



**The Impact of E-Supply Chain Integration on Achieving  
Blue Ocean Strategy: An Empirical Study of Jordanian  
Pharmaceutical Manufacturing Organizations**

**أثر تكامل سلسلة التوريد الإلكترونية في تحقيق استراتيجية المحيط الأزرق:  
دراسة ميدانية في منظمات صناعة الأدوية الأردنية**

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**Thesis Submitted in Partial Fulfillment of the Requirements for  
the Degree of Master of E-Business**

**Department of Management**

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### Authorization

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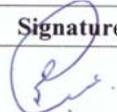
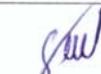


Date: 12/2/2017

### Examination Committee's Decision

This thesis of the student Abdallah Hasan Sha'ban Agha, which studied **"The Impact of E-Supply Chain Integration on Achieving Blue Ocean Strategy: An Empirical Study at Jordanian Pharmaceutical Organizations"**, has been defined, accepted and approved on 23/1/2017

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Finally, thanks for the examination committee for devoting much of their valuable time reviewing and discussing the material of the study.

Abdallah Hasan Sha'ban Agha

## **Dedication**

First and foremost, I gratefully thank Allah for empowering me with health and strength for achieving this work.

This thesis is dedicated to my precious family; my father Hasan, my mother Anola, my uncle Tambi and to my anti's Silvana and Nariman and her husband Jasim, and to my lovely friends who helped me in each and every way it was needed, for their endless support throughout my life to reach this stage .

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**Abstract**

The aim of this study is to investigate the impact of E-supply chain integration on achieving blue ocean strategy at Jordanian Pharmaceutical Manufacturing Organizations through the perception of the managers working at these organizations.

This study is a descriptive and cause-effect study. The populations of study consist from Jordanian pharmaceutical manufacturing organizations that registered in Jordanian association of pharmaceutical manufacturers (JAPM) in 2016. The study was surveyed managers working at 7 organizations out of 14 organizations. Data collected from 100 out of about 200 managers during October-December, 2016, by means of questionnaire, which developed and refined by literature review and panel of referees committee. After confirming normality, validity and reliability, different statistical techniques have been used to test the hypothesis like descriptive statistics, correlation, multiple and simple regressions.

The results of this study show that there is an agreement on a medium implementation of E-supply chain integration variables among Jordanian pharmaceutical manufacturing Organizations. The results also indicate that there is medium relationship between E-supply chain integration and blue ocean strategy. Finally, results points out all E-supply chain integration variables have an effect on blue ocean strategy in Jordanian pharmaceutical manufacturing organizations.

**Key Words:** E-Supply Chain Integration, Blue Ocean Strategy, Jordanian Pharmaceutical Manufacturing (JPMO) Organizations.

## أثر تكامل سلسلة التوريد الإلكترونية في تحقيق إستراتيجية المحيط الأزرق:

### دراسة ميدانية في منظمات صناعة الأدوية الأردنية.

إعداد

عبدالله حسن شعبان اغا

إشراف

الدكتور عبدالعزيز أحمد الشرباتي

### الملخص

هدفت هذه الدراسة إلى قياس أثر تكامل سلسلة التوريد الإلكترونية في تحقيق إستراتيجية المحيط الأزرق في منظمات الصناعة الدوائية الأردنية من خلال المدربين العاملين في المستويات الإدارية الثلاث (العليا، المتوسطة، التنفيذية).

تعتبر هذه الدراسة وصفية سببية. حيث أن مجتمع الدراسة هو شركات الصناعة الدوائية الأردنية والتي عددها 14 شركة حسب الجمعية الأردنية لمنتجات الأدوية لسنة 2016. كانت وحدة المعاينة المدربين العاملين وعددهم 200 مديرا. ولغايات الدراسة تم استخدام الاستبانة التي تم وضعها وتطويرها من خلال مراجع الدراسات السابقة ولجنة التحكيم حيث تم جمع 100 استبانة خلال فترة ما بين تشرين الأول وتشرين الثاني من عام 2016. بعد التأكد من طبيعة النتائج، صلاحيتها واعتماديتها، استخدمت الدراسة عددا من الأساليب الاحصائية مثل الاحصاء الوصفي، وتحليل الارتباط، وتحليل الانحدار البسيط، والمتعدد والمنفرد لفحص الفرضيات.

أظهرت النتائج أن هناك اتفاقا على تطبيق متغيرات سلسلة التوريد الإلكترونية، مما يدل على أن هناك اتفاقا على وجود هذه المتغيرات في شركات الصناعة الأدوية الأردنية. وأظهرت النتائج أن

هناك علاقة بين متغيرات سلسلة التوريد الإلكترونية ككل واستراتيجية المحيط الأزرق وهي علاقة متوسطة. وأخيرا أظهرت النتائج أن جميع متغيرات سلسلة التوريد الإلكترونية لها تأثير في تحقيق إستراتيجية المحيط الأزرق في شركات الصناعة الدوائية الأردنية.

**الكلمات المفتاحية:** سلسلة التوريد الإلكترونية، إستراتيجية المحيط الأزرق، شركات الصناعة

الدوائية الأردنية.

## **Chapter One:**

### **Introduction**

#### **1.1. Background:**

The technological development of communication and transportation lead to what is called today globalization. The importance of supply chain management (SCM) has grown over a period of time and various planning models have been put into practice by organizations across the world. Stock, et. al. (2010) described supply chain management (SCM) as the management of raw materials, in process materials, and finished goods inventories from the point of origin to the point of consumption. Otchere, et. al. (2013a) said the objective of supply chain management is to maximize the overall value generated rather than profit generation. Technological development has affected everything in our life including how to improve the business through satisfying customer's needs and wants. The customer needs a quality product at right place in right time with suitable price. This can be achieved by integrating the supply chain elements together which includes integration with suppliers, internal integration and integration with customers. Supply-chain integration has become a prominent issue during the last decade. In recent years, there has been a great deal of empirical evidence to show that successful supply chain integration can improve a firm performance and competitive advantage. Liu, et. al. (2013) said supply chain integration (SCI) refers to the degree to which a firm collaboratively manages intra- and inter-organizational processes with channel partners. Otchere, et. al. (2013) stated the basis of integration can therefore be characterized by collaboration, information sharing, trust, partnerships, shared technology, and a fundamental shift away from managing individual

functional processes, to managing integrated chains of processes. Nowadays, this can be best achieved by using enterprise resource planning (ERP) which is the generation tool of electronic supply chain (E-SC) nowadays. ERP can help defining the exact needs and wants of market and how to develop the suitable strategy to satisfy them. Seo (2013) stated enterprise resource planning (ERP) system as one of the most popular business management systems, providing benefits of real-time capabilities and seamless communication for business in large organizations. Dominic, et. al. (2013) stated (E-SC) as a smoothness key of the information exchange processes which occur during the e-business transactions of companies across the supply chain, which aims for integration with suppliers, internal processes and customers. Blue ocean strategy (BOS) is a strategy of searching and creating new needs and wants, and developing a suitable strategy to satisfy them.

Both business and engineering domains share a vision as an industrial era where the use of knowledge and the capability to innovate play fundamental roles in a companies' success which depends upon a good planned strategy to satisfy customer's needs and wants. Blue ocean strategy (BOS) was introduced in 2005 by Kim and Mauborgne. The logic of blue ocean strategy is based on a number of fundamental principles, which seeks to create value for both buyers of products and services and for company. Kim and Mauborgne (2005) defined the blue ocean strategy as a consistent pattern of strategic thinking behind the creation of new markets and industries where demand is created rather than fought for and the rule of competition is irrelevant.

Therefore, this study is dedicated to investigate the impact of E-supply chain integration on blue ocean strategy at Jordanian pharmaceutical manufacturing organizations.

## **1.2. Study Aim and Objectives:**

The aim of this study is to investigate the impact of E-supply chain integration on achieving blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, while the main objective of this research is to provide sound recommendations to pharmaceutical organizations and other industries, as well as, to decision makers who have concerns about both E-supply chain integration and blue ocean strategy. It is directed to scholars and academicians who may use it as reference and for comparison studies.

## **1.3. Study Significance:**

This study may be considered as the first study which investigates the effect of E-supply chain integration on achieving blue ocean strategy at pharmaceutical manufacturing organizations in Jordan. This study is not only important for practitioners who work in Pharmaceutical industry, but also to other practitioners who work in other industries, as well as, for scholars and researchers.

## **1.4. Problem Statement:**

Blue ocean strategy is a new concept which attracts many organizations to develop their strategy accordingly. Therefore, the blue ocean strategy is not limited to organization, industry or country; it can be used in any organization or industry anywhere. The impact of E-supply chain integration on achieving blue ocean strategy is not well researched yet.

Quickened the Jordanian pharmaceutical organizations has fallen back in the international markets because of what happened in the middle east lately also because of the entrance of Egypt and India which also infected the Jordanian pharmaceutical market

and this can be solved by using the blue ocean strategy dimension. Technological advances have substantially improved industrial productivity and have allowed suppliers to produce a matchless array of products and services, and externally pressure that the production and service companies including the pharmaceutical ones faced, and because the Jordanian market now is open for any pharmaceutical products, these companies are advised to use blue ocean strategy to create a new market and capturing a new demand of medicines, producing a high quality medicines and services that increases customer's satisfaction which can lead these organizations to achieve the sustainability and to succeed in the markets.

Therefore the purpose of this research is to investigate the impact of E-supply chain integration on achieving blue ocean strategy at Jordanian pharmaceutical manufacturing organizations.

### **Problem Questions:**

Based on problem statement the following questions can be derived:

### **The main question:**

1. Does E-supply chain integration affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations?

According to E-supply chain integration the main question can be divided into the following sub-questions:

1.1. Does suppliers' integration affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations?

1.2. Does internal integration affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations?

1.3. Does customers' integration affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations?

### **1.5. Study Hypotheses:**

The problem questions can be answered by developing the following hypothesis:

**H<sub>01</sub>**: E-supply chain integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ ).

According to E-supply chain integration elements the main hypothesis can be divided into the following sub-hypotheses:

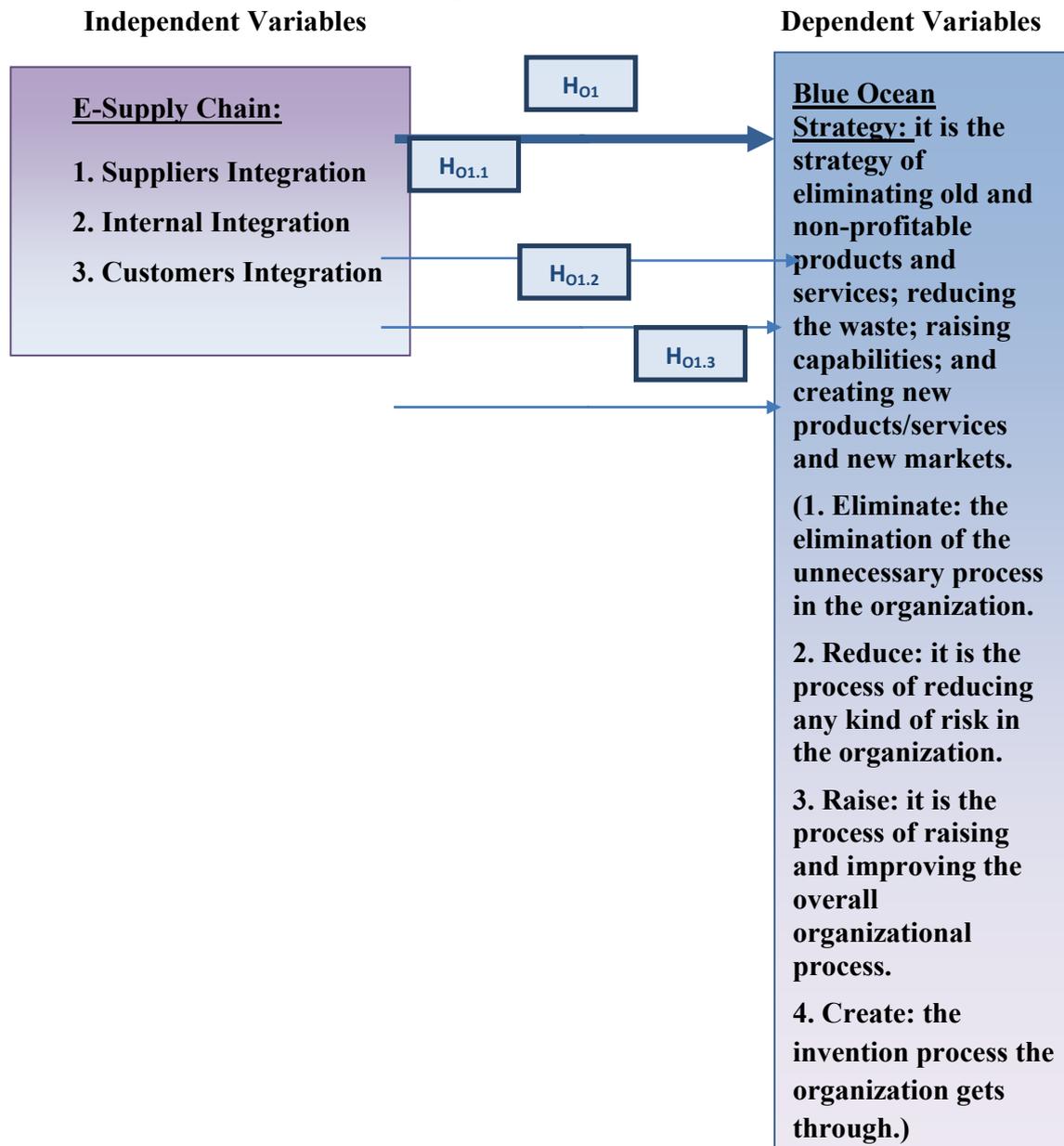
**H<sub>01.1</sub>**: Suppliers' integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ ).

**H<sub>01.2</sub>**: Internal integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ ).

**H<sub>01.3</sub>**: Customers' integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ ).

## 1.6. Study Model:

Figure 1: Study Model



The model is developed based on the following previous studies: for independent variable Flynn, et. al. (2010), Tenkorang and Helo (2011), Huo, et. al. (2015), for dependent variable Kim and Mauborgne (2005).

## 1.7. Conceptual Definitions of Variables:

**E-Supply Chain (E-SC):** It is the process that controls the raw materials or products and services movements from suppliers through the organization to customers or end users through E-mails, ERP systems, and many other electronic systems or devices.

**Supply Chain Integration:** Is the coordination process that any organization does to achieve their goals and profits safely.

**Suppliers' Integration:** It is a coordination process which happens between the organization and its suppliers through many communication systems and long or short term business agreements.

**Internal Integration:** it is the activities of sharing information and exchanging technical experiences that happens inside the organization functional and non-functional departments to reduce risks enhance performance and solve problems to achieve the organizational goals.

**Customers' Integration:** it is a clever sensitive relationship that happens among the organization and its customers through the selling process and sharing information from the organization side about its products and services, also sharing the information from the customers side about their feedbacks through opinions and new ideas about products and services, also taking information from customers knowledge about other competitors in the same market.

**Blue Ocean Strategy:** it is the strategy of eliminating old and non-profitable products and services; reducing the waste; raising capabilities; and creating new products/services and new markets.

**Eliminate:** the elimination of the unnecessary process in the organization.

**Reduce:** it is the process of reducing any kind of risk in the organization.

**Raise:** it is the process of raising and improving the overall organizational process.

**Create:** it is the creation and the invention process that the organization gets through.

### **1.8. Study Limitations:**

**Human Limitation:** This study conducted managers working at Jordanian pharmaceutical manufacturing organizations.

**Place Limitation:** This study is performed on Jordanian pharmaceutical manufacturing organizations located at Amman - Jordan. All Jordanian pharmaceutical manufacturing organizations are actually located in Amman.

**Time Limitation:** This study is carried out within the period between summer semester and 1st semester of academic year 2015/2016.

### **1.9. Study Delimitation:**

This study discussed the impact of E-supply chain integration on achieving blue ocean strategy at Jordanian pharmaceutical manufacturing organizations (JPMOs). Generalizing Jordanian settings on other countries is questionable. This study is limited to industry therefore; the study recommends investigating the effect on other countries.

## **Chapter Two:**

### **Conceptual and Theoretical Framework and Previous Studies**

#### **Introduction:**

This chapter starts discussing the conceptual and theoretical framework, followed by introducing previous studies and finally, what differentiate this study from previous studies.

#### **2.1. Conceptual and Theoretical Framework:**

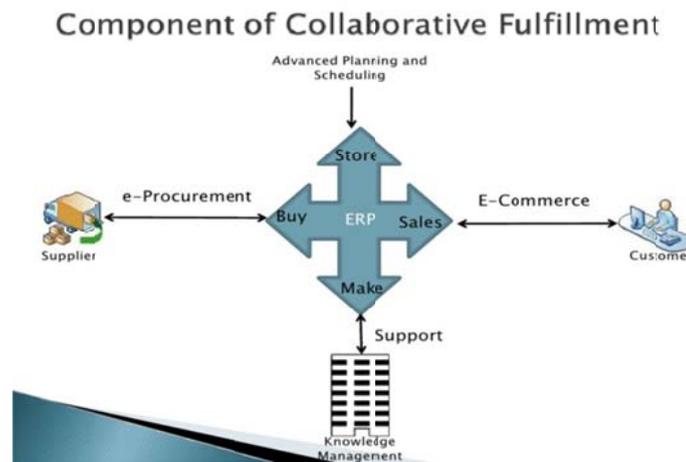
It seems that there is no clear-cut definition for blue ocean strategy or E-supply chain integration, and there is no agreement upon the components neither for E-supply chain nor for blue ocean strategy. Blue ocean strategy concerns about creating a new uncontested market through new products and services to make a new demand, while E-supply chain integration is a measuring tool to improve processes and performance inside organization for achieving blue ocean strategy.

##### **2.1.1. E-Supply Chain Concept:**

The age of internet and the developments of e-business have enhanced the traditional supply chain coordination and communication between business partners. Enabling technologies like E-Markets, ERP management system, CRM, and many others has improved the integration among organization departments and with its suppliers and customers. The word 'E' has removed the borders of sharing the information making the firm even smarter than ever in every single day.

After combining the electronic systems with the supply chain management elements any person can witness the improvements that the electronic systems added to the supply chain procedures in this decade such as the fast responses that the organizations get from these systems.

**Figure 2: E-Supply Chain Management Model**



**Source: Amer, M. (2012)**

Figure (2): Explains how the supply chain process work starts from the ERP through e-procurement channel when the organization starts searching and negotiating with suppliers about products and services also getting the experience and guidance through knowledge management channel until delivering the products and service to the customers through the e-commerce channel. Dominic, et. al. (2013) said E-supply chain (E-SC) leads to lower cost and increases sales, profits, and creates greater market. Also, it increases the level of performance and productivity of (SC) components. Rao and Reddy (2013) defined E-supply chain (E-SC) as the Internet wave and emergence of e-business has highly influenced the traditional supply chain by enhancing coordination and communication between the partners. Dominic, et. al. (2013) considered E-supply chain as a key to

guarantee the smoothness of the information exchange processes which occur during the e-business transactions of companies across the SC. Tenkorang and Helo (2011) said an ERP system enables an organization to integrate all the primary business processes in order to enhance efficiency and maintain a competitive position. However, without successful implementation of the system, the projected benefits of improved productivity and competitive advantage would not be forthcoming. Tenkorang and Helo (2011) stated enterprise resource planning (ERP) system as facilitating the smooth flow of common functional information and practices across the entire organization. In addition, it improves the performance of the supply chain and reduces the cycle times. Based on Stewart (1997) supply chain operations reference which is (SCOR) model, the first supply chain management (SCM) process framework was established in 1996:

- 1) Increase the speed of system implementations
- 2) Support organizational learning goals
- 3) Improve inventory turns

Therefore, the E-supply chain (E-SC) can be defined as: the process that controls the raw materials, products and services movements from suppliers through the organization to customers or end users through E-mails, ERP systems, and many other electronic systems or devices.

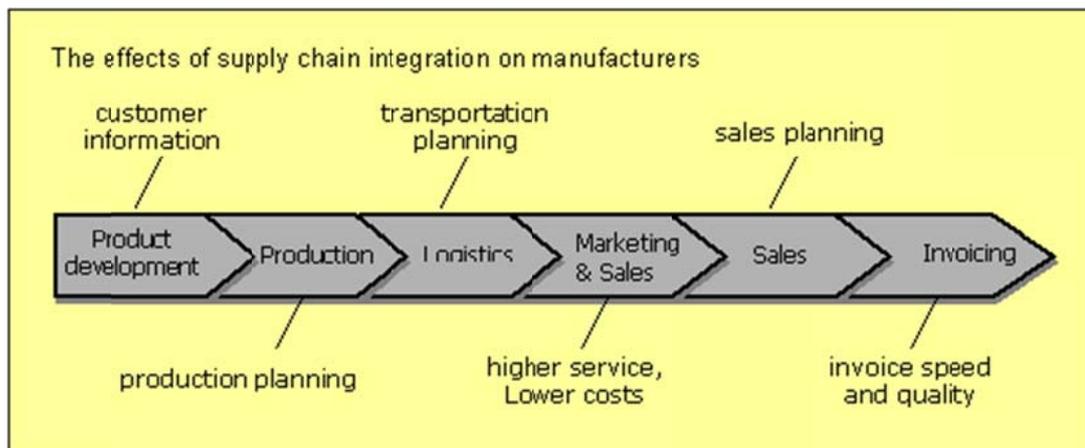
### **2.1.2. Supply Chain Integration (SCI) Concept:**

The process of supply chain integration (SCI) has become easier these days' because of the technological and global improvements' of the new E-business process which has made the integration with suppliers' through the organization (internal

integration) ending by customer integration easier and flexible to work on. Lambert, et. al. (1998) defined supply chain integration (SCI) as the key of business process from end user through original suppliers that provides products, services and information that add values for customers and other stake holders. It has been observed that (SCI) constructs are built from three items, in Lopez, et. al. (2013) study defined the (SCI) framework by means of three items, which is: (1) supplier partnering, (2) closer customer relationships and (3) cross-functional teams.

Therefore, supply chain integration can be defined as the coordination process that any organization does to achieve their goals and profits safely.

**Figure 3: Supply Chain Integration**



**Source: Joost and Laan (2010)**

Figure (3): Explain the improvements area which is a different type of processes within the value chain: exchange of point-of-sale information with manufacturers will improve logistics service levels and reduce stocks and simultaneously reduce out-of-stocks. This figure also shows a short-term effect for retailer which is a reduction in procurement costs and improved planning and execution of promotions. The figure directs the effect of

reduced stock levels in the stores is the possibility to add assortment and increase sales and margin.

Therefore, supply chain integration can be defined as the coordination process that any organization does to achieve their goals and profits safely.

## **2.2. Supply Chain Integration Variables:**

### **2.2.1. Supplier Integration Concept:**

The supplier integration process had improved the organizations movements from reducing costs to raise profits through the collaboration among the organizations and its suppliers.

Petersen, et. al. (2005) defined supplier integration as an important coordinating mechanism for decisions that link product design, process design, and supply chain design together. Das, et. al. (2006) defined supplier integration as a vertical integrated times, that concerns about various functional areas in a company with suppliers to work together to meet corporate goals. With increasing portions of the product value being partitioned to entities outside the organization, across supply chains partners to effectively deliver products to the market. Koufteros, et. al. (2007) claimed supplier integration as the supplier expertise, suggestions and other input towards the product development effort but typically will not assume sole responsibility for developing parts, for the final product. Flynn, et. al. (2010) stated supplier integration or integrated supplier's concept for improving the part of the supply chain among industries and their tiers of suppliers of ingredients, (raw materials, money, machines and packaging, etc.) By sharing information, both parties are able to exercise judgment on costs, quantities and timing of deliveries and production in order to

streamline the product flow and to move to a collaborative relationship. Droge, et. al. (2012) defined supply chain integration as the overall as a process of redefining and connecting entities through coordinating or sharing information and resources. Supplier integration suggests that suppliers are providing information and directly participating in decision making. It is characterized by a cooperative relationship between the buyer and the upstream supplier. Often these relationships incorporate initiatives and programs that foster and strengthen the linkages between buyer and supplier.

Overall, supplier integration can be defined as the coordination process which happens between the organization and its suppliers through many communication systems and long or short term business agreements.

### **2.2.2. Internal Integration Concept:**

Successful business firm has been always working hard to enhance the collaboration among its departments through sharing information to reduce risks to achieve their overall goals. Zhao, et. al. (2011) said internal integration refers to the degree to which a firm can structure its organizational practices, procedures and behaviors into collaborative, synchronized and manageable processes in order to fulfill customer requirements. Schoenherr and Swink (2012) defined the internal integration as a firm performance ability to achieve abnormally positive operational outcomes relative to their competitors. While classifying their performance measures into the groups of marketplace-, productivity and non-productivity related measures. Droge, et. al. (2012) stated internal integration as the overall as a process of redefining and connecting entities through coordinating or sharing information and resources. Huo, et. al. (2015) claimed that internal integration mainly

involves information sharing, cross-functional cooperation or working together across different functions to improve processes or develop new products.

After all, internal integration can be defined as the activities of sharing information and exchanging technical experiences that happen inside the organization functional and non-functional departments to reduce risks enhance performance and solve problems to achieve the overall organizational goals.

### **2.2.3. Customer Integration Concept:**

Business firms through decades used to concentrate on profits to be sustainable in the market but these days they are concentrating on satisfying their customer needs more than profits through sharing information from both sides (company side and customer side). Droge, et. al. (2012) stated Customer integration as the involves directing attention and resources toward understanding how products and processes interact with the customer's business and helping the customer become more competitive. Thus customer integration entails engaging the customer in decisions about products sold by the firm and encompasses methods and strategies that improve coordination between the firm and the customer. Huo, et. al. (2015) announced involves sharing information with customers about product quality and delivery and determining the changing needs of customers. Customer integration also involves working together with customers to jointly develop strategies for creating market opportunities. When SCI has been investigated as a dimension construct, the variables are very different in number and focus.

Therefore, customer integration can be defined as: a clever sensitive relationship that happens among the organization and its customers through the selling process and

sharing information from the organization side about its products and services, also sharing the information from the customers side about their feedbacks through opinions and new ideas about products and services, also taking information from customers knowledge about other competitors in the same market.

### 2.3. Blue Ocean Strategy:

Issues like transforming the model of the business firms is definitely a new approach directing to the value creation and by pushing the organizations to gain and increase of profits through sales activities. After the deep studies from both the researches and practitioners sides organizations can transform its form or model or get in a new business for sure, the organizations that always seek for changing and always wants to be number one and no one else in the market place but them, can do it and could be easy for the while following the innovation values by thinking or re-thinking creatively even from if the process were from the past as Nintendo did with the Pokémon go game.

**Figure 4: Defining Blue Ocean Strategy versus Red Ocean Strategy**

Red Ocean Strategy	Blue Ocean Strategy
Compete in existing market space	Create uncontested market space
Beat the competition	Make the competition irrelevant
Exploit existing demand	Create and capture new demand
Make the value-cost trade-off	Break the value-cost trade-off
Align the whole system of a firm's activities with its strategic choice of differentiation <i>or</i> low cost	Align the whole system of a firm's activities in pursuit of differentiation <i>and</i> low cost

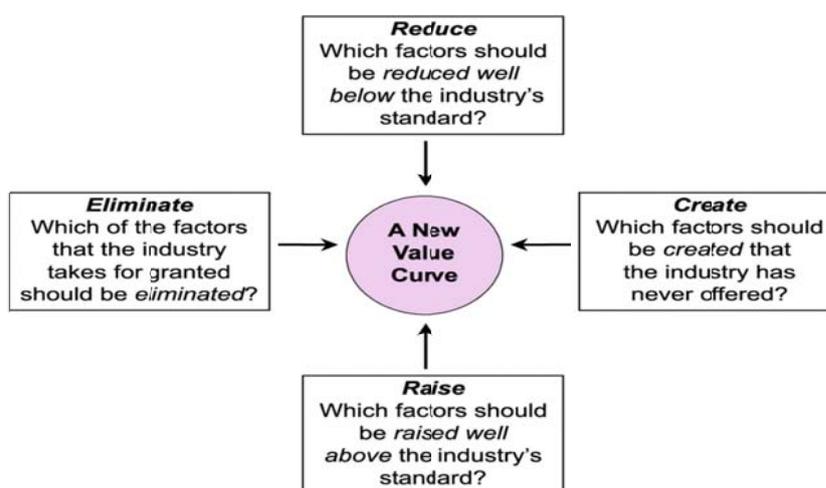
**Source: Kim and Mauborgne (2005).**

Red Ocean Strategy is the competition business model of a firm which was the base model for most of businesses firms in the market. Still, many business practitioners insist on use previous red ocean models as a key for survival but the business world experienced many changes from those times. In 2005 Kim and Mauborgne brought blue ocean strategy into business theory and practice. The founders' of blue ocean strategy Kim and Mauborgne (2005:14-15) said blue ocean strategy generally refers to the creation by a company of a new market space that makes, uncontested competitors irrelevant which they create new consumer value often while decreasing costs. Kim and Mauborgne (2005:14-15) stated blue ocean strategy (BOS) as a pattern of strategic thinking behind the creation of new markets and industries where demand is created rather than fought for and the rule of competition is irrelevant. Lindic, et. al. (2012) defined blue ocean strategy (BOS) as the idea of a company's value creation in uncontested markets labeled "blue oceans". Chakrabarti (2014) stated blue ocean marketing strategy (BOMS) as a management strategy tool well recognized in the 21 century. And a concept in strategic management directed at finding new business and new value. Eskandaria, et. al. (2015) said blue ocean strategy is the approach to strategic thinking, with innovation, by taking steps to provide a set of specific tools and approaches for achieving the strategic goals of the organization. Kim and Mauborgne (2005) claimed the goal of blue ocean strategy is to create a new products and services and a new market space, following the six paths framework in formulating blue ocean strategy are (1) Look across alternative industries, (2) Look across strategic groups within industry, (3) Look across buyer groups, (4) Look across complementary product and service offerings, (5) Look across the functional-emotional orientation of an industry and (6) Look across time to shape trends.

In this study blue ocean strategy can be defined as the strategy of eliminating old and non-profitable products and services; reducing the waste; raising capabilities; and creating new products/services and new markets.

## 2.4. Blue Ocean Strategy Variables:

Figure 5: Blue Ocean Strategy variables



Kim and Mauborgne (2005).

### 2.4.1. Eliminate: (Wastage, Junk, High costs, etc.)

By decades organizations started to get rid of any kind of wastage starting from time to production, these days any organization is looking for sustainability which is staying in the market as far long to achieve the overall objectives that the organization plans for by eliminating every type of risk. Kim and Mauborgne (2005) defined the eliminate concept as the factors that the industry takes for granted should be eliminated to add a new value. Alghamdi (2016) stated eliminate as the elimination that the organization excludes any unnecessary processes to reduce costs without affecting the quality, sales and

profits, such as the exclusion of individuals who disturb the organization's work and who get high wages. Hersh and Abusaleem (2016) claimed eliminate as the creation of a new value and think carefully about the exclusion of the factors that organization competed around in prior periods.

Therefore, eliminate can be defined as the elimination of the all over unnecessary process in the organization.

#### **2.4.2. Reduce: (Costs, Risks, Complexity, etc.)**

As far for any organization to stay in the market and achieve their goals they have to start a plan for reducing costs risks or any kind of business troubles they will face in the future. Kim and Mauborgne (2005) stated it as the factors which should be reduced well below the industry's standard. Alghamdi (2016) defined reduction as the organization cuts or reduces some of the work processes that it deems unnecessary or unjustified and that can contribute to reducing the overall costs with maintaining the stability of profits and increasing the quality, like reducing some unnecessary services provided to customers. Hersh and Abusaleem (2016) said if the organization, aims to create a blue ocean, they must seriously consider its exaggerated activities on different areas such as designing the product which contributed to increase the cost.

Overall, reduce can be stated as the process of reducing any kind of wastage and risk in the organization.

### **2.4.3. Raise: (Control, Worker abilities, Productivity, etc.)**

After the process of eliminating and reducing (risks, costs, etc...) organization start focusing on Raising its abilities and profits through raising its position and reputation in the market to raise its profits overall. Kim and Mauborgne (2005) claimed raise as the factors should be raised well above the industry's standard. Alghamdi (2016) stated raise as the Increasing process by organization adding some activities, procedures or materials that result in increased and improved quality of the products offered to customers, and that lead to an increased level of the profits size. Hersh and Abusaleem (2016) said in the same context, it is assumed that the organization is seeking to increase some factors concentration more than the rest of the competitors in the field of production process or marketing activities to access to uniqueness state.

After all, raise can be defined as the process of raising and improving the overall organizational process and performance.

### **2.4.4. Create: (Products, Services, Systems, etc.)**

Any organization is looking toward staying in the market as long as it can be by creating and offering new products and services to its customers. Now a day it is not easy for sure to do that just through following blue ocean strategy process, any organization can be creative and innovative yes but to create a whole new idea to sustain in the market through the process of blue ocean strategy that starts from an innovative idea to innovate a value or make a value creation. Kim and Mauborgne (2005) claimed create as the factors should be created that the industry has never offered. Lindic, et. al. (2012) defined create as the achievements and establishments of a high growth markets for both large and small

companies by creating new market space. Alghamdi (2016) said create means that the organization is creating new jobs and products and is also creating a better working environment for its employees. In addition to use of its innovative ways and methods in the marketing process.

Therefore, create can be defined as the creation and the invention process that the organization gets through.

In summary, blue ocean strategy can be defined as the strategy of eliminating old and non-profitable products and services; reducing the waste; raising capabilities; and creating new products/services and new markets.

## **2.5. The Relationship between Variables:**

The researcher has scanned the internet and searched in many universities and academic centers to find previous study or research correlating E-supply chain with blue ocean strategy, but found a few studies related to the topic. Therefore, the topic of the effect of supply chain on blue ocean strategy can be considered as a new and important topic to be discussed. Some previous researches studied the relationship between supply chain and other variables such as: Petersen, et. al. (2005) study titled: “Supplier integration into new product development: coordinating product, process and supply chain design”, they examined the supplier involvement in new product development to produce a significant improvements in financial returns and/or product design performance. Rehan and Akyuz (2010) study titled: “Enterprise Application Integration (EAI), Service Oriented Architectures (SOA) and their relevance to E-Supply Chain (E-SC) formation”, this paper focused on service oriented architectures (SOA) as the recent trend in cross-platform

enterprise application integration. This study has found that indicated SOA still appears as the most convenient paradigm to meet the challenges of today's e-supply chain formation requirements. Authors used a questionnaire to collect data. Chakrabarti (2014) study titled: "Blue Ocean Marketing Strategy (BOMS): An overview", this study explained one of the current strategic moves that an organization has to follow in pursuit to generate profits which is blue ocean marketing strategy (BOMS). The authors has found that blue ocean marketing strategy (BOMS) is relatively new and developed a strategy to look at the market boundaries differently and has formulated a new value for products or services to customers from different segments and placed in an uncontested market place. They focused on the principles of blue ocean strategy which is value innovation and implement the strategy to promote the case for creating uncontested market spaces in circumstances when supply exceeds demand. Huo (2012) study titled: "The impact of supply chain integration on company performance: an organizational capability perspective" aimed to examine the impact of three types of supply chain integration (SCI) on three types of company performance from the perspective of organizational capability. The results of this study showed that internal integration improves external integration and that internal and external integration directly and indirectly enhance company performance. Whitten, et. al. (2012) study titled: "Triple-A supply chain Performance" aimed to theorize a triple-A supply chain performance (agility, adaptability, and alignment) model that incorporates triple-a supply chain status as antecedent to supply chain performance and supply chain performance as antecedent to organizational performance. Hersh and Abusaleem (2016) study titled: "Blue ocean strategy in Saudi Arabia telecommunication companies and its impact on the competitive advantage" The study came to a set of results, the main important results are:

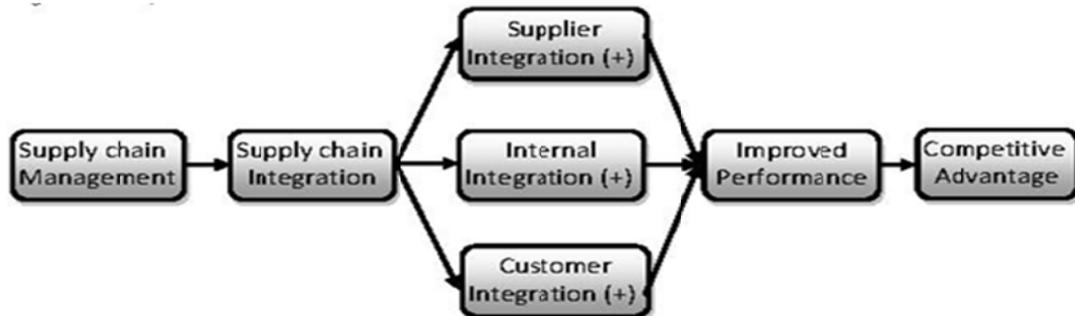
The application of the principles of blue ocean strategy will contribute significantly to achieve a competitive advantage to the company over its competitors in the market, where it was found that there is a strong positive relationship between the competitive advantage variable and every principle of blue ocean strategy principles, and the most powerful relationship came to (Reconstruct market boundaries, Reach beyond existing demand) principles, and the least came to the principle of (Build execution into strategy), the study concluded that the dimensions of blue ocean strategy have made a strong impact in create value.

## **2.6. Previous Models:**

Scholars and practitioners have used different methods and models to measure E-supply chain integration and its effect on other variables. The following section will briefly discuss the most widely used models that measured E-supply chain integration and its effect on targeted variables.

**Otchere, et. al. (2013) Supply chain competitive advantage Model:** Studied the supply chain integration from a conceptual framework through a three value chains that provided a competitive advantage. The value chain explains a firm's advantage and overall performance in terms of its pricing and its competitive advantage over rivals.

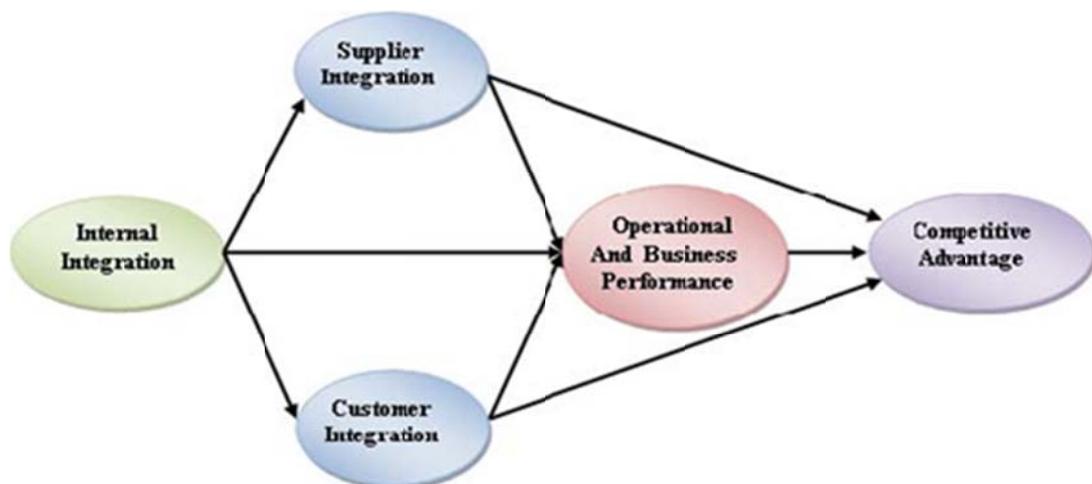
**Figure 6: Otchere, et. al. (2013) Supply chain competitive advantage Model**



**Otchere, et. al. (2013) Supply chain internal and external integration Model:**

Explained the internal integration, which has led to external integration and both lead to improved performance and finally lead to competitive advantage.

**Figure 7: Otchere, et. al. (2013) Supply chain internal and external Integration Model**



**Luzzini, et. al. (2015) Supplier innovation Model:** Innovation strategy theoretical model was developed based on the skills and competences of purchasing managers only influence innovation out comes in an indirect way through the collaboration with suppliers and strategic sourcing related to NPD.

**Figure 8: Luzzini, et. al. (2015) Supplier Innovation Model**

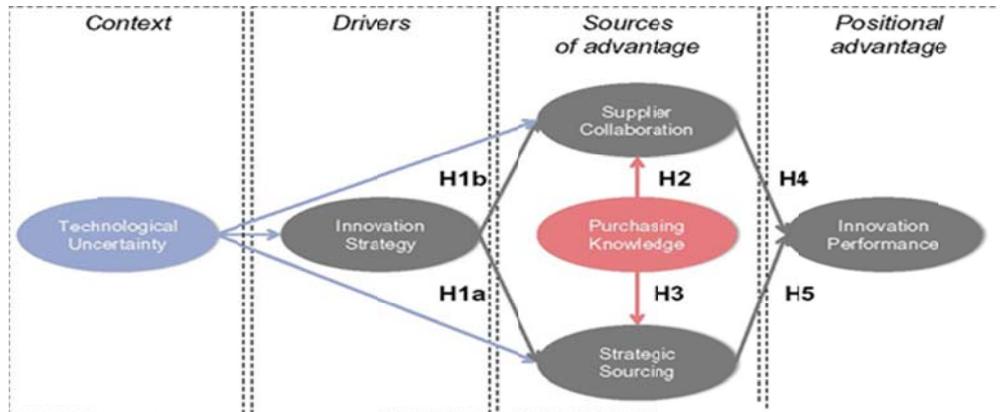
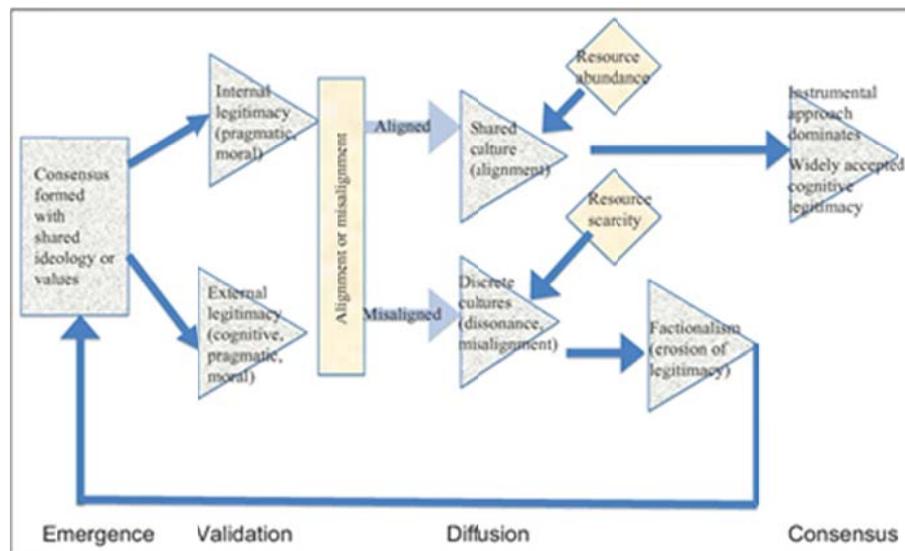


Fig. 1. Theoretical model.

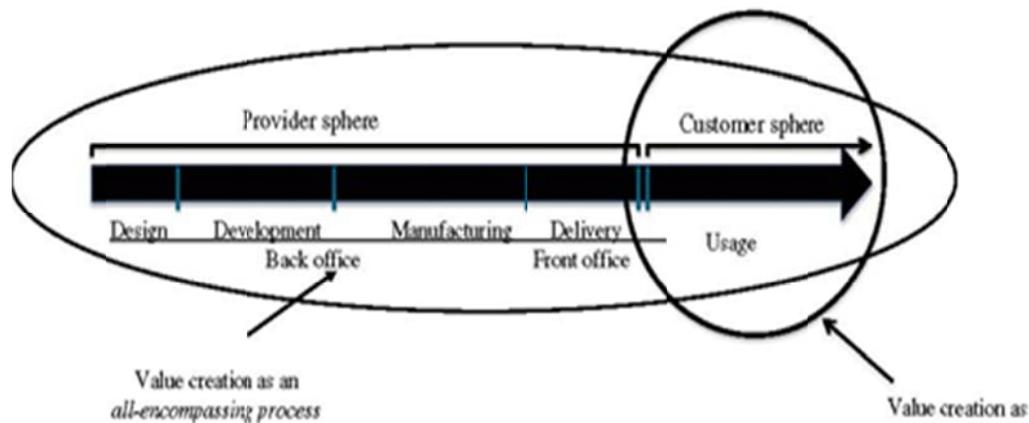
**Drori and honig (2013) Internal and external legitimacy Model:** Process model incorporating internal and external legitimacy, the authors developed the model below based those rules: creativity and innovation. Also they have provided consulting services on cultural and structural to develop this model.

**Figure 9: Drori and Honig (2013) Internal and External legitimacy Model**



**Grönroos and Voima (2012) Customer integration Model:** Studied the widespread acceptance of the idea of value as “perceived and determined by the customer on the basis of value-in-use.

**Figure 10: Gronroos and Voima (2012) Customer Integration Model**



## 2.7. Previous Studies:

In this section the previous studies will be highlighted and snapshot from each study will be presented based from oldest to newest.

Petersen, et. al. (2005) study titled: “**Supplier integration into new product development: coordinating product, process and supply chain design**”, this study examined the supplier involvement in new product development to produce a significant improvements in financial returns and/or product design performance. Authors’ tested the proposed relationships using survey data collected from a group of global organizations and find support for the relationships based on the results of a multiple regression analysis.

Rai, et. al. (2006) study titled: **“Firm performance impacts of digitally enabled supply chain integration capabilities”**, this research paper focused on emerging IT-which enabled organizational capabilities perspectives which suggested that firms that developed IT infrastructures integration for SCM and leveraged it to create a higher-order supply chain integration capability generate significant and sustainable performance gains. Data surveys were collected from 110 supply chain and logistics managers in manufacturing and retail organizations. The results of this study suggested that integrated IT infrastructures enable firms to develop a higher order capability of supply chain process integration.

Sharma, et. al. (2007) paper titled: **“ICTs for the Effective usage of Blue Ocean Strategy for Societal Development: An analysis with reference to the parameters of capability”**, The paper looked towards an efficient usage of ICTs (Information and Communication Technology) so as to effectively use Blue ocean strategy at the grass root levels for enhancing the propulsion of societal development at large. The paper suggested that ICTs can be used as an efficient tool to develop uncontested markets, resulting in the rise of the bottom of the pyramid market levels along with the enhancement of the rural and the poor population for the overall societal development. The paper first proposed parameters of capability which found through empirical research and analysis and subsequently extends the proposition in lieu with blue ocean strategy.

Rehan and Akyuz (2010) study titled: **“Enterprise Application Integration (EAI), Service Oriented Architectures (SOA) and their relevance to E-Supply Chain (E-SC) formation”**, this paper focused on service oriented architectures (SOA) as the recent trend in cross-platform enterprise application integration. This study has found that indicated

SOA still appears as the most convenient paradigm to meet the challenges of today's e-supply chain formation requirements. Authors used a questionnaire to collect data.

Hafeeza, et. al. (2010) study titled: **“E-Supply Chain operational and behavioral perspectives: an empirical study of Malaysian SMEs”**, reviewed a literature that suggested much of the existing e-supply chain adoption literature. . A questionnaire was designed and survey data from 208 Malaysian SMEs was collected. Structural equation modeling (SEM) was employed to test the impact of supply chain strategy, E-business adoption, and the interaction of these constructs, on overall business performance. With regards to the operational perspective the results suggested that E-business adoption relates more positively to business performance compared to supply chain strategy construct

Fen Su, and Yang (2010) study titled: **“Why are enterprise resource planning systems indispensable to supply chain management”**, defined a conceptual framework of ERP benefits and SCM competencies. The result of this study was confirmed by the managerial and strategic benefits of ERP for the SCM competencies, but not on IT infrastructure and organizational benefits as significant predictors of them.

Flynn, et. al. (2010) study titled: **“The impact of supply chain integration on performance: A contingency and configuration approach”**, this study developed a body of literature on supply chain integration (SCI), in order to achieve effective and efficient flows of products and services, information, money and decisions, to provide maximum value to the customer. They have referred this study to incomplete definitions of SCI. The authors focused on customer and supplier integration only, excluding the important central link of internal integration. They applied a contingency approach to determine the impact of

individual SCI dimensions (customer, supplier and internal integration) and their interactions on performance. The results indicated that internal and customer integrations were more strongly related to improving performance than supplier integration.

Wubben, et. al. (2010) paper titled: “**Finding uncontested markets for European fruit and vegetables through applying the Blue Ocean Strategy**”, aimed to discover an uncontested market space in the European fruit and vegetables industry (EFVI). This research claimed to search for untapped market space which made it necessary to configure the logic of the Blue Ocean Strategy. This application worked on EFVI which required a two-stage research strategy, namely desk research with six case studies, and large surveys. The results of this study has agreed that the blue ocean strategy -framework has been enabled to identify ex ante an untapped market space, characterized by the combination of sweets’ attributes with fresh fruit, that targeted at the new buyer group children and teenagers.

Mashni (2011) thesis titled: “**Blue Ocean Strategy and Its Role in Entrepreneurial Products and Markets in Food Manufacturing Industry in Jordan**”, this study aimed to identify the driving forces behind arising imperative for value innovation, and to explore to what extent AL Nabil company for food products applies the principles of Blue Ocean Strategy, and its role in entrepreneurial products and markets. The study applied an interactive qualitative research approach through the case study design in order to acquire a rich and in-depth understanding of the research topic. AL Nabil Company for food products applies the four principles of blue ocean strategy (Reconstruct market boundaries, focus on the big picture not numbers, reach beyond existing demand,

and get the strategic sequence right) which lead to value innovation and create value for the company and its customers simultaneously.

Yang and Sung (2011) study titled: “**An Integrated Model of Value Creation Based on the Refined Kano’s Model and the Blue Ocean Strategy**”, the study presented a redefines categories of customer value by suggesting a new category of ‘creative value’. The paper explored the concepts inherent in the refined Kano’s model and the actions associated with the ‘blue ocean’ strategy. The study presented an integrated model of ‘value creation’ and explains how this model can be used to select appropriate practical actions to enhance customer value, and by implication, also enhance customer retention. A case study is presented to illustrate the ease of application of the model in practice.

Borgianni, et. al. (2012) paper titled: “**Investigating the Patterns of Value-Oriented Innovations in Blue Ocean Strategy**”, aimed to investigate the past success stories that focused on blue ocean strategy. A perspective the investigation has designed for new value proposition, which made it poorly explored, domain. The authors used a survey to collect the data, this survey over looked to customer needs to provide a greater market evaluation. The results of this paper introduced some of preparatory ways to support the re-thinking of products and services.

Goldasteh, et. al. (2012) study titled: “**A fuzzy expert system for evaluating value innovation in social computing platforms based on blue ocean strategy (Case Study: WBB Platform)**”, the study aimed to determine the value innovation in social computing platforms by an intelligent system. A fuzzy expert system has been designed with the consideration of four actions of blue ocean strategy as input variables. The results

contained an anticipated model for evaluating level of value innovation of social computing platforms based on four actions situation.

Nyambane (2012) study titled: **“Challenges in the implementation of blue ocean strategy in large indigenous banks in Kenya”**, designed to know the large challenges in Kenya banks, this study faced to implement blue ocean strategy and how they have responded to challenges. Data collected by survey’s from face to face interviews with heads of units involved in strategy implementation. From the survey’s, it was evident that all banks studied clearly to focus on blue ocean strategy. The survey’s also identified the responded banks which have employed to overcome or reduce the challenges. They were able to deduce research on blue ocean strategy before they implemented which provided a good basis for seamless implementation.

Scott (2012) study titled: **“Sailing Blue Oceans in Search of Blue Ribbons: A Case Study of the Application of Reconstructionist Strategy in Collegiate Business Schools”**, aimed to explore the implementation, and potential performance effects on blue ocean strategy, within context of two business schools. This study used as a case study methodology to explore the use of blue ocean strategy (BOS). A total of 15 semi-structured interviews were conducted with school administration, faculty, and staff reviewed relevant documentation to these three moves. This study has found that schools were poorly positioned for direct competition with higher ranked and better funded schools could effectively employ blue ocean strategies (BOS) if the school had an organizational orientation toward innovation.

Dehkordi, et. al. (2012) study titled: **“Blue Ocean Strategy: A Study Over A Strategy Which Help The Firm To Survive From Competitive Environment”**, aimed to introduce one of the argumentative issue in business which labeled blue ocean strategy, this study highlighted blue ocean`s barriers like imitation and emulation. The research reviewed a contained role of innovation and its value for this strategy to help organizations survive the competitive market. The results of this study explained the first movers and second fast imitator`s advantages and disadvantages in brief comparison.

Lopez, et. al. (2013) study titled: **“Supply chain integration framework using literature review”**, this study, took a step back to define SCI. This research has contributed the SCI literature by: (1) clarifying the SCI concept, (2) identifying key dimensions and variables for SCI and (3) developing a conceptual framework for measuring SCI. The methodology of this study was implemented from the previous studies. This article identified new dimensions of SCI constructs for empirical research and industry applications.

Chen and Holsapple (2013) study titled: **“E-Business adoption research: state of the art”**, examined the e-business-adoption area. The authors focused on 618 journal articles that deal with e-business adoption. The results of this study compared with prior studies. This study has found new trends in e-business adoption researches are detected which linked the five dimensions and practical implications for e-business adoption researchers.

Otchere, et. al. (2013b) study titled: **“Assessing the Challenges and Implementation of Supply Chain Integration in the Cocoa Industry: a factor of Cocoa Farmers in Ashanti Region of Ghana”**, examined a major challenges within the industry, which inhibited effective implementation of supply chain integration; this study revealed the best way of implementing supply chain integration is to start from Supplier integration through internal to customer integration. The authors implemented a complete integration process both upstream, operations, and downstream. Some of the major challenges of this study were poor in technological innovations, and lack of information sharing, and poor integrated database. The results of study indicated that the industry of cocoa should adopt pragmatic approach to implement all of the three aspects of integration and follow the right way of implementing them to reduce the challenges of integration.

Ivanovska and Kaleshovska (2013) paper titled: **“Implementation of e-Supply Chain Management”**, aimed to understand the electronic supply chain management concept, which gives insight into the nature of e-SCM and the opportunities that the information technologies provided. This paper understood the electronic supply chain management concept. The authors used analysis of real world examples of organizations that have implemented e-SCM as a methodology. The result shows the benefits and advantages to these organizations by building a sustainable competitive advantage through E-Supply chain.

Aboujafari, et. al. (2013) study titled: **“Study of Blue Ocean Strategy Effect on the Market Value of Listed Companies in Tehran Stock Exchange Market”**, the study aimed to investigate the blue ocean strategy effect on the market value of listed companies in Tehran stock exchange market. The authors used a questionnaire to collect information

from the market. The results showed that to create a non-competitive market environment, making the competitiveness nonsense , create and capture new demand, breaking the substitution of value-cost, aligning the entire system of organization's activities to achieve differentiation and low cost, are effective on firm value.

Rao and Reddy (2013) study titled: **“Impact of IT in Supply Chain Management”**, explained the explosive changes witnessing intense competition among the local and international players. Supply Chain Management was fast growing as a core strategy that organizations worldwide are adopting for sustainable business advantage. They used the internet and associated technologies as tools to revolutionize inter-enterprise business processes by enabling seamless information exchange between business partners. High volume of data has transferred at low cost. Supply chain information operated at speed of thought and this is possible only by enhance e-speed communications and information sharing with their critical partners.

Liu, et. al. (2013) paper titled: **“Effects of Supply Chain Integration and Market Orientation on Firm Performance: Evidence from China”**, aimed to investigate the effect of two different dimensions of supply chain integration on two aspects of firm performance in the emerging economy of China. Data were obtained from a survey organized to 246 firms in the manufacturing and services industry in China. Hierarchical regression analysis was used to test the hypotheses. Operational coordination was positively associated with operational performance and business performance. The results of this study provided an empirical support for the moderating effects of market orientation on the association of supply chain integration and organizational performance.

Williams, et. al. (2013) study titled: **“Leveraging supply chain visibility for responsiveness: The moderating role of internal integration”**, provided an examination of visibility as a construct, and growing literature also addressed integration as an information processing capability. An analysis of data from 206 firms strongly supported the hypothesis. The results of this study pointed out for two sides, First side for supply chain managers, results were indicated a strategy for achieving supply chain response which required a dual approach that aligns increased visibility with extensive information processing capabilities from internal integration. Second and final side for researchers, this study has provided an initial examination of visibility as a construct, and extends a growing literature which addressed integration as an information processing capability.

Hollensen (2013) study titled: **“The Blue Ocean that disappeared – the case of Nintendo Wii”**, aimed to analyze the “Blue Ocean” phenomenon in depth. The goal of this study was to better understand the underlying dynamic strategies of interactions between theories and management practices. The authors has done this study in order to distinguish the value propositions of the three players in the game console industry. The authors found that even if a company can create a blue ocean very fast with the right value proposition at the right time, it may be short-termed and may be transformed into a red ocean again within 1-2 years, unless the company's competitiveness is safe-guarded.

Dominic, et. al. (2013) study titled: **“Trust-based partner identification method for E-Supply Chain (B2B) integrator – a case study of Malaysian construction industry”**, aimed to investigate the trust values perceived by the business community the Malaysian construction industry. This author’s putted literatures which lead to trust values elements formulation, data collected from previous studies which proposed a method for

trusted partner selection. Lack of trust has been identified as one of the issues that hinder collaboration among business partners.

Dura and Saud (2014) book titled: “**Strategic management in the twentieth century atheist and / Theory and Practice**”, the clerks asked readers, about the best unit profitable growth analysis; a key question without any strategy for profitable growth is not worthwhile. It justified the authors’ new ideas and the process that none of company or industry is not the best unit profitable growth analysis. The book deals with the experience of companies in a variety of fields such as watches, wine, cement, computers, automobiles, textiles, coffee, airlines, retailers, and even the circus, to answer this fundamental question, and builds on the controversy over the "innovation value" as a cornerstone of the strategy blue Ocean.

Huo, et. al. (2014) study titled: “**The impact of supply chain integration on firm performance: The moderating role of competitive strategy**”, this study aimed to provide empirical evidence of the effectiveness of various supply chain integration (SCI) practices under different. Survey methodology was used to collect data from 604 Chinese manufacturers. Hierarchical linear regression was used to analyze the moderating effects. The results showed that competitive strategies significantly influenced the effectiveness of SCI practices, including internal, process and product integration. More specifically, internal integration significantly affected the financial performance of cost leaders, while process integration contributed more to the financial performance of differentiators. However, competitive strategies had no significant moderating effect on the relationship between SCI and operational performance.

Alhaddi (2014) study titled: **“Blue Ocean Strategy and Sustainability for Strategic Management”**, this paper suggested using blue ocean strategy (BOS) to instigate the implementation of sustainability initiatives guided by the similarity between BOS and sustainability in terms of their drive for innovation and value. This is done by introducing the BOS and Sustainability Conceptual Framework, which strategic managers can use as a guiding principle in the development of the organization’s strategy. BOS suggested the potential to create profitable growth by means of diminishing the relevancy of competition and creating uncontested market space by creating leap in value with Value Innovation. Similarly, sustainability is a key driver for innovation as companies strive to find new solutions, applications, and techniques that would generate benefits in the environmental, social, and economic spaces. Sustainability also created a value that emerges from doing well be doing good known as Sustainable Value. Therefore, BOS as a business strategy can be used to tap into the sustainability space as a domain for growth where innovation can be used to create new market space and business profit.

Chakrabarti (2014) study titled: **“Blue Ocean Marketing Strategy (BOMS): An overview”**, aimed to explain one of the current strategic moves that an organization has to follow in pursuit to generate profits which is blue ocean marketing strategy (BOMS). The authors has found that blue ocean marketing strategy (BOMS) is relatively new and developed a strategy to look at the market boundaries differently and has formulated a new value for products or services to customers from different segments and placed in an uncontested market place. They focused on the principles of blue ocean strategy which is value innovation and implement the strategy to promote the case for creating uncontested market spaces in circumstances when supply exceeds demand.

Hourani (2015) study titled: **“The Impact of Enterprise Resource Planning System, E-Business Technologies, and their Integration on Supply Chain Agility: Examining the Mediating Role of Inter and Intra-Organizational Collaboration at Hikma Pharmaceuticals Company”**, aimed to understand the impact of enterprise resource planning system (ERP), e-business technologies, and the integration between them on internal and external organizational cooperation which in turns influence supply chain agility. The study targeted ERP users at one pharmaceutical company in Jordan and used a questionnaires circulated to collect data. The results pointed out that both intra and inter organizational collaboration have significant impact on supply chain agility.

Huo, et. al. (2015) paper titled: **“The effect of high-involvement human resource management practices on supply chain integration”**, aimed to combine a concept from human resource management (HRM) and supply chain management (SCM) fields which explored the effects of HRM practices on supply chain integration (SCI). The authors used an empirical survey to collect the data from ten countries; they have examined the specific impacts of three dimensions of HRM practices, employee skills, incentives and participation, on three types of (SCI) internal integration, supplier and customer integration. The results of this study confirmed that overall relationship of HRM to SCI.

Abdi, et. al. (2015) study titled: **“Effect of Blue Ocean Strategy on the Marketing Function of Iranian Banks (Case Study: Mellat Bank)”**, aimed to evaluate the impact of blue ocean strategy in the marketing function of Iranian banks. This study applied on the basis of its data gathering method, which is descriptive and correlational and distinctly is based on Structural Equation Modeling. In qualitative part, Statistical populations of this research are people who have executive and managerial experience. For this reason, a

questionnaire were used which included five dimensions making competition meaningless, creating unrivaled market space, breaking value-cost replacement relationship, making align the whole system in the organization and creating and capturing new demands for blue ocean strategy. The results this study showed that the relationship between blue ocean strategy indexes and marketing function was significantly high.

Eskandaria, et. al. (2015) paper titled: “**Thinking of the blue ocean - strategy beyond the competition**”, aimed to provide the positive effects of using blue ocean strategy, Also this study is quite evident. They have solved problems facing organizations in different areas of management. The authors used an approach of innovation and strategy, which aimed to sustain organizational growth and performance.

## **2.8. What Differentiate the Current Study from Previous Studies:**

This study might be considered as the first study which investigates the impact of E-supply chain integration on achieving blue ocean strategy on Jordanian pharmaceutical manufacturing organizations. This study is going to be an expansion in the blue ocean strategy field for both practitioners and researchers. Most of previous researches works were conducted to manage blue ocean strategy from the conceptual perspective, and to increase the organizations’ blue ocean strategy indicators disclosure. This study is going to specifically explain how the contributions of E-supply chain integration process design and

achieve a distinctive blue ocean strategy. Most of previous studies have been carried out in different countries. The current study will be carried out in Jordan. Most of previous studies were based on reports of different organizations and industries. The current study is based on perception. The results of this study will be compared with the results of previous studies mentioned earlier to highlight similarities and differences that might be there.

## **Chapter Three:**

### **Study Methodology (Methods and Procedures):**

#### **3.1. Study Approach and Design:**

The current study is considered as a descriptive as well as cause/effect study. It aims at studying the effect of E-supply chain integration on achieving blue ocean strategy at Jordanian pharmaceutical manufacturing organizations (JPMO's). It starts with literature review and practitioners' interview to improve the currently used measurement model and explore the blue ocean strategy profile in the Jordanian pharmaceutical manufacturing organizations. Then, panels of judges were surveyed to confirm the items which will be included in the questionnaire. Finally, the surveys were carried out and collected data were checked and coded from SPSS 20. After testing its normality, validity and reliability, the correlation between variables were tested and the multiples regressions were carried out to test the effect.

#### **3.2. Study Population, Sample and Unit of Analysis:**

Population and Sample: At the time of study, the Jordanian pharmaceutical manufacturing organizations are only 14 organizations, which are registered in Jordanian association of pharmaceutical manufacturers (JAPM) by October 2016. All the managers working at the Jordanian pharmaceutical manufacturing organizations, has been targeted for the aim to collect the study data. This negates the need for sampling.

Unit of Analysis: The survey analysis was composed for all managers working at Jordanian pharmaceutical manufacturing organizations; all managers were targeted to be included in the study regardless of their title or educational background.

### **3.3. Data Collection Methods (Tools):**

The data were used to fulfill the purpose of the study which divided into two sources: secondary and primary data. Secondary data were collected from Jordanian pharmaceutical manufacturing organizations (JPMO), journals, books, researches, thesis, dissertations, articles, working papers, and the Worldwide Web. Primary data were collected from practitioners' interview, panel of judges from a survey (questionnaire).

#### **Tool of Collecting Primary Data:**

The tools were chosen and tested to fit the current study also to match the study hypothesis model. The items of questionnaire were developed depending upon previous studies. Then, the questionnaire was revised and validated by an academic panel of judges. Then, the questionnaires were reviewed and validated by experienced experts in the field of pharmaceutical manufacturing organizations.

#### **Questionnaire Variables:**

The questionnaire has included two parts as below:

1-First part demographic characteristics related to Age, gender, education, experience and position.

2-Second part is composing of both independent and dependent variables as follows:

A- Independent Variable (E-supply chain integration): Based on literature reviews such as Flynn, et. al. (2010), and Hafeeza, et. al. (2010), the current study has identified three variables that contribute to Jordanian pharmaceutical E-supply chain integration (supplier integration, internal integration, customer integration) each variable was measured by 8 items and the total was 24 items (from item 1 to item 24 in the questionnaire).

B- Dependent Variable (blue ocean strategy): Based on literature review such as: Kim and Mauborgne (2005) and Chakrabarti (2014) the current study took it as four dimensions the total items were 28 items (from item 25 to item 53 in the questionnaire).

All items were measured by five-point Likert-type scale to take the advantage of respondent's perceptions, varying from value 1 (strongly agree) to value 5 (strongly disagree) that was used through the study questionnaire.

Panel of judges and referees: panel of judges and referees were selected from both well-known academicians, and professional with highly experienced leaders in the pharmaceutical manufacturing organizations.

### **3.4. Data Collection:**

All the 14 Jordanian pharmaceutical manufacturing organizations (JPMOs), which registered in Jordanian pharmaceutical manufacturer association, were targeted to collect the data from them, but unfortunately, because of time limitation the data have been collected only from 7.

Data collected during the period from October to November 2016. Questionnaires were handed over to 130 managers out of about 200 managers who are working at JPMOs, which covers 70% of unit of analysis. 110 questionnaires have been received back. After

checking and verification of the questionnaires, only 100 questionnaires were suitable for further analysis. The accepted questionnaires were coded against SPSS 20, which used for further analyze.

### **3.4.1. Statistical Analysis:**

#### **1. Validity Test:**

Three methods were used to confirm the validity test: First, by using content validity, multiple sources of data (as journals, working papers, researches, thesis, articles and worldwide web and Jordanian pharmaceutical manufacturing organizations, expert interviews) were used to set and refine the model and measures. Second, panel of judges was carried out to modify the finale form of the questionnaire. Third, construct validity (Pearson principal factor analysis) test was carried out only for variables to insure the validity of variables. Table (3.1) shows that all factor loading for variables were more than 40%.

#### **2. Reliability Test (Cronbach's Alpha):**

The questionnaire will be reliable when Cronbach's alpha coefficients for all variables will be rating more than 60%. Cronbach's alpha coefficients display internal consistency (Sekaran 2003). Table (3.1) shows that the Cronbach's alpha coefficients values for all variables were more than 60%, except for customer integration and raise which were 0.511 and 0.583.

**Table (3.1): Reliability and Validity**

<b>Variable</b>	<b>No. of Items</b>	<b>Cronbach's Alpha</b>	<b>Factor 1</b>
Supplier Integration	8	0.723	0.670
Internal Integration	8	0.712	0.836
Customer Integration	8	0.511	0.792
<b>Supply Chain Integration</b>	<b>3</b>	<b>0.641</b>	
Eliminate	7	0.726	0.807
Reduce	7	0.654	0.719
Raise	7	0.583	0.809
Create	7	0.742	0.649
<b>Blue Ocean Strategy</b>	<b>4</b>	<b>0.724</b>	

## 2. Normal Distribution (Z-test):

Kolmogorov-Smirnov Z test has been used to test the data normal distribution. Since the significance of all variables was more than 5%, therefore we assume the normal distribution of data. As shown in table (3.2).

**Table (3.2): Kolmogorov-Smirnov Z Test**

	<b>SI</b>	<b>II</b>	<b>CI</b>	<b>SCI</b>	<b>BOS</b>
<b>KS(Z)</b>	0.946	1.277	1.337	0.669	0.935
<b>Significance</b>	0.333	0.077	0.056	0.761	0.346

### 3.4.2. Demographic Analysis:

The Tables from (3.3) to (3.7) below explain the general characteristics of the respondents in terms of gender, age, education, job title and years of experience:

1. Gender: Table (3.3) shows that most of the respondents are males with 68 (67.3%) while female rated 33 (32.7%). This indicates that most of the managers in Jordan are males; due the traditions and culture.

**Table (3:3): Gender Analysis**

<b>Dimension</b>		<b>Frequency</b>	<b>Percent</b>
<b>Gender</b>	Male	68	67.3
	Female	33	32.7
	Total	101	100.0

2. Age: Table (3.4) shows the highest percentage of ages and they were from 25-35 (55.4%), then ages from 36-45 (38.6%), ages from 18-25 and ages from 46 or more is the lowest percentage of the average by (3.0%), this indicates that the average of the ages of managers are from 26 – 35.

**Table (3.4): Age Analysis:**

<b>Dimension</b>		<b>Frequency</b>	<b>Percent</b>
Age	18-25	3	3.0
	26-35	56	55.4
	36-45	39	38.6
	46 or more	3	3.0
	Total	101	100.0

3. Qualification: Table (3.5) shows that most of the respondents were holding the Bachelor degree 76 (75.2%), the master degree 23 (22.8%), and finally PhD by 2 (2.0%).

**Table (3.5): Qualification:**

<b>Dimensions</b>		<b>Frequency</b>	<b>Percent</b>
Qualification	Bachelor	76	75.2
	Master	23	22.8
	PHD	2	2.0
	Total	101	100.0

4. Job title: Table (3.6) is divided into 4 sections General manager, department manager, head of department and supervisor, most of the respondents were from the department managers by 49 (48.5%), comes after them the head of department and they were 38 respondents (37.6%) and from both General managers and supervisors the respondents were 7 (6.9%).

**Table (3.6): Job title:**

<b>Dimension</b>		<b>Frequency</b>	<b>Percent</b>
Job title	General manager	7	6.9
	Department manager	49	48.5
	Head of department	38	37.6
	Supervisor	7	6.9
	Total	101	100.0

5. Years of Experience: Table (3.7) shows the majority of the respondents' experiences were from 6-10 years of experience 42 (41.6%), then those with 11-20 years of experience 34 (33.7%), followed by 5 years or less of experience 16 (15.8%) and finally 21 years or more experience 9 (8.9%).

**Table (3.7): Experience:**

<b>Dimension</b>		<b>Frequency</b>	<b>Percent</b>
Experience	5 years or less	16	15.8
	6-10 years	42	41.6
	11-20 years	34	33.7
	21 years or more	9	8.9
	Total	101	100.0

## **Chapter Four:**

### **Analysis and results**

#### **4.1. Introduction:**

This chapter includes three sections. First, descriptive analysis for all including means, standard deviations, t-values, importance and ranking. Second, Bivariate Pearson correlation among independent and between them and dependent variables. Finally, it includes the hypothesis test, which shows the effect of independent variables on dependent variable.

#### **4.2. Study Variables Analysis (Descriptive Analysis):**

This part describes the independent and dependent variables from statistical point of view including means, standard deviations, t-values, importance and ranking.

The importance has been divided into three categories based on range, which calculated as follows:  $5 - 1/3 = 1.33$ .

- 1- Low importance: between 1 and 2.33 ( $1 + 1.33 = 2.33$ ).
- 2- Medium importance: between 2.34 and 3.66 ( $2.33 + 1.33 = 2.34 - 3.66$ ).
- 3- High importance: between: 3.67 up to 5.

##### **4.2.1. Independent Variable (E-Supply Chain Integration):**

Table (4.1) shows the mean of the manager's percentage about the importance of the E-supply chain integration variables which ranging between 3.539 to 3.551, with standard deviation ranges from 0.313 to 0.394. This means that there is an agreement on a

medium importance of E-supply chain integration variables. The average mean for total E-supply chain integration variables is 3.544 with standard deviation 0.273, which points that there is an agreement on a medium importance of E-supply chain integration.

Moreover, the overall result indicates that there is a strong implementation of the E-supply chain integration in Jordanian pharmaceutical manufacturing organizations, where ( $t=20.04 > 1.96$ ). This indicates that the managers working at Jordanian pharmaceutical manufacturing organization (JPMO) realize the importance of implementing the E-supply chain integration variables. Finally, the result shows that the supplier integration was the most important, followed by internal integration then customer integration.

**Table (4. 1): Mean, Standard Deviation, Importance and Ranking of E-Supply Chain**

**Integration Variables:**

Variable	Mean	Std. Deviation	t	Sig.	Importance	Rank
Supplier Integration	3.551	0.394	14.039	0.000	Medium	1
Internal Integration	3.546	0.361	15.195	0.000	Medium	2
Customer Integration	3.539	0.313	17.338	0.000	Medium	3
<b>Supply Chain Integration</b>	<b>3.544</b>	<b>0.273</b>	<b>20.041</b>	<b>0.000</b>	Medium	

**t-Tabulated=1.97**

**Supplier Integration:**

Table (4.2) show that the means of supplier integration items are ranging from 3.02 to 4.24, with standard deviation that ranges from 0.544 to 0.803. This points that there is an agreement on high to medium importance of supplier integration items, where t-value

indicates that there is a weakness in the implementation of three items, which rated t-value less than 1.97. The average mean of total supplier Integration items is 3.55 with standard deviation of 0.394, which indicates that there is a medium importance of this variable and medium implementation, where ( $t=14.03 > 1.97$ ).

**Table (4. 2): Mean, Standard Deviation, Importance and Ranking of Supplier**

**Integration items:**

No.	Item	Mean	St. D.	T	Sig.	Importance	Rank
1.	The company updates the suppliers' database regularly.	3.69	0.612	11.37	0.000	High	4
2.	The company exchanges technical experience with suppliers.	3.15	0.740	2.017	0.046	Medium	5
3.	The company aligns strategies with its suppliers.	3.09	0.680	1.318	0.191	Medium	7
4.	The company agrees with suppliers on raw material suitable prices.	4.24	0.619	20.09	0.000	High	1
5.	The company informs suppliers with its production schedules.	3.07	0.803	0.867	0.388	Medium	6
6.	The company shares its demand forecast with suppliers.	3.02	0.721	0.276	0.783	Medium	8
7.	The company gets the best facilitation payment methods.	4.07	0.652	16.48	0.000	High	2
8.	The company uses electronic system to order from supplier.	4.06	0.544	19.55	0.000	High	3
	<b>Supplier Integration</b>	<b>3.55</b>	<b>0.394</b>	<b>14.03</b>	0.000	Medium	

**t-Tabulated=1.97**

### Internal Integration:

Table (4.3) show that the means of internal integration items are ranging from 3.10 to 3.87, with standard deviation that ranges from 0.483 to 0.739. This means that there is an agreement on high to medium importance of internal integration items, where t-value indicates that there is a weakness in the implementation of one item, which rated t-value less than 1.97. The average mean of total internal integration items is 3.545 with standard deviation of 0.361, which indicates that there is a medium importance of this variable and medium implementation, where ( $t=15.19 > 1.97$ ). Overall, the practitioners should be concentrating on turning these weaknesses points into a strengths point by running common training programs which should be concentrating on increasing the performance while focusing on implementing these two items in the near future to achieve the organizational goals in a safe way.

**Table (4. 3): Mean, Standard Deviation, Importance and Ranking of Internal**

#### Integration items:

No.	Item	Mean	St. D.	T	Sig.	Importance	Rank
1.	The company uses a common database among departments.	3.46	0.686	6.67	0.000	Medium	5
2.	The company uses same standards among departments.	3.10	0.714	1.40	0.167	Medium	8
3.	The company uses the online systems for inside communication.	3.86	0.566	15.29	0.000	High	2
4.	The company departments' collaborate to	3.87	0.483	18.13	0.000	High	1

	manage risks.						
5.	The company departments meet and cooperate to solve problems.	3.82	0.537	15.39	0.000	High	3
6.	The company runs common training programs to have common language.	3.69	0.612	11.37	0.000	High	4
7.	The company matches processing timing operation between departments (just in time).	3.21	0.622	3.36	0.001	Medium	7
8.	The company departments learn technical experience from each other.	3.34	0.739	4.58	0.000	Medium	6
	<b>Internal Integration</b>	<b>3.545</b>	<b>0.361</b>	<b>15.19</b>	<b>0.000</b>	<b>Medium</b>	

**t-Tabulated=1.97**

### **Customer Integration:**

Table (4.4) shows that the mean of customer integration item are ranging from 3.08 to 4.03, with standard deviation that range from 0.591 to 0.770. This point that there is an agreement on high to medium importance of customer integration items, where t-values indicate that there is a weakness in the implementation of two items, which rated t-values are less than 1.97. The average mean of total customer integration items is 3.539 with standard deviation of 0.312, which indicates that there is a medium importance of this variable and medium implementation, where ( $t=17.33 > 1.97$ ).

Therefore, the customer integration process is very important; organizations should be running common training programs that could enhance their employee's skills while

dealing with customers. Based on table (4.4) organizations should turn the weakness point below into strengths points by focusing more on those two items.

**Table (4. 4):Mean, Standard Deviation, Importance and Ranking of Customer**

**Integration items:**

No.	Item	Mean	St. D.	T	Sig.	Importance	Rank
1.	The company has a full database about customers.	3.66	0.637	10.47	0.000	High	4
2.	The company shares information with customers about new products and services.	4.03	0.591	17.51	.000	High	1
3.	The company relies on new technology systems to update customers.	3.75	0.623	12.14	.000	High	2
4.	The company has fast communication systems with customers.	3.73	0.598	12.31	.000	High	3
5.	The company products match with customers' quality standards.	3.13	0.770	1.68	.096	Medium	7
6.	The company exchange demand forecast information with customers.	3.08	0.717	1.11	.269	Medium	8
7.	The company's production schedule matches with customers' needs.	3.33	0.680	4.83	.000	Medium	6
8.	The company encourage customers' feedbacks (ideas and complains).	3.58	0.621	9.45	.000	Medium	5
	<b>Customer Integration</b>	<b>3.539</b>	<b>0.312</b>	<b>17.33</b>	<b>.000</b>	<b>Medium</b>	

**t-Tabulated=1.97**

#### 4.2.2. Dependent Variables (Blue Ocean Strategy):

Table (4.5) explains the mean average percentage from the managers' who responded about the importance of blue ocean strategy variables which ranges from 3.461 to 3.742. With 0.306 to 0.411 standard deviation, the results of the blue ocean strategy variables agree on a medium importance in Jordanian pharmaceutical manufacturing organization (JPMO).

Therefore, organizations should be focusing on practicing the blue ocean strategy elements more to turn it from a medium importance to high.

Finally, blue ocean strategy variables mean total is 3.625 with 0.266 standard deviation, the overall result points that there is a medium importance of the blue ocean strategy variables in Jordanian pharmaceutical manufacturing organizations, and where ( $t=23.613 > 1.97$ ).

**Table (4. 5): Mean, Standard Deviation, Importance and Ranking of Blue Ocean Strategy Variables:**

Variable	Mean	St. D.	T	Sig.	Importance	Rank
Eliminate	3.742	0.364	20.492	0.000	High	1
Reduce	3.564	0.350	16.175	0.000	Medium	3
Raise	3.732	0.306	24.058	0.000	High	2
Create	3.461	0.411	11.281	0.000	Medium	4
<b>Blue Ocean Strategy</b>	<b>3.625</b>	<b>0.266</b>	<b>23.613</b>	<b>0.000</b>	Medium	

**t-Tabulated=1.97**

### **Eliminate: (Wastage, Junk, High costs, etc.)**

Table (4.6) describes the mean percentage for the importance of eliminate items which ranging from 3.53 to 3.96 with a standard deviation range from 0.445 to 0.767. The mean total of eliminate is 3.625 with 0.266 standard deviation, the overall result points that there is a medium importance and implementation of eliminate items in Jordanian pharmaceutical manufacturing organizations, and where ( $t=20.50 > 1.97$ ).

**Table (4. 6): Mean, Standard Deviation, Importance and Ranking of Eliminate Items:**

<b>No.</b>	<b>Item</b>	<b>Mean</b>	<b>St. D.</b>	<b>T</b>	<b>Sig</b>	<b>Importance</b>	<b>Rank</b>
1.	The company excludes high cost systems.	3.96	0.445	21.67	0.000	High	1
2.	The company drives out poor performers.	3.67	0.634	10.67	0.000	High	5
3.	The company eliminates production junks regularly.	3.60	0.584	10.38	0.000	Medium	6
4.	The company eliminates unnecessary product movement.	3.53	0.626	8.60	0.000	Medium	7
5.	The company eliminates unnecessary products and services.	3.89	0.546	16.40	0.000	High	2
6.	The company eliminates duplication in processes.	3.65	0.767	8.56	0.000	Medium	4
7.	The company eliminates unnecessary transportation processes.	3.88	0.475	18.64	0.000	High	3
	<b>Eliminate</b>	<b>3.74</b>	<b>0.364</b>	<b>20.50</b>	<b>0.000</b>	High	

**t-Tabulated=1.97**

### Reduce: (Costs, Risks, Complexity, etc.)

Table (4.7) shows the mean percentage for the importance of reduce items which ranging from 2.95 to 3.84 with a standard deviation that ranges from 0.541 to 0.698. Where t-values indicate that there is a weakness in the implementation of one item, which t-values rate are less than 1.97. The mean total of reduce is 3.563 with 0.360 standard deviation, the overall result points that there is a medium importance of reduce items in Jordanian pharmaceutical manufacturing organizations, and where ( $t=16.17 > 1.97$ ).

**Table (4. 7): Mean, Standard Deviation, Importance and Ranking of Reduce Items:**

No.	Item	Mean	St. D.	t	Sig	Importance	Rank
1.	The company reduces research and development costs.	3.84	0.612	13.81	0.000	High	1
2.	The company reduces logistics costs.	3.74	0.577	12.93	0.000	High	3
3.	The company reduces the production costs by optimizing production process.	3.50	0.577	8.801	0.000	Medium	5
4.	The company reduces production time.	2.95	0.698	-0.713	0.000	Medium	7
5.	The company reduces production wastage.	3.74	0.541	13.78	0.478	High	4
6.	The company reduces complexity in operations.	3.76	0.586	13.08	0.000	High	2
7.	The company reduces bureaucratic decisions by enhancing employee's collaboration.	3.41	0.695	5.867	0.000	Medium	6
	<b>Reduce</b>	<b>3.563</b>	<b>0.350</b>	<b>16.17</b>	<b>0.000</b>	<b>Medium</b>	

**t-Tabulated=1.97**

### **Raise: (Control, Worker abilities, Productivity, etc.)**

Table (4.8) describes the mean percentage for the importance of raise items which ranging from 3.22 to 4.22 with a standard deviation that ranges from 0.453 to 0.743. The mean total of raise items is 3.731 with 0.305 standard deviation, the overall result points that there is a high importance of reduce items in Jordanian pharmaceutical manufacturing organizations, and t-value where ( $t=24.058 > 1.97$ ).

Therefore, the raising procedure must be running carefully because it may cause bad effects especially on employees whose practicing the blue ocean strategy process in the organization.

**Table (4. 8): Mean, Standard Deviation, Importance and Ranking of Raise Items:**

<b>No.</b>	<b>Item</b>	<b>Mean</b>	<b>St. D.</b>	<b>t</b>	<b>Sig</b>	<b>Importance</b>	<b>Rank</b>
1.	The company increases the control over costing.	3.93	0.453	20.651	0.000	High	3
2.	The company accelerates data sharing among departments.	3.36	0.743	4.823	0.000	Medium	6
3.	The company boosts workers abilities.	3.71	0.572	12.534	0.000	High	5
4.	The company's productivity increases over time.	3.73	0.546	13.493	0.000	High	4
5.	The company develops inventory systems continuously.	3.22	0.657	3.330	0.001	Medium	7
6.	The company improves quality over time.	3.95	0.498	19.200	0.000	High	2
7.	The company increases its return on investment (ROI).	4.22	0.482	25.405	0.000	High	1
	<b>Raise</b>	<b>3.731</b>	<b>0.305</b>	<b>24.058</b>	<b>0.000</b>	<b>High</b>	

**t-Tabulated=1.97**

### **Create: (Products, Services, Systems, etc.)**

Table (4.9) shows the importance of create items which ranging from 3.09 to 3.81 with a standard deviation that ranges from 0.610 to 0.703. Where t-values points there is a weakness of one item, which t-values rate are less than 1.97.

**Table (4. 9): Mean, Standard Deviation, Importance and Ranking of Create Items:**

<b>No.</b>	<b>Item</b>	<b>Mean</b>	<b>St. D.</b>	<b>T</b>	<b>Sig</b>	<b>Importance</b>	<b>Rank</b>
1.	The company seeks for creative ideas.	3.49	0.610	7.99	0.000	Medium	4
2.	The company seeks for innovative ideas.	3.50	0.642	7.74	0.000	Medium	3
3.	The company creates new products and services.	3.09	0.665	1.34	0.181	Medium	7
4.	The company creates its own culture.	3.46	0.641	7.14	0.000	Medium	5
5.	The company creates its own systems.	3.61	0.632	9.76	0.000	Medium	2
6.	The company uses joint ventures to acquire manufacturing technologies.	3.28	0.695	4.01	0.000	Medium	6
7.	The company creates teams for new products technology developments.	3.81	0.703	11.60	0.000	High	1
	<b>Create</b>	<b>3.461</b>	<b>0.411</b>	<b>11.28</b>	<b>0.000</b>	<b>Medium</b>	

**t-Tabulated=1.97**

The results show the mean total of create items is 3.461 with 0.411 standard deviation, the overall result points that there is a high importance of create items in Jordanian pharmaceutical manufacturing organizations, and t-value where ( $t=11.28 > 1.97$ ).

### 4.3. Relationships between the Study Variables:

Table (4.10) shows that the relationships between the E-supply chain integration variables are medium to strong relationships, where  $r$  ranging between 0.276 and 0.513. In addition, the relationships between blue ocean dimensions are medium to strong, where  $r$  ranging between 0.278 and 0.549. Moreover, the table shows that there are medium relationships between supply chain integration variables and blue ocean strategy, where  $r$  ranging between 0.217 and 3.11. Finally, the results show that there is medium relationship between total supply chain and total blue ocean strategy, where  $r$  equals 0.367.

**Table (4. 10): Bivariate Parsons' correlation ( $r$ ) among Independent Variables, Dependent variables, and between Independent and Dependent Variables.**

No.	Variable	1	2	3	4	5	6	7	8	9
1	Supplier Integration	Correlation								
		Sig.								
2	Internal Integration	Correlation	.360**							
		Sig.	.000							
3	Customer Integration	Correlation	.276**	.513**						
		Sig.	.005	.000						
4	Supply Chain Integration	Correlation	.746**	.810**	.742**					
		Sig.	.000	.000	.000					
5	Eliminate	Correlation	.163	.219*	.235*	.266**				
		Sig.	.104	.028	.018	.007				

6	<b>Reduce</b>	Correlation	.199*	.230*	.225*	.282**	.516**				
		Sig.	.046	.021	.024	.004	.000				
7	<b>Raise</b>	Correlation	.241*	.215*	.183	.280**	.549**	.368**			
		Sig.	.015	.031	.066	.005	.000	.000			
8	<b>Create</b>	Correlation	.064	.301**	.270**	.264**	.291**	.278**	.461**		
		Sig.	.523	.002	.006	.008	.003	.005	.000		
9	<b>Blue Ocean Strategy</b>	Correlation	.217*	.328**	.311**	.367**	.781**	.720**	.774**	.709**	
		Sig.	.029	.001	.002	.000	.000	.000	.000	.000	.000

\*\* . Correlation is significant at the 0.01 level (2-tailed). \* . Correlation is significant at the 0.05 level (2-tailed).

#### 4.4. Testing Hypothesis:

To test hypothesis both simple and multiple regressions analysis were used to analyze the effect of E-supply chain integration on achieving blue ocean strategy.

Before using regressions, the following the assumptions should be fulfilled normality, validity, reliability, linearity, multi-colleanearity, independence of errors and correlation.

#### Normal Distribution (Histogram):

The Figure (4.1) shows that the data were normality distributed, since the residual has no effect on the normal distribution.

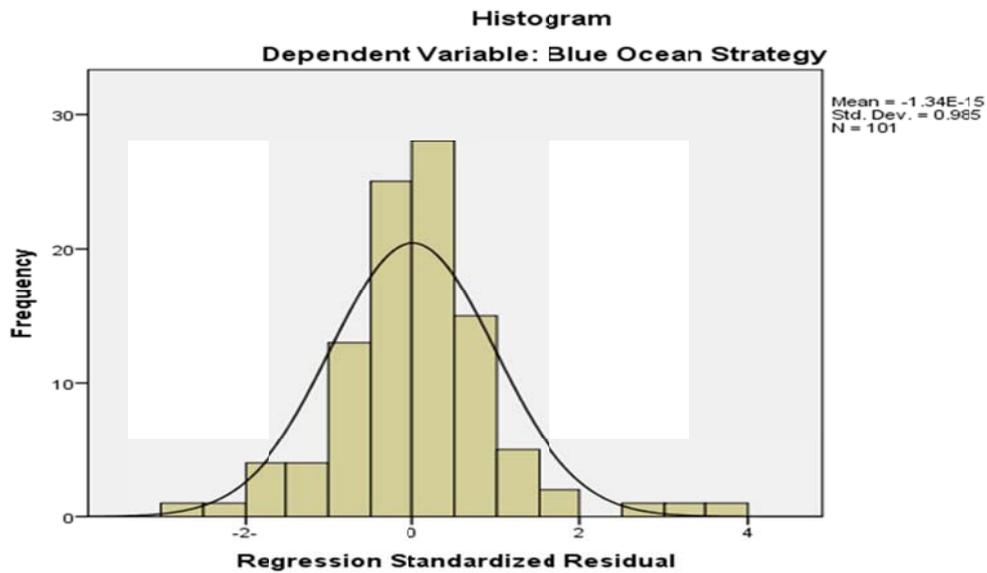
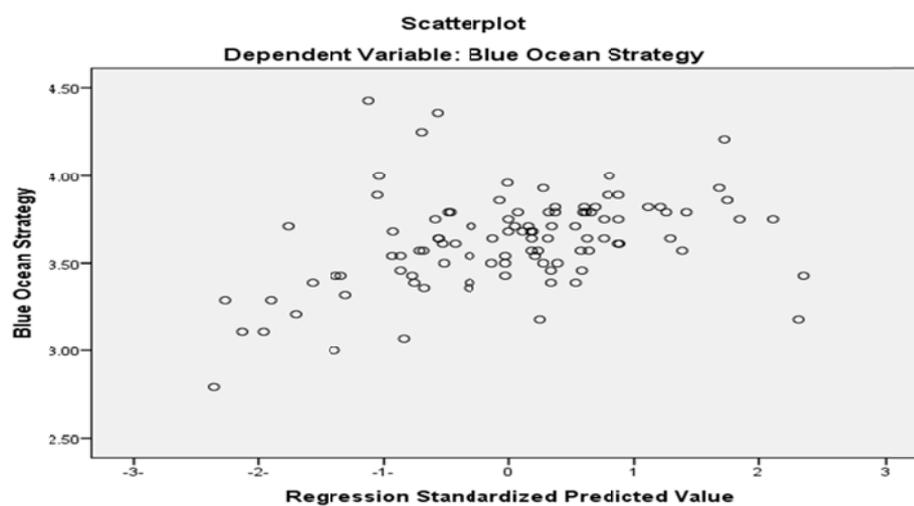
**Figure (4.1): Histogram****Linearity Test:**

Figure (4.2) shows that the relationship between independent and dependent variables is linear.

**Figure (4.2): Scatterplot**

As far as normality, validity and reliability were assumed, so regressions analysis can be used in the case at hand; especially after achieving the following underlying assumptions: Durbin-Watson test to ensure independence of errors, If the Durbin-Watson test value is about 2 the model does not violate this assumption. Where, VIF (Variance Inflation Factor) and tolerance are used to test multi-collinearity. If VIF is less than 10 and tolerance is more than 0.2, the multi collinearity model does not violate this assumption.

Table (4.11) shows that Durbin Watson value is ( $d=2.263$ ), which is around two which mean that the residuals are not correlated with each other; therefore, the independence of error is not violated. The results of table (4.11) show that the values of VIF are less than 10 and the tolerance values are more than 0.2. This points out that there is no multi-collinearity within the independent variables of the study.

**Table (4. 11): Multi-Collinearity Test for Main Hypothesis**

Variable	Collinearity Statistics		Durbin-Watson
	Tolerance	VIF	
Supplier Integration	0.859	1.164	2.263
Internal Integration	0.685	1.460	
Customer Integration	0.727	1.376	

**The Main Hypothesis:**

$H_{01}$ : E-supply chain integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ ).

### Multiple Regressions:

Table (4.12) shows the regressions of the three E-supply chain integration variables together against blue ocean strategy variables.  $R^2$  explains the variance of E-supply chain integration on blue ocean strategy regression. The result indicates that the E-supply chain integration variables explain 14.3% of variance of blue ocean strategy, where ( $R^2=0.143$ ,  $F=5.381$ ,  $Sig.=0.002$ ). Therefore, the null hypothesis is rejected and the alternative is accepted which states that “E-supply chain integration affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

**Table (4. 12): Results of Multiple Regression Analysis (ANOVA): Regressing E-Supply Chain Integration against total Blue Ocean Strategy.**

<b>Model</b>	<b>r</b>	<b>R<sup>2</sup></b>	<b>Adjusted R<sup>2</sup></b>	<b>F</b>	<b>Sig.</b>
E-Supply Chain Integration	0.378	0.143	0.116	5.381	0.002

**Dependent Variable: Blue Ocean Strategy**

Table (4.13) again shows the impact of each independent variable on dependent variable.

**Table (4. 13): Results of Multiple Regression Analysis (Coefficients): Regressing E-Supply Chain Integration against total Blue Ocean Strategy.**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.327	0.332		7.004	0.000
	Supplier Integration	0.064	0.068	0.094	0.930	0.355
	Internal Integration	0.148	0.084	0.200	1.763	0.081
	Customer Integration	0.155	0.094	0.182	1.652	0.102

**Dependent Variable: Blue Ocean Strategy**

#### **Sub-Hypothesis:**

**H<sub>01.1</sub>: Supplier Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

Table (4.13) shows there is no significance effect of supplier integration on blue ocean strategy, where (Beta=0.094, t=0.930, Sig=0.355). This means that the null hypothesis is accepted which states “supplier integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

**H<sub>01.2</sub>: Internal Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

Table (4.13) shows there is no significance effect of internal integration on blue ocean strategy, where (Beta=0.200, t=1.763, Sig=0.081). Which means that the null

hypothesis is accepted which states “Internal Integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

**H<sub>01.3</sub>: Customer Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

Table (4.13) shows there is no significance effect of internal integration on blue ocean strategy, where (Beta=0.182, t=1.652, Sig=0.102). Which means that the null hypothesis is accepted which states “Customer Integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

In summary, there was a high significance effect for supplier integration on blue ocean strategy, while there were a less significance effect for supplier and customer integration on blue ocean strategy.

### **Simple Regression:**

#### **E-Supply Chain Integration:**

**H<sub>01</sub>: E-Supply Chain Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

**Table (4. 14): Results of Simple Regression Analysis (ANOVA): Regressing E-Supply Chain Integration against Blue Ocean Strategy.**

Variable	r	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	Sig.
E-Supply Chain Integration	0.367	0.134	0.126	15.363	0.000

**Dependent Variable: Blue Ocean Strategy**

Table (4.14) shows the regression of the total E-supply chain integration against blue ocean strategy. The model shows that the total E-supply chain integration explains 13.4% of blue ocean strategy variance, where ( $R^2=0.134$ ,  $F=15.363$ ,  $Sig=0.000$ ). Therefore, the null hypothesis is rejected and the alternative is accepted which states: “E-supply chain integration affects blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

#### **Supplier Integration:**

**H<sub>01.1</sub>: Supplier Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

**Table (4. 15): Results of Simple Regression Analysis (ANOVA): Regressing Supplier Integration against Blue Ocean Strategy.**

Variable	r	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	Sig.
Supplier Integration	0.217	0.047	0.037	4.879	0.029

Table (4.15): Shows the regression of supplier integration which is regressed against blue ocean strategy  $R^2=0.047$ , and that means the variation of supplier integration can be explained as 4.7% from blue ocean strategy, where ( $R^2=0.047$ ,  $F=4.879$ ,  $Sig=0.029$ ). Therefore, the null hypothesis is rejected and the alternative is accepted. This states that

“Supplier Integration affects blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

### **Internal Integration:**

**H<sub>01.2</sub>: Internal Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

**Table (4. 16): Results of Simple Regression Analysis (ANOVA): Regressing Internal Integration against Blue Ocean Strategy.**

<b>Model</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>Adjusted R<sup>2</sup></b>	<b>F</b>	<b>Sig.</b>
Internal Integration	0.328	0.107	0.098	11.907	0.001

**Dependent Variable: Blue Ocean Strategy**

Table (4.16) shows the regression of internal integration against blue ocean strategy  $R^2=0.107$ , that means the variation of internal integration explains 10.7% from blue ocean strategy variance, where ( $R^2=0.107$ ,  $F=11.907$ ,  $Sig=0.001$ ). So, the null hypothesis is rejected and the alternative is accepted. Which states: “Internal integration affects blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

### **Customer Integration:**

**H<sub>01.3</sub>: Customer Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

**Table (4. 17): Results of Simple Regression Analysis (ANOVA): Regressing Customer Integration against Blue Ocean Strategy.**

<b>Model</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>Adjusted R<sup>2</sup></b>	<b>F</b>	<b>Sig.</b>
Customer Integration	0.311	0.097	0.088	10.599	0.002

**Dependent Variable: Blue Ocean Strategy**

Table (4.17) shows the regression of customer integration against blue ocean strategy  $R^2 = 0.097$ , that means the variation in customer integration can be explained as 9.7% from blue ocean strategy, where ( $R^2=0.097$ ,  $t=10.599$ ,  $Sig=0.002$ ). Finally, the null hypothesis has been rejected and the alternative is accepted. Which indicates: “Customer integration affects blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

### **Stepwise Regressions:**

Table (4.18) shows that when the three independent variables together regressed against dependent variable, only the internal integration shows relation and effect on blue ocean strategy, because it explains 10.7% of blue ocean strategy variance, where ( $R^2=0.107$ ,  $t=11.907$ ,  $Sig=0.001$ ). Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted. Which states: “Internal integration has the highest effects on blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

**Table (4.18): Results of Stepwise Regression Analysis (ANOVA): Regressing E-Supply chain integration against Blue Ocean Strategy.**

Model	Variable	r	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	Sig.
1	Internal Integration	.328	.107	.098	11.907	.001

Table (4.19): shows that the supplier integration and customer integration do not have significant effect on blue ocean strategy at ( $\alpha \leq 0.05$ ), where (Beta=0.113,  $t=1.116$ , sig=0.267) and (Beta=0.194,  $t=1.771$ , sig=0.080) respectively.

**Table (4.19): Results of Stepwise Regression Analysis (Coefficients): Regressing E-Supply Chain Integration against total Blue Ocean Strategy.**

Model	Beta	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	
1	Suppliers Integration	.113	1.116	.267	.112	.870
	Customer Integration	.194	1.771	.080	.176	.737

**H<sub>01.1</sub>: Supplier Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

Table (4.19) Shows that the supplier integration has no significance effect on blue ocean strategy, where (Beta=0.113,  $t=1.116$ , Sig=0.267). This means that the null hypothesis is accepted which states “Supplier integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

**H<sub>01.3</sub>: Customer Integration does not affect Blue Ocean Strategy at Jordanian Pharmaceutical Manufacturing Organizations, at ( $\alpha \leq 0.05$ ).**

Table (4.19) shows that the stepwise regression of customer integration has no significance effect on blue ocean strategy, where (Beta=0.194, t=1.771, sig=.080). This means that the null hypothesis is accepted which states “Customer integration does not affect blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, at ( $\alpha \leq 0.05$ )”.

In Summary, the results of this chapter show that there is a relationship between E-supply chain integration variables and blue ocean strategy dimensions in Jordanian pharmaceutical manufacturing organizations (JPMO). The relationships between the E-supply chain integration variables rated from medium to strong relationship; the relationships between blue ocean dimensions are from medium to strong. Moreover, the tables shows that there are medium relationships between supply chain integration variables and blue ocean strategy, where internal integration comes at first, followed by customer integration and finally supplier integration in Jordanian pharmaceutical manufacturing organizations (JPMO).

## **Chapter Five:**

### **Results Discussion, Conclusions and Recommendations.**

#### **5.1. Results Discussion:**

Results of this study explain that there is a positive significance implementation of E-supply chain integration in Jordanian pharmaceutical manufacturing organizations (JPMO). The internal integration has the highest medium rate, followed by the customer integration, finally the supplier integration.

The overall results show that there is a medium significance of the E-supply chain integration in Jordanian pharmaceutical manufacturing organizations (JPMO). The relationship among blue ocean strategy dimensions in Jordanian pharmaceutical manufacturing organizations (JPMO) rated medium. The relationship of total supply chain integration on blue ocean strategy rated around high to medium.

Results show that the relationships between the E-supply chain integration variables are medium to strong relationships, the relationships between blue ocean dimensions are medium to strong, the relationships between supply chain integration variables and blue ocean strategy is medium, and finally, the relationship between total supply chain and total blue ocean strategy is medium.

Moreover, the results show that the E-supply chain integration affects blue ocean strategy in Jordanian pharmaceutical manufacturing organizations (JPMO) since ( $R^2=0.134$ ,  $F=15.363$ ,  $Sig=0.000$ ). These results are going to line with some of the previous studies such as: Rehan and Akyuz (2010) study focused on service oriented architectures

(SOA) as the recent trend in cross-platform enterprise application integration. The result has found that indicated SOA still appears as the most convenient paradigm to meet the challenges of today's e-supply chain formation requirements. Hafeeza, et. al. (2010) suggested much of the existing e-supply chain adoption literature. This study discussed the E-Business Adoption, and the interaction of constructs, on overall Business Performance. With regards to the operational perspective the results suggested that E-Business Adoption relates more positively to Business Performance compared to Supply Chain Strategy construct. Flynn, et. al. (2010) study developed a body of literature on supply chain integration (SCI), in order to achieve effective and efficient flows of products and services, information, money and decisions, to provide maximum value to the customer. Lopez, et. al. (2013) this study, took a step back to define SCI. This research has contributed the SCI literature by: (1) clarifying the SCI concept, (2) identifying key dimensions and variables for SCI and (3) developing a conceptual framework for measuring SCI. This article identified new dimensions of SCI constructs for empirical research and industry applications.

The results show that internal integration affects blue ocean strategy in Jordanian pharmaceutical manufacturing organizations (JPMO) since ( $R^2=0.047$ ,  $F=4.879$ ,  $Sig=0.029$ ). These results are going to line with some of previous studies like: Petersen, et. al. (2005) study examined the supplier involvement in new product development to produce significant improvements in financial returns and/or product design performance. Flynn, et. al. (2010) study explained how a firm achieves an effective and efficient flow of products and services, information, money and decisions, to provide maximum value to the customers through supply chain integration process (SCI). The result of this study has

important implications for positioning companies in the supply chain integration process. Das, et. al. (2006) study operationalized supplier integration as a bundle of practices that includes a set of “internal” and “external” practices. The results provided an empirical support for the concept of an optimal set of supplier integration practices. They have showed deviations from the optimal profile are associated with performance deterioration, and that indiscriminate and continued investments in integration may not yield commensurate improvements in performance.

The results show that internal integration affects blue ocean strategy in Jordanian pharmaceutical manufacturing organizations (JPMO) since ( $R^2=0.107$ ,  $F=11.907$ ,  $Sig=0.001$ ). Huo, et. al. (2015) study showed the positive practices of HRM in the supply chain integration, which explored the effects of HRM practices on supply chain integration (SCI). The study examined the specific impacts of three dimensions of HRM practices, employee skills, incentives and participation, on three types of (SCI) internal integration, supplier and customer integration. The results of this study confirmed that overall relationship of HRM to SCI. Williams, et. al. (2013) study posit that a supply chain organization’s internal integration competence provides complementary information processing capabilities required to yield expected responsiveness from greater supply chain visibility. This study provided an initial examination of visibility as a construct, and extends a growing literature addressing integration as an information processing capability.

Finally, the results show also that the customer integration affects blue ocean strategy in Jordanian Pharmaceutical Manufacturing Organizations (JPMO) since ( $R^2=0.097$ ,  $t=10.599$ ,  $Sig=0.002$ ). The result of customer integration is going to line with previous studies such as: Piller (2006) study showed t modern information technologies

play a similar important role. This study has enabled a distinctive principle of mass customization efficiently: customer integration into the production processes. The customer integrated into value creation during the course of configuration, product specification and co-design. The results provided an integrated view of value creation in mass customization-based production models. Liu, et. al. (2013) study explained the effect of two different dimensions of supply chain integration on two aspects of firm performance in the emerging economy operational coordination was positively associated with operational performance and business performance. The results of this study provided an empirical support for the moderating effects of market orientation on the association of supply chain integration and organizational performance.

## **5.2. Conclusions:**

Based on the results that show there is an agreement among participants on a medium implementation of E-supply chain integration variables (supplier integration, internal integration, customer integration), which indicate that there is a medium implementation of E-supply chain integration variables in Jordanian pharmaceutical manufacturing organizations (JPMO). This indicates that the managers of Jordanian pharmaceutical manufacturing organizations know the importance of implementing the E-supply chain integration variables.

The results show the relationships between E-supply chain integration variables which rated from high to medium. Also the study shows the relationship between each variable of E-supply chain integration on blue ocean strategy is positive. Moreover, the correlation between each E-supply chain integration variables and blue ocean strategy is

also medium. Finally, the current study indicates that all E-supply chain integration variables have a positive effect on Jordanian pharmaceutical manufacturing organizations (JPMO) blue ocean strategy. The internal integration has the highest effect, followed by customer integration and supplier integration.

Finally, this study explains that the internal integration has the highest effect on blue ocean strategy at Jordanian pharmaceutical manufacturing organizations, which is obviously logic because the strategies in any kind of organization are made from the inside from the top level management.

### **5.3. Recommendations:**

**Based on the conclusions, the researcher recommends the following:**

#### **Recommendations for Jordanian Pharmaceutical Manufacturing Organizations (JPMO):**

1. The current study recommends focusing more on the new E-Supply Chain techniques and systems.
2. The current study advice organizing E- supply chain training programs for the supply chain departments.
3. The current study recommends taking the supply chain integration variables and blue ocean strategy dimensions in consideration.
4. The current study recommends focusing more on aligning strategies with its suppliers.

5. The current study recommends focusing more on exchanging demand forecast information with customers.

**Recommendations for researchers:**

6. This study advice to conduct more studies that assess the effect of E-Supply Chain on Blue Ocean Strategy.

7. This study suggests developing more indicators and questions to the same field.

8. This study was conducted on Jordanian organizations. Therefore, the study recommends carrying out similar studies in different countries.

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**Appendices:**

**Appendix (1): Panel of Referees Committee:**

<b>No.</b>	<b>Name</b>	<b>Qualification</b>	<b>Organization</b>
1.	Dr. Nidal Al-Salhi	PhD. Management	Middle East University
2.	Dr. Saud Al-Mahamid	PhD. Management	Middle East University
3.	Dr. Ahmad Ali saleh	PhD. Management	Middle East University
4.	Dr. Sameer Al-Jabali	PhD. Marketing	Middle East University
5.	Dr. Ahmad thonaibat	PhD. IT	Al-Zaytooneh University
6.	Dr. Sameer Tabariah	PhD. Management	Al- Zaytooneh University
7.	Dr. Thamer Arrwashdeh	PhD. Management	Motah University

**Appendix (2): List of Members of the Jordanian Pharmaceutical Manufacturers  
Organizations 2016.**

<b>No.</b>	<b>Company</b>	<b>Year Established</b>	<b>Type</b>
<b>1</b>	The Arab Pharmaceutical Manufacturing Co. LTD (APM)	1962	Public
<b>2</b>	Dar Al Dawa Development and Investment Co. (DAD)	1975	Public
<b>3</b>	Hikma Pharmaceuticals (HIKMA)	1977	Public
<b>4</b>	Jordanian Pharmaceutical Manufacturing Co. PLC (JPM)	1978	Public
<b>5</b>	Arab Center for Pharmaceutical and Chemical (ACPC)	1983	Public
<b>6</b>	United Pharmaceutical (UPM)	1989	Private
<b>7</b>	Amman Pharmaceutical Industries Co. (API)	1989	Private
<b>8</b>	Ram Pharmaceutical Industries Co. Ltd (RAM)	1992	Private
<b>9</b>	Hayat Pharmaceutical Industry (HPI)	1993	Public
<b>10</b>	Middle East Pharmaceutical Manufacturing Co.(MIDPHARMA)	1993	Public
<b>11</b>	Pharma International (INTER)	1994	Private
<b>12</b>	Jordan Sweden Medical and Sterilization Co.	1996	Private
<b>13</b>	TQ PHARMA	2007	Private
<b>14</b>	Jordan River Pharmaceutical Industries Co. (JoRiver)	1999	private

**Appendix (3): Panel of Referees Committee Letter.**



**Thesis Questionnaire**

**Dear Doctor,**

I would like to request you to referee the attached questionnaire, which will be used for thesis entitled:

**“The impact of E-Supply chain integration on achieving Blue ocean strategy in Jordanian Pharmaceutical Manufacturing Organizations”.**

This questionnaire includes 58 paragraphs which cover all independent and dependent variables, and may take only 15 minutes from you to edit, correct, and amend it. You are requested to write your valuable comments and suggestions opposite to each paragraph which will be highly appreciated. Finally, I'm ready to consider your suggestions and recommendations while rewriting the final questionnaire version.

I would like to thank you for your participation, support and guidance, and if do you have any question or comment, please call me (00962790732320).

Thank you for your attention.

Researcher: Abdallah Hassan Agha

Supervised by: Dr. Abdel-Aziz Ahmad Sharabati

**Appendix (4): Participant Letter.****Dear Participant:**

The E-Supply chain integration is considered as a modern system to provide customers with suitable product at right place in right time with suitable price. Therefore, the purpose of this study is to investigate the impact of E-Supply chain integration on achieving Blue ocean strategy in Jordanian Pharmaceutical Manufacturing Organizations (JPMO).

Kindly, I request you to answer the attached questionnaire, which includes 53 paragraphs and may take only 10 minutes. Please, rate your perception regarding each paragraph according to your experience from 1 to 5, 1 mean's highly disagree and 5 means highly agree. We promise you that your answered questionnaire will remain confidential and will be used for study purposes only, so we suggest not writing your name.

Finally, I would like to thank you and appreciate your participation, which will be beneficial for this study, and if you have any question or comment, please call (00962790732320).

**Thank you for your attention.**

Researcher: Abdallah Hassan Agha

Supervisor: Dr. Abdel-Aziz Ahmad Sharbati

### **Appendix (5): Thesis Questionnaire.**

#### **Part one:**

This part contains demographic and functional characteristics which includes (Gender, Age, Qualifications, Job title, Years of experience in current job).

Please tick (√) on or beside the right answer:

1. Gender:

- Male      •Female

2. Age:

- 18-25      •26-35
- 36-45      •46 or more

3. Qualification:

- Diploma    •Bachelor
- Master     •PHD

4. Job title:

- General Manager      •Department manager
- Head of department    •Supervisor

5. Years of experience in current job:

- 5 years or less    •6-10 years
- 11-20 years        •21 years or more

**Part two:**

This part contains paragraphs that measures independent variable which is the E-Supply Chain Integration and it dimensions are (supplier integration, internal integration, customer integration) besides the paragraphs that measures dependent variable which is the Blue ocean strategy and it dimensions are (eliminate, reduce, raise, create).

**Questionnaire: E-Supply Chain Integration**

The following 56 items tap into E-Supply Chain Integration (ESCI) and its effect on achieving Blue Ocean Strategy (BOS). Please, answer these questions based on actual and current situation and not on beliefs.

[1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree] based on how you feel about the statement.

**Supplier integration: It is a coordination process which happens between the organization and its suppliers through many communication systems and long or short term business agreements**

1.	The company updates the suppliers' database regularly.	1	2	3	4	5
2.	The company exchanges technical experience with suppliers.	1	2	3	4	5
3.	The company aligns strategies with its suppliers.	1	2	3	4	5
4.	The company agrees with suppliers on raw material suitable prices.	1	2	3	4	5
5.	The company informs suppliers with its production schedules.	1	2	3	4	5

6.	The company shares its demand forecast with suppliers.	1	2	3	4	5
7.	The company gets the best facilitation payment methods.	1	2	3	4	5
8.	The company uses electronic system to order from supplier.	1	2	3	4	5

**Internal integration: it is the activities of sharing information and exchanging technical experiences that happens inside the organization functional and non-functional departments to reduce risks enhance performance and solve problems to achieve the organizational goals.**

1.	The company uses a common data base among departments.	1	2	3	4	5
2.	The company uses same standards among departments.	1	2	3	4	5
3.	The company uses the online systems for inside communication.	1	2	3	4	5
4.	The company departments' collaborate to manage risks.	1	2	3	4	5
5.	The company departments meet and cooperate together to solve problems.	1	2	3	4	5
6.	The company runs common training programs to have common language.	1	2	3	4	5
7.	The company matches processing timing operation between departments (just in time).	1	2	3	4	5
8.	The company departments learn technical experience from each other.	1	2	3	4	5

**Customer integration: it is a clever sensitive relationship that happens among the organization and its customers through the selling process and sharing information from the organization side about its products and services, also sharing the information from the customers side about their feedbacks through opinions and new ideas about products and services, also taking information from customers knowledge about other competitors in the same market.**

1.	The company has a full database about customers.	1	2	3	4	5
2.	The company updates customers' database continuously.	1	2	3	4	5
3.	The company shares information with customers about new products and services.	1	2	3	4	5
4.	The company relies on new technology systems to update customers.	1	2	3	4	5
5.	The company has fast communication systems with customers.	1	2	3	4	5
6.	The company products match with customers' quality standards.	1	2	3	4	5
7.	The company exchange demand forecast information with customers.	1	2	3	4	5
8.	The company's production schedule matches with customers' needs.	1	2	3	4	5
9.	The company encourage customers' feedbacks (ideas and complains).	1	2	3	4	5

## Blue Ocean Strategy

### Eliminate:

1	The company excludes high cost systems.	1	2	3	4	5
2	The company drives out poor performers.	1	2	3	4	5
3	The company eliminates production junks regularly.	1	2	3	4	5
4	The company eliminates unnecessary product movement.	1	2	3	4	5
5	The company eliminates unnecessary products and services.	1	2	3	4	5
6	The company eliminates duplication in processes.	1	2	3	4	5
7	The company eliminates unnecessary transportation processes.	1	2	3	4	5

### Reduce:

1	The company reduces research and development costs.	1	2	3	4	5
2	The company reduces logistics costs.	1	2	3	4	5
3	The company reduces the production costs by optimizing production process.	1	2	3	4	5
4	The company reduces production time.	1	2	3	4	5
5	The company reduces production wastage.	1	2	3	4	5
6	The company reduces complexity in operations.	1	2	3	4	5
7	The company reduces bureaucratic decisions by enhancing employee's collaboration.	1	2	3	4	5

**Raise:**

1	The company increases the control over costing.	1	2	3	4	5
2	The company accelerates data sharing among departments.	1	2	3	4	5
3	The company boosts workers abilities.	1	2	3	4	5
4	The company's productivity increases over time.	1	2	3	4	5
5	The company develops inventory systems continuously.	1	2	3	4	5
6	The company improves quality over time.	1	2	3	4	5
7	The company increases its return on investment (ROI).	1	2	3	4	5

**Create:**

1	The company seeks for creative ideas.	1	2	3	4	5
2	The company seeks for innovative ideas.	1	2	3	4	5
3	The company creates new products and services.	1	2	3	4	5
4	The company creates its own culture.	1	2	3	4	5
5	The company creates its own systems.	1	2	3	4	5
6	The company uses joint ventures to acquire manufacturing technologies.	1	2	3	4	5
7	The company creates teams for new products technology developments.	1	2	3	4	5

### Appendix (6): Statistical Analysis

#### Demographic: Frequency Table

##### Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
1	68	67.3	67.3	67.3
Valid 2	33	32.7	32.7	100.0
Total	101	100.0	100.0	

##### Age

	Frequency	Percent	Valid Percent	Cumulative Percent
1	3	3.0	3.0	3.0
2	56	55.4	55.4	58.4
Valid 3	39	38.6	38.6	97.0
4	3	3.0	3.0	100.0
Total	101	100.0	100.0	

**Qualification**

	Frequency	Percent	Valid Percent	Cumulative Percent
2	76	75.2	75.2	75.2
3	23	22.8	22.8	98.0
4	2	2.0	2.0	100.0
Total	101	100.0	100.0	

**Job Title**

	Frequency	Percent	Valid Percent	Cumulative Percent
1	7	6.9	6.9	6.9
2	49	48.5	48.5	55.4
3	38	37.6	37.6	93.1
4	7	6.9	6.9	100.0
Total	101	100.0	100.0	

### Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
1	16	15.8	15.8	15.8
2	42	41.6	41.6	57.4
Valid 3	34	33.7	33.7	91.1
4	9	8.9	8.9	100.0
Total	101	100.0	100.0	

### Normal Distribution

### One-Sample Kolmogorov-Smirnov Test

	Supplier Integrati on	Internal Integrati on	Custom er Integrati on	Elimin ate	Redu ce	Raise	Create	Supply Chain Integrati on	Blue Ocean Strategy
Kolmogorov- Smirnov Z	.946	1.277	1.337	1.387	1.639	1.388	1.238	.669	.935
Asymp. Sig. (2- tailed)	.333	.077	.056	.043	.009	.043	.093	.761	.346

**Validity:**

**Reliability**

**One-Sample Statistics**

Variable	No. of Items	Cronbach' s Alpha	Factor 1	
Supplier Integration	8	0.723	0.670	
Internal Integration	8	0.712	0.836	
Customer Integration	8	0.511	0.792	
Supply Chain Integration	3	0.641		
Eliminate	7	0.726	0.807	
Reduce	7	0.654	0.719	
Raise	7	0.583	0.809	
Create	7	0.742	0.649	
Blue Ocean Strategy	4	0.724		

**T-Test****One-Sample Statistics and Test**

	Mean	Std. Deviation	T	Sig. (2-tailed)
Supplier Integration	3.5509	.39436	14.039	.000
Internal Integration	3.5456	.36089	15.195	.000
Customer Integration	3.5394	.31266	17.338	.000
Supply Chain Integration	3.5440	.27277	20.041	.000
Eliminate	3.7422	.36399	20.492	.000
Reduce	3.5639	.35034	16.175	.000
Raise	3.7316	.30561	24.058	.000
Create	3.4612	.41085	11.281	.000
Blue Ocean Strategy	3.6250	.26599	23.613	.000

## T-Test

## One-Sample Statistics and Test

Item	Mean	Std. Deviation	t	Sig. (2-tailed)
The company updates the suppliers' database regularly.	3.69	.612	11.376	.000
The company exchanges technical experience with suppliers.	3.15	.740	2.017	.046
The company aligns strategies with its suppliers.	3.09	.680	1.318	.191
The company agrees with suppliers on raw material suitable prices.	4.24	.619	20.099	.000
The company informs suppliers with its production schedules.	3.07	.803	.867	.388
The company shares its demand forecast with suppliers.	3.02	.721	.276	.783
The company gets the best facilitation payment methods.	4.07	.652	16.481	.000
The company uses electronic system to order from supplier.	4.06	.544	19.555	.000
Supplier Integration	3.5509	.39436	14.039	.000
The company uses a common database among departments.	3.46	.686	6.673	.000
The company uses same standards among departments.	3.10	.714	1.393	.167
The company uses the online systems for inside communication.	3.86	.566	15.289	.000
The company departments' collaborate to manage risks.	3.87	.483	18.130	.000
The company departments meet and cooperate to solve problems.	3.82	.537	15.391	.000
The company runs common training programs to have common language.	3.69	.612	11.376	.000
The company matches processing timing operation between departments (just in time).	3.21	.622	3.362	.001
The company departments learn technical experience from each other.	3.34	.739	4.580	.000
Internal Integration	3.5456	.36089	15.195	.000
The company has a full database about customers.	3.66	.637	10.469	.000
The company shares information with customers about new products and services.	4.03	.591	17.514	.000

The company relies on new technology systems to update customers.	3.75	.623	12.139	.000
The company has fast communication systems with customers.	3.73	.598	12.309	.000
The company products match with customers' quality standards.	3.13	.770	1.679	.096
The company exchange demand forecast information with customers.	3.08	.717	1.111	.269
The company's production schedule matches with customers' needs.	3.33	.680	4.830	.000
The company encourage customers' feedbacks (ideas and complains).	3.58	.621	9.457	.000
Customer Integration	3.5394	.31266	17.338	.000
The company excludes high cost systems.	3.96	.445	21.668	.000
The company drives out poor performers.	3.67	.634	10.669	.000
The company eliminates production junks regularly.	3.60	.584	10.385	.000
The company eliminates unnecessary product movement.	3.53	.626	8.590	.000
The company eliminates unnecessary products and services.	3.89	.546	16.404	.000
The company eliminates duplication in processes.	3.65	.767	8.559	.000
The company eliminates unnecessary transportation processes.	3.88	.475	18.639	.000
Eliminate	3.7422	.36399	20.492	.000
The company reduces research and development costs.	3.84	.612	13.818	.000
The company reduces logistics costs.	3.74	.577	12.931	.000
The company reduces the production costs by optimizing production process.	3.50	.577	8.801	.000
The company reduces production time.	2.95	.698	-.713	.478
The company reduces production wastage.	3.74	.541	13.785	.000
The company reduces complexity in operations.	3.76	.586	13.083	.000
The company reduces bureaucratic decisions by enhancing employee's collaboration.	3.41	.695	5.867	.000
Reduce	3.5639	.35034	16.175	.000
The company increases the control over costing.	3.93	.453	20.651	.000
The company accelerates data sharing among departments.	3.36	.743	4.823	.000
The company boosts workers abilities.	3.71	.572	12.534	.000
The company's productivity increases over time.	3.73	.546	13.493	.000

The company develops inventory systems continuously.	3.22	.657	3.330	.001
The company improves quality over time.	3.95	.498	19.200	.000
The company increases its return on investment (ROI).	4.22	.482	25.405	.000
Raise	3.7316	.30561	24.058	.000
The company seeks for creative ideas.	3.49	.610	7.991	.000
The company seeks for innovative ideas.	3.50	.642	7.747	.000
The company creates new products and services.	3.09	.665	1.347	.181
The company creates its own culture.	3.46	.641	7.144	.000
The company creates its own systems.	3.61	.632	9.762	.000
The company uses joint ventures to acquire manufacturing technologies.	3.28	.695	4.011	.000
The company creates teams for new products technology developments.	3.81	.703	11.606	.000
Create	3.4612	.41085	11.281	.000

**Relationships between variables:**

Correlations										
		Supplier Integration	Internal Integrati on	Custome r Integrati on	Supply Chain Integrati on	Elimin ate	Reduc e	Raise	Create	Blue Ocean Strategy
Supplier Integration	Pearson Correlation									
	Sig. (2- tailed)									
Internal Integration	Pearson Correlation	.360**								
	Sig. (2- tailed)	.000								
Customer Integration	Pearson Correlation	.276**	.513**							
	Sig. (2- tailed)	.005	.000							
Supply Chain Integration	Pearson Correlation	.746**	.810**	.742**						
	Sig. (2- tailed)	.000	.000	.000						

Eliminate	Pearson Correlation	.163	.219*	.235*	.266**					
	Sig. (2-tailed)	.104	.028	.018	.007					
Reduce	Pearson Correlation	.199*	.230*	.225*	.282**	.516**				
	Sig. (2-tailed)	.046	.021	.024	.004	.000				
Raise	Pearson Correlation	.241*	.215*	.183	.280**	.549**	.368**			
	Sig. (2-tailed)	.015	.031	.066	.005	.000	.000			
Create	Pearson Correlation	.064	.301**	.270**	.264**	.291**	.278**	.461*		
	Sig. (2-tailed)	.523	.002	.006	.008	.003	.005	.000		
Blue Ocean Strategy	Pearson Correlation	.217*	.328**	.311**	.367**	.781**	.720**	.774*	.709**	
	Sig. (2-tailed)	.029	.001	.002	.000	.000	.000	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).										
*. Correlation is significant at the 0.05 level (2-tailed).										

## Simple Regression

### Total Supply Chain Integration on Blue Ocean Strategy Regression

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.367 <sup>a</sup>	.134	.126	.24872

a. Predictors: (Constant), Supply Chain Integration

#### ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.950	1	.950	15.363	.000 <sup>b</sup>
	Residual	6.125	99	.062		
	Total	7.075	100			

a. Dependent Variable: Blue Ocean Strategy

b. Predictors: (Constant), Supply Chain Integration

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.358	.324		7.277	.000
Supply Chain Integration	.357	.091	.367	3.920	.000

a. Dependent Variable: Blue Ocean Strategy

**Supplier Integration on Blue Ocean Strategy Regression****Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.217 <sup>a</sup>	.047	.037	.26097

a. Predictors: (Constant), Supplier Integration

**ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.332	1	.332	4.879	.029 <sup>b</sup>
	Residual	6.743	99	.068		
	Total	7.075	100			

a. Dependent Variable: Blue Ocean Strategy

b. Predictors: (Constant), Supplier Integration

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.106	.236		13.137	.000
Supplier Integration	.146	.066	.217	2.209	.029

a. Dependent Variable: Blue Ocean Strategy

**Internal Integration on Blue Ocean Strategy Regression****Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.328 <sup>a</sup>	.107	.098	.25257

a. Predictors: (Constant), Internal Integration

**ANOVA<sup>a</sup>**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	.760	1	.760	11.907	.001 <sup>b</sup>
Residual	6.315	99	.064		
Total	7.075	100			

a. Dependent Variable: Blue Ocean Strategy

b. Predictors: (Constant), Internal Integration

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.769	.249		11.101	.000
Internal Integration	.242	.070	.328	3.451	.001

a. Dependent Variable: Blue Ocean Strategy

**Customer Integration on Blue Ocean Strategy Regression****Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.311 <sup>a</sup>	.097	.088	.25407

a. Predictors: (Constant), Customer Integration

**ANOVA<sup>a</sup>**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	.684	1	.684	10.599	.002 <sup>b</sup>
Residual	6.391	99	.065		
Total	7.075	100			

a. Dependent Variable: Blue Ocean Strategy

b. Predictors: (Constant), Customer Integration

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	2.689	.289		9.312	.000
	Customer Integration	.265	.081	.311	3.256	.002

a. Dependent Variable: Blue Ocean Strategy

**Multiple Regressions:****Supply Chain Integration on Blue Ocean Strategy Regressions****Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.378 <sup>a</sup>	.143	.116	.25006	2.263

a. Predictors: (Constant), CI, SI, II

b. Dependent Variable: BOS

ANOVA<sup>a</sup>

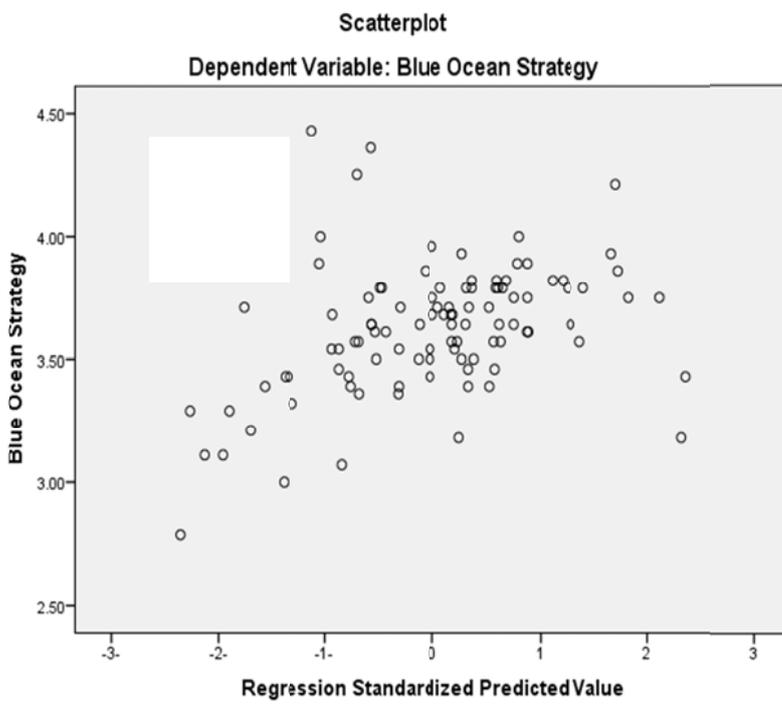
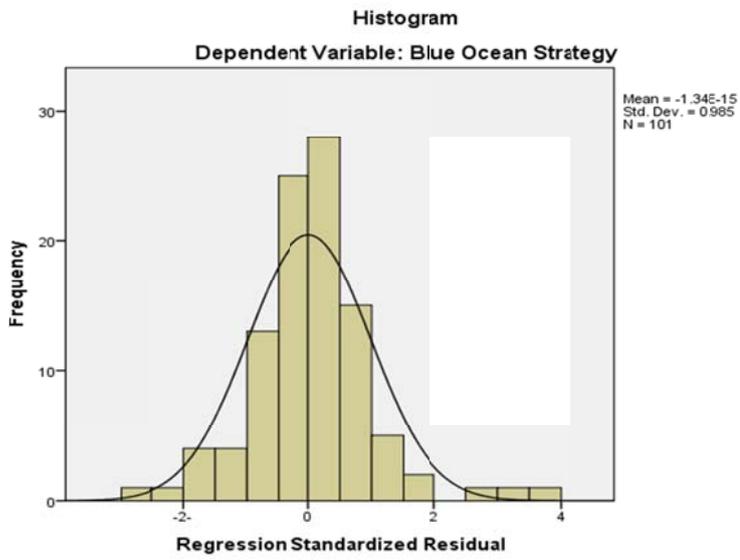
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.010	3	.337	5.381	.002 <sup>b</sup>
	Residual	6.065	97	.063		
	Total	7.075	100			

a. Dependent Variable: BOS

b. Predictors: (Constant), CI, SI, II

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.327	.332		7.004	.000		
	SI	.064	.068	.094	.930	.355	.859	1.164
	II	.148	.084	.200	1.763	.081	.685	1.460
	CI	.155	.094	.182	1.652	.102	.727	1.376



**Stepwise Regression:****Supply Chain Integration on Blue Ocean Strategy Regressions****Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.328 <sup>a</sup>	.107	.098	.25257

a. Predictors: (Constant), II

**ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.760	1	.760	11.907	.001 <sup>b</sup>
	Residual	6.315	99	.064		
	Total	7.075	100			

a. Dependent Variable: BOS

b. Predictors: (Constant), II

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.769	.249		11.101	.000
II	.242	.070	.328	3.451	.001

a. Dependent Variable: BOS

**Excluded Variables<sup>a</sup>**

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
1 SI	.113 <sup>b</sup>	1.116	.267	.112	.870
CI	.194 <sup>b</sup>	1.771	.080	.176	.737

a. Dependent Variable: BOS

b. Predictors in the Model: (Constant), II