISTANBUL AYDIN UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES

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İSTANBUL AYDIN ÜNİVERSİTESİ
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Prof. Dr. Ragıp Kutay KARACA
Enstitü Müdürü

Dedicated with Affection and Respect
to
My Parents and My Wife

FOREWORD

Heartily thanks and respect to my supervisor Assist. Prof. Dr. Hasan Volkan ORAL and co-supervisor Prof. Dr. Hasan SAYGIN for all the support and guidance.
Thanks to all professors and friends whoever thought me a word.

June 2019 **Ahmad Ehsan KAKAR**

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ABBREVIATIONS

AISA : Afghanistan Investment Support Agency
ANPDF : Afghanistan National Peace Development Framework
ASDGs : Afghanistan Sustainable Development Goals
CASA-100 : The Central Asian-South Asia Power Project
EIB : European Investment Bank
GDP : Gross Domestic Product
GNP : Gross National Product
IPoA : Istanbul Program of Action
LDCs : Least Developed Countries
LLDCs : Landlocked Least Developing Countries
MDGs : Millennium Development Goals
PPPs : Public-Private Partnerships
SDGs : Sustainable Development Goals
SEAM : Support for Environmental Assessment and Management
SIDS : Small Island Developing States
TAP : Turkmenistan-Afghanistan-Pakistan
TAPI : Turkmenistan-Afghanistan-Pakistan-India
UNESCO : The United Nations Educational, Scientific and Cultural Organization

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INVESTIGATING AND RECOMMENDING THE FEASIBLE INDUSTRIAL SUSTAINABLE DEVELOPMENT STRATEGIES FOR HERAT PROVINCE OF AFGHANISTAN

ABSTRACT

As a preliminary research in Afghanistan, this study will be conducted in Herat Province of Afghanistan. Herat province is located in the western part of Afghanistan. Together with Badghis, Farah, and Ghor provinces, it makes up the northwestern region of Afghanistan. It has a population of 1,967,180 and 63097-km2 is the area of this province. Herat province shares border with Iran in the west and Turkmenistan in the north, making it a significant trading province. Herat province by having the biggest Industrial Town in the country is called economic pole of Afghanistan. The Industrial town of Herat as a manufacturing complex was established in 2003, which was the first Industrial town in Afghanistan after the Taliban occupy.

The aim of this study is to explore and analyze the feasible industrial sustainable development strategies for Herat province of Afghanistan. The study used quantitative research method and data was collected on questionnaire which was formulated as a result of comprehensive literature review on the subject matter. A survey was conducted on a sample of 250 artisans of Herat Province. In this study nine industrial sustainable development strategies have been recommended which are as follow:

- The growth of domestic industries and products and achieving of self-sufficiency through the adoption of supportive and encouraging policies of government for investors by maintaining sustainable development strategy.
- Exporting of domestic goods and products to neighborhood and other countries through the creation of land and air transportation routes. (Exporting Promotion Strategy).
- Creating job opportunities through encouraging and supporting of domestic and foreign investors in industrial field.
- Promotion of Local Products and Handicrafts in Herat Province which has comparative advantages in Wider Markets through good marketing and introducing of the products.
- Improvement of available industrial technologies to modern technologies in Handicrafts and Machine Industries by Maintaining Sustainable Development Strategy.
- Reduction of products costs such as electricity and fuel for investors through the creation of internal energy sources and construction of dams without harming natural and environmental resources.
- Supplying the raw materials of industrial factories through the proper use of domestic mines and their modern extraction by maintaining sustainable development strategies.

- Training of professional and specialized cadres and raising the capacity of entrepreneurs by creating educational, vocational and technical centers.
- Creation of repairing workshops for making the factories' equipment and construction of the storages and cold stores in accordance with the modern technology by maintaining sustainable development strategy.

It is expected that this research study will support the policymakers within government, development agencies and the local community to create better policies for the industrial development purposes in Herat province of Afghanistan.

Keywords: *Industry, Industrial Sustainable Development Strategies, Herat Province, Afghanistan.*

AFGANİSTAN'IN HERAT VİLAYETİNİN UYGULANABİLİR ENDÜSTRİYEL SÜRDÜRÜLEBİLİR KALKINMA STRATEJİLERİNİN ARAŞTIRILMASI VE ÖNERİLER

ÖZET

Afganistan'da bir ön araştırma olarak, bu çalışma Afganistan'ın Heart şehrinde yapılacaktır. Herat vilayeti Afganistan'ın Batısında yer almaktadır. Badghis, Farah ve Ghor vilayetleri ile birlikte Afganistan'ın kuzeybatısını oluşturmaktadır. Vilayetin nüfusu 1,967,180 ve yüzölçümü 63097-km2'dir. Herat vilayeti batıda İran ve kuzeyde Türkmenistan ile sınırdır. Bu durum da şehri önemli bir ticaret merkezi yapmaktadır. Ülkenin en büyük endüstri bölgesine sahip olan Herat şehri Afganistan'ın ekonomik kutbu olarak anılmaktadır. Taliban işgalinden sonra Afganistan'daki ilk endüstriyel bölge olan Herat endüstriyel bölgesi, 2003 yılında bir imalat kompleksi olarak kuruldu.

Bu çalışmanın amacı Afganistan'ın Herat Vilayeti için endüstriyel sürdürülebilir ve uygulanabilir kalkınma stratejilerini analiz ve keşfetmektir. Çalışma nitel araştırma yöntemi kullanmıştır ve veriler konu ile alakalı kapsamlı literatür taraması sonucu oluşturulan anket yöntemi ile toplanmıştır. Anket Herat vilayetinden 250 esnafa uygulanmamıştır. Bu çalışmada dokuz endüstriyel sürdürülebilir kalkınma stratejisi önerilmektedir.

- Yerel endüstri ve ürünlerin büyümesi ve hükümetin sürdürülebilir kalkınma stratejileri sağlayarak yatırımcılar için destekleyici ve teşvik edici politikalarını benimseyerek kendisine yeterli bir durum elde etmek.
- Kara ve hava taşımacılığı rotaları oluşturarak yerel malların ve ürünlerin komşu ülkelere ve diğer ülkelere ihraç edilmesi (İhracat Promosyonu Stratejisi).
- Endüstriyel alanda yerel ve yabancı yatırımcıları teşvik ederek ve destekleyerek iş imkanları oluşturmak.
- Daha büyük pazarlarda karşılaştırmalı avantajlara sahip Herat Vilayetinde ürünlerin pazarda tanıtımı ile yerel ürünlerin ve el sanatlarının geliştirilmesi.
- Sürdürülebilir Kalkınma Stratejileri ile El Sanatları ve Makine Endüstrilerinde mevcut endüstriyel teknolojilerin modern teknolojiye geliştirilmesi.
- Ulusal enerji kaynakları oluşturarak ve doğal ve çevresel kaynaklara zarar vermeden barajlar inşa ederek yatırımcılar için elektrik ve yakıt gibi ürün maliyetlerinin azaltılması.
- Ulusal madenlerin doğru kullanımı ve sürdürülebilir kalkınma stratejileri ile modern çıkartılmalarıyla endüstriyel fabrikaların hammaddelerini sağlamak.
- Profesyonel ve uzman kadroların eğitimi ve eğitimsel, mesleki ve teknik merkezler ile girişimcilerin kapasitelerinin artırılması.
- Sürdürülebilir kalkınma stratejileri ile modern teknolojiye uygun olarak fabrikalarının ekipmanlarının yapılması için tamir atölyeleri kurmak ve soğutma depoları ve depolar inşa etmek

Bu çalışmanın Afganistan'ın Herat Vilayetinin endüstriyel kalkınma amaçları doğrultusunda daha iyi politikalar üreterek hükümetteki politika yapıcılarını, kalkınma ajanslarını ve yerel toplulukları destekleyeceği öngörülmektedir.

Anahtar Kelimeler: *Endüstri, Endüstriyel Sürdürülebilir Kalkınma Stratejileri, Herat Vilayeti, Afganistan.*

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

We will discuss, the research problem, the importance of this research and justification of conducting it in this chapter. In addition, the goals, objectives, questions and hypothesis that will eventually be answered by this research will be discussed here, furthermore, this chapter explains the concept of sustainable development in Afghanistan, specially, industrial sustainable development. As a preliminary research in Afghanistan, this study aims to investigate and recommend the feasible industrial sustainable development strategies for Herat province of Afghanistan.

Herat is famous for its historical buildings and minarets; Herat is one of the largest provinces of Afghanistan. It is located in the west of the country. Positioned at 63-degree latitude and 43-degree longitude, Herat is bounded by Turkmenistan and the Afghan province of Bādghīsāt in north, by Iran in west, by Farāh Province in south and by Ghowr Province in east. Its population touched the figure of 1,967,180 while its land area is 63097-km2. With a history as one of the ancient city, Herat is known with different names in different periods. Herat has the credit to be the center of Islam.

Herat has 15 municipality districts and it is divided into 15 administrative units including Engeel, Shindand, Pashtoon Zarghoon, Ghorian and Guzra as first grade districts. However, Gulran, Zinda Jan, Awba, Kushk, Kurkh, Kuhsan, and Adraskan are second grade districts while Farsi, Kushk-i-Kuhna, and Chisht-i-Sharif are third grade districts.

The widely known Salma Dam which is located in Chesht-i-Sharif District, constructed on Herirod River. The dam has the capacity of producing 42 megawatts electricity. The dam helps irrigate 2, 000 Hectares land while the neighboring provinces will also advantage from the electricity to be generated from the dam.

Literature and poetry have huge number of fans in Herat with the province arrange cultural activities most of the time. The province is historically recognized as a cradle for knowledge and literature. The province produces big names of international repute in literature and poetry. Herat was one the capital of Alexander the Great with the Herat Arg (Qala-i-Ikhtiaruddin) was the sign of dignity at that time. The great poet and Sufi Khwaja Abdullah Ansari and Abdul Rahman Jami are among culturists that added to the beauty of Herat. Currently, the province has leading poets, singers and writers. There are many cultural and literary associations such as Ustad Mashal, Herat Cultural Association, Poem and Literary Association, Peer-i-Herat, Ustad Kamaluddin Behzad Art Association, Khwaja Abdullah Ansar Social Association and many more, which contribute to the progress and prosperity of the arts, culture and literature and the province as well.

While noticing that Herat is an ancient province, UNESCO prompted to put the province in world cultural heritage program list. Minarets of Herat, Pul-i-Malan, Herat Arg, the Congregational Mosque of Kherqa, Herat Mosque, Khwaja Abdullah Ansari, Herat Peer, Shahrukh Mirza, Maulana Jami, Imam Fakhr Razi, Shehzada Qasim, Sultan Agha, Khwaja Ghaltan Wali, Mullah Waiz Kashifi, the Gauhar Arshad Begum Mosque and Shehzada Abdullah are among some historical monuments.

Khwaja Abdullah Ansari, Imam Fakhr Razi, Abdul Rahman Jami, Khwaja Ghaltan Wali, Mir Abdul Waheed Shahid, Malika Gauhar Shad Begem, Mihri Herawi, Sultan Hussain Biaqra are among globally known celebrities of Herat.

This province has plain geographical landscape and the Harirood River assisted pave ground for more agriculture related activities. There are natural almond and pistachio forests largely viewed as a main source of economy of the people. Rice, wheat, corns, apples, grapes, mulberry, pomegranates, saffron and various kinds of vegetables are the main products in Herat.

Trade and handicrafts are the people's ancient tradition. Even in BC, Herat was a big trade center on Silk Road connecting central Asia with China and Europe. Since long, its marble and glass made products are known global. World's famous museums keep Herat marble and glass made products. The province has Torghondi and Islam Qala ports, which give excellent job opportunities to the people of the area and stabilize their economy.

This province has 801 industrial factories and one industrial park where 20,000 Afghans and 300 foreigners are employed. The industrial park is in Guzra District cross from the airport on Herat-Kandahar Highway. Since the economic development, national self-efficiency and the progress of any country is impossible without the development of the industry, so the government of Afghanistan has established the industrial park of Herat in 2002 with the dimensions of 1/5 by 6 km. This park which has the capacity of more than 1000 production companies, is the largest park in the country. In this park, 650 plots of land have been distributed till now which only 320 companies are active in different parts like producing of marble, producing of iron smelting, carpet weaving, food stuffs, motorcycle assembly, cartoon production, building materials, medical tools, pharmacy and producing of flour. From 650 plots of land 120 of them are working on their facilities and 211 companies are inactive. About 150 production companies are in center and other places of Herat which are in metallurgy and livestock sectors.

1.2 Statement of the Problem

Sustainable development is development that meets the necessities of the present without compromising the ability of future generations to meet their own necessities.

It contains within it two main concepts:

- The idea of 'needs', in specific the essential needs of the world's poor, to which overriding priority should be given; and
- The concept of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future necessities.

Thus the goals of economic and social development must be cleared in terms of sustainability in all countries, developed or developing, market-oriented or centrally planned. Interpretations will differ, but must share certain overall features and must flow from an agreement on the basic concept of sustainable development and on a broad strategic outline for reaching it.

Development includes a progressive transformation of society and economy. A development pathway that is sustainable in a physical sense could theoretically be chased even in a rigid social and political setting. But physical sustainability cannot be protected

without growth policies pay attention to such thoughts as changes in access to resources and in the sharing of profits and expenses. Even the narrow notion of physical sustainability infers a concern for social equity between generations, a concern that must logically be extended to justice within each generation.

Industrialization has been vital to economic growth. Not only is industrialization the usual route to development, but as an outcome of the globalization of industry, the speed of development can be explosive. A lot of countries have gotten higher development levels for the advantage of their people in all dimensions social, economic and environmental. So far, stable prosperity has not been reached through the world and there remain significant variances between and within countries, regions and societies. Development in the past happened too often without preparing the opportunity of contribution and reward to important segments of the population, and women and youth in particular. Obviously, future strategies for poverty reduction require to be economically empowered as a response to these challenges, is promoting inclusive and sustainable industrial development. The industry views sustainable development as a challenge put before all parts of society. In the advances made in its own operations, its improved performance and in the developments to the human condition made through its products, the industry sees reason for hopefulness and believes that sustainable development can be the intellectual outline around which industry and also sectors of society can reach agreement on how to advance living standards and the environment.

1.3 Significance of the Problem

This research will address a highly important aspects of industrial sustainable development strategies for Herat province of Afghanistan. The importance of this research has been explained according to the following reasons:

- Since Herat is the economic pole of Afghanistan and has the biggest industrial town in the county, therefore it is necessary to design sustainable industrial development strategies in order to grow Herat’s industry.

- Because Herat has border with two countries (Iran and Turkmenistan), so it seems important to design feasible industrial strategies for competition of products with these two countries.
- After decades of war in Afghanistan which all aspects of the life have been affected, especially the industrial sector, so it is considered essential to investigate more researches on it.

1.4 Research Background Afghanistan

There are a lot of discrepancies about the exact definition of the industry. The industry has different definitions which are presented according to the capability of the products replacement, process of production, and geographic ranges. For instance, the most important definition of industry was given by Michael Porter in 1979: a group of competitors producing substitutes that are close enough that the behavior of any firm affects each of the others either directly or indirectly. Later, Porter defined the term more precisely as a group of companies offering products or services that are close substitutes for each other, that is, products or services that satisfy the same basic customers' needs. This new definition emphasizes the importance of industry borders and industry's role as a market supplier or producer of goods and services, as distinguished from a market, defined as a consumer of goods and services. Furthermore, inside every industry there are groups of companies that follow similar strategies, defined by Michael S. Hunt in his unpublished 1972 Ph.D. dissertation as strategic groups. Between these groups there are differences in entry barriers, bargaining power with buyers and suppliers and skills and resources. Strategic groups compete against each other within the industry as a result of these differences.

Afghanistan has a very brilliant history in the field of industry. From the study of the Avesta book and other books, the situation of the country seems very clear. Specially, in this ancient book the industrial situation of Afghanistan has been mentioned, and through its context it has been cleared that thousand years before Christ, the Western people had a bright civilization. Craftsmen have been proficient in making various metal ornaments of gold, silver, copper, iron, and so on. For example, gold coinage, gold and silver belts,

horseshoe, woolen goods, clay, smooth fluffy pieces, brass and mud dishes, goldsmith and pottery factories, iron and other industries have been mentioned in Avesta book. The book also shows that these people have had a high ranking in urbanization and civilization. Our country, in ancient times when there weren't naval, was connector between the great powers of the East and the West. On the one hand, the Chinese Empire and India, on the other the caravans of the Western countries from Iran to Rome, all passed away from Afghanistan. They bought and sold goods.

For the first time the modern technology of the West has been invested in India by British. Altogether, the government and people of Afghanistan became familiar with this technology and demanded that in our country this technology would be used, which almost machinery took place of handicrafts at that time. Amir Sher Ali Khan was the first king of Afghanistan that he tried to grow trade, agricultural products and industry in the country. The publication of the first issue of Shams al-Nahar had been took place during the time of this king. Lithography, ballooning, gunfire and gunpowder factories were made at this time. Abdur-Rahman Khan was another king of the country which in 20 years of his reign tried in government reforms, growth of capitalism and trade. Ibn-Sina Hospital and the first drinking water were built at this time. Official business establishments were formed. The export of astrakhan, almonds, pistachios, wood and minerals began to the overseas country. Mining started with the basic tools. Handicrafts and craftsmanship revived. The demand for the country's markets has grown in industries, especially the textile industry, wool, carpet, clay, hips and etc.

Habibullah Khan was the king of advancement. In the growth of education, domestic production, agricultural production, government buildings, capitalist development, he tried a lot. Hence, slavery, that was the disgraceful harvest of the Feudal society, was destroyed. Music grew. A car manufacturing company was established by court. At the same time, the leather repair factory in Kabul was founded by a British specialist. The factory provided the boots' leather needed for the Afghan army, as well as in the Kabul markets. At the time of this king, a woolen knit factory was built. The factory at first produced annually for 50,000 military units and launched to the market. The Jabalu-Seraj Hydroelectric Factory was built in 1907. For the first time, a white gunpowder shotgun was made at War Factory of Kabul. The extensions of Kabul to Nangarhar and Kabul to

Jabalu-Seraj telephone lines were also scheduled at this time. The roads were constructed. The number of workers at this time ranged from 1,500 to 5,000. The upward trend in the rise of workers during the reign of Amir Habibullah Khan indicates the expansion of investment in this period.

King Amanullah Khan came to power by the Constitutional Movement. He was a reformist person and he wanted to advance the country very quickly. In the first step, he approved reforms and laws to make growth easier. In 1922, the Industrial Promotion Act was approved, and the King encouraged the growth of industries through a tax reform. The law of "retirement" was also introduced to strengthen production. During this period, private ownership was strengthened. The commercial companyies of Tonavir, car, drug, Afghan Comrades, Afghan Alliance, Qamar and Zia German were established. The government established the commercial firms of Amani and Samar. Since the foreign goods were barred from expanding of domestic productions in Afghanistan, the country's economy remained intact. The country lacked major factories, railroads and so on. Hence, the Amanayi government has sought to produce factories and railroads, and announced in the 1307 AH Loya Jirga that the government has taken up work on the construction of an airplane repairing plant and also a white gunpowder plant. During this period, contracts were concluded with two German and French companies, based on which railway was supposed to be constructed from the south to the north of Afghanistan for ten years. The extension of the Telegraph Line and the telephone line were taken under the process between the center and the provinces of the country. Electric power stations were used in Paghman, Jalalabad, and Kandahar. To curriery, gunsmiths, cement and sulfur production factories were given electricity. Car repairing, soap, perfumes, weaving, carpentry, ice, cotton and oiling factories were established in Kandahar, Mazar-i-Sharif and Herat.

During the rule of Muhammad Zahir Shah, Dawood Khan provided the Afghanistan army with the modern Russian weapons. During his reign, Mohammad Dawood Khan contributed a lot in developing of economic and public projects. He took a 25-year development plan in the country. The Afghanistan Television Construction Project, railway survey of Islam Qala, Turghandi, Kandahar, Ghazni and Kabul, Ghaleh Logar plain airfield project, Aynak copper extraction so on were took under establishment. Dawood Khan was killed on April 27, 1978 by coup-officers.

Afghanistan has not only grown from 1979 to 2001, but all the establishments have been destroyed by the effects of civil war. Since 2002, due to the country's attention to Afghanistan, it has grown from zero to a better position. After this year, in the area of road construction, the construction of water, solar and wind electricity projects, architecture, handicrafts and machinery industries specially attention have taken place. Significant differences have happened in the quality of the press, media and information. It has been established to hundreds of schools and to dozens of public and private universities. Thousands of private life projects were built. Telecommunications has improved significantly. Freedom of the parties was announced. According to the figures of the Afghanistan Investment Support Agency (AISA) between 2003 and 2011, 25265 domestic companies and 3854 foreign companies registered, which their investments in different sectors of Afghanistan reaches more than $ 5255 billion. Hence, on December 6, 2005 the Afghan Investment Law was approved in 1 Chapter of 33 articles.

In Afghanistan, due to the necessity of time in 1974, for the first time industrial parks were established by the cooperation of India in the Pul-e-Charkhi area of Kabul. Later, Bagrami Industrial Park in Kabul and an industrial park in Herat province which are standard parks, have been established. Two other industrial parks were built in the Mazar-i-Sharif and Kandahar provinces, which have not been distributed yet. The largest industrial park in Jalalabad is under construction. Hence, more than 20 industrial parks in the provinces are planned to be built. According to information provided by the Afghan Industries Association, 281 factories in Kabul, 320 factories in Herat Province, 29 factories in Kunduz, 320 factories in Nangarhar, 29 factories in Balkh, and 115 factories in Kandahar are active.

According to the similarities in terms of manufacturing process, style of marketing and management, volume of capital, type of machinery, type of raw materials, there are various industrial groups. Industrial groups can be divided into different aspects. Some of these divisions are as follows:

- Heavy Industries and Light Industries
- Centralized industries and decentralized industries
- Global Industries and Local Industries

The main industries of Afghanistan are: vegetable oil plants, raisins, flour, chemical fertilizers, sugar, paper making, dairy and meat products, glass manufacture, plastic manufacture, soap-makery, cotton and silk textiles, handicrafts included carpet weaving, short- napped coarse carpet weaving, yarn, curriery, muddy containers, masonry and needlework.

1.5 Aims and Objectives

The aim of this study is to explore and analyze the feasible industrial sustainable development strategies for Herat province of Afghanistan. In the end of this study, it is expected to recommend the feasible industrial sustainable development strategies for the province.

The research has significance outcomes which could be as follow:

- Find out the obvious policies and strategies for supporting and encouraging of the investors maintaining sustainable development strategy.
- Easy and comfortable transportation routes for transferring of goods.
- Finding potential job opportunities through investment.
- Identifying appropriate markets for exporting of the products.
- Introduction of modern technology and Identifying and positioning of energy resources and mining maintaining sustainable development strategy.
- Identifying the most popular Local Products and Handicrafts of Herat province.

It is also expected that this research study will support the policymakers within government, development agencies and the local community to create better policies for the industrial development purposes in Herat province of Afghanistan.

1.6 Research Questions

This study will ultimately provide answers to bellow questions:

- What are the feasible industrial sustainable development strategies for Herat province of Afghanistan?

- Have the government policies been sufficient to advance industry and encourage Herat artisans?
- Are there appropriate land and air transportation routes for exporting goods from Herat to other provinces and places?
- Have the government encouragement and supportive policies for domestic and foreign artisans created job opportunities?
- Are there suitable domestic and foreign markets and customers for Herat manufactured products?
- Have effective efforts been done to develop and change the industrial technology from traditional to modern?
- Have energy sources and water dams been created to reduce the electricity and fuel production costs in Herat province?
- Have effective strategies been taken by the government in order to reduce pollution and sewage of industrial factories?
- Has modern extraction of mines been taken place for supplying of raw materials to the artisans?
- Have educational, vocational and technical centers been created for training of professional and specialized cadres and raising of the capacity of Herat entrepreneurs and workers?
- Have repairing workshops for making the factories' equipment been made in Herat Province?
- Have cold stores and storages been created for preservation and keeping of the products?

1.7 Research Hypothesis

The proposed study will address following research hypothesis:

- There are feasible industrial sustainable development strategies for Herat province of Afghanistan.
- The government policies have been sufficient to advance industry and encourage Herat artisans or not.

- There are appropriate land and air transportation routes for exporting goods from Herat to other provinces and places or not.
- The government encouragement and supportive policies for domestic and foreign artisans have created job opportunities or not.
- There are suitable domestic and foreign markets and customers for Herat manufactured products or not.
- Effective efforts have been done to develop and change the industrial technology from traditional to modern or not.
- Energy sources and water dams have been created to reduce the electricity and fuel production costs in Herat province or not.
- Effective strategies have been taken by the government in order to reduce pollution and sewage of industrial factories or not.
- Modern extraction of mines has been taken place for supplying of raw materials to the artisans or not.
- Educational, vocational and technical centers have been created for training of professional and specialized cadres and raising of the capacity of Herat entrepreneurs and workers or not.
- Repairing workshops for making the factories' equipment have been made in Herat Province or not.
- Cold stores and storages have been created for preservation and keeping of the products or not.

2. LITERATURE REVIEW

2.1 Introduction

The objective of this chapter is to explore the available literature concerning the topic of this study, furthermore, the explanation of some significant issues about industrial sustainable development in the previous studies will be discussed, this literature review looks at the available literature from a variety of sources and studies concerning the research topic conducted in different countries.

Firstly, this literature review will look into the studies that have already been done concerning the importance of industrial sustainable development. Secondly, this review will look into the definitions of key elements of the thesis topic such as, concept of development, three aspects of sustainable development (economic, environmental and social) and a synthesis prospective. Then industrial concepts, especially, achieving industrial sustainable development, instrument for implementing industrial sustainable development, indicators for monitoring progress with the implementation of sustainable industrial development, cross-cutting issues (climate change, enlargement and employment) and at end a short look to Afghanistan Sustainable Development Goals.

There are similar researches which explain the industrial sustainable development strategies in different countries. According to the study of Dr. Uri Marinov (1996) Environmental Consultant about sustainable industrial development of Israel, he claims in order to promote sustainable industrial development; the following steps should be taken:

- All economic decisions must be based on sustainable development principles.
- The activities which contribute to sustainable development plus those which counteract it should be indicated, containing goal setting and data transmission.

- Decision makers should be interested to base their decisions not only on the promise of short term achievements for immediate development in quality of life but more on criteria of sustainable development.
- An obvious policy which sets goals and improves the essential measures should be organized to reach these goals at all levels of society.
- A political "give and take" procedure should be originated, specifically with respect to present versus future necessities.

Moreover, in order to reach sustainable industrial development in the future, activities in a number of realms have to be undertaken now:

- Information: Environmental information to all decision makers should be transferred in the industrial sector at all levels.
- Research: In order to better recognize industry's involvement to environmental pollution, practical and basic research are vital and the means which should be used to become success on environmental problems by means of urbane technologies.
- Environmental policy: An obvious environmental policy with detailed schedules and clear goals is needed to reach the purposes. Such policy must take account of international limitations and of new economic thinking while incorporating environmental policy with economic, social and political policy as it relates to industrial development.
- Environmental problem analysis: Better use should be made of such instruments as life cycle analysis of products, economic tools and technologies for material recycling and pollution prevention.

In other research Prof. Dr. Amin Mobarak (2001) Chairman of Industry and Energy Committee, explained the challenges of sustainable industrial development in Egypt.

Understanding the significance of manufacturing, Egypt looks at industry growth as vital for economic and social development and for increasing the growth rate and improving the quality and efficiency of the industrial sector. The industrialization’s process in Egypt depends on utilizing technology, natural resources and labor. Egypt has the competitive advantage in abundant labor and as a result, the labor-intensive exports represent an

important percentage of the exported manufactured products. This country relies in its development process on micro, small, medium, and large size enterprises. Egypt's Industrial development is characterized by two main trends, the establishment of new technologically competitive industries and the enlargement and renovation of existing industries to increase their productivity. The responsibility for carrying out the environmental policy of the Egyptian government has given to the Ministry of State for Environmental Affairs with its executive arm the Egyptian Environmental Affairs Agency. Their key emphasis is to prevent all sources of pollution and to protect Egypt's natural resources. The Egypt's environmental policy seeks to attain environmental protection through the creation of proper institutional, economic, and legislative frameworks at the national, regional, and local levels. After the enactment of Law 4of 1994, it became essential to make balance between the environment and development through sustainable development. This Law forces new institutions and all existing ones to make an assessment for the environmental impacts of industrial establishments. Numerous important policies have been initiated by Egyptian government in order to advance and implement environmental management programs and projects. For instance, the Support for Environmental Assessment and Management (SEAM) project which is funded by Britain's Department for International Development (DFID) and the Egyptian Pollution Abatement Project (EPAP) project which is funded by the World Bank, FINNIDA, European Investment Bank (EIB) and EEAA. But, there are some obstacles and constraints in enhancing the contribution of industry to sustainable development. Some of these constraints are connected to Human Resource Development mainly the increasing rate of population which leads to low standard of education and other key services. Moreover, technical that related to limited technical knowledge, lack of trained technical staff, high price of imported pollution prevention technologies, lack of coordination between authorities responsible for pollution monitoring, high price of conducting research and non-utilization of cleaner manufacture technologies in manufacturing enterprises hard currency limitations, fluctuations in raw materials market prices, governmental control over the exchange rate of foreign currency, and lack of global market companies are other constraints. A new five-year action plan 2002-2007 have been developed by MSEA and EEAA. This plan which includes 14 programs related mainly to

industrial development and sustainable development. Protecting the River Nile and water resources by controlling the industrial waste, industrial pollution abatement in the new industrial cities, creating environmentally friendly technology transfer by introducing ESTs are some goals of these programs. A ten-year strategy has been presented by the Ministry of Industry and Technological Development for upgrading, modernization and renovation of the Egyptian industry. About 50% of the renovation projects suggested is for exports and 40% of the new products is for export. As a whole, Egypt has achieved a big growth regarding industry sustainable development especially in the environmental dimension. Though, great efforts should be focused on implementing applied research and development to industry especially ESTs. This can be done by increasing the share of funding R & D and technology transfer from the meager value of 0.6% of GDP to 2.5% of GDP.

In the study of Kevin P, Gallagher and Lyuba Zarsky (2004) about sustainable industrial development of Mexico, observed pointers of the performance of Mexico's Foreign Direct Investment (FDI)- led integration strategy in contradiction of two broad sets of aims in the 1990s:

- The goals of fostering "industrial sustainable development," that have been explained in terms of development of internal productive capability, enhanced industry environmental performance and reduced inequality.
- Goals articulated by the government, containing progress in Foreign Direct Investment exports and inflows in the manufacturing sector, industrial restructuring, national progression and investment;

They realized that the policy was effective in attaining some of the primary set of goals: Foreign Direct Investment exports and inflows enlarged in the industrial area, as did the Mexican manufacturing efficiency. Though, their report implies to four overarching deductions:

- A form of growth has been produced by the integration policy in which the national economy is mostly remove from development in the export sector.

- The Foreign Direct Investment -dependent, this country's export-oriented industrial ideal of growth is susceptible to monetary inconsistency and lack of competitiveness.
- The policy did very weakness in terms of occupation development and appears to have aggravated, rather than decreased, exterior migration and revenue unfairness.
- Environmental implementation has deteriorated because of the insufficiency of the government obligation to environmental rule and measure effects.

In short, the feasibility of the Foreign Direct Investment -led integration policy is away from certain, together since it might not be sustainable and it does not produce industrial sustainable development. The important issue is that the policy disordered means—macroeconomic constancy and enlarged Foreign Direct Investment influxes and exports—for ends, as well as a better lifecycle for the bulk and a rise in local capabilities for manufacture and invention. The main issue, obviously, concerns the replacements. Assumed bazaar orientations concerning economic globalization, in addition to neo-liberal local and investment instructions and worldwide business and the contiguity of the giant to the north, what "room to move" does this country have in terms of monitoring a track concerning industrial sustainable development? The industrial sustainable development strategies of the previous are not reasonable assumed present bazaar circumstances, even if desirable, and business and investment guidelines. The government ought to hold industrial sustainable development as the focus of its growth strategy, as a preliminary point. This will give the idea, initially, that the important objective will be not to Foreign Direct Investment per se nonetheless to advance the general environment for investment and national manufacture, most significantly containing investment by national stakeholders in national companies. High national price of wealth should be decreased in a method that does not re-trigger inflation, in order to do the same. Great interest taxes, intended to charm external investment have choked off national enterprise. Credit tools planned especially for minor, medium and micro sized industrial units could produce both investment and employment, via their relations to nearby located inputs. Second, a considerable rise in private and public investment in extending and enlargement capacities of the country for invention would be essential by a sustainable industrial development strategy. Learning (primary to university), methodical and trade education,

engineering, technical, and industry-relevant investigation and growth are the necessities of investment. Third, the concept of embrace an industrial sustainable development policy is to look for the national bazaar as a base for the progression of inventive and effective companies. For instance, R&D must be focused to domestic markets as producing worldwide competitive industries and crops. Fourth, in order to enlarge the possible for efficiency spillovers from Foreign Direct Investment, suitable strategies would be essential, mostly via the growth of local source capabilities. Before, this country got Foreign Direct Investment spillovers greatly through domestic content requirements and export performance. WTO and NAFTA are ruled out these strategies now. Fifth, an industrial sustainable development policy in order to minimizing the environmental destruction created by industrial growth would need a vital commitment. This would involve investing financial resources in enforcing and strengthening environmental regulations and also working with factories to advance performance-based environmental management systems. In order to indorse the design of extra eco-efficient procedures and services and crops, environmental purposes also require to be combined into R&D policies. Sixth, discussion and replication on general industry policy of this country would be required in a sustainable industrial development strategy. What kind of industries must this country cheer? Ought it emphasis at first on labor-intensive areas rich in resident content? Is it a necessity for this country to have worldwide "progressive" competences in industries like great tech or bio-tech, so that achieve a fundamental information and technical base for the industries of the upcoming—or must it emphasis on agro-industrial productions which form on its essential agricultural powers? And what types of industry growth implements might be efficient?

In India, the study of M.N.Murty and Surender Kumar (2002) measured the cost of environmentally sustainable industrial development. In this paper which have been used the methodology of distance function in the theory of production, the paper attempts to evaluate the maintenance cost of water pollution abatement measures to the Indian industry. The distance function is estimated using both programming and stochastic frontier models for a sample of water polluting industries in this country. The firm-specific shadow costs for pollutants, scale economies and measures of efficiency are estimated. Estimates indicate that on average the price to the Indian industry for reducing one ton of

BOD and COD are respectively, Rs 0.246 and 0.077 million. Huge differences in the estimates of firm-specific shadow costs of pollutants reveal the usage of ineffective water pollution abatement technologies. The relationships between marginal costs of abatement of BOD and COD and the index of compliance (ratio of effluent load to sale value) or firm-specific shadow prices and the pollution load reductions obtained confirm the previous empirical outcomes of studies on water pollution abatement in industries of India. The previous studies have showed declining marginal cost with respect to the pollution loads reduced by the firms and increasing marginal costs with respect to reductions in pollution concentrations.

The article of Chen Shiyi (2009) about Energy Consumption, CO_2 Emission and Sustainable Development in Chinese Industry; the findings show that in order to analyze industrial sustainable development of China constrained by energy and environment, this study constructs the input and output panel data of China's 38 sub-industries, evaluates their efficiency and carries out the green growth accounting based on trans log production function. This study determines that, as a whole, industry of China has attained the transformation from extensive to intensive growth, with the productivity to be the first driving force, in the long run that is essential to sustainable development. Labor and emission made less even negative influence while in addition to technical progress, capital and energy have also been driving the industrial development during the sample period to it. Some heavy productions, though, are still characterized by extensive development and must advance their energy-save and emission-abate technology to favor the sustainable development of overall Chinese industry.

According to Damian Mbaegbu (2016) about an Industrialization Strategy for Economic Diversification and Sustainable Development of Nigeria. The aim of the study was to test the role manufacturing industry can play in obtaining the diversification of the Nigerian economy. Since the end of the civil war in 1970, the economy had been mostly dependent on revenue from the export of crude oil and excessive importation of manufactured goods, which had made it susceptible to the price of vagaries in the world market. It was this susceptibility that gave rise to the introduction of the ineffective Structural Adjustment Programs in 1986. The situation had become very serious this time. Since 2014 demand rigidities had caused the value of crude oil to decrease steadily leading to a crash to $29.02

in January 2016. In good times since the 2000s the value had been as high as $108.00 per barrel. Theoretically diversification of economy is the process of making the economy related on a wide range of products and sectors in the place of a few and incorporating the economy into various regions or cartels so that a robust economic expansion and sustainable development can be generated. In the Nigerian situation, it is the procedure of avoiding overdependence on crude oil to the negligence of agriculture, services/trade, manufacturing and the other developing sectors and revenue earners. The researcher hypothesized that manufacturing production did not have any important relationship with the Nigeria's Gross Domestic Product (G.D.P). In order to test the null hypothesis, secondary data were obtained from the Nigeria Central Bank, CBN Statistical Bulletin to cover the period of democratic law, 1999 to 2015 when power transited to another political party. The dependent variable the G.D.P and the independent variables: the exchange rate, manufacturing output, the percentage of commercial bank loans to SMEs and the average capability utilization were subjected to many regression analyses. An important positive relationship between output of manufacturing industry and G.D.P was the main finding that there existed. The null hypothesis was rejected. Finally, it has been obtained that industrialization can be used to increase the G.D.P and expand the economy. The strategy recommendation was that all the industrialization strategies, to wit, export substitution, import substitution, small/medium industries participation and the big push policy should be accepted to make manufacturing the arrow head for attaining the diversification of the Nigerian economy for sustainable development.

Hojat Parsa et al (2018) measured in order to be sustainable how much the sector of industrial suppresses the development process in Iran. They hired a quadratic-log form of regression model to test the Industrial Environmental Kuznets Hypothesis; Furthermore, in order to evaluate the nexus among the industrial development they used a Vector Auto-Regressive model, environmental pollution, energy consumption and income inequality during 1971-2014 in Iran. The outcomes approved the Industrial Environmental Kuznets Hypothesis. Additionally, since all the replies are increasing, they indicated that all the three variables present the similar reply to the shock in the industrial development. It provides majority of evidence for the incompatibility of industrial development with environmental, social and resource development in Iran. In order to pave the way for

coordination among the quadruple layers of sustainable development including environmental quality, industrial growth, social satisfaction and optimal usage of resources, this sector should be improved, modified and reconstructed. Advised policy-makers to consider the sustainability properties in their development strategies as the growth process evolves comprehensively.

2.2 Sustainable Development: Describing a Novel Model

Once the World Commission on Development and Environment offered their 1987 statement, Our Common Future, they searched to discourse the problem of contradictions between development and environment objectives by expressing a description of sustainable development. SD is development which fulfils the necessities of the current without compromising the capability of upcoming groups to fulfil their individual necessities.

According to the wide argument and usage of the idea since then, there has commonly been a recognition of three sides of sustainable development (Holmberg 1992, Reed 1997):

- Economic: An economically sustainable system, in order to maintain manageable levels of government and exterior liability and to eschew extreme sectoral inequities which hurt industrial manufacture or agricultural, must be able to generate merchandises and services on a persistent basis.

- Environmental: A system of environmentally sustainable has to preserve a steady source base, eschewing over-exploitation of renewable source structures or environmental sink functions and reducing non-renewable sources only to the degree that deal is made in satisfactory alternates. This contains preservation of atmospheric steadiness, biodiversity and other ecology practices not normally categorized as sources of economic.

- Social: A system of socially sustainable has to attain dispensational equity, gender equity, sufficient facility of social services including, education and health, contribution and political responsibility.

Obviously, a lot of possible obstacles to the unique simple description are introduced by these three elements of sustainability. The objectives which stated are rising the subject of how to judge failure or success, how to balance aims and multidimensional. For instance, what whether providing of sufficient water and food materials seems to need variations in land usage that will decline biodiversity? Which objective will obtain priority?

We can seldom eschew tradeoffs in the factual world, we can exploit just one purpose at a time. In order to describe SD with the level of control presumed in the logic of modernism and in an operational way in the detail, it is impossible (Norgaard, p.22). In order to pin down logically, the powerfully normative nature of the sustainable development idea creates it problematic.

Nevertheless, the three overhead philosophies defined do have intensification at a collective- sense level. They gladden the standard set forth former for a powerful, simply grabbed idea that can have wide implement ability. Confidently the world would be a nicer place - and similarly assuredly we often fall short in all three admirations, if we could pass nearer to attaining this three-way objective. This would be calmer to classify unsustainability than sustainability - and the classification of unsustainability can stimulate us to obtain essential strategy act.

This is informative to test the difficulty via various corrective viewpoints. Indeed, the aims set forth need the visions of numerous correctives. Economists, would desire to offer larger heaviness to the financial purposes, social theorists to the social issues and ecologists to the environmental dimension. But we have to recognize them and discover their interior reasons, before we can effort to equilibrium these various viewpoints.

Each one of the three parts is usually denoted to as a system: environmental, social and economic systems each have their distinct judgement. To analyze all these systems at once, it is an impossible task. So, we have to begin by seeing each definitely, as suggested on sustainability pointers by the report of Balaton Group:

If distinct component structures cannot function correctly, the entire cannot function correctly and is not feasible and sustainable, only if component structures in addition to the whole structure are feasible SD is possible. In spite of the doubt of the orientation of

SD, it is essential to define pointers that are able to offer dependable and necessary info about the feasibility of each and of the whole system and to identify the essential component systems (Bossell, Hartmut, ed, 1999).

This indicates that in order to measure diverse dimensions of sustainability, we can use various indicators. Pointers suggest measurement; measurement suggests the academic description of theories to calculate. Let test what the three various corrective areas must suggest in this issue.

2.2.1 The economic outlook

Sustainability can be described in relations of the expansion of happiness over time, indicated by theory of neoclassical economic. (It is expected to be human happiness - the statements of the non-human world will be introduced while we reflect the outlook of ecological.) Most of the economists by classifying the expansion of happiness with the expansion of usefulness resulting from consumption make easier. Though it might be disapproved as a simplification, it surely contains a lot of significant elements of human welfare (housing, food, clothing, health and education services, transportation and etc.) and it has the logical benefit of decreasing the difficulty to a quantifiable single-dimensional pointer.

Then the query of if sustainability has some rationality as an idea of economic was raised by a formal economic analysis. Effective source distribution must have the influence of exploiting usefulness from expenditure, according to standard economic theory. Sustainability seems to mean not anything further than effective source distribution - an idea previously fine recognized in economics, if we admit the usage of time disregarding as a technique of paralleling the economic values of expenditure in various time episodes.

One mark of critique of this reductionist method to sustainability cores on the usage of discounting. The worth of one million dollar 100 years from present is the similar as a mere seventy-two million dollars today, at a discount rate of 10%. Therefore, it would deceptively be defensible to enact prices of up to one million dollars on people in the year 2100 in order to enjoy seventy-two million worth of expenditure today. Through this reason, according to a criterion of economic efficacy, much source reduction and environmental harm might be measured adequate and even best.

The problem is that we have indirectly forced a definite selection concerning the comparative happiness of upcoming and current groups, in accepting the use of a discount rate. Howarth and Norgaard (1993) have revealed that the selection of a reduction rate is equal to a selection of distributions between groups.

It offers excessive heaviness to the favorites of present customers by usage of a current market discount rate. This generates a strong bias against sustainability, when we consider issues like atmospheric accumulation of gases of greenhouse or soil erosion, where the greatest harmful effects are sensed over generations or decades. Therefore, we should also execute a little reduction rate or some type of sustainability regulation concerning source usage and environmental effects, in order to reach intergenerational equity.

A connected subjects' relevance the conception of natural wealth. Atmospheric functions and soils which involves of all the natural sources and environmental facilities of the earth are aspects of natural capital. Herman Daly (1994) has proposed that SD is able to be operationalized in periods of the preservation of natural wealth. Renewable sources and non-renewable sources are the two decision rules of this strategy objectives. The rule for nonrenewable is to re-invest the profits from non-renewable source utilization into investment in renewable natural wealth; the rule for renewables is to bound source expenditure to sustainable harvest stages. Succeeding the rules will preserve a continuous standard of natural wealth. In order to maintain a progressive for each capita standard of natural capital as well wants a steady level of human population, an issue that Daly has also highlighted (Herman, 1991)

Michael Toman has proposed that the topic might be determined through identifying that some concerns can be appropriately distributed with through neo-classical bazaar efficacy, whereas the others need the request of an inoffensive lowest standard method to retain environmental purposes and crucial sources (Ciriancy, 1952). He recommended that the principles of probable harshness and irreversibility of ecological troubles must be used to choose which academic outline is more suitable:

The idea of a harmless least standard is able to be applied to interests about human impression, source limitations and intergenerational justice. The harmless least standard theorizes a publicly specified, although "fuzzy," separating stroke between the free play

of resource trade-offs and moral necessities to preserve and enhance natural resource systems. Succeeding a harmless least standard, civilization would exclude movements that might effect in natural influences outside a definite verge of charge and immutability. Principal to the harmless least standards method are the character of community choice creation and the foundation of social standards. Be contingent on ethical decision about ethical necessities and the worth of disregarding, the harmless least standard will be indicated contrarily by environmentalists and economists. (Michael 1992, Rajaram, Jonathan, Neva 1995).

The acceptance of this sensible proposal would take extensive inferences for economic philosophy and strategy. Reminder the vital character of public decision making, ethical necessities and the foundation of social standards in Toman's proposed judgement outline.

No one of them seem in the neo-classical economic ideal, where bazaars are supposed to be the finest source distributors, and the infrequent alteration of a "market faultiness" the single suitable character for government. Therefore, Toman is in influence declaring the significance of sustainability as an idea liberated of standard neo-classical economic inquiry, one which needs a clearly normative and socially specified procedure of decision-making.

It illustrates a basic move in the economic model. Greatly as the Keynesian solstice legalized the idea of government interference to attain macroeconomic steadiness, the approval of sustainability as a usable social aim places a novel complexion on totally strategy issues regarding the relationship between the environment and human economic activity. There is no doubt in high value of Markets, but they are not able to define the finishes, that should be reached at by a social choice procedure warned by various corrective perspectives. It will need an unfamiliar self-effacement on the portion of economists, and a readiness to effort collected with other natural and social experts. As proposed by Toman:

To address some significant issues related to sustainability there is great scope for interdisciplinary work, including classifying constraints, defining aims and solving the related dissimilarities. Larger usage of environmental info and the concepts of physical source bounds in an inquiry of source worth could be made by economists. Social experts

can donate to an accepting of just how upcoming generations may worth various qualities of natural environs. Ecological information must be provided by ecologists in a way that is able to be used in economic estimation. Moreover, they must also take into explanation the character of economic inducements in environmental effect enquiry (Toman, p.90)

We must test the social and environmental girths of the subject, so that discover additional the concepts of this method. Then we will be able to reflux to the query of if a novel model for growth strategy has truthfully appeared from the multidisciplinary argument on the nature of sustainability.

2.2.2 The ecological outlook

Ecologists and physical experts are familiar to the concept of boundaries, contrasting to the economists, whose replicas offer no higher border on economic development. Indigenous structures should exist topic to the inflexible rules of thermodynamics and the knowledge of population ecosystem has discovered the inferences of these rules for living creatures. As environmentalist C.S. Holling puts it:

Both of the vital maxims of evolutionary biology and ecological are that creatures are energetically over-productive, and that bounds fixed by space, vigor and time are unavoidably met. The fundamentals for totally modem ecosystem and evolutionary natural science rest in share upon the results of these two maxims (Hotting, 1994)

According to an environmental viewpoint, then, sustainability should include bounds on expenditure and population stages. The bounds use to whole organic classifications. Individuals must ultimately admit the limits of a finite planet, while they might seem to avoid them for a period. According to environmentalist Paul Ehrlich and his associates' estimation that individuals are nowadays "consuming, co-opting or removing approximately 40% of the essential vigor source for whole earthly animals (Paul, et al., 1986). Obviously, a doubling of this request, as may fit be pointed with a 33% growing in populace to 8 billion and a 50% growing in per capita expenditure by 2050, would leave little room for any other types on the earth.

Elasticity in ecologies is given rise by genomic diversity. Elasticity is a "get-well" capability that allows a structure to reply to damage or disturbances. Such as, a jungle

ecological unit might mend from a drop invasion through a growth in the populace of marauders that govern the drop, an increase of types unpretentious by the drop, and perhaps an expansion of drop confrontation in affected types. However, the designs of reaction will be extensively flexible, but the crucial honesty of the ecology will be conserved. The main to elasticity is interacting with each other, the existence of an extensive variety of species and offering a reservoir of genomic methods that offer the possible to adjust to altering circumstances.

Afterwards, for the environmentalist, sustainability must be stated in words of the conservation of ecology elasticity. The stated vision of sustainability is obviously diverse from the consumption-based principles suggested by economic theorists and the human-centered ideas place frontward by the World Commission on Environment and Development. The difference has been discovered by Penings and Common (1992) who differentiate concerning Solow-sustainability, isolated from the economic ideal of steady or growing expenditure, founded on ecology resilience of Holling-sustainability. The findings show that the ideas of Holling-sustainability and Solow-sustainability are mainly disconnect. It infers that there might be no near association among ecological sustainability and economic efficacy.

The significance of the ecological viewpoint is progressively obvious, for example more of the serious difficulties confronting mortality rise from letdowns of environmental elasticity. The revitalization of illnesses owing to the formation of “dead zones” in seaside waters, the growth of antibiotic confrontation, the disturbance of ecological units by presented types and the numerous environmental intimidations connected to weather alteration and enlarged weather instability, whole appear to the effects of increasing individuals economic action. As Holling puts it:

The planetary expansion of their influence, and growing human populations in the South, joint by unfair administration in both South and North, decreases useful variety and rises spatial concord not only in states but on the whole earth. Spatial heterogeneity and functional variety of the configuring procedures are the two most crucial factors of environmental heftiness and elasticity, the characteristics which offer the transfer of environmental facilities and of time that have permitted individuals to learn and adjust in

the previous. And these important characteristics are now being cooperated at the level of the earth (Holling, 1992, p.93).

The worst instance to date of the response results of individuals' devastation of ecological unit elasticity is maybe the disturbing effect of AIDS in the African continent. Maybe AIDS created in rain-jungle primates and feast to individuals via human interruption into the jungle. Before continuing inaccessible in minor groups, it then feast all over the world via worldwide trade and trip, such as numerous other damaging drops and viruses. Populace checks via similar intensive environmental reaction are, obviously, familiar to environmentalists. Nonetheless they are usually distant from the opinions of the policymakers and economists who up till current have formed our ideas of growth.

Obviously, a combination of ecology and economics is mandatory, and it could just be reached through the help of the third component of the sustainability triad - the social viewpoint. We have to turn to conscious social action if we are not able to trust on unadjusted bazaars to resolve our difficulties. But social act at what level and by whom? And also how do the ecological problems connect to the other excessive fail of growth to date - the perseverance of inequity? This is in the social part that we should pursue the vital to the design of strategies for SD.

2.2.3 The social outlook

As we have indicated, advocates of sustainable development, identify the social element of growth like a vital portion of the novel model (Holmberg and Reed). In doing so, they are authenticating the significance of a greatly elder viewpoint. An individual growth attitude underlining subjects of essential necessities and fairness is fine stranded in the era of economic philosophy. Amartya Sen and Sudhir Andand (1996) stated, interests for these scopes of economic growth begin with the initial economic philosophers, and difference the wealth maximization attitude to the human development attitude which has conquered modem economics:

In making economic enquiry and strategy take wide note of the requests of human growth there is no basic movement. The attitude regains an existing legacy, instead of inserting or bring in a different alteration. The concern in individuals growth has had to contend with different significances and chases inside the body of the economics' mainstream. The

infatuation with opulence, monetary achievement and commodity manufacture can also be drawn in economics via numerous periods. Definitely, the prevailing modern custom of concentrating on such variations as per capita gross national product (GNP) or countrywide capital is a continuance maybe even an increase of the past wealth leaning attitude (Sudhir Andand, Amartya Sen ,1996).

The emphasis on basic necessities and equity in development, as they have noted, has been expressed by the United Nations Development Program's series of Human Development Reports. Besides to computing the Human Development Index that proposes a diverse extent of growth achievement from each one gross national product or gross domestic product, the HDR concentrate yearly on a diverse phase of economic and social growth like gender inequity 1995, democratic governance 1993and poverty 1997.

When the Human Development Index does not clearly consist of some ecological measures, the relationship between equity and sustainability was argued by the 1994 article:

The idea of SD rises the subject of if there is any cause to cross them on to the following generation and if current life-models are admirable. Since intergenerational justice should pass hand in hand with intergenerational justice, a main rearrangement of the world's expenditure and revenue designs might be an essential condition for any feasible policy of SD. Growth designs which preserve today's injustices are not sustainable and not value sustaining (UNDP, 1994).

Obviously, the topic of ecological sustainability is tangled by that of inequity and poverty. This one has regularly been stated that the causal connection turns both paths - improved shortage and damage of rural livings quickens ecological poverty as expatriate individuals put larger heaviness on bordering lands, fisheries and jungles.

If the difficulties of environs and justice are obviously connected, therefore should be the resolutions. The extensive hopefulness implied in Rostow's unique stages-of-growth model overlooks cultural and social alterations among nation-states plus the central power difference among developing and developed nations. The vision of growth like a one-way voyage to developed situations loses to contest the knowledge of numerous individuals whose livings are endangered by globalization.

Western local capabilities of growth have been closely related in various localities of the third world with the closure of original political, economic and cultural structures; with enlarged dissimilarities in lifecycle probabilities between genders and among classes, ethnic groups, orders and with deterioration in and elimination of availability to the biophysical environment (Porter, Philip, Eric, 1998).

As we search for approaches of justifiable growth and sustainable, therefore, we have to identify the necessity for an important amendment in what Pablo Escobar mentions to as a growth dissertation conquered through updating visualization of the West and the power. A SD procedure will have to be decentralized, pluralistic and democratized.

And it will have to conclude a well skepticism about Western replicas and the updating results of worldwide bazaars. Also It will have to equilibrium wealth-creation by prosperity sharing.

Radical critics are not the single who are cognizant of the necessity for important alterations in the growth model. Lately the World Bank has formed reports emphasizing the role of the state, the significance of social capital and the significance of native non-governmental and government administrations in growth (World Bank, 1997). From the Bank's further conservative viewpoint, decentralization, involved democracy and social wealth signified by powerful native association are well-matched with, and useful to, standard processes of growth like gross domestic product by each one.

Furthermore, investigation on pointers of SD has been shaped by the World Bank in specific procedures of real reserves: the factual degree of reserves in a nation later due account is taken of the reduction of natural sources and the compensations affected by pollution (World Bank, 1997). The novel care to a mixture of environmental and social issues specifies that strokes of thought formerly at the margins of growth strategy are creating their path into the mainstream.

Whatever has been mentioned to as the consensus of Washington on the qualities of globalization and free bazaars has also arisen under challenge from the World Bank's individual principal economist, Joseph Stiglitz (1997). There are several zones according to Stiglitz in which the actions of free bazaars are damaged by unbalanced rein of info. The slightly obscure economic concept is able to be interpreted into an consciousness of

the significance of social norms and institutions in determining bazaar results. This in line defends governmental and social act at macro and micro stages, and unlocks the path to an extra obviously normative idea of growth. Stiglitz, in this logic is repeated to the additional aim-oriented viewpoint of the of the unique theoreticians of growth - except for the objectives that at the present appear suitable have greatly sturdier environmental and social elements.

Although there are obviously extensive dissimilarities of viewpoint and highlighting among the detractors within and without the growth founding, there appears to exist an extensively touched dissatisfaction with current growth practice and theory, and it seems that the components of a novel model are evolving. Can we incorporate the ecological, social and economic viewpoints to offer a different image of growth in the 21st century?

2.2.4 A synthesis of outlook

Here there is a short revision on some of the key subjects enlarged up to now:

- Both total source demand and population, according to an environmental viewpoint, should be restricted in scale, and the truthfulness of ecological units and variety of species should be preserved.

- While preserving a sound economic base, a perception of SD should remedy ecological destruction and social injustices,

- Main idea of growth was founded on a direct-line movement from customary to new mass-expenditure society. Inside this outline, a tightness industrialized among the reasonable provision of preliminary necessities and the advancement of economic progression. Growth has remained unbalanced as it has continued over the past half-century, and has had developing negative environmental effects.

- The completion of main learning and health requirements, involved democracy and social justice are vital basics of growth and are interconnected with ecological sustainability.

- Natural capital maintenance for intergenerational equity and sustainable economic manufacture is crucial. The mechanisms of Bazaar do not act efficiently to preserve natural capital, but incline to degrade and reduce it.

Engaged with each other, new strategies are clearly suggested for the development process by these principles. They also need an adjustment of the main goal of economic growth. Economic growth is obviously required, specifically for those who lack basics, but should be theme to worldwide restrictions and must not be the major purpose for countries previously at great stages of expenditure. As Alan Duming has proposed, a reasonable stage of expenditure, composed with a healthy environment and powerful social institutions, signifies a better ideal than ever-increasing consumption.

This would be essential to identify the bounds of the bazaar system, in chasing these modified development goals. The goodness of free bazaars grew an essay of confidence for strategy-makers during the structural modification phase of development policy; this creed would have to be reviewed, as the World Bank admit now. Although bazaars might be brilliant in some circumstances at attaining economic efficacy, those are frequently nonadvantageous in era of sustainability. For reaching particular environmental goals, guided markets may usually be useful tools, and there is a wide literature of economic on "interiorizing externalities" so as to return ecological charges and profits in the bazaar. However, in a wider viewpoint, it is the institutional and social procedures of setting environmental and social objectives and standards which have to direct SD strategy.

It may be appropriate to eschew two extremes, as we pursue to describe the SD nature further exactly. One is whatever might be named "mere sustainability" - basically certifying that economic manufacture is able to continue stable or rise. The attitude offers little shrift to the environmental and social features of sustainability by way we have perceived draws some funding from philosophy of neo-classical economic. If the single aim that matters is to preserve manufacture stages high, the difficulty of sustainability becomes unreliably relaxed to resolve - but the suggested resolutions might just make worse difficulties.

Supporters of production-oriented sustainability incline to be concerned into high-tech fixes that frequently have unintentional results. Atomic power as a substitute to fossil oils,

planting the oceans with iron to rise plankton manufacture, genomic manufacturing to rise carbon fixation and crop yields - altogether demand to the attitude of technical administration, but totally have the capability for irreversible and dangerous results. The possibility of accidentally creating super-weeds, unresolved problems of nuclear waste management, and super-pests via genomic transmission and the improvement of persistence, unidentified reaction results from efforts to operate environmental weather device machineries - these must cause us to be careful about hopeful strategies for SD.

We must be cautious to institute a reasonable balance between the available means and resources and the favorite goals if we are to reinstate into the enquiry of the development of economic some of the main normative content (but now through a various purpose-orientation).

We can examine some sectoral specifics in order to carry the reasoning down to ground, and to catch a logic of what the philosophies shortened at the opening of this unit mean for growth. By each main zone, it becomes obvious that correct sustainability means a main move from organization of manufacture and current methods.

- Industry: It is obvious that "end-of-pipe" contamination device not be sufficient, as the measure of worldwide manufacturing production rises numerous-fold over existing stages, that themselves signify a multiplying over stages of 1950. The new idea of industrial ecology indicates the reformation of entire manufacturing sectors founded on an objective of decreasing emanations and recycling resources at whole steps of the manufacture phase. Shared modification and greening in addition to a wide supportive work among government and corporations will be required to reach objective.

- Agriculture: Necessity to food an increasing populace at advanced per-capita stages of expenditure is damaging worldwide water and soil structures. Reaction to this should be double. On the manufacture section, the present high-input methods that are guiding to solemn soil decay and contamination of water and overdraft should be substituted via biological soil renewal, effective irrigation and combined pest management. This in opportunity indicates greatly larger trust on native understanding and participating input into the growth of agricultural methods.

- Energy: Environmental impacts and reserve bounds both, in certain the reposition of hothouse gases, mean that it would be essential to complete a move away from vestige fuels well previously 2050. A non-fossil energy structure might be meaningfully further adjusted to native circumstances, decentralized, and grabbing benefit of chances for biomass, off-grid solar power and wind structures. It is doubtful to happen in the absence of a main armament of wealth sources for renewable energy expansion in countries now quickly increasing their energy structures.

- Renewable Resource Systems: Forests, water arrangements and world fisheries are harshly over-stressed. All levels of institutional management must be immediately renewed, with even larger requests on total structures anticipated in the following century. Multilateral contracts and worldwide funding are required to preserve transboundary resources; local societies must be powerfully involved in resource preservation and domestic source administration structures should be moved from objectives of utilization to protection and sustainable gathering.

It is obvious that the social element of sustainability is not only an ideal objective, but a requirement for attaining the ecological and economic mechanisms. Current establishments of whole types, containing national and native government, corporations and multinational administrations, may have to adjust to the necessities of SD if whole the difficulties that interested the growth of perception are not to develop worse. Contribution, independent governance and the gratification of main necessities are consequently an important portion of a novel growth synthesis.

2.3 Attaining Industrial Sustainable Development

Attaining industrial sustainable development means that industry and trade will have to regulate manufacture arrangements and its product combination. The strategy of industrial must donate to assisting such a regulation procedure. The aim sounds for a combined method to SD, cheers enlarged interrelationship among industrial policies and environment and supports the character of industry and business for the reaching of SD.

2.3.1 Enlarged mutual relation between industrial policies and environment

Industrial and environment strategies are equally significant columns for the attainment of SD and enlarged mutual relation among these strategies will advance competitiveness, environmental protection, employment and invention. Exertions to reach a great stage of environmental preservation might rise competitiveness and cheer industrial innovation. This is obvious that an extremely competitive economy is well located for chasing a great stage of ecological conservation and improving employment. There are several samples in fact, where enlarged economic and ecological efficacy will save resources for more social and economic development. Corporations' income from that economic improvement and advance to achieve sufficient revenues that permits them to constantly promotion machinery and rise efficacy, which in turn creates employment chances and produces environmental profits.

The complete array of expenses and profits of the different strategy tools have to be recognized and place in the equilibrium of a methodical strategy valuation outline, in order to be as supplementary and equally assistance as probable for environment and industrial policies. Reports of the 174 EC article this concern, declaring that in making strategy on the environment, the communal ought to get into account probable profits and charges of act or shortage of act in addition to the social and economic growth of the communal as a total. The articles of 2 and 6 along the similar lines, indicate that social concerns and environmental economic must be reserved into account in the framework of processes planned to guarantee that the situations essential for the quality of being competitive of industry exist, in Article 157 application.

Definitely, the strategy reply to the challenge of SD might evade numerous of the hurting trade-offs if wisely executed. This might uncheck equally advantageous interdependencies among economic, social and ecological objectives. A basic component of such a policy would be to acquire amounts correct, i.e. to permit them completely reproduce whole the prices of dealings, containing the ecological ones. That method, rather moves the attentiveness of expenses upstream, i.e. further than upcoming generations and civilization as an entire to the present generation and the contaminators themselves therefore making the economy further effective.

2.3.2 The figure of industry and business for attaining sustainable development

The figure of business and industry in common in the reaching of SD is outside suspicion, as revealed via evolving conceptions like eco-efficiency and responsible entrepreneurship and the capability of initiatives to face to novel difficulties like the info society, globalization and the alteration of manufacture and expenditure configurations. Though, corporations are able to play that character simply if they persist competitive, in other arguments if they can implement operational and organizational variations and create the suitable investments. Furthermore, since amounts play a significant character in the choices of both consumers and business, in order that they make the correct selections it is essential that the suitable outline circumstances are recognized by governments, containing value signs that reveal the complete array of expenses and ecological externalities

2.3.2.1 The environmental challenge

The necessity to more advance its environmental performance is one of the major challenges opposite industry today in order truthfully to become well-matched with SD. Even though the industry of European has prepared an excellent contract in the previous decades to advance its ecological enactment, significant challenges persist at European and worldwide stage. A report at the surface of European lately delivered by the European Environment Agency (1999) indicated that apart from important and positive cuts in ozone-depleting substances, continue in decreasing other pressures on the state of the environment has continued mostly inadequate. According to a recent UNEP report (1999), at global level the condition is even bleaker the worldwide ecosystem is threatened by serious imbalances in the distribution of services and goods and in productivity. The report drives on to speak of "environmental stewardship lagging behind social and economic development. Environmental achievements from new technology and strategies are being overtaken by economic development and population growth.

According to the above statements, business and industry have a significant character to play in retreating the negative ecological tendencies at global and European surface, via accountable entrepreneurship and eco-efficacy defined in following. Enlarged ecological enactment would mean decreasing the harmful ecological effects that happen at per capita

step of the product life-cycle, from the mining of raw resources via the manufacture procedures, transportation and spreading of goods to the usage and removal of goods.

2.3.2.2 The implication of eco-efficiency

The growth of the eco-efficiency idea and its advancement and execution through trade, containing industrial corporations, services and the monetary sector is an additional sample of accountable entrepreneurship. The idea appeared as an inventive trade policy merging together economic and environmental efficacy to produce further worth with fewer ecological effect. It has assisted corporations' comprehension the SD challenges and directed them to rise proficiency in their procedures and produce novel and great goods, for instance declining the usage of non-renewable sources and poisonous materials, decreasing energy and substantial intensity, improving material to be recycled and good persistence and rising the service strength of their services and merchandises. The necessity to address the effects through the whole product series and to take into account a lifetime progression method appearance to these corporations that they can impact their customers and suppliers and extent the idea through the supply series. Also they are opening a co-operation and discourse with total of their shareholders and emerging dimension and reporting systems to observe growth, for example benchmarks and eco-efficiency indicators.

Companies' effective execution of eco-efficacy created governments become attracted in this conception and some have comprised eco- efficacy as a component of a policy strategy to SD. Administrations have a character in setting the outline circumstances for cheering corporations to accept these strategies and assisting the advancement of eco-efficacy policies in trade. Eco- efficacy can offer a connection among the incorporation of SD concerns at the macro surface and at micro surfaces and, in that setting, eco- efficacy is able to be a significant component of a combination strategy in the industrial policy area motivating advancement concerning development of sustainable industrial.

2.3.2.3 The novel challenges: the info society, globalization and the alteration of production and consumption patterns

Industrial transmutation is being precipitated by globalization, which is provoking significant structural alterations in the structure and in industry and organization of markets and companies. It also provides cumulative significance to facilities in opposition to manufacturing. The expansion of the information society shows a driving character in that procedure through the evolving of a novel worldwide economy built on intangible assets and networks (COM, 1998). This transmutation has the probable to chipping in previously to a exchange to additional sustainable production and consumption patterns, one more main difficulty facing business and industry. The change to lean manufacture and to greater-value facilities and the expansion of an understanding based economy, advances eco- innovation and eco-efficiency. Rising the productivity of natural resources and reducing material and energy strengths decrease environmental compressions. The info technologies and info society are previously simplifying the growth and extensive usage of cleaner technologies and manufacture and the advancement of eco- efficacy and ecological greatest preparation.

It is necessary at the similar period to evade any possible harmful ecological effects of globalization, and definitely to pursue to direct globalization in a method that it improves SD. Sufficient European industry of ecological enactment can only be completely well-matched through its worldwide competitiveness in the background of a combined outside business strategy that takes entirely into account worldwide growth and ecological interests. International corporations are frequently can implement and introduce ecological administration structures, neater technologies and production in improving and newly industrialized countries, via their subsidiaries. To make sure that international corporations exert great ecological principles while financing in such countries, codes of behaviors or charters of good practices could be established.

A significant difficulty on the path concerning SD is the alteration for further sustainable consumption patterns. To advance their image, and to impact the ecological behavior and enactment of suppliers and customers via green buying and obtaining practices, the business reply has been to rise dialogue and collaboration through their shareholders.

Some corporations are also intense to advance the excellence of info to customers on the ecological effect of their goods.

2.3.2.4 Other stakeholders

Even though this Working Document emphasizes the significant character of business and industry in chipping in to industrial SD, this is obvious that it can only be performed in the framework of co-operation, an exposed discourse and corporation with other shareholders. Whole strategy measures and results concerning to that containing public and the trade, government and NGOs at all surfaces, should be taken on the basis of near cooperation between all shareholders.

2.4 Cross-Cutting Issues: Climate Change, Enlargement and Employment

The deductions of Vienna European Council indicated the various foundations of the Council to place highlighting on cross-cutting topics like climate change, the ecological dimension of expansion and employment.

2.4.1 Climate change

Fulfilling the targets established in the Kyoto Protocol (1997) and decreasing the effect of human activities on the worldwide climate shall only be effective while incorporating the suitable scales into whole strategy parts, containing the policy of industry. Substantive developments are possible and essential to be cheered, but efforts to rise energy efficacy are already being made. It shall also be significant to decrease gases of halogenated like PFCs, SF6 and HFCs and to advance transpirations information for different sectors industry. To address the essential assistances to climate change, suitable policy instruments have to be found. In this framework, optional contracts are significant and could be efficient prepared that they are obvious and determined in their purposes, which their outcomes able to be confirmed and there is a great grade of self-assurance in their attainment. As a significant part of Kyoto Protocol flexible mechanisms shall offer a cost-efficient mode to decrease GHG transpirations for industry, thus confirming competitiveness. Furthermore, this is significant to guarantee the situations for the fast growth and execution of novel, little-energy expending technologies and the usage of

renewable energies. Internalization of fiscal incentives, charge-elements, evaluation of subventions and developed customer consciousness are basics in that respect.

A current revision of manners will increase significant understanding on the usage of such tools in the public for a local examination group of elastic tools in the Baltic Sea Region and the foreseen Green Paper on transpiration trading.

2.4.2 Employment

Excessive affirmation recent have been all placed by European Councils on reaching a great surface of employment as a dominant political preference. Enlarged cooperation will be a driving force for attaining that aim between industrial and environmental policy. A competitive economy and powerful ecological conservation and that rises economic and environmental efficacy shall protect sources for social and economic growth and consequently chip in to the formation of employment. Production procedures, ecological management, products and invention in technology is a vital to reaching it. The society must assist and motivate creativities that speed up the move from contaminating and "end-of-pipe" technologies to cleaner, novel, combined and energy-accumulating technologies, advance the expansion and design of goods that have fewer effect on the environment and cheer the execution of ecological management structures and instruments in trade (COM, 1997 and 1999).

2.4.3 Enlargement

The challenges of SD are vital to nominate countries. There are insufficient resources for executing environmental aims, their environment is debased and their industries are frequently excessively feeble to compete and produce revenue for social growth.

Important ecological enterprises are essential and the nominee countries must to accelerate their arrangements for expansion in the area of environment. Minimum price resolutions would be needed. An inclusive improvement of both the environmental and economic efficacy of the approximation procedure is required. The nominee countries should observe wisely how ecological significances and aims are able to be combined into other public strategies and programs.

Discussions with the nominee countries will make it probable to ascertain what they require to preform to accept and execute legislature and the sources that shall be essential for this objective. As a precedence in the ecological schedule the lawful scales reserved by the nominee countries have to be clear with the necessity to advance the only bazaar. In this framework, it is necessary that the nominee countries start and accept fulfilling EU ecological norms before agreement. The society must support and develop the co-operation networks and organization of discussions on ecological subjects in those countries, containing by industry organizations of European. Financial assist for addressing previous ecological obligations and for indorsing environmental cooperation.

2.5 Afghanistan Sustainable Development Goals

After decades of war in Afghanistan, the international community helped the shattered nation to establish new frameworks for governance, economy and the society. Afghanistan took the bold stage to sign the Millenary Statement and pledged to achieve the Millennium Development Goals by 2020 despite the brittle nature of that process. The ambition of human rights for all was particularly attractive to war-weary Afghanistan; certifying every individual's right to elegance, equality, freedom, a basic standard of living and freedom from lack of food and violence.

The MDGs commitment showed hard for Afghanistan to implement. Due to a preliminary lack of technical capacity, unconfident conditions and insufficient resources, data collection was difficult. Nevertheless, the Central Statistics Organization and line ministries gathered as much data as possible and proposed a 10-year MDGs progress report in 2015. The data evaluations revealed Afghanistan's position vis-a-vis the set targets, relative to the preliminary baseline circumstances. The data indicated the absolute progress that had been reached. The MDGs progress of Afghanistan might appear minor from the global viewpoint, but it reveals a specification in attaining goals that was severely forced by accessible capacities and resources.

Afghanistan must keep track of its movement towards the awareness of the Sustainable Development Goals, but also towards the MDGs and the execution of the Program of Action for the Least Developed Countries for the Decade 2011 -2020, approved by the

Fourth UN Conference held in Istanbul on 9-13 May 2011, on the Least Developed Countries. The purposes of the Istanbul Program of Action (IPoA) and SDGs and are cross-cutting and both should finally see the LDCs reach sustainable development; supporting the means of execution of one will fuel comprehension of the other.

Afghanistan is a food shortage country, based on the Afghanistan agriculture production trend analysis. In a typical year Afghanistan's cereal shortage is expected above one million tons. This amount can reach up to two million tons in a poor agriculture year. Such difference is caused by below normal rain during March to June, vital for the growth of rain fed crops. The import tendency analysis is frequently steady with production tendency with the exception of 2012, 2013 and 2014 where production statistics show self-sufficiency, which is likely to be a positive skew of production analysis.

Inequality and poverty and within the country remain main issues. 36% of the Afghan people in 2015 still lived under the poverty lines while discrimination contrary to vulnerable groups, including ethnic minorities and women, stayed a concerning challenge, despite important progress made in the framework of the Afghanistan Millennium Development Goals (MDG Report, 2015).

This country must plan to move beyond poverty and its history of war and initiate the extended journey to success. The Afghanistan National Peace and Development Framework (ANPDF) proposes a long-term development narrative for Afghanistan by preparing constant high-level direction to government, and other, shareholders. It expresses our long term and immediate development significances, highlights important changes and shapes importance investments required to reach the SDGs in these critical areas. As the tenuous nature of socio-economic development in Afghanistan, the nation requires the progression support of international partners, regional cooperation and private sector, civil society organizations, to accomplish SDGs' commitments for 2030.Build resilient substructure, advance inclusive and sustainable industrialization and foster innovation.

Our development strategy depends on advancing the ability of producers to achieve international and urban markets. The development of transport corridors has been affected by the conflict. Poor designs (often done using Google maps) and weak supplier

management have been similarly challenging, resulting in very high expenses for poor quality construction. We will initiate a procedure of establishment of pre-qualifying qualified corporations to construct roads, in order to avoid these issues in the future. Effort is underway to expand transportation authorities by establishing systems that would let them to harmonize replies to the country's expanding transport necessities. This contains the establishment of a Road Fund, a Road Authority and a Transport Institute.

Afghanistan has started a long-term program for electricity transfer and generation. Projects like Turkmenistan 500 KV power line and CASA-1000 could eventually carry up to 4000 MW of power. The TAPI natural gas pipeline is making progress toward carrying gas from Turkmenistan to South Asia. The Salma multipurpose dam inauguration is a main attainment and could afford income from transmission sales and rise the availability of private and commercial electricity in Afghanistan (AN PDF 2017-2021, Pg. 23). Domestic power generation with a master plan to produce 2,300 MW from internal sources within five years is on the rise, including four large hydroelectric projects established as public-private partnerships (PPPs) and 600MW from wind, solar and natural gas, also through PPPs. Afghanistan will be generating more electricity by the end of 2018, from new domestic sources than has been produced domestically during the past 40 years. Preference will be to continue to invest in the national grid, which is a vital requirement for industrial or commercial growth, while making cumulative investments in renewables for isolated and residential areas. Important opportunities present themselves to let the country to meet international standards and grow new competitive performs, with Afghanistan's recent accession to the World Trade Organization, that would charm more investments from other member states as well as contributing to the achievement of the SDGs.

Regions such as East and South Asia over the past decades have made amazing advance in reaching development goals in the areas of industrialization, infrastructure and innovation. Though, attaining Goal 9 by 2030 will need addressing a range of resource limitations, especially for the Landlocked Least Developing Countries (LLDCs), least developed countries (LDCs) and Small Island Developing States (SIDS). Countries will have to discover new techniques to resolve development challenges and reinforce their competences by including different actors, source of finance and encourage cooperation,

procedures and kinds of governance and collaboration across sectors, stakeholders and regions.

Goal 9 Sustainable Development contains three various aims, namely; promoting inclusive and sustainable industrialization, building strong infrastructure and nurturing innovation. The goal has five extensive targets that are reflected as goals themselves rather than targets. For better measurement of the targets, the A- SDGs presented localized indicators. The three dimensions of the Goal are correlated and might affect each other's act.

Sustainable infrastructures including fostering invention and attaining industrialization contribute to economic and human growth. Afghanistan's future social growth and economic performance relates on irrigation infrastructure, access to sustainable and reasonable energy, sustainable highways, capable institutions and technological knowledge. Develop consistent, quality, resilient and sustainable infrastructure, containing regional and trans-border infrastructure, to support human well-being and economic growth, with an attention on equitable and reasonable access for all. It does not specify what type of infrastructure it states to, but it looks that it emphases mostly on mobile broadband payments, roads and ICT maturity. The target itself absences comprehensive indicators able to take the full picture of the position of the infrastructures situation in a country. Afghanistan has added many indicators for sectors, such as aviation lines, indicators on railway, power grids and so forth, and will enlarge more if required. One of the key priorities of the Afghanistan government is infrastructure building. We are pushing our exertions to change Afghanistan in to a land-linked country linking south Asia to central Asia. A lot of investments have been allotted to water dams, construction and reconstruction of highways, irrigations systems and so forth. Promote inclusive and sustainable industrialization and, by 2030, meaningfully increase gross domestic product and industry's share of employment.

Several years of war and conflict left the country in ruins. In that time, the different country's economic sectors suffered a lot. Industry and state owned initiatives were completely devastated. The formation of the new administration paved the ground for industry and other sectors to activate. The latest investments on energy production and

buildings roads will absolutely effect the expenses of production in the country. This would be a decent encouragement for indoor and outdoor investors to invest and manufacture in Afghanistan. Though, the industrial sector must tackle with various difficulties for example technical knowledge, lack of infrastructure, energy provision and so forth. The share of the industrial sector as impact to the GDP stood around 19% as in 2016, which shows a declining trend from former years. The industry in Afghanistan is generally based on agriculture and pastoral raw materials. The sector's performance is thus frequently related with the performance in the sector of agricultural. The industry sector in Afghanistan supplies beverages and food materials, plastics, processed dry fruits, skins and so on. There are also precious stones, mineral, gas and oil that have remained mostly unexploited. The industrial value added as proportion of GDP is 12% as of 2015 (World Bank, 2015) and might have more declined, as the value was measured about 18% in 2002. The portion of value added by industrial procedures is anticipated to be replaced by the services sector in the future. During the recent years, unemployment has raised. The foreign troops' departure had a major influence on the investment climate. The failure in total investments, particularly in the industrial sector, might have contributed to joblessness. The current employment in manufacturing sector is expected to be about 11%. Increase the access of small-scale industrial and other enterprises to financial services.

Providing access to credit and financial services has been a significant challenge during the past years. The presence of high interest rates (16-20%) and guarantee has exacerbated the problem. The total credit provided during the year 2015 is estimated around 685 million USD. The figure is expected to increase in the coming years. The country, as numerous least-developed countries, counts further small scale- industries than moderate scale ones. It is also worth stating that there are still corporations that are not registered and activate in a fiscal gray area. This has strengthened the capacity of the government to gather and distribute correct measurements on small scale industries. The Afghanistan's Central Bank is working on a mechanism and structure to simplicity credit access by small and medium corporations.

Target 9.4: By 2030, advancement infrastructure and retrofit industries to make them sustainable, with raised resource-use efficacy. Important progress in building infrastructure has been attained by Afghanistan. In order to develop infrastructure

investment efficacy is the Afghanistan government strategy. The ongoing corruption and conflict are considered main limitations to this end. The government's and donor organizations' investments in infrastructure projects have been growing lately. The government's 2016 development budget in infrastructure investment was $1273 million, as per the NIP; sector coverage, and accounted for around 50 percent of the total development budget (Afghanistan National Infrastructure Plan (NIP) 2017-2020, 2017).

Target 9.5: Improve scientific research, upgrade the technological competences of industrial sectors including, by 2030. However, there have been some outspread exertions by various organizations, there is no exact fund and budget allocated for this aim. The government is determined to highly invest in R&D in the coming years. The development and research expenses as proportion of GDP is 0.3% as of 2015. Moreover, some new organizations and research centers have been established in Kabul recently. The key research areas of the newly established organizations include political, social and security concerns. The only public research center that requires revitalization is Afghanistan Academy of Sciences.

3. RESEARCH METHODOLOGY

3.1 Introduction

This chapter will discourse the research method subscribed to contemplation the research philosophy followed by this research, the research approach employed, research methodology and also the instrument used to follow the goal which is the research objective argued in chapter one, research questions and the research problem. The main objectives will be to describe the research philosophy in difference with other research philosophies, describe the research methodology accepted and introduce the instruments utilized to follow the research objectives.

3.2 Research Philosophy

Research philosophy is mentioned to the belief based on which the data concerning the research topic will be collected and assessed to resolve the research problem. The word epistemology which means what is “known” to be factual, while doxology which mean “what is believed as correct” includes many different research philosophies. The goal of research mostly is to convert things that are “believed” into things that “known” or transform doxa into episteme. In the modern western research Tradition, the main philosophies are two, namely positivist also mentioned to as scientific and interpretivist or anti-positivist, Galliers, (1991).

3.2.1 Positivism

Positivists believe reality is steady and can be observed and stated from an objective perspective, with no interference to the phenomena that is being learnt (Levin, 1988). This frequently contains influencing the definite reality with differences in only a single independent variable to ascertain the regularities and to make a correlation among the key modules in the social world. This philosophy has been used hugely in the history of science, it even is believed that none positivist knowledge is claimed not to be classed as

scientific and area believed as invalid (Hirschheim, 1985, p.33). Alavi and Carlson (1992), reviewed 902 researches and they came to understand that most of the experiential researches were positivist in their approach, they also supported this philosophy not directly, this philosophy has an excellent relationship with physical and natural sciences, despite the fact that there is a persistent discussion concerning the suitability of positivist paradigm for social sciences.

3.2.2 Interpretivism

This philosophy in general claims the fact that only via the subjective interference and interpretation in the reality, the reality can be exactly understood and shown. Interpretivist philosophy generally believes in the investigation of the realities in its own natural environment, admitting the fact that experts will certainly affect the phenomena's under the study. They also accept that there is a great different interpretation of reality, but these different descriptions are necessities and components of scientific knowledge. Interpretivism doesn't have less magnificence or length compared to positivism.

3.2.3 The justification for approach selection

These two research traditions had happened in Classical times of Greece in the era of Aristotle and Plato (positivists) and also the Sophists or (anti-positivists). During the renaissance of the discipline in 16th, 17th centuries, following the dark periods of science in the Europe, well-known positivists were Durkheim, Russell, Bacon, Mill, Descartes and Popper, on other hand Hegel, Kant, Freud, Marx, Polanyi and Kuhn in the interpretivist side, Hirschheim, (1985).

Vreede (1995) believes that in organizational Science research, interpretive research was the norm till late 1970, but since then, positivism has become the tradition, this fact was verified by the studies directed by Dickson et al, (1990) Orlikowski et al (1991) which determined that 96.8% scientific researches in the United states journals are following this paradigm. Pervan (1994), reviewed 122 GSS studies, the obtainable literature perceived that (3.27%) of these researchers could be classified as interpretivist.

Benbasat et al., (1987) believed that as an outcome of precise clarifications, no research methodology is inherently better compared to the other, some authors consider these

techniques can be joint to improve the research quality. Even some organizations suggested the usage of a confident methodology called as “House Style” (Galliers, 1991); because of the fact that real world phenomena’s are very rich and complex, the greatest matched methodology for the certain problem and research objective should be used Benbasat, (1984). Considering our research question described in Chapter One, we reflect that positivist philosophy best suits the philosophy for this study to resolve above-mentioned research problem, since positivism values the realities that are based only on “factual” gained knowledge that are understood via observations and its measurement is reliable and positivism bounds researchers role only to collection and data analysis, in this research, this role has also been limited only to collecting quantitative data regarding the industrial sustainable development strategies in Herat Province of Afghanistan which makes it a cross sectional empirical study of Herat artisans. As a primary research in Afghanistan, the data was collected via research instrument adopted from previous studies, such as books, topics and other famous publications in Herat. The data were analyzed via data analysis software namely SPSS (statistical package for social science) to make interpretations and observations regarding the topic of the study.

3.3 Research Approach

Saunders et al, (2007) explained that both deductive or inductive approach can be followed in a research, in the inductive approach the researcher analyses the data before developing a research theory. On the other hand, in deductive pattern, a hypothesis is initially created to be tested, following that, the study is prepared in such a method that the hypothesis can be tested. Qualitative research methods are typically inductive while quantitative studies are using deductive research approach Gay et al (2003:4).

Cormack (1991) specified that quantitative methodology makes it possible to test the theory deductively from the accessible knowledge by developing hypothesized correlation and proposed study results. This research has adopted deductive research approach to test the hypothesis made in Chapter One, the test will be done based on the quantitative data which was collected via a survey questionnaire from the artisans of Herat Province.

3.4 Research Methodology

This research is based on a cross-sectional survey, a sample was calculated and the survey was conducted on the defined sample. This quantitative research design was approved to accurately and objectively define the characteristics of the phenomenon which was the industrial sustainable development strategies for Herat province of Afghanistan.

The requirements for this framework is divided generally into five categories:

- The researcher should have specific objective to pursue to guide the study, as described in chapter one, our objective is to investigate and recommend the feasible industrial sustainable development strategies for Herat province of Afghanistan.

- The researcher should describe the population and be clear the sample derived from the population for the study to distinguish what inferences can be drawn from the study. For details about our population and sample size please see section 3.3.1 Target Population for details.

- The researcher has to take the survey questions and other method issues into consideration which are essential for judging the internal validity of the study. See section 3.3.3 survey instrument and data collection for more details.

- Data collection should be accurate. Please see section 3.3.3 Survey Instrument and data collection for the explanation of the practical procedure of data collection.

- The research should report how it was made sure that all the necessities are met.

Survey has been chosen as the favored methodology for this research, there are pros and cons associated with survey method, the fact that survey can simplify the researcher to achieve data about practices, situations and viewpoints in a specific point of time via survey instrument which is a questionnaire in this case, or interviews can be counted as the confident sides of survey method. The quantitative data collected from a survey and can be analyzed via analytical techniques and inferences can be drawn from the data regarding the existing correlations. Survey also allows the researchers to look at more than one variable at one time which is not possible in field experiments or laboratories. The cons associated with survey method can be the fact that realizing an insight into the causes

or the procedures in the measured phenomena can be very problematic. They are also some bias sources related with this method because its frequently a self-selecting nature of respondents, also time period when the survey is done, furthermore, the design of survey by researcher himself can be a bias source.

3.4.1 Target population

Based on the explanation of Sekaran (2006) who indicated that population is the entire group of individuals, actions or phenomena that the researcher plans to investigate them, the population for this study was the entire artisans of Herat Province, which are located in Industrial Town of Herat or other places of the province. The total number of factories in Herat Province are 801 (Business and Industrial Department of Herat Province, 2018). Since no population frame with contact details exists and due to limitations of this study, communication and security limitations in Afghanistan surveying all Herat artisans was impossible, the survey was conducted using a reasonable sample that can most accurately represent the population.

3.4.2 Sampling size and sampling procedure

Considering the population size of 801 artisans of Herat Province. Sample size was calculated as bellow considering 95 percent confidence level within 0.05 risk of sampling error.

$$n = \frac{N}{1+N\,(e)^2} = \frac{801}{1+801\,(.05)^2} = 200.125$$

Where:

n = Sample Size

N = Total Population Size

E = Acceptable Level of Error (5%)

Source: Yamane (1967)

The sample sized was determined 200.125 industrial factories in Herat Province of Afghanistan who were surveyed as described in the data collection section below using the survey instrument, but I have distributed and collected 250 questionnaires from the industrial factories. The surveyed subjects were selected using nonprobability convenient sampling.

3.4.3 Survey instrument and data collection

The data was collected adopting a 21 item questionnaire constructed by previous researchers, it covers following areas;

- Personal information (6 questions)
- Polices and strategies of the government (3 questions)
- Transportation services of the government (3 questions)
- Productions' marketing (3 questions)
- Technical, electricity, educational and maintenance services of the government (6 questions)

The instrument used five-point Likert scale: 1= strongly agree to 5 = strongly disagree. To ensure the reliability and validity of the questions, instead of designing the questions from scratch, the questions have been adopted from the previous scholarly articles, the main source of the questionnaire is from a scholarly article (Israel Sustainable Industrial Development, Dr. Uri Marinov, 1996.

The questionnaire was originally designed in English, the questionnaire also was accompanied with a cover letter that assured the participants of their anonymity and confidentiality of their responses.

Out of the 270 questionnaires, 212 questionnaires were filled up by the artisans which are located in Industrial Town of Herat Province and 38 others were filled up by the artisans which are located in different areas of Herat Province. Personal connections were used to urge the participants to participate, personal connections accounted for most the data collected the questionnaires sent without a prior introduction rarely returned back.

3.5 Ethical Issues

This study has valued the ethical values of quantitative research methodologies, the participants had obviously been informed prior to answering survey questions that their answers which represent their organization's information will be kept strictly private and will be used solely for the aim of this research and that they will remain unanimous.

3.6 Limitations

Data collection was one of the main limitations of this survey. Since the respondents of this survey were in different places of Herat, it was a little difficult to distribute and collect the questionnaires, especially, the factories that were out of the Industrial Town of Herat

Other limitations can be named as limitations in the budget for this research project, time is also another limitation that should be remind here.

4. PRESENTATION AND ANALYSIS OF FINDINGS

4.1 Introduction

This chapter is related to the description of the analysis of data that is carried with the help of different statistical tests, the data was collected empirically from Artisans of Herat province via a 21 item questionnaire from 250 respondents (N=250).

The quantitative results will be explained and presented in this chapter. The quantitative data is based on a 21 item questionnaire that was developed in two sections, the first section is respondents' and factories' demographic information, the second part includes 15 questions about their perception of the government policies and strategies, transportation services of the government, productions' markets, other services of the government for the artisans and their level of agreement/disagreement on statements using 5 point scales; where 1= Strongly agree; 2 = Agree; 3 = Neutral; 4 = Disagree; 5 = Strongly disagree. The outcome of the data is analyzed using statistical package for social science (SPSS) and presented in this chapter.

4.2 Results

Data analysis process involved 3 stages, it started by doing a descriptive analysis of 6 demographic and factories related items and 15 Likert-scale questions of the industrial sustainable development strategies for Herat Province of Afghanistan, then Pearson's Chi-Square Test for understanding whether there is an association between categorical variables. In the third and final stage, factor analysis was performed for confirmation for 15 Likert scale items.

4.2.1 Demographic characteristics of the responses

The research questionnaire is surveyed between 250 respondents in Herat province of Afghanistan. The current questionnaire has 6 demographical questions related to the study topic as it is illustrated in tables below.

Table 4.1: Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	238	95.2	95.2	95.2
Female	12	4.8	4.8	100.0
Total	250	100.0	100.0	

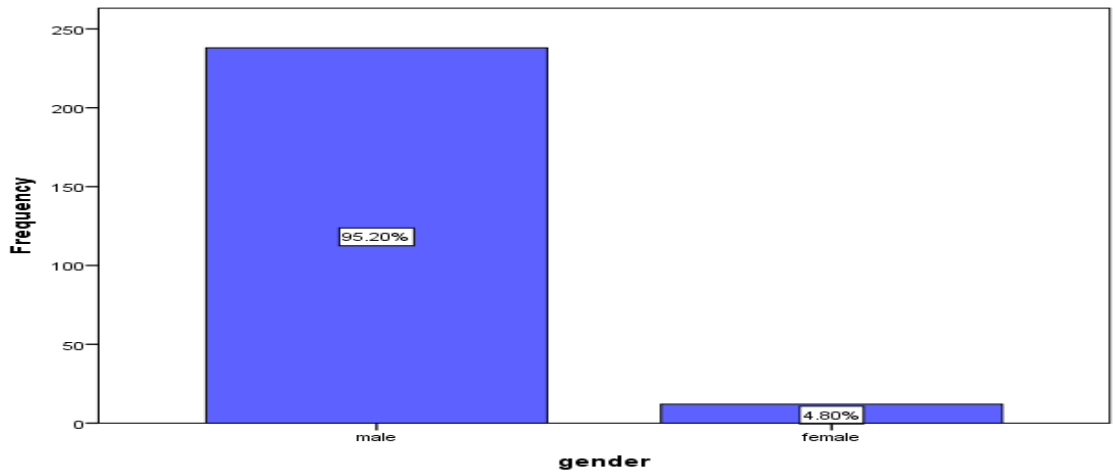

Figure 4.1: Gender

Table 4-1 present the data on gender of the respondents, it shows that majority of the artisans in Herat province are male, out of the 250 respondents 238 of them which is 95.2% of them are male and the rest 12 were female which is 4.8%, the sample closely resembles the whole population of Herat artisans where mostly the artisans are male dominant.

Table 4.2: Age of Respondents

Age	Frequency	Percent	Valid Percent	Cumulative Percent
21-25	23	9.2	9.2	9.2
26-30	39	15.6	15.6	24.8
31-35	83	33.2	33.2	58.0
>36	105	42.0	42.0	100.0
Total	250	100.0	100.0	

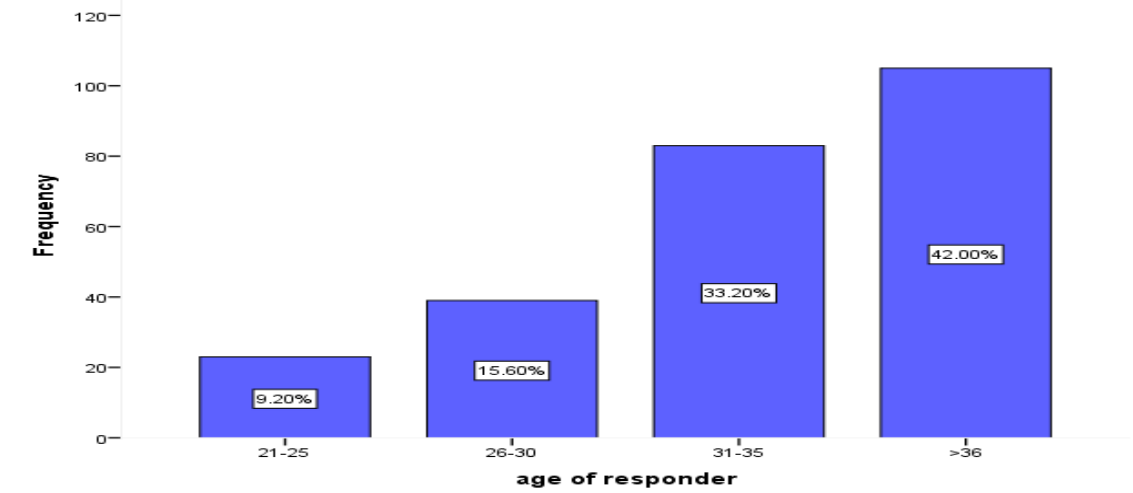

Figure 4.2: Age of Respondents

The data analysis has revealed that 23 out of N=250 were aged between 21 to 25 years which accounts for 9.2 % of the sample. This shows that least of the artisans are young individuals, 15.6% which were 39 respondents were between the age of 26 to 30, 83 respondents representing 33.2% of the sample were between 31 and 35 years of age, and 105 respondents representing 42% were above the age of 36, it shows that the most of the artisans in Herat province are the elders, the detail is illustrated in Table 4-2.

Table 4.3: Status of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Single	41	16.4	16.4	16.4
Married	209	83.6	83.6	100.0
Total	250	100.0	100.0	

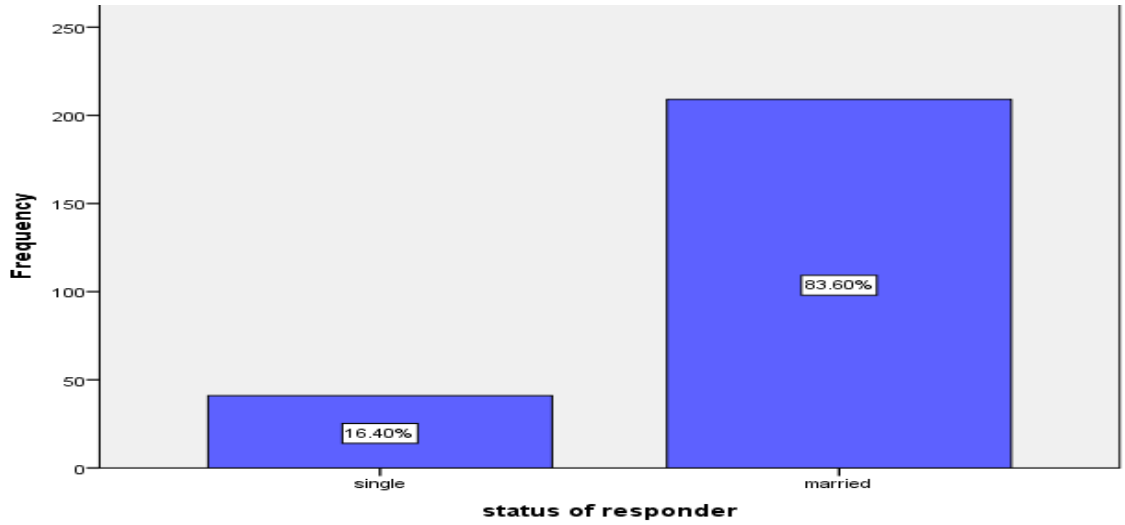

Figure 4.3: Status of Respondents

Table 4-3 presents the data on marital status of the respondents, it shows that majority of the artisans in Herat province are married, out of the 250 respondents 209 of them which is 83.6% of them are married and the rest 41 were single which is 16.4%, the sample closely resembles the whole population of Herat artisans where mostly the artisans are married dominant.

Table 4.4: Education of The Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Associate Degree	98	39.2	39.2	39.2
Bachelor	147	58.8	58.8	98.0
Master	5	2.0	2.0	100.0
Total	250	100.0	100.0	

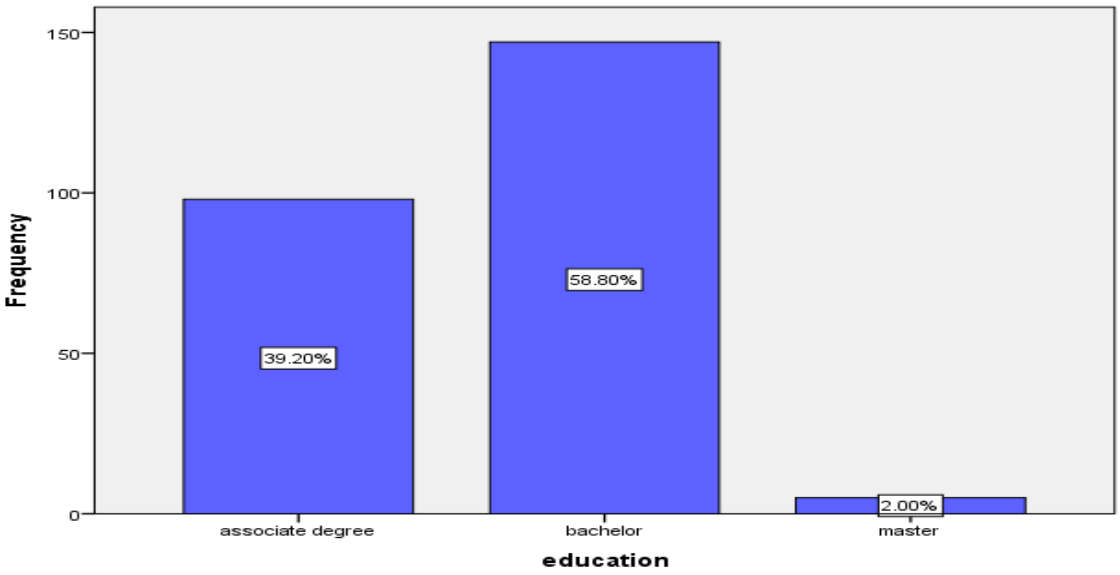

Figure 4.4: Education of The Respondents

Determining respondents' education level was important since it can be inferred if education is important in industrial part of Herat province, table 4-4 in blow illustrates the educational background of the respondents: Table 4-4 shows that huge portion of respondents hold a bachelor's degree which was 147 respondents representing 58.8% of the sample, it can be deducted that majority of artisans in Herat province are bachelor degree holders, 98 respondents had an associate

degree being 39.2% of the sample, and 5 respondents representing 2% of the sample were holding master degrees, no PhD degree holders were among the sample, which can illustrate the limitations of education due to decades of war.

Table 4.5: Years of The Factories' Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
1-5 years	132	52.8	52.8	52.8
>5 years	118	47.2	47.2	100.0
Total	250	100.0	100.0	

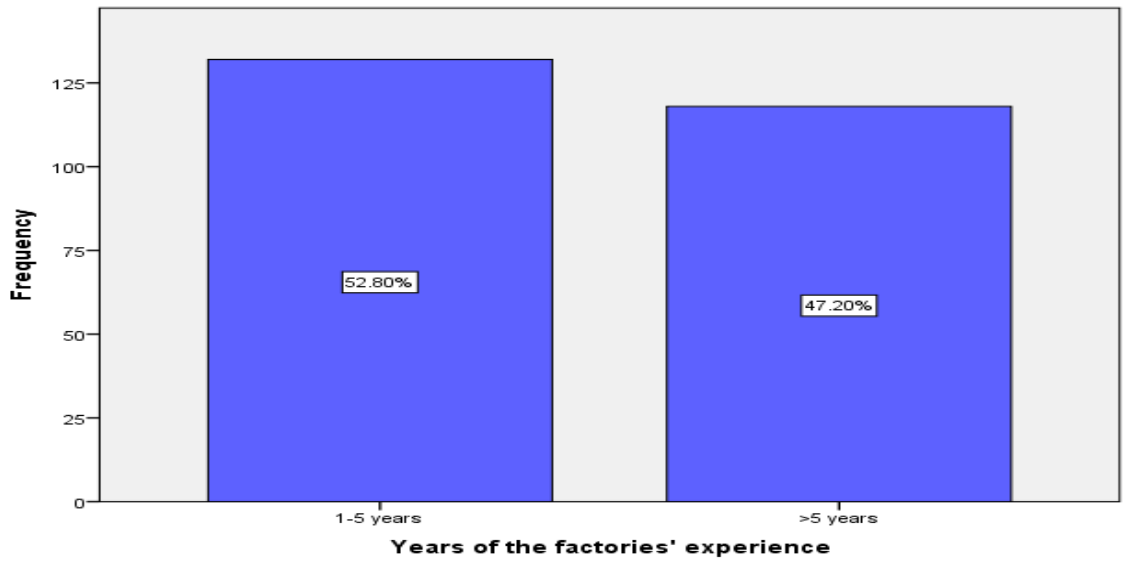

Figure 4.5: Years of The Factories' Experience

Table 4-1 presents the data on years of the factories experience, it shows that majority of the factories in Herat province have been initiated to work in recent years, out of the 250 respondents 132 of them which is 52.8% of them have been started to work between 1-5 years ago, and the rest 118 which is 47.2% have been started to work above 5 years ago.

Table 4.6: Location of The Factories

	Frequency	Percent	Valid Percent	Cumulative Percent
Industrial Town of Herat	212	84.8	84.8	84.8
Other places	38	15.2	15.2	100.0
Total	250	100.0	100.0	

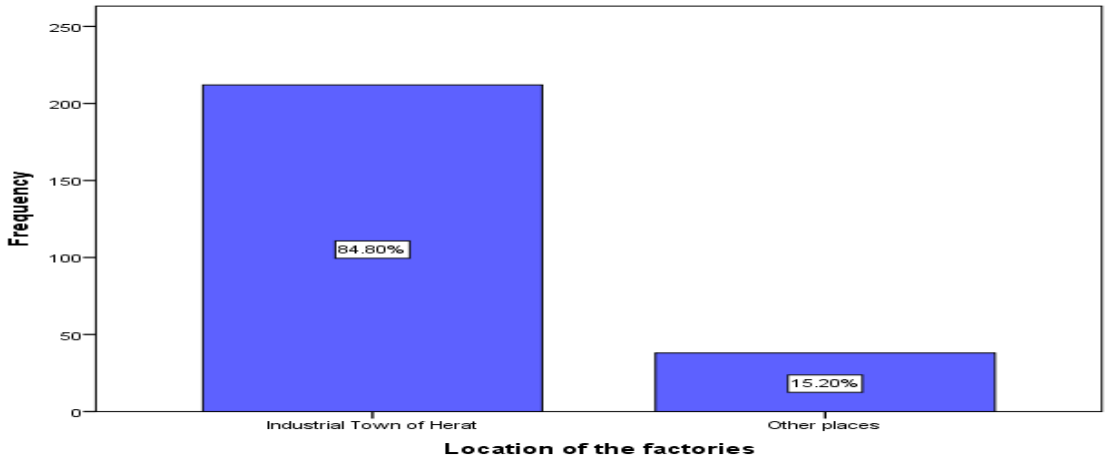

Figure 4.6: Location of The Factories

Table 4-6 shows the significant role of the Industrial Town of Herat in development and growth of industrialization in Herat province, 212 out of N=250 factories representing 84.8% of the sample were placed in Industrial Town of Herat and the rest 38 factories representing 15.2% were placed in other places of Herat province.

4.2.2 Responses to the feasible industrial sustainable development strategies for Herat province of Afghanistan.

The following tables show the respondents' answer regarding to Likert-scale questions of the feasible industrial sustainable development strategies for Herat Province of Afghanistan.

Table 4.7: The Government Policies Have Been Sufficient to Advance Industry and Encourage Herat Artisans

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	21	8.4	8.4	8.4
neutral\	217	86.8	86.8	95.2
disagree	12	4.8	4.8	100.0
Total	250	100.0	100.0	

The table shows answers of the question, whether the government policies have been sufficient to advance industry and encourage Herat artisans or not. 217 respondents with (86.8%), answered the neither agree nor disagree option which make the most respondents proportionate. Moreover, 21 respondents with (8.4%), agreed, while disagree option was chosen by 12 of respondents with (4.8%).

Table 4.8: There Are Appropriate Land Transportation Routes for Exporting Goods from Herat to Other Provinces

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	42	16.8	16.8	16.8
Agree	159	63.6	63.6	80.4
Neutral\	45	18.0	18.0	98.4
Disagree	4	1.6	1.6	100.0
Total	250	100.0	100.0	

Here the question is whether applicants do think that there are appropriate land transportation routes for exporting goods from Herat to other provinces. 159 respondents with (63.6%), agreed with it. However, 45 (18 %) of all respondents answered neutral, 42

respondents with (16.8%), strongly agreed with question. Indeed, the amount of respondents who disagreed with question is 4 respondents with (1.6%).

Table 4.9: There Are Appropriate Air Transportation Routes for Exporting Goods to Other Provinces

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	6	2.4	2.4	2.4
Disagree	224	89.6	89.6	92.0
strongly disagree	20	8.0	8.0	100.0
Total	250	100.0	100.0	

The table explains the question about applicants who think that if there are appropriate air transportation routes for exporting goods to other provinces. Although 224 respondents with (89.6%), disagreed with. 20 respondents with (8%) of all total respondents answered strongly disagree. As the table shows, the third place in this argues is 6 respondents with (2.4%) of respondent's agreed with this question.

Table 4.10: There Are Appropriate Land and Air Transportation Routes for Exporting Goods to Neighborhood Countries

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	61	24.4	24.4	24.4
Neutral\	180	72.0	72.0	96.4
Disagree	9	3.6	3.6	100.0
Total	250	100.0	100.0	

As the chart shows, the applicants answered the question if there are appropriate land and air transportation routes for exporting goods to neighborhood countries. However, 180 respondents with (72%) answered neutral, the second proportionate of answers belongs to agree option with 61 respondents with (24.4%). Moreover, 9 respondents with (3.6%), disagreed with this question.

Table 4.11: The Government Encouragement and Supportive Policies for Domestic and Foreign Artisans Have Created Job Opportunities

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	9	3.6	3.6	3.6
Agree	194	77.6	77.6	81.2
Neutral\	47	18.8	18.8	100.0
Total	250	100.0	100.0	

This table shows the frequencies of applicants who answered the questions, if the government encouragement and supportive policies for domestic and foreign artisans have created job opportunities. In fact, 194 respondents agreed with percentage of (77.6%). Moreover, 47 respondents with (18.8%) neither agreed nor disagreed and 9 respondents with (3.6%) strongly disagreed with the asked question.

Table 4.12: There Are Suitable Domestic Markets and Customers for Herat Manufactured Products

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	76	30.4	30.4	30.4
Agree	99	39.6	39.6	70.0
Neutral\	39	15.6	15.6	85.6
Disagree	36	14.4	14.4	100.0
Total	250	100.0	100.0	

As the chart shows, 99 respondents with (39.6%), agreed that there are suitable domestic markets and customers for Herat manufactured products, while 76 respondents with (30.4%), stated strongly agree with it and as it shown just 39 respondents (15.6%), have

had neutral idea about it. Following the table, it can be said that only 36 respondents with (14.4%), circled the option of disagree regarding the asked question.

Table 4.13: There Are Suitable Foreign Markets and Customers for Herat Manufactured Products

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	9	3.6	3.6	3.6
Agree	50	20.0	20.0	23.6
Neutral\	46	18.4	18.4	42.0
Disagree	83	33.2	33.2	75.2
Strongly Disagree	62	24.8	24.8	100.0
Total	250	100.0	100.0	

The table shows the respondents' answers regarding there are suitable foreign markets and customers for Herat manufactured products. By following the chart, 83 respondents with (33.2%) answered disagree option, strongly disagree option was chosen by 62 of respondents with (24.8%), while 50 respondents with (20%), agreed with the asked question. Moreover, 46 respondents with (18.4%) answered neutral with this asked question, while the rest (9 respondents) with (3.6%) answered strongly agree.

Table 4.14: Good Marketing Has Been Done for Selling of the Local Products and Handicrafts of Herat Province

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	188	75.2	75.2	75.2
Neutral\	39	15.6	15.6	90.8
Disagree	18	7.2	7.2	98.0
Strongly Disagree	5	2.0	2.0	100.0
Total	250	100.0	100.0	

This table shows the frequencies of applicants who answered the questions, if good marketing has been done for selling of the local products and handicrafts of Herat province. In fact, 188 respondents agreed with percentage of (75.2%). Moreover, 39 respondents with (15.6%) neither agreed nor disagreed, 18 respondents with (7.2%) disagreed with the asked question and 5 respondents with (2%) answered strongly disagree.

Table 4.15: Effective Efforts Have Been Done to Develop and Change the Industrial Technology from Traditional to Modern One

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	27	10.8	10.8	10.8
Agree	76	30.4	30.4	41.2
Neutral\	97	38.8	38.8	80.0
Disagree	50	20.0	20.0	100.0
Total	250	100.0	100.0	

As the chart shows, the applicants answered the question if effective efforts have been done to develop and change the industrial technology from traditional to modern one. However, 97 respondents with (38.8%) answered neutral, the second proportionate of answers belongs to agree option with 76 respondents with (30.4%). Moreover, 50 respondents with (20%), disagreed with this question and 27 respondents with (10.8%) answered strongly agree.

Table 4.16: Energy Sources and Water Dams Have Been Created to Reduce the Electricity and Fuel Production Costs in Herat Province

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	37	14.8	14.8	14.8
Neutral\	127	50.8	50.8	65.6
Disagree	44	17.6	17.6	83.2
Strongly Disagree	42	16.8	16.8	100.0
Total	250	100.0	100.0	

The table shows answers of the question, whether energy sources and water dams have been created to reduce the electricity and fuel production costs in Herat province. 127 respondents with (50.8%), answered the neither agree nor disagree option which make the most respondents proportionate. Moreover, 44 respondents with (17.6%), disagreed, while strongly disagree option was chosen by 42 of respondents with (16.8%) and 37 respondents with (14.8%) answered agree.

Table 4.17: Effective Strategies Have Been Taken by The Government in Order to Reduce Pollution and Sewage of Industrial Factories

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	3	1.2	1.2	1.2
Neutral\	40	16.0	16.0	17.2
Disagree	115	46.0	46.0	63.2
Strongly Disagree	92	36.8	36.8	100.0
Total	250	100.0	100.0	

Here the question is whether applicants do think that effective strategies have been taken by the government in order to reduce pollution and sewage of industrial factories. 115 respondents with (46%), disagreed with it. However, 92 (36.8 %) of all respondents answered strongly disagree, 40 respondents with (16%), answered neutral option. Indeed, the amount of respondents who agreed with question is 3 respondents with (1.2%).

Table 4.18: Modern Extraction of Mines Have Been Taken Place for Supplying of Raw Materials to The Artisans

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	3	1.2	1.2	1.2
Neutral\	3	1.2	1.2	2.4
Disagree	159	63.6	63.6	66.0
Strongly Disagree	85	34.0	34.0	100.0
Total	250	100.0	100.0	

The table explains the question about applicants who think that modern extraction of mines has been taken place for supplying of raw materials to the artisans. Although 159 respondents with (63.6%), disagreed with this question. 85 respondents with (34%) of all total respondents answered strongly disagree. As the table shows, the third and fourth places in this argues the same 3 respondents with (1.2%) for neutral and agree options with this question.

Table 4.19: Educational, Vocational and Technical Centers Have Been Created for Training of Professional and Specialized Cadres and Raising of the Capacity of Herat Entrepreneurs and Workers

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	2	.8	.8	.8
neutral\	10	4.0	4.0	4.8
Disagree	176	70.4	70.4	75.2
strongly disagree	62	24.8	24.8	100.0
Total	250	100.0	100.0	

As the chart shows, 176 respondents with (70.4%), disagreed that educational, vocational and technical centers have been created for training of professional and specialized cadres and raising of the capacity of Herat entrepreneurs and workers, 62 respondents with (24.8%), stated strongly disagree with it and as it shown just 10 respondents (4%), have had neutral idea about it. Following the table, it can be said that only 2 respondents with (0.8%), circled the option of agree regarding the asked question.

Tabel 4.20: Repairing Workshops for Making the Factories' Equipment Have Been Made in Herat Province

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral\	8	3.2	3.2	3.2
Disagree	178	71.2	71.2	74.4
Strongly Disagree	64	25.6	25.6	100.0
Total	250	100.0	100.0	

The table shows the respondents' answers regarding, repairing workshops for making the factories' equipment have been made in Herat Province. By following the chart, 178 respondents with (71.2%) answered disagree option, strongly disagree option was chosen by 64 of respondents with (25.6%), while only 8 respondents with (3.2%), answered neutral with the asked question.

Table 4.21: Cold Stores and Storages for Preservation and Keeping of the Products Have Been Created

Likert-Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	19	7.6	7.6	7.6
Neutral\	55	22.0	22.0	29.6
Disagree	170	68.0	68.0	97.6
Strongly Disagree	6	2.4	2.4	100.0
Total	250	100.0	100.0	

This table shows the frequencies of applicants who answered the questions, if cold stores and storages for preservation and keeping of the products have been created. In fact, 170 respondents disagreed with (68%). Moreover, 55 respondents with (22%) neither agreed nor disagreed, 19 respondents with (7.6%) agreed with the asked question and only 6 respondents with (2.4%) answered strongly disagree.

4.3 Pearson's Chi-Square Test

The Chi-Square Test of Independence determines whether there is an association between categorical variables (i.e., whether the variables are independent or related). It is a nonparametric test.

In this research, I want to examine the relation of years of the factories' experience and the factories' locations with some important questions. The relation of years of the factories' experience (1-5 years and more than five years) with questions 6,7&9. And the relation of the factories' locations (Industrial town of Herat and other locations of Herat) with questions number 2,10&11. We would like to know: are years of the factories' experience and the factories' locations associated with some questions? And-if so-how?

Table 4.22: SPSS Cross-Tabulation

Cross-tab		There Are Suitable Domestic Markets and Customers for Herat Manufactured Products				
		Strongly Agree	Agree	Neutral\	Disagree	Total
Years of the factories' experience	1-5 years	0	58	38	36	132
	>5 years	76	41	1	0	118
Total		76	99	39	36	250

Table 4.23: Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	149.707[a]	3	.000
Likelihood Ratio	202.178	3	.000
Linear-by-Linear Association	131.738	1	.000
N of Valid Cases	250		

By looking table 4.22, we can notice a large difference of opinion within the panel. Indeed, 76 participants out of 118 factories which have more than five years' experience answered strongly agree whereas 0 participant out of 132 factories which have less than five years' experience answered strongly agree. Moreover, factories with 1-5 years' experience, 58 participants out of 132 answered agree while the factories with more than five years' experience, 41 participants out of 118 answered agree. Also 38 participants out of 132 of the factories with 1-5 years' experience answered neutral while only 1 participant out of 118 of the factories with more than five years' experience answered neutral. Finally, 36 participants out of 132 of the factories with 1-5 years' experience answered disagree whereas 0 participant out of 118 of the factories with more than five years' experience answered disagree. As for the difference between 1-5 years of experience and more than five years' experience with the statement (there are suitable domestic markets and

[a] 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.99.

customers for Herat manufactured products), I made a cross-tabulation and Chi-square tests (see Table 4.23) to validate or not the significance of this difference. Thus, results show that this difference is significant (Pearson Chi-Square = 149,707; df = 3; p = 0,000 < 0,05). The result proves that the factories with more experiences have found their domestic markets and customers, whereas the factories with less experiences need to work more on their products setting.

Table 4.24: SPSS Cross-tabulation

Crosstab		There Are Suitable Foreign Markets and Customers for Herat Manufactured Products					
		Strongly Agree	Agree	Neutral\	Disagree	Strongly Disagree	Total
Years of the factories' experience	1-5 years	0	8	20	53	51	132
	>5 years	9	42	26	30	11	118
Total		9	50	46	83	62	250

Table 4.25: Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	64.501[a]	4	.000
Likelihood Ratio	72.268	4	.000
Linear-by-Linear Association	63.741	1	.000
N of Valid Cases	250		

Table 4.24 shows a large difference of opinion by the respondents. 9 participants out of 118 factories which have more than five years' experience answered strongly agree whereas 0 participant out of 132 factories which have less than five years' experience answered strongly agree. Moreover, factories with 1-5 years' experience, 8 participants out of 132 answered agree while the factories with more than five years' experience, 42 participants out of 118 answered agree. Also 20 participants out of 132 of the factories

[a] 2 cells (20.0%) have expected count less than 5. The minimum expected count is 4.25.

with 1-5 years' experience answered neutral while only 26 participants out of 118 of the factories with more than five years' experience answered neutral. 53 participants out of 132 which have less than 5 years' experience answered disagree while 30 participants out of the 118 participants which have more than 5 years' experience answered disagree. Finally, 51 participants out of 132 of the factories with 1-5 years' experience answered strongly disagree whereas 11 participants out of 118 of the factories with more than five years' experience answered disagree. As for the difference between 1-5 years of experience and more than five years' experience with the statement (there are suitable foreign markets and customers for Herat manufactured products), I made a cross-tabulation and Chi-square tests (see Table 4.25) to validate or not the significance of this difference. Thus, results show that this difference is significant (Pearson Chi-Square = 64,501; df = 3; p = 0,000 < 0,05). The result indicates that the factories which have more experiences have foreign markets and customers, while the factories with less experiences don't have foreign markets and they need to work more on their products setting.

Table 4.26: SPSS Cross-tabulation

Crosstab		**Effective Efforts Have Been Done to Develop and Change the Industrial Technology from Traditional to Modern One**				
		Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Total**
Years of the factories' experience	1-5 years	22	61	45	4	132
	>5 years	5	15	52	46	118
Total		27	76	97	50	250

Table 4.27: Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	73.778[a]	3	.000
Likelihood Ratio	82.569	3	.000
Linear-by-Linear Association	66.214	1	.000
N of Valid Cases	250		

As the above chart shows, there is a significant difference between the factories with more experiences and less experiences. Actually, 22 participants out of 132 factories which have less than five years' experience answered strongly agree whereas 5 participants out of 118 factories which have more than five years' experience answered strongly agree. Therewith, factories with 1-5 years' experience, 61 participants out of 132 answered agree while the factories with more than five years' experience, 15 participants out of 118 answered agree. Also 45 participants out of 132 of the factories with 1-5 years' experience answered neutral while only 52 participants out of 118 of the factories with more than five years' experience answered neutral. At the end, 4 participants out of 132 of the factories with 1-5 years' experience answered disagree whereas 46 participants out of 118 of the factories with more than five years' experience answered disagree. As for the difference between 1-5 years of experience and more than five years' experience with the statement (effective efforts have been done to develop and change the industrial technology from traditional to modern one), I made a cross-tabulation and Chi-square tests (see Table 4.27) to validate or not the significance of this difference. Thus, results show that this difference is significant (Pearson Chi-Square = 73,778; df = 3; p = 0,000 < 0,05). The result demonstrates, the factories which have been established recently or the factories which are new, have modern technology, whereas the factories which are old and their machineries are ancient, haven't made their ultimate effort in order to change their industrial technology from traditional to modern one.

[a] 0 cells (.0%) have expected count less than 5. The minimum expected \count is 12.74.

Table 4.28: SPSS Cross-tabulation

Crosstab		There Are Appropriate Land Transportation Routes for Exporting Goods from Herat to Other Provinces				
		Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Total**
Location of the factories	Industrial Town of Herat	42	143	27	0	212
	Other places	0	16	18	4	38
Total		42	159	45	4	250

Table 4.29: Chi-Square Tests

	Value	**Df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	54.572[a]	3	.000
Likelihood Ratio	48.695	3	.000
Linear-by-Linear Association	44.611	1	.000
N of Valid Cases	250		

By looking table 4.28, we can notice a huge difference of opinion among the respondents. Indeed, 42 participants out of 212 factories which are located in industrial town of Herat answered strongly agree whereas 0 participant out of 38 factories which are located in other places of Herat answered strongly agree. Moreover, 143 out of 212 factories of Herat industrial town answered agree while the other places factories, 16 participants out of 118 answered agree. Also 27 participants out of 212 of the factories which are in industrial town answered neutral while only 18 participants out of 38 of the factories which are located in other places answered neutral. Finally, 0 participant out of 212 of the factories in industrial town answered disagree whereas 4 participants out of 118 of the factories in other places answered disagree. For the difference between the factories which are located in industrial town and other places of Herat with the statement (there are appropriate land transportation routes for exporting goods from Herat to other provinces), I made a cross-tabulation and Chi-square tests (see Table 4.29) to validate or not the significance of this

[a] 2 cells (25.0%) have expected count less than 5. The minimum expected count is .61.

difference. Thus, results show that this difference is significant (Pearson Chi-Square = 54,572; df = 3; p = 0,000 < 0,05). The result shows that the factories which are located in industrial town of Herat have a better location in order to transfer their products to other places, whereas the factories which are in other places of Herat don't have this criterion.

Table 4.30: SPSS Cross-tabulation

Crosstab		Energy Sources and Water Dams Have Been Created to Reduce the Electricity and Fuel Production Costs in Herat Province				
		Agree	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
Location of the factories	Industrial Town of Herat	37	121	29	25	212
	Other places	0	6	15	17	38
Total		37	127	44	42	250

Table 4.31: Chi-Square Tests

	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	50.444[a]	3	.000
Likelihood Ratio	51.585	3	.000
Linear-by-Linear Association	44.270	1	.000
N of Valid Cases	250		

By observing the table 4.30 shows a large difference of opinion by the respondents. 37 participants out of 212 factories in industrial town answered agree while 0 participant out of 38 factories which are located in other places of Herat answered agree. In addition, factories that are located in industrial town, 121 participants out of 212 answered neutral, whereas the factories in other places of Herat, 6 participants out of 38 answered neutral. Also 29 participants out of 212 of the factories in industrial town answered disagree while only 15 participants out of 38 of the factories which are located in other places of Herat

[a] 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.62.

answered disagree. Finally, 25 participants out of 212 of the factories which are located in industrial town answered strongly disagree, whereas 17 participants out of 38 of the factories which are located in other places of Herat answered strongly disagree. As for the difference between 1-5 years of experience and more than five years' experience with the statement (energy sources and water dams have been created to reduce the electricity and fuel production costs in Herat province), I made a cross-tabulation and Chi-square tests (see Table 4.31) to validate or not the significance of this difference. Thus, results show that this difference is significant (Pearson Chi-Square = 50,444; df = 3; p = 0,000 < 0,05). The result indicates that the factories which are located in industrial town have better electricity than the factories which are located in other places of Herat.

Table 4.32: SPSS Cross-tabulation

Crosstab		**Effective Strategies Have Been Taken by The Government in Order to Reduce Pollution and Sewage of Industrial Factories**				
		Agree	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
Location of the factories	Industrial Town of Herat	0	30	100	82	212
	Other places	3	10	15	10	38
Total		3	40	115	92	250

Table 4.33: Chi-Square Tests

	Value	**Df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	21.471[a]	3	.000
Likelihood Ratio	15.780	3	.001
Linear-by-Linear Association	9.623	1	.002
N of Valid Cases	250		

As the above chart shows, there is a significant difference between the factories which are located in industrial town and other places of Herat. Actually, 0 participant out of 212

[a] 2 cells (25.0%) have expected count less than 5. The minimum expected count is .46.

factories which are located in industrial town answered agree whereas 3 participants out of 38 factories which are located in other places of Herat answered agree. Therewith, factories in industrial town, 30 participants out of 212 answered neutral while the factories in other places of Herat, 10 participants out of 38 answered neutral. Also 100 participants out of 132 of the factories that are located in industrial town answered disagree while only 15 participants out of 38 of the factories that are located in other places of Herat answered disagree. At the end, 82 participants out of 212 of the factories which are located in industrial town answered strongly disagree whereas 10 participants out of 118 of the factories which are located in other places of Herat answered strongly disagree. For the difference between the factories which are located in industrial town and the factories which are located in other places of Herat with the statement (effective strategies have been taken by the government in order to reduce pollution and sewage of industrial factories), I made a cross-tabulation and Chi-square tests (see Table 4.33) to validate or not the significance of this difference. Thus, results show that this difference is significant (Pearson Chi-Square = 21,471; df = 3; p = 0,000 < 0,05). The result demonstrates, the factories which are located in industrial town don't have a standard sewage system and artisans are facing with a lot of problems regarding to this issue, whereas the factories which are located in other places of Herat have this problem too, but since these factories are divided in different parts of Herat can solve this issue easier.

4.4 Exploratory Factor Analysis

Confirmatory factor analysis was conducted using SPSS 24, it was confirmed as a result of the test that multicollinearity is not a problem for this data, all items are correlated significantly, and no item's coefficient was particularly large, so no need for considering omitting any of any item was realized.

Kaiser-Meyer-Olkin (KMO) Test is a measure of how suited your data is for Factor Analysis. The test measures sampling adequacy for each variable in the model and for the complete model. The statistic is a measure of the proportion of variance among variables that might be common variance. The lower the proportion, the more suited your data is to Factor Analysis.

Table 4.34: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.611**
Bartlett's Test of Sphericity	Approx. Chi-Square	198.596
	Df	105
	Sig.	.000

A KMO value close to 1 shows that the data pattern of correlation is compact, so, the factor analysis will yield reliable factors. For the data in this research the KMO test value is 0.611 which is classed as mediocre, this means that the factor extracted will surely be suitable for the data. Bartlett's test measures the null hypothesis that the correlation matrix is classed as identity matrix. For the data in this research, Bartlett's test is highly significant ($p < 0.000$), hence factor analysis is applicable. There are different methods for conducting the factor analysis such as principal component, unweighted least square, generalized least square, maximum likelihood, principal axis factoring, alpha factoring and image factoring. In current study, principal component analysis has been followed which is widely used in exploratory factor analysis with the rotation method of varimax type.

Table 4.35: Total Variance Explained

	Initial Eigenvalues		
Factor	**Total**	**% of Variance**	**Cumulative %**
1	1.991	13.271	13.271
2	1.452	9.678	22.949
3	1.224	8.157	31.106
4	1.162	7.744	38.851
5	1.084	7.229	46.080
6	1.030	6.868	52.948
7	.987	6.580	59.528
8	.941	6.272	65.801
9	.910	6.067	71.867
10	.851	5.675	77.543

11	.767	5.111	82.654
12	.741	4.942	87.595
13	.698	4.656	92.252
14	.603	4.019	96.271
15	.559	3.729	100.000

Extraction Method: Principal Component Analysis.

The initial eigenvalues show that there are six factors with the values greater than 1 and their cumulative % is 52.948% thereby acceptable for the further analysis.

Table 4.36: Component Matrix

Component Matrix[a]	**1**	**2**	**3**	**4**
The government policies have been sufficient to advance industry and encourage Herat artisans			-.464	.349
There are appropriate land transportation routes for exporting goods from Herat to other provinces	.497		.388	

Table 4.36 (continued): Component Matrix

Component Matrix[a]	**1**	**2**	**3**	**4**
There are appropriate air transportation routes for exporting goods to other provinces		.522		.428
There are appropriate land and air transportation routes for exporting goods to neighborhood countries			.658	-.306
The government encouragement and supportive policies for domestic and foreign artisans have created job opportunities		.342		
There are suitable domestic markets and customers for Herat manufactured products	-.689			
There are suitable foreign markets and customers for Herat manufactured products	-.549		.327	
Good marketing has been done for selling of the local products and handicrafts of Herat province				-.311

[a] Attempted to extract 4 factors. More than 25 iterations required.
[a] Attempted to extract 4 factors. More than 25 iterations required.

Effective efforts have been done to develop and change the industrial technology from traditional to modern one	.678			
Energy sources and water dams have been created to reduce the electricity and fuel production costs in Herat province	.325		.317	.464
Effective strategies have been taken by the government in order to reduce pollution and sewage of industrial factories	- .367	-.492		
Modern extraction of mines have been taken place for supplying of raw materials to the artisans	.413			
Educational, vocational and technical centers have been created for training of professional and specialized cadres and raising of the capacity of Herat entrepreneurs and workers		-.538		.335
Repairing workshops for making the factories' equipment have been made in Herat Province		.569		-.316
Cold stores and storages for preservation and keeping of the products have been created				-.308

Extraction Method: Principal Component Analysis.

The first factor is associated with land transportation routes for exporting goods from Herat to other provinces; domestic markets and customers for Herat manufactured products; and effective efforts have been done to develop and change the industrial technology from traditional to modern one. Most of the respondents had the same idea about these strategies, they indicated that these strategies have been taken place very well in Herat province.

The second factor is attached with air transportation routes for exporting goods to other provinces; effective strategies have been taken in order to reduce pollution and sewage of industrial factories; educational, vocational and technical centers have been created for training of professional and specialized cadres and workers; and repairing workshops have been made for making the factories' equipment. Most of the respondents had a negative idea about these strategies, they stated that these strategies have not been taken place well in Herat province.

Finally, the third factor is attached with the government policies have been sufficient to advance industry and encourage Herat artisans; and there are appropriate land and air transportation routes for exporting goods to neighborhood countries. Most of the respondents claimed that these strategies have been taken place well, but need more efforts to increase the satisfaction.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This final section of the report deals with the discussion of the findings presented in the preceding chapter. The discussion is made with reference to other similar works done in previous studies. The section then draws conclusions from these discussions after which it offers its recommendations. Finally, it suggests areas that are potential grounds for research that could not be completed in the body of this report.

5.2 Results Discussion

As a primary research in Afghanistan, in this research nine industrial sustainable development strategies have been suggested for Herat province of Afghanistan. Here, I have a short discussion the strategies which I mentioned and those which have suggested in different countries as industrial sustainable development strategies. One by one will be discussed:

- The growth of domestic industries and products and achieving of self-sufficiency through the adoption of supportive and encouraging policies of government for investors by maintaining sustainable development strategy. The strategy agrees with those of (Kevin P. & Gallagher and Lyuba Zarsky, 2004) about sustainable industrial development of Mexico, they observed pointers of the performance of Mexico's Foreign Direct Investment (FDI)- led integration strategy in contradiction of two broad sets of aims in the 1990s:

- The goals of fostering "industrial sustainable development," that have been explained in terms of development of internal productive capability, enhanced industry environmental performance and reduced inequality.
- Goals articulated by the government, containing progress in Foreign Direct Investment exports and inflows in the manufacturing sector, industrial restructuring, national progression and investment.

- Exporting of domestic goods and products to neighborhood and other countries through the creation of land and air transportation routes. (Exporting Promotion Strategy). This is also in line with those of (Kevin P. & Gallagher and Lyuba Zarsky, 2004) about sustainable industrial development of Mexico, argued the embrace of an industrial sustainable development policy is to look for the national bazaar as a base for the progression of inventive and effective companies. Also in (Industry.gov.ph) website which is about the industrial sustainable development strategies of Philippine it is stated that, Expand the domestic market base to allow industries to attain scale economies and export.

- Creating job opportunities through encouraging and supporting of domestic and foreign investors in industrial field. The strategy agrees with those mentioned in (Industry.gov.ph) website, which is about the industrial sustainable development strategies of Philippine. The industrial sustainable development strategies of Philippine have been categorized in three parts, short run (2014-2017), medium-run (2018-2021) and long-run (2022-2025). In their industrial sustainable development strategies, it has stated that, pursue aggressive promotion and marketing programs to attract more foreign direct investments especially those that would bring in new technologies.

- d. Improvement of available industrial technologies to modern technologies in Handicrafts and Machine Industries by Maintaining Sustainable Development Strategy. The strategy agrees with those of (Dr. Uri Marinov, 1996) Environmental Consultant about sustainable industrial development of Israel, argued in order to achieve sustainable industrial development in the future, better use should be made of such tools as economic instruments, life cycle analysis of products, and technologies for pollution prevention and material recycling.

- Reduction of products costs such as electricity and fuel for investors through the creation of internal energy sources and construction of dams without harming natural and environmental resources. This is in line with the strategy of (Industry and Trade Development Strategy 2016-2020, Trade and Industry Ministry of Egypt), stated that it is worth noting that the increase in manufacturing processes would inevitably lead to a high consumption of energy, which requires the rationalization of energy consumption in

factories. Since the general directions of the Government heads to 20% reliance on new and renewable energy, the industrial sector must respond to the development of such industries, and should generate energy from natural sources, whether from the wind, sun, and/or recycling of industrial and agricultural waste.

- Supplying the raw materials of industrial factories through the proper use of domestic mines and their modern extraction by maintaining sustainable development strategies. This strategy agrees with South Africa industrial sustainable strategies which have mentioned in a research of (Trade and Industry Department of South Africa 2014, A National Industrial Policy Framework): South Africa has an abundance of mineral and plant resources. Coupled with historically cheap electricity and substantial state support, this has given rise to distinct comparative advantage in a range of resource-processing sectors. Much of this comparative advantage is now self-sufficient and does not require state support.

- Training of professional and specialized cadres and raising the capacity of entrepreneurs by creating educational, vocational and technical centers. The strategy agrees with those of (Kevin P. & Gallagher and Lyuba Zarsky, 2004) about sustainable industrial development of Mexico, they argued that learning (primary to university), methodical and trade education, engineering, technical, and industry-relevant investigation and growth are the necessities of investment.

5.3 Conclusions

The above strategies have been investigated through questionnaire and interviews. About 15 questions were asked from 250 artisans and 3 interviews were taken with 3 different departments' heads of Herat (department of commerce and industrial, department of industrial and mines, department of economic) in order to analyze the suggested strategies for Herat province of Afghanistan. The study findings have been indicated as below:

It is evident that the government policies in order to advance industry and encourage Herat artisans were good but need more efforts (most of the governments' efforts are dramatic and in practice it is nothing).

It is revealed that there are good land transportation routes for exporting goods from Herat to other provinces, but there aren't good air transportations routes for exporting goods from Herat to other provinces due to the high costs of transportation. The findings indicate that there is a relationship between transportation of the factories' products and their locations. In comparison to the factories which are located in other places of Herat, the Industrial Town factories have a better advantage in exporting goods to other provinces, because the Industrial Town has located on Kandahar-Herat Highway and also near to the airport. But the factories which are located in other places of Herat must pass their products' packages from the city center to arrive on Kandahar-Herat Highway and since the city has a terrible terrific, the factories move their trucking during the night. It is remarkable that 0n December 2018, the government of Afghanistan has inaugurated the new ring (bypass) road of Herat donated by Italy with a cost of 32$. The 45-km road starts from Robat Paryan area on the Herat-Islam Qala Highway and ends linking the Herat-Kandahar Highway near the Herat International Airport. This road will significantly reduce heavy terrific in the city center and will facilitate the connection between Herat and neighboring countries such as Iran and Turkmenistan. The construction of this road will bring great benefits to commercial operators, by significantly reducing costs and transit times, but also the population of Herat by redirecting heavy and highly polluting trucks outside the city center.

The results illustrate that land and air transportation routes for exporting goods from Herat to other countries are good but need more efforts. Lately the Afghanistan government has signed the Lapis Lazuli Corridor Agreement with Turkmenistan, Azerbaijan, Georgia and Turkey which is the nearest and cheapest way to transit Afghanistan's and Asian countries' goods to Europe, it is remarkable that the starting of this this way is from Torghondi. And also the Afghanistan government has inaugurated the Air Corridor for exporting the Afghanistan's products to other countries.

The government supportive and encouragement polices have created job opportunities. About 20,000 afghans and 300 foreigners are employed in Herat Industrial Town.

There are suitable domestic markets for Herat manufactured products, but there aren't suitable foreign markets for Herat manufactured products. The findings indicate that there

is a relationship between markets for products' selling and their experience. In comparison to the factories which have less than five years' experience, the factories which have more than five years' experience have better domestic and foreign markets for their products. It shows that the factories with more experience have found their markets and don't have any problem with the selling of their products. But the factories with less experience haven't caught markets for selling of their products and they are obliged to work more on marketing of their products.

Good marketing has been done for selling of the local products and handicrafts of Herat province.

In addition, it is revealed that effective efforts have been done to develop and change the industrial technology from traditional to modern one, but these efforts were not enough. The findings show that the factories with more than five years' experience have this problem more than the factories which have been established in the latest years, their machineries are very old and cause pollution. The government must take strategies for collecting the old and traditional machineries, because they are a caution for the environment.

It is evident that few energy sources and water dams have been created to reduce the electricity and fuel production costs. In comparison to the Industrial Town factories, the factories which are located in other places of Herat have more difficulties with electricity because their electricity is not regular. The government of Afghanistan has recently launched some energy infrastructure projects such as Salma Dam, TAPI, TAP and etc. Salma Dam is the biggest project which has been established in the country in 40 years and it is located in Herat district of Chesht-e-Sharif. Salma Dam is 20km in length and 3km in width and has a water storage capacity of 640 million cubic meters. The Salma Dam generates 43 megawatts of electricity for 40,000 families and irrigates 80,000 hectares of farmland, belonging to 50,000 families. The dam which has been inaugurated on June 2016, was built and funded by India at a cost of 300$ million USD. The Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline project is another biggest project which was inaugurated in January 2016. The 1,814-kilometers gas pipeline will pass thorough Afghanistan to Pakistan and India. About 816 kilometers of the pipeline

will pass thorough the territory of Afghanistan. In Afghanistan this project will be constructed alongside the Kandahar-Herat Highway and the pipeline passes through Herat, Farah, Nimroz, Helmand and Kandahar provinces. The project cost which will be completed in 2019, is 22.5$ billion USD. The Turkmenistan-Afghanistan-Pakistan 500 kilovolts Line (TAP-500) is another important project which will be implemented alongside this key initiative for Afghanistan. The (TAP-500) will transfer Turkmenistan's electricity to Pakistan thorough Afghanistan. Besides the transit right that Afghanistan will earn from Turkmenistan and Pakistan, three substations of power will be established in Herat, Farah and Kandahar provinces too.

Furthermore, the results indicate that effective strategies have not been taken by the government in order to reduce pollution and sewage of industrial factories. Both the factories which are located in Industrial Town and other places of Herat have a lot of problems with pollutions and sewages of their factories, but the Industrial Town of Herat which is biggest town in Afghanistan has an urgent necessity to a sewage system in order to reduce the damages of pollution and sewages to the environment and have a sustainable future. Furthermore, the government should establish some departments in order to control from the factories' pollutions and sewages.

Thus, based on outcomes of research, it can be concluded that modern extraction of mines has not been taken place for supplying of raw materials to the artisans. Despite of being one of the poorest nations in the world, Afghanistan may be setting on one of the richest troves of minerals in the world, valued at nearly $1 trillion, according to U.S scientists. In 2006, U.S. researchers flew airborne missions to conduct magnetic, gravity and hyperspectral survey over Afghanistan. The survey verified all the major Soviet finds. According to the survey Afghanistan may hold 600 million tons of copper, 2.2 billion tons of iron ore, 1.4 million tons of rare earth elements such as lanthanum, cerium, and neodymium, and lodes of aluminum, gold, silver, zinc, mercury, and lithium. Herat's natural resources had been divided into three categories, large, medium and small. Copper, gold, marbles, lithium, iron, coalmine cement, salt, stucco and precious stones deposits are the most important natural resources. Despite of having many troves of minerals, the government of Afghanistan couldn't use from these minerals in a modern and sustainable

way and still most of the factories' raw materials come from outside. The main challenges on the modern extraction of minerals are lack of security and infrastructures.

The results show that there have not been created any educational, vocational and technical centers for training of professional and specialized cadres and raising of the capacity of Herat entrepreneurs and workers. Establishment of these kinds of centers in Industrial Town or other places of Herat is an urgent necessity.

It is revealed that there have not been made any repairing workshops for making the factories equipment. While the factories machineries facing to any problem, they ask and hire machinery engineers from neighborhood countries, or they deliver their machinery equipment to other countries in order to fix them. Therefore, it is a need to be established a repairing workshop in Herat province.

The study on the last question of the questionnaire concludes that cold stores and storages for preservation and keeping of the products have not been created. There are some cold stores and storages in Herat province, but they are not standard. Most of the factories have their own cold stores and storages, which they are small and making of these cold stores and storages cost them a lot. Making of standard cold stores and storages is another necessity for Herat artisans.

In conclusion, after investigating and analyzing all the issues and according to the questionnaire and interviews findings, it has been revealed that some of the recommended industrial sustainable development strategies for Herat province of Afghanistan have been placed very well, some of them have not been placed well and some of the strategies have been placed well but need to have some more efforts on them. From the suggested strategies, land transportation routes for exporting goods from Herat to other provinces; domestic markets and customers for Herat manufactured products; and efforts for changing the industrial technology from traditional to modern one, have been placed very well and majority of the respondents had the same positive ideas. The strategies which have not been placed well are, air transportation routes for exporting goods to other provinces; effective strategies have been taken in order to reduce pollution and sewage of industrial factories; educational, vocational and technical centers have been created for training of professional and specialized cadres and workers; and repairing workshops have

been made for making the factories' equipment. The strategies which have been taken placed well but need to have more efforts are, the government policies have been sufficient to advance industry and encourage Herat artisans; and there are appropriate land and air transportation routes for exporting goods to neighborhood countries.

The civil war, which has been going on for more than a decade in Afghanistan, prevents the investments to be made within the country. In order to achieve sustainable development, firstly political stability and peace must be ensured. The years between 1973 and 1978, when the country gained its sovereignty and every element of modern society was clearly visible. During this time period, even if there was no sustainable development, rural development strategies were slightly developed but there was no chance of implementation throughout the country. The first thing the local government should do in Herat Province is to identify the problems of the tradesmen and the middle-sized industry that will lead to the development of the province in a similar way. Solution proposals for these problems should be discussed at a conference attended by all segments of society and discussed in every aspect. At the next stage, these solutions should form the basis of the policies to be established nationwide. The necessary funding can be provided directly from the World Bank or similar international entities, rather than from organizations that fund sustainable development projects.

5.4 Limitations of the Study

Non-response to certain questions and providing of false information is another anticipated limitation to the study. This is due to the fear by some respondents that the researcher exposed confidentiality to public. However, the researcher used logical questions so that the respondents could be able to release such information needed by the researcher. The problem of insufficient time was solved by making sure that the researcher got enough time and maximum concentration on the research, drawing of the time table that facilitated ease completion of the research. Luck of females, youths and low educated artisans were other limitations of this study.

5.5 Suggestions and Recommendations

The ultimate goal of this research is to investigate and recommend the feasible industrial sustainable development strategies for Herat province of Afghanistan and to indicate the weaknesses and strengths of the industrial sector in Afghanistan and specially Herat province.

These recommendations include items related to industrial sustainable development strategies and how to advance and expand the industrial sector of Herat.

- Having a strategic industrial sustainable development plan for industrial sector which is prepared based on the thorough study of the needs and the long run development plan is highly important.
- The government could be incentives in terms of subsidized power, further tax exemptions or recognition for being the most environmentally friendly enterprise.
- Due to the growth of domestic products and the ability to compete with the foreign products, the tax should be increased on foreign products and low tax should be enacted on raw materials of Herat artisans.
- The local government of Herat should make a standard sewage system for Herat Industrial Town in order to prevent from high pollution and sewages of Herat industrial factories.
- In order to be prevented from high pollution and sewages, the government should transfer the factories which are located in other places of Herat into the Industrial Town of this province.

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APPENDICES

Appendix A. Questionnaire

Appendix B. Ethics Protocol Approval

Appendix C. Communalities

Appendix A: Questionnaire

Dear Participant,

I invite you to participate in a research study entitled " Investigating and Recommending the Feasible Industrial Sustainable Development Strategies for Herat Province of Afghanistan". The case of Artisans in Herat - Afghanistan. I am currently enrolled in the MBA program at Istanbul Aydin University and am in the process of writing my Master's Thesis.

The purpose of this study is to explore and analyze the feasible industrial sustainable development strategies for Herat province of Afghanistan.

Your participation in this research project is voluntary. Your responses will remain confidential and anonymous. Data from this research will be reported only as a collective combined total. You are kindly requested to be honest in your answers; since no one other than the researcher will know your individual answers to this questionnaire. If you agree to participate in this project, please answer the questions on the questionnaire as best you can. It should take approximately 5 minutes to complete.

With best regards,

Ahmad Ehsan Kakar

+905370272655

Ehsankakar2010@gmail.com

Section one: Demographical Questions

Please select the best choice for the following questions:

1. Your Sex?

☐ Male

☐ Female

2. Your age?

☐ 15-20

☐ 21-25

☐ 26-30

☐ 31-35

☐ >36

3. Your marital status?

☐ Single

☐ Married

4. Your current enrolled program?

☐ Associate Degree

☐ Bachelor

☐ Master

☐ Ph.D.

☐ Research

5. Years' of the factories' experience

☐ 1-5 years

☐ >5 years

6. Location of the factories

☐ Industrial Town of Herat

☐ Other places

Section Two:

Please indicate the extent to which you either agree or disagree with the following Statements by choosing the right option:

1. The government policies have been sufficient to advance industry and encourage Herat artisans.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

2. There are appropriate land transportation routes for exporting goods from Herat to other provinces.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

3. There are appropriate air transportation routes for exporting goods to other provinces.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

4. There are appropriate land and air d transportation routes for exporting goods to neighborhood countries.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

5. The government encouragement and supportive policies for domestic and foreign artisans have created job opportunities.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

6. There are suitable domestic markets and customers for Herat manufactured products.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

7. There are suitable foreign markets and customers for Herat manufactured products.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

8. Good marketing has been done for selling of the local products and handicrafts of Herat province.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

9. Effective efforts have been done to develop and change the industrial technology from traditional to modern one.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

10. Energy sources and water dams have been created to reduce the electricity and fuel production costs in Herat province.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

11. Effective strategies have been taken by the government in order to reduce pollution and sewage of industrial factories.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

12. Modern extraction of mines have been taken place for supplying of raw materials to the artisans.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

13. Educational, vocational and technical centers have been created for training of professional and specialized cadres and raising of the capacity of Herat entrepreneurs and workers.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

14. Repairing workshops for making the factories' equipment have been made in Herat Province.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

15. Cold stores and storages for preservation and keeping of the products have been created.

☐Strongly agree ☐Agree ☐Neutral ☐Disagree ☐Strongly disagree

Appendix B: Ethics Protocol Approval

Appendix C: Communalities

	Initial	Extraction
The government policies have been sufficient to advance industry and encourage Herat artisans	1.000	.377
There are appropriate land transportation routes for exporting goods from Herat to other provinces	1.000	.451
There are appropriate air transportation routes for exporting goods to other provinces	1.000	.477
There are appropriate land and air transportation routes for exporting goods to neighborhood countries	1.000	.545
The government encouragement and supportive policies for domestic and foreign artisans have created job opportunities	1.000	.266
There are suitable domestic markets and customers for Herat manufactured products	1.000	.616
There are suitable foreign markets and customers for Herat manufactured products	1.000	.526
Good marketing has been done for selling of the local products and handicrafts of Herat	1.000	.809
Effective efforts have been done to develop and change the industrial technology from traditional to modern one	1.000	.569
Energy sources and water dams have been created to reduce the electricity and fuel production costs in Herat province	1.000	.640
Effective strategies have been taken by the government in order to reduce pollution and sewage of industrial factories	1.000	.413
Modern extraction of mines have been taken place for supplying of raw materials to the artisans	1.000	.473
Educational, vocational and technical centers have been created for training of professional and specialized cadres and raising of the capacity of Herat entrepreneurs and workers	1.000	.553
Repairing workshops for making the factories' equipment have been made in Herat Province	1.000	.510
Cold stores and storages for preservation and keeping of the products have been created	1.000	.716

Extraction Method: Principal Component Analysis.

RESUME

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Date of Birth :03/12/1994

Place of Birth :Herat, Afghanistan

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E-MAIL :ehsankakar2010@gmail.com

EDUCATION

- **Master in Business Administration (MBA)** : 2017-2019, Istanbul Aydin University, Faculty of Social Sciences, Istanbul, Turkey.
- **BA Public Administration and Policy** : 2012-2015, Herat University, Afghanistan.
- **High School Diploma** :Saifi High School, Herat, Afghanistan (2011).
- **ILD (Institute for Leadership Development)** : Morning Star Development, Herat, Afghanistan. March- December 2014
- **UNHCR, WDOA & Herat University Project** :Life Skills Project, Herat, Afghanistan. July-December 2014
- **TTP (Teacher Training Program)** : Skills Training Center, Herat, Afghanistan. February-April 2009

WORK EXPERIENCE

Director of Elite Students' Council at Herat University (Jan 2013- Sep 2016)
(Volunteer besides studying Public Administration and Policy Faculty)
Duties and Responsibilities:

- Establishment and Management of academic and cultural, conflict resolution, sports and environment, psychological and financial committees.
- Conducting and Management of academic, social, cultural, educational seminars and research workshops.
- Editor-in-chief of "Nokhbagan Monthly Publication".
- Attending in many academic conferences in relation with the students' problems and finding the solutions for them.
- Conducting of media both pictorial and vocal programs.
- Organizing of job placement programs for the students.
- Motivate the students to initiate various academic and cultural exhibitions.

Administrative Volunteer - AISA (Afghanistan Investment Support Agency) (May – 0ct 2014)

Duties and Responsibilities:

- Data entry and Filing
- Assisting and facilitating the registration process of AISA clients' licenses
- Assisting in coordination and conducting of special events and activities
- Other related duties assigned

Observer of Interns in Public Administration and Policy Faculty– (Herat University) - (Sept- Dec 2015)

Duties and Responsibilities:

- Assessment of internship program in different organizations, provision of reports and record of their activities to heads of the administrative departments.
- Providing evaluation forms for the interns and analyzing their activities through the evaluation forms.

Part Time English and Computer Teacher – STC (Skills Training Center) - (2007-2013)

Duties and Responsibilities:

- Teaching English Language from basic to advanced levels
- Teaching Computer programs including MS Office Package
- Conducting exams, class discussions on relevant issues and news topics
- Fulfilling the general responsibilities of a teacher

COMPUTER SKILLS

- MS Windows, MS. Word, MS Excel, MS Access, MS PowerPoint & Outlook
- Advanced Diploma in Computer Science (Computer Hardware (Partitioning, Formatting & Installation of Hardware as well as Software Skills)
- Internet
- English and Dari typing

LANGUAGES

Language	**Speaking**	**Writing**	**Reading**
Dari	Native	Native	Native
Pashto	Very Good	Excellent	Excellent
English	Excellent	Excellent	Excellent
Turkish	Good	Good	Good