

**ROLE OF INTERNATIONAL BUSINESS OPERATIONS IN A
DEVELOPING PHARMACEUTICAL COMPANY:
MANAGING SUPPLY CHAIN**

**Dissertation
at
Claris Otsuka Private Limited**

**By
Siddarth Vasisth**

**Under the Guidance of
Brig (Dr.) S. K. Puri**

**MBA Pharmaceutical Management
2013-2015**



**Institute of Health Management Research,
Jaipur
2015**

TO WHOMSOEVER MAY CONCERN

This is to certify that **Siddarth Vasisth** student of MBA in Pharmaceutical Management from The IIHMR University; Jaipur has undergone internship training at **Claris Otsuka Private Limited** from January 2015 to April 2015.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.



Col. Dr. Ashok Kaushik
Dean, Academics and Student Affairs
IIHMR, Jaipur



Brig. Swadesh Kumar Puri VSM (Retd)
Advisor
IIHMR, Jaipur

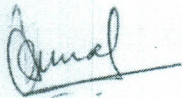
TO WHOMSOEVER MAY CONCERN

This is to certify that **Siddarth Vasisth** student of MBA in Pharmaceutical Management from The IIMR University; Jaipur has worked on dissertation entitled "titled **Role of International Business operations in a developing Pharmaceutical company: Managing supply chain**" at **Claris Otsuka Private Limited** from January 2015 to April 2015.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.



Mr.Kunal Jalota
HOD-Business Operations

Claris Otsuka Private Limited

(Formerly known as Claris Otsuka Limited)

5th Floor, Claris Corporate Headquarters,

Nr. Parimal Crossing, Ellisbridge, Ahmedabad 380 006, India.

Tel: +91-79-26583331, 66309339 Fax: +91-79-26408053

www.clarisotsuka.com

(CIN : U24230GJ2012PTC072602)

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **Role of International Business operations in a developing Pharmaceutical company: Managing supply chain** and submitted by **Siddarth Vasisth** Enrollment No. IIHMR/MBAPM/2013-15/05-206 under the supervision of **Brig. Swadesh Kumar Puri ,VSM (Retd)** for award of MBA Pharmaceutical Management of the university carried out during the period from January 2015 to April 2015 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.


19/05/15
Signature

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **Role of International Business operations in a developing Pharmaceutical company: Managing supply chain** and submitted by **Siddarth Vasisth** Enrollment No. IIHMR/MBAPM/2013-15/05-206 under the supervision of **Brig. Swadesh Kumar Puri ,VSM (Retd)** for award of MBA Pharmaceutical Management of the university carried out during the period from January 2015 to April 2015 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.


19/05/15
Signature

ACKNOWLEDGEMENT

First and foremost, I venerate to the **God** whose mercy, compassion and benediction have guided me in each and every step during the course of my Life & this study as well.

There are so many people who deserve a word of thanks for their part, in one way or other for the completion of my dissertation. So I am highly indebted to all those who made it possible for me to mold this study in the form of my dissertation.

I am especially grateful to **Prof. S.K. Puri** VSM (Retd.), Advisor, The IIHMR University, Jaipur, for his constant guidance, support, motivation & untiring help during the course of my MBA journey.

I would like to express my profound sense of reverence to **Mr. Kunal Jalota**, HOD Buisness Operations, Claris Otsuka Private Limited, Ahmedabad, for the valuable guidance, keen interest and constant boost up of my moral in completion of this project.

I am immensely thankful to **Claris Otsuka Private Limited** for giving me such a great opportunity to work with them during my MBA.

I would also like to express my heartfelt thanks to all my **Friends** for motivating me whenever I was in need. Their critical remarks & suggestions have always been very helpful in improving my skills.

Words are less to express my appreciation for my **Family** for their love, support and understanding throughout my life.

Siddarth Vasisth

Date:

Siddarth Vasisth

Place:

MBA PM-05

Roll no. 206

Institute of Health Management Research

The IIHMR University

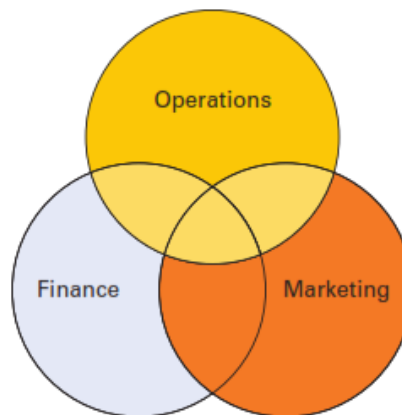
Contents

INTRODUCTION	4
1.0 About Operations-.....	4
1.1 SIGNIFICANCE OF OPERATIONS RESEARCH	7
2.0 Background	11
3.0 Literature review	13
4.0 Objective(s):.....	18
5.0 Methodology:	18
5.1 EXPLORATORY RESEARCH	19
5.2 SECONDARY DATA	19
5.3 QUALITATIVE RESEARCH.....	19
5.4 CONCLUSIVE RESEARCH DESIGN	19
5.5 DESCRIPTIVE RESEARCH	19
6.0 Data Collection:	20
7.0 Findings:	21
8.0 Conclusion.	43
9.0 SUGGESTIONS	45
10.0 References:-	46

INTRODUCTION

1.0 About Operations-

Operation is one of the popular managerial decision science tools used by profit and nonprofit organizations. As the global environment becomes fiercely competitive, Operations Research has gained significance in applications like world-class Manufacturing systems(WCM), Lean production, Six-sigma quality management, Benchmarking, Just-in-time (JIT) inventory techniques. The growth of global markets and the resulting increase in competition have highlighted the need for Operation Research. In order to be competitive, businesses must meet the challenges present in a global market by offering products and services that offer good value to their customers. Good value is a combination of low cost, high quality, rapid availability and real time information on these.



In order to enhance the role of operational research and speed up the process and methodologies of different

Stakeholders, they should work closely and complement each other's effort. In this process, the academicians should take the lead in the design, development and demonstration of sustainable operational research models. Industry should support this initiative and accelerate the transmission of this methodology. This would ensure wealth creation in the short term, and sustainable development in the long term. The government should encourage this initiative by adopting optimized responses. Consequently, optimized policy responses and its implementation would bring about positive changes in the socio political and economic environment. As a result, sustained use of operational research would be a regular feature in the decision making process of the government, industry and the society. Such a wide usage of operational research models by the government, industry and academicians would not only contribute to the discipline but also would contribute to the enhanced quality of life in India. The present study is an attempt to highlight the significance of business operation, different techniques used and its application in business and industry.



Working together successfully means that all members of the organization understand not only their own role, but they also understand the roles of others. This is precisely why all business students, regardless of their particular major, are required to take a common core of courses that will enable them to learn about all aspects of business. Because operations management is central to the functioning of every business organization, it is included in the core of courses business students are required to take. And even though individual courses have a narrow focus (e.g., accounting, marketing), in practice, there is significant interfacing and *collaboration* among the various functional areas, involving *exchange of information* and *cooperative decision making*. For example, although the three primary functions in business organizations perform different activities, many of their decisions impact the other areas of the organization. Consequently, these functions have numerous interactions, as depicted by the overlapping circles shown in Figure above .

Finance and operations management personnel cooperate by exchanging information and expertise in such activities as the following:

- 1 . **Budgeting.** Budgets must be periodically prepared to plan financial requirements. Budgets must sometimes be adjusted, and performance relative to a budget must be evaluated.
2. **Economic analysis of investment proposals.** Evaluation of alternative investments in plant and equipment requires inputs from both operations and finance people.
3. **Provision of funds.** The necessary funding of operations and the amount and timing of funding can be important and even critical when funds are tight. Careful planning can help avoid cash-flow problems.

1.1 SIGNIFICANCE OF OPERATIONS RESEARCH

Because of Operation Research's multidisciplinary character and application in varied fields, it has a bright future, provided people devoted to Operation Research study can help meet the needs of society. Some of the problems in the area of Pharmaceutical Company management, energy conservation, environmental pollution, etc. have been solved by Operation Research specialists and this is an indication that Operation Research can also contribute towards the improvement in the social life and areas of global need.

The Operation Research approach is particularly useful in balancing conflicting objectives (goals or interests) where there are many alternative courses of action available to the decision-makers. In a theoretical sense, the optimum decision must be one that is best for the organization as a whole it is often called the global optimum. A decision that is best for one or more sections of the organization is usually called suboptimum decision. Operation Research attempts to resolve the conflicts of interest among various sections of the organization and seeks the optimal solution which may not be acceptable to one department but is in the interest of the organization as a whole. Operation Research is concerned with providing the decision-maker with decision aids (or rules) derived from:

- i) A total system orientation,
- ii) Scientific methods of investigation, and
- iii) Models of reality, generally based on quantitative measurement and techniques.

Besides its use in industry, this new technique was also utilized in a number of socio-economic problems which came up after the war. Operation Research has come to be used

in a very large number of areas such as problems of traffic, question of deciding a suitable fare structure for public transport, or industrial process like ore-handling. Its use has now extended to academic spheres, such as the problems of communication of information, socio-economic fields and national planning.

Whether dealing with issues of marketing, managing, or negotiating, the success or failure of a company abroad depends on how effectively its employees can exercise their skills in a new location. That ability will depend on both their job-related expertise and the individual's sensitivity and responsiveness to the new cultural environment. One of the most common factors contributing to failure in international business assignments is the erroneous assumption that if a person is successful in the home environment, he or she will be equally successful in applying technical expertise in a different culture. Research has shown that failures in the overseas business setting most frequently result from an inability to understand and adapt to foreign ways of thinking and acting rather than from technical or professional incompetence (Tung 1988; Black, Gregersen, and Mendenhall 1992). At home, U.S. businesspeople equip themselves with vast amounts of knowledge of their employees, customers, and business partners. Market research provides detailed information on values, attitudes, and buying preferences of U.S. consumers; middle- and upper-level managers are well versed in the intricacies of their organization's culture; and labor negotiators must be highly sensitive to what motivates those on the other side of the table. Yet when Americans turn to the international arena, they frequently deal with customers, employees, and fellow workers with a dearth of information that at home would be unimaginable. The literature on international business is filled with examples of business

miscues when U.S. corporations attempted to operate in an international context. Some are mildly amusing; others are downright embarrassing. All of them, to one degree or another, have been costly in terms of money, reputation, or both. For example, when American firms try to market their products in other countries, they often assume that if a marketing strategy or slogan is effective in, say, Cleveland, it will be equally effective in other parts of the world. But problems can arise when changing cultural contexts. The following examples illustrate some miscues. An airline offering service to Brazil advertised that it had comfortable "rendezvous lounges" in its business-class section. Unfortunately, it failed to realize that the word rendezvous in Portuguese refers to a room for illicit sexual encounters. Chicken entrepreneur Frank Purdue decided to translate one of his very successful advertising slogans into Spanish, but the new slogan didn't produce the desired results. The slogan "It takes a tough man to make a tender chicken" was translated into Spanish as "It takes a virile man to make a chicken affectionate." And the Dairy Association's wildly successful ad campaign "Got Milk?" had the unfortunate translation "Are you lactating?" when used in Mexico. Although all these cross-cultural advertising blunders cause us to chuckle, they can result in a loss of revenue and even product credibility. Insensitivity to the cultural realities of foreign workforces can lead to less than desirable results. David Anderson (1985) tells of a U.S. businessperson who rewarded the most outstanding member of a Japanese marketing team by promoting him to head up the group. Rather than being proud and grateful, however, the top performer seemed ashamed, and the others in the group were uncomfortable and demoralized. Contrary to what the American manager had anticipated, performance in the group quickly deteriorated. What the American had not realized was that Japanese feel most comfortable working in teams, with all sharing equally in decisions, workloads, and responsibility for outcomes. As Anderson puts it, "The attempt at motivation, American-style, destroyed a sense of harmonious cooperation the Japanese

workers had cherished" (1985,54-55). Just as inattention to the cultural context can result in some costly blunders in marketing and management, it also can affect seriously the success of international business negotiations. Time, effort, reputation, and even contracts can be lost because of cultural ignorance. Alison Lanier tells of one American executive who paid a very high price for failing to do his cultural homework: These are only a few of the examples of the price paid for miscalculating--or simply ignoring--the cultural dimension of international business. The most cursory review of the international business literature will reveal many other similarly costly mistakes. In 1974, Ricks, Fu, and Arpan published a compendium of international business miscues appropriately entitled *International Business Blunders*. Less than a decade later, an entirely new collection was published (Ricks 1983), describing only those international business blunders that have occurred since 1974. More recently, Ricks (1993, 1999) has published his latest volumes of new and "improved" international business blunders. The purpose here is not to demonstrate the folly and insensitivity of the American businessperson when operating overseas but to show that the world is changing faster than most of us can calculate. If American businesspeople are to meet the challenges of an increasingly interdependent world, they will need to develop a better understanding of how cultural variables influence international business enterprises. A healthy dialogue between cultural anthropologists and members of the international business community which this book seeks to initiate-is an important step in achieving that needed understanding.

2.0 Background

With the dawn of globalization, international business is becoming increasingly popular. Multinational Organizations are among the most profitable in the world. A company needs to be aware of the language and culture of the country where it plans to embark with its investment. Politics and laws of the nation can either make international business easy or hard. With the success of international business, its future is gleaming, on a global scale.

Operations management is a branch of study that is evolving day after day. Market globalization, technological development, the overcoming of international trade barriers and the boom in some dormant economies are modifying the economic structure of many countries and pushing companies to change their strategies and way of doing business. The rapid rate of change of corporate modus operandi involves the rethinking of operations management strategies: innovative approaches to international new product development, sourcing, manufacturing and logistics are required to maintain and increase competitive advantage.

These changes contribute to the operations management discipline new research topics that take into account the new order and the new economies that are shifting the world's economic equilibrium. The dynamics are even more articulated if the actors involved belong to different economics scenarios.

Operations Research as a new field started in the late 1930's and has grown and expanded tremendously in the last 30 years. The British army was conducting exercises on the radar

system for detecting the aircrafts. In July 1938, the Superintendent of Bawdsey Research Station, announced that although the exercise had demonstrated the technical feasibility of the radar system for detecting aircraft, its operational achievements were not up to what was required.

Supply Chain during last decade, researchers usually focused on Supply Chain Management (SCM) issues in profit organizations. Research objectives may include adding value, reducing cost, or slashing response time in various parties involved in the manufacturing supply chain. However, very few studies were attempted in non-profit organizations. An extremely scarce number of research papers focused on SCM in the academia (Habib, 2011, 2010e, 2010d, 2010f, 2010g). Hay (1990) states that a profit organization attempts to maximize profits, whereas a non-profit organization considers monetary returns of less importance. Their major objectives may include improved literacy rate, better quality of life, equal opportunities for all genders or races, etc. The revenues gained by a non-profit organization would be used primarily to balance the expenditure of the organization. Due to conflicting objectives, managing a successful profit organization may be drastically different from a non-profit organization (Firstenberg, 1996; Drucker, 1992). Recently, an increasingly large number of research studies highlight the criticalness of SCM as a means to assuring organizational success. SCM assists the business organization to compete in the dynamic international market.

3.0 Literature review

According to Saurabh Kumar Saxena of Department of Management, Rakshpal Bahadur Management Institute in his literature “A review of marketing Strategies work by Different pharmaceutical Companies” The current shift in the marketing strategy is work by multinational pharmaceutical Companies .It is now high-end (rather than adaptive) development that is being carried out by leading companies. And, increasingly, other companies are finding themselves competing against, or working with, new innovation-based companies. His study focuses on the processes and outcomes of globally distributed pharmaceutical Companies. This article will present the changing marketing strategies when a pharma company shifts from acute base to chronic therapy base. This research paper will also give an insight about shift in supply chain Process and customer and end-customer perception which is the base of formulation of different marketing strategies.

According to LLamasoft, Inc. in ‘Supply Chain Design for the Pharmaceutical Industry’ with fewer new “breakthrough” pharma products hitting the shelves and narrower margins, now is the time to uncover inefficiencies in the existing supply chain and optimize for improved performance. LLamasoft enables businesses to quantify and analyze all supply chain activities and costs incurred to fulfill a customer’s product demand by modeling all the supply chain activities in the network and properly allocating fixed and variable costs. Every country’s regulations are different, and what works in one country may not work at all in another. Use scenario analysis to understand how your company’s supply chain will react to new legislation and gauge your readiness to enter new geographies. Pharmaceutical companies are continually introducing new products and opening new regions for sales and

distribution. Through demand analysis and network optimization, LLamasoft can help determine the optimal launch plan. Using production modeling, companies can regularly review demand forecasts as the information becomes available so that they can best balance limited production capacity with demand volumes that often exceed this capacity. Strong data integration, editing and error checking capabilities; along with our certified connectors via our exclusive relationship as the SAP supply chain design partner.

According to John Storey and Caroline Emberson of 'The Open University Business School, Milton Keynes, UK, and Janet Godsell and Alan Harrison of Cranfield School of Management, Cranfield, UK The majority of pharmaceutical products are managed by a uniform supply chain with little to no adaptation for the specific product or market that it serves. This forces high inventory and service levels for all products, regardless of need.

As this occurs, the most competitive pharmaceuticals companies, like consumer goods companies will require several supply chains, each adapted to serve a particular market, product type or product lifecycle stage. While the supply chain for a new high-margin drug under patent protection may resemble the current one — with production located in the innovating company's facilities and a highly complex supply chain — the supply chain for an older drug or one competing with generics must look very different and be focused on cost competition. Such a supply chain will utilize global networks of contract manufacturers positioned close to suppliers and customers to provide products tailored for unique local requirements. The new model will more closely resemble today's consumer goods supply chains, which are able to supply low-margin products at low prices almost without interruption. The traditional pharmaceutical supply chain requires, on average, 75 Days for pharmaceutical products to reach distribution centres from manufacturing plants. However, Several leading companies have reduced lead times to 30 Days by adapting their supply.

According to De Vries, Jan; Huijsman, Robbert, describes the complexity of supply chain management in health services. All authors in this special issue emphasize the fact that supply chain management in a health care setting is characterized by some unique features, which make it difficult to transfer knowledge from the industrial sector to a health care sector in a direct way.

First of all, it seems to be important to further explore the role information technology can play in supporting the management and control of supply chain practices. Secondly, the influence of different stakeholders on establishing supply chain management relationships both within as well as between different health service providers still is rather unknown. It seems to be worthwhile therefore, to study into more depth the influence of power and interest relationships between the stakeholders during the process of adopting, shaping and implementing supply chain management relationships. Third, it seems to be of importance to study into more depth the strengths and weakness of management philosophies like lean and agile manufacturing, business process management and Lean Six Sigma in the context of health services. Many of these philosophies are often used together with supply chain management practices. Little is known however, about how these philosophies are applied by health care providers and to what extent health care providers can benefit from these practices. A fourth main field of research which can be associated with supply chain management in health services relates to performance metrics and the results being achieved by health care organisations when implementing supply chain practices. Finally, applying supply chain management concepts to patient flows requires special attention to the specifics of services. New developed concepts of disease management for chronic diseases show that supply chains get longer with combinations of different care providers in which the patient himself often is in the lead. How this interacts with and influences the

supply chain definitely is an important and challenging issue in future research on healthcare Supply Chain Management.

According to Kizito Elijah Kanyoma James Kamwachale Khomba, Eric James Sankhulani & Rabiya Hanif, The research has confirmed findings from previous study regarding the role of sourcing strategy in managing supply risk. It empirically establishes that single sourcing strategies exacerbate the risk of supply failure. It has also shown that supply failure in healthcare delivery systems can have fatal consequences such as deaths of patients. Thus, from the research, new knowledge to policy makers is created namely that, all things being equal, 'single sourcing strategies are not appropriate for healthcare delivery systems'. Based on the foregoing, dual or multiple sourcing strategies are recommended because they are an effective means of hedging against the risk of supply failure since non-delivery by one supplier is covered by another. Thus, availability of medical supplies in Pharmaceutical Companies would be safeguarded because the effects of supply disruptions affecting one supplier would no longer result in total supply failure for buying organization. The major limitation of the study is that it was conducted at a time when stock outs of drugs were at crisis levels in Malawi's public Pharmaceutical Companies. The results may therefore strongly represent the situation at that material point in time, other than the status under normal conditions of supply.

According to Samuel Toba • Mary Tomasini • Y. Helio Yang, with the supply chain costing as much as 40 percent of the typical pharmaceutical company budget, the strategic importance of pharma supply chain is evident (McKone-Sweet, et al., 2005). Pharmaceutical industries must overcome years of adversarial supplier relationships and dramatic internal and external inefficiencies to re-engineer their supply chain. This

paper, through a comprehensive case study, has addressed some issues in pharma supply chains and provided suggestions to overcome the challenges.

According to Robert Grosse* and Jack N. Behrman** International business has existed as a distinct field of study for the past three decades, but it does not have a widely accepted explanatory theory on which to base its uniqueness as a discipline. David Ricardo's theory of comparative advantage, Raymond Vernon's product life cycle, John Dunning's eclectic theory and all others are essentially explanations of business between domestic firms or regions, as well as international firms. They explain "multidomestic" investment and intra-national trade. Those theories offer important insights into the functioning of firms in business anywhere, including international firms, but they fail to focus on the distinguishing characteristics of business operating among different nations. Since international business is the study of business activities that cross national borders and, therefore, is fundamentally concerned with the firms that undertake that business and the national Governments that regulate them, a theory that is unique to such business must explain the responses of businesses to government policies and the policy-making of Governments themselves towards international firms. Empirical studies have distinguished international from domestic business strategies and operations, but they have not resulted in an international theory of cross-national business behaviour. The lack of a proper theoretical focus has diverted the discipline from an emphasis on policy and on conflicts and cooperation among corporations and Governments. A framework for constructing such a theory can be built on existing bargaining theory.

4.0 Objective(s):

- To identify the gaps in the area of logistics and supply chain management.
- To suggest remedial actions in the existing areas pertaining to supply chain management..

5.0 Methodology:

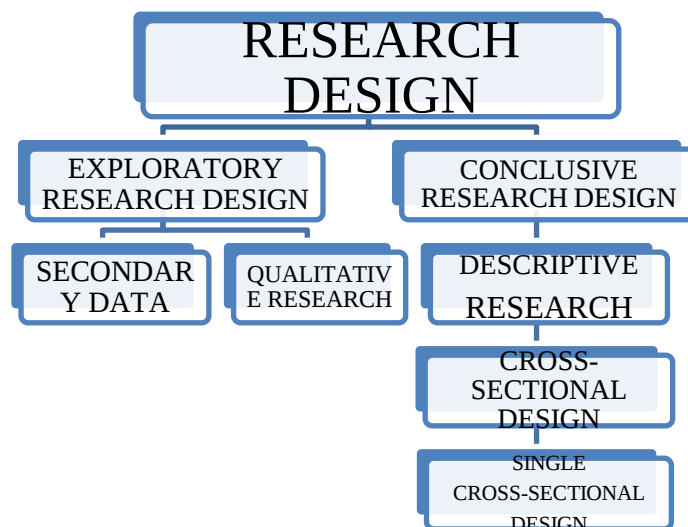
Research methodology represents the strategies involved in collecting and analysing data.

This section attempts to give a direction and manner for research work. This includes the mode of data collection, analysis and the research design.

Records show.

Practical knowledge about the work:

Indulging in practical work gives you an insight of the perception a person is going to make about the work done.



5.1 EXPLORATORY RESEARCH

It is a type of research design, which has its primary objective of getting an insight into and understanding of the problem situation confronting the researcher.

In exploratory design two

Types of methods available for collecting the data are as following;

[1] Secondary data

[2] Qualitative research

5.2 SECONDARY DATA

- Books, Internet for general information on supply chain management and Pharmaceutical Management.
- Organization's website for details regarding Pharmaceutical industries.

5.3 QUALITATIVE RESEARCH

- In depth interview: - Supply Chain professionals and logistic department personnel's.

5.4 CONCLUSIVE RESEARCH DESIGN

Conclusive research: - In conclusive research I used descriptive research

5.5 DESCRIPTIVE RESEARCH

- Descriptive research :- In descriptive research I use single cross sectional research
- Descriptive research is preplanned and structured. It is based on amount of representative samples.
- To measure the effectiveness of software users, I use the single cross sectional design of descriptive research.

- I take different 20 users of SAP system and take response once.
- In descriptive research design, again two types of methods available for collecting information are as follow;

1) Surveys,

2) Observational

6.0 Data Collection:

Primary and secondary sources provided essential information for this research work .

These sources include:

- a) Interview with some key personnel in the company, logistic department, professional country managers & the head of department of business operations.
- b) Observation of the supply chain process was done to see the flow of products in the delivery process.

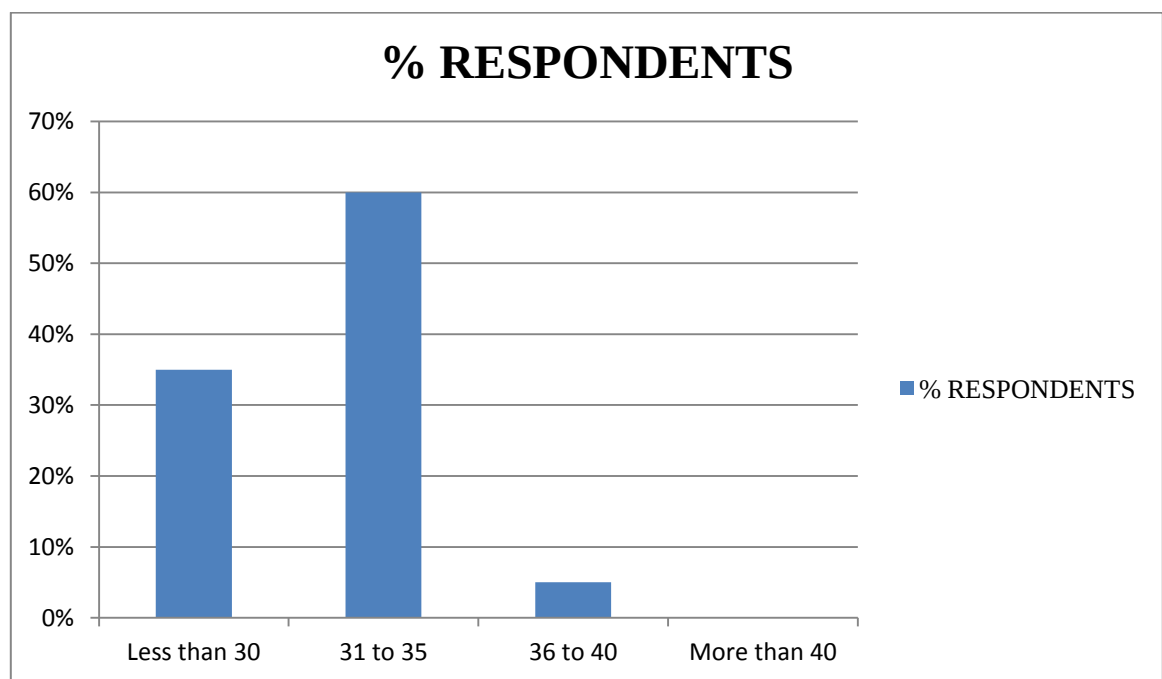
Materials handling and storage were also observed and so was the patrol inspection procedures.

.

7.0 Findings:

Q1.What is your age?

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Less than 30	7	35%
31 to 35	12	60%
36 to 40	1	5%
More than 40	0	0%

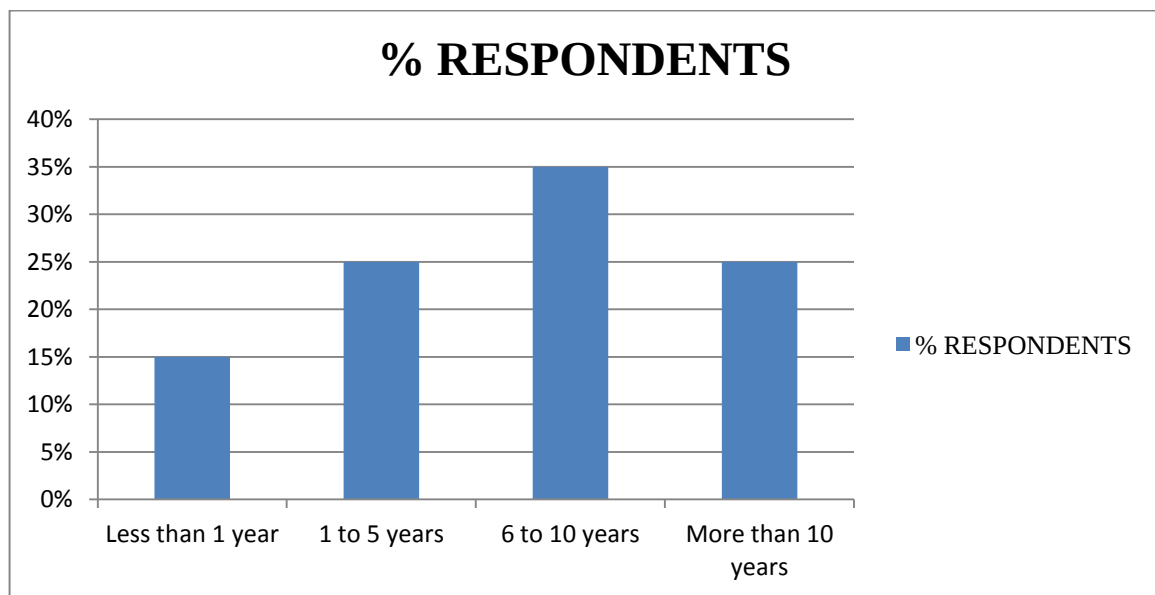


INTERPRETATION:

From the above data I interpret that 35% respondents are less than 30 year, 60% respondents are between 31 to 35 years, 5% respondents are between 36 to 40 years and 0% respondents are more than 40 year

Q2.What is your total experience?

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Less than 1 year	3	15%
1 to 5 years	5	25%
6 to 10 years	7	35%
More than 10 years	5	25%

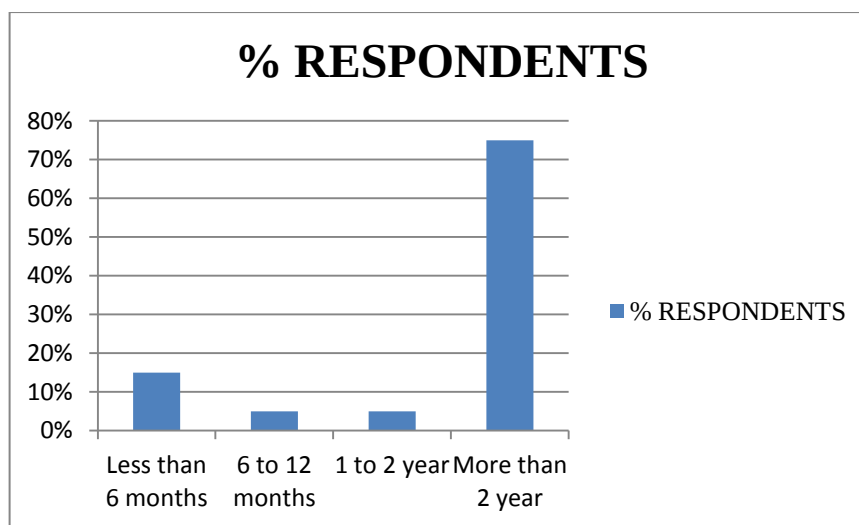


INTERPRETATION:

From the above data I interpret that 15% respondents have less than 1 year total work experience, 25% respondents have 1 to 5 years total work experience, 35% respondents have 6 to 10 year total job experience and 25% respondents have more than 10 year total experience.

Q3. Since how long you are serving in the Pharmaceutical Company?

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Less than 6 months	3	15%
6 to 12 months	1	5%
1 to 2 year	1	5%
More than 2 year	15	75%

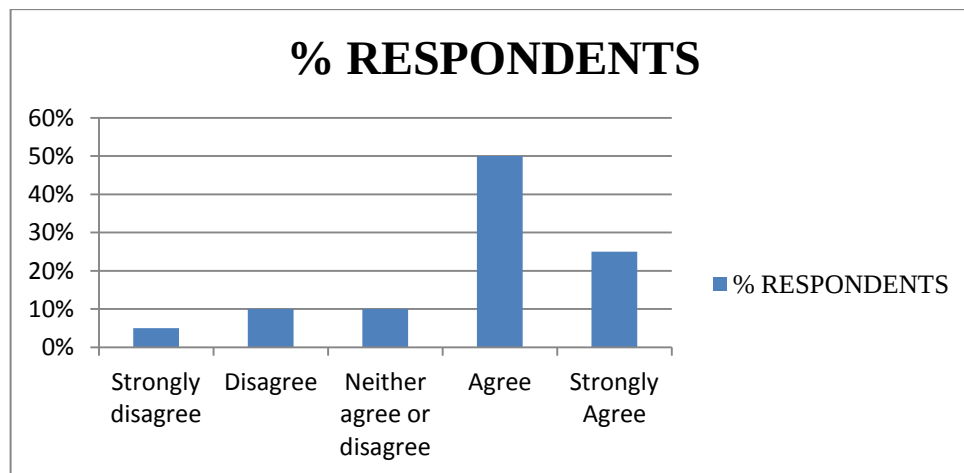


INTERPRETATION:

From the above data I interpret that 15% respondents are less than 6 month working experience in this Pharmaceutical Company, 5% respondents are 6 to 12 month working experience in this Pharmaceutical Company, 5% respondents are 1 to 2 year working experience in this Pharmaceutical Company and 75% respondents are more than 2 year working experience in this Pharmaceutical Company.

Q4 Business Operations is useful in maintaining purchase order availability.

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	1	5%
Disagree	2	10%
Neither agree or disagree	2	10%
Agree	10	50%
Strongly Agree	5	25%

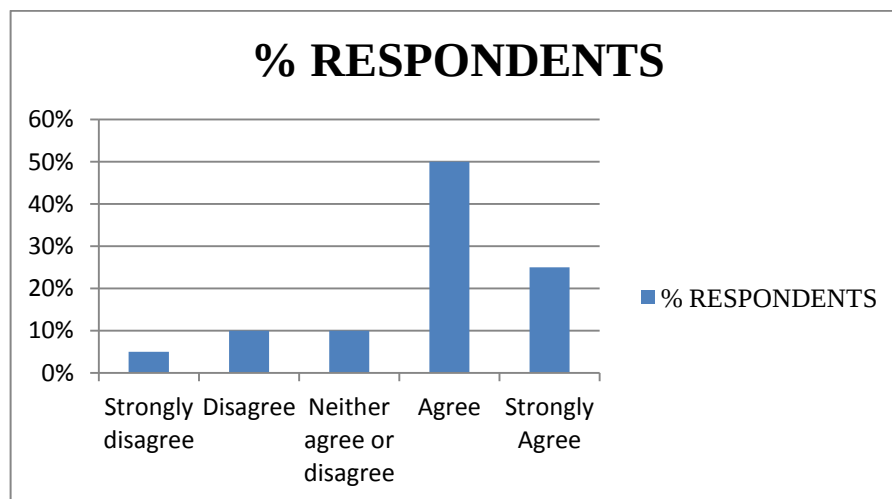


INTERPRETATION:

From the above data I interpret that 5%, respondents are highly disagree, 10% respondents are disagree, 10% respondents are neither agree or disagree, 50% respondents are agree and 25% respondents are highly agree with above statement.

Q5 Business operations is dependent on logistics for making Systematic dispatches .

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	0	0%
Disagree	1	5%
Neither agree or disagree	1	5%
Agree	10	50%
Strongly Agree	8	40%

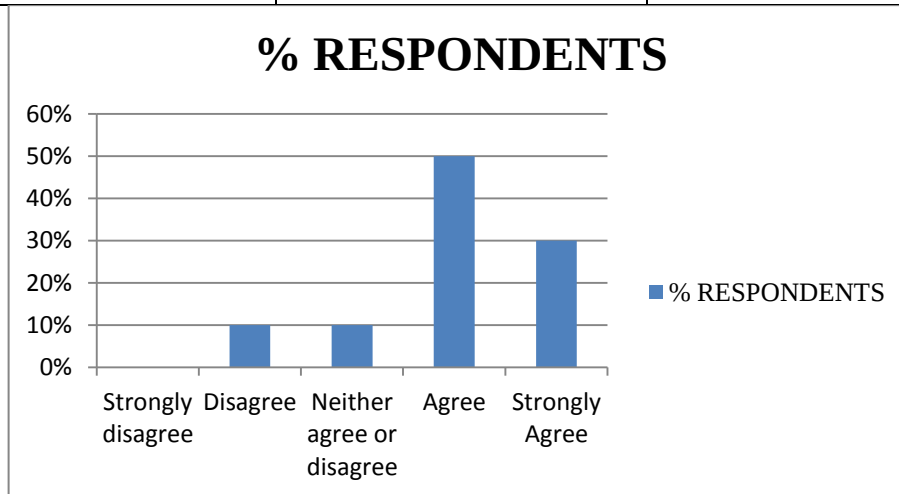


INTERPRETATION:

From the above data I interpret that 0% respondents are highly disagree, 5% respondents are disagree, 5% respondents are neither agree or disagree, 50% respondents are agree and 40% respondents are highly agree with above statement.

Q6. Indent of the material has become easy and smooth after having highly skilled business operations executives.

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	0	0%
Disagree	2	10%
Neither agree or disagree	2	10%
Agree	10	50%
Strongly Agree	6	30%

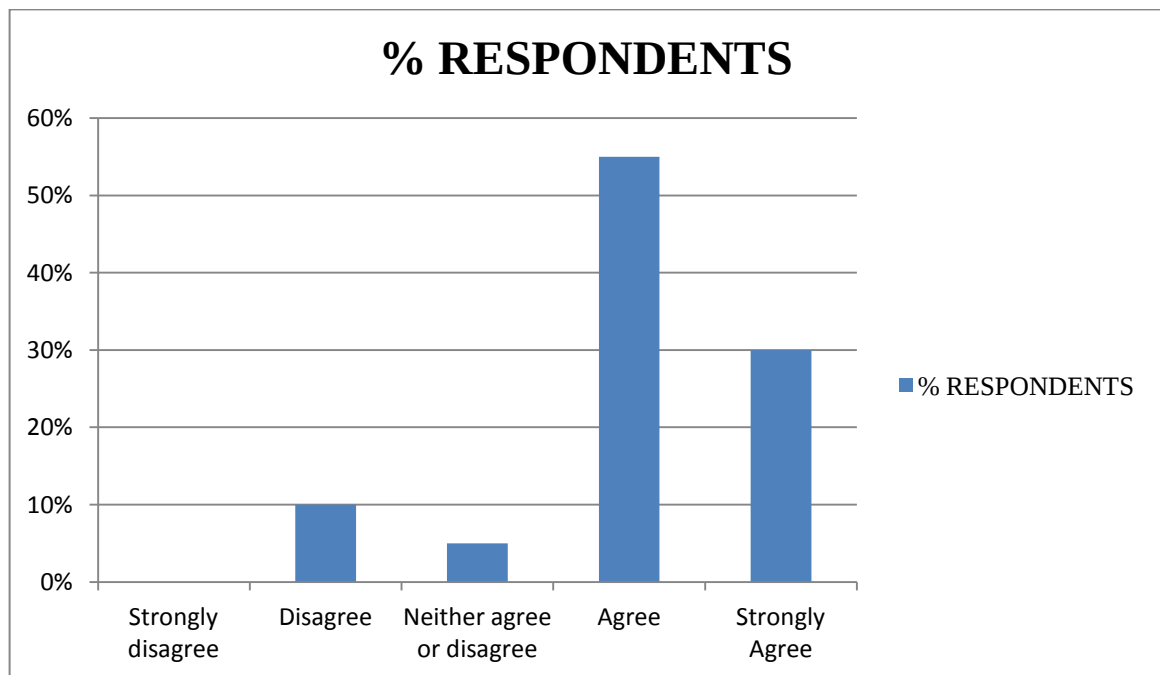


INTERPRETATION:

From the above data I interpret that 0% respondents are highly disagree, 10% respondents are disagree, 10% respondents are neither agree or disagree, 50% respondents are agree and 30% respondents are highly agree with above statement.

Q7.Issue of material has become easy and smooth after implementation of SAP software by business operations.

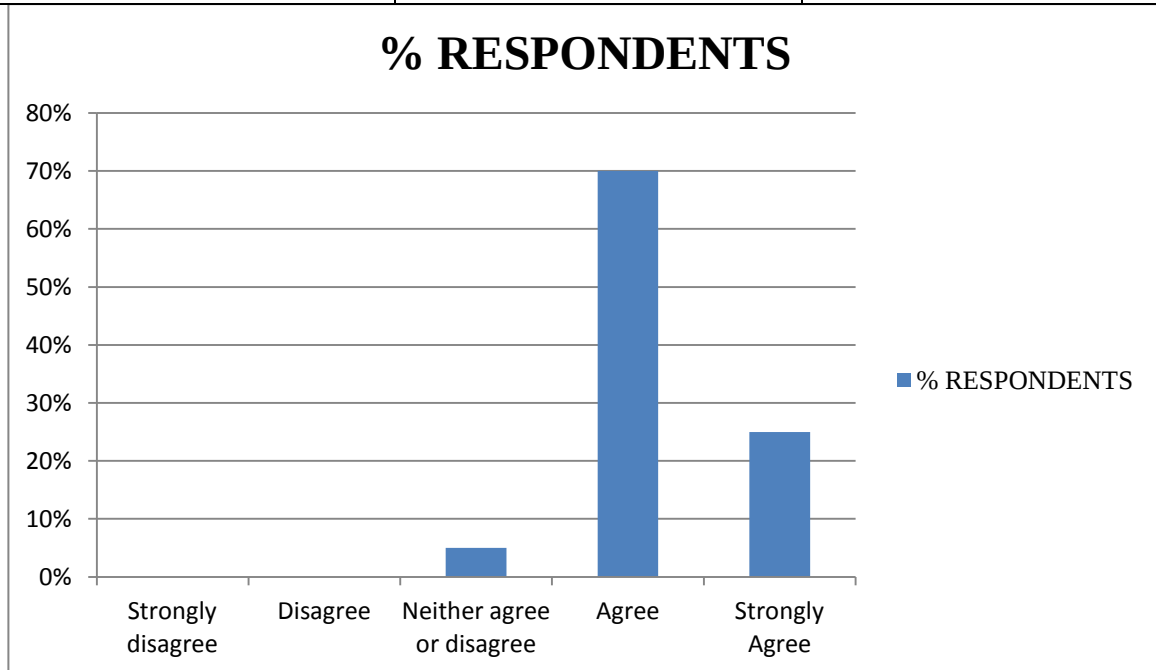
PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	0	0%
Disagree	2	10%
Neither agree or disagree	1	5%
Agree	11	55%
Strongly Agree	6	30%



INTERPRETATION: From the above data I interpret that 0% respondents are highly disagree, 10% respondents are disagree, 5% respondents are neither agree or disagree, 55% respondents are agree and 30% respondents are highly agree with above statement.

Q8 Issue return of the material has become easy and smooth after implementation of SAP software.

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	0	0%
Disagree	0	0%
Neither agree or disagree	1	5%
Agree	14	70%
Strongly Agree	5	25%

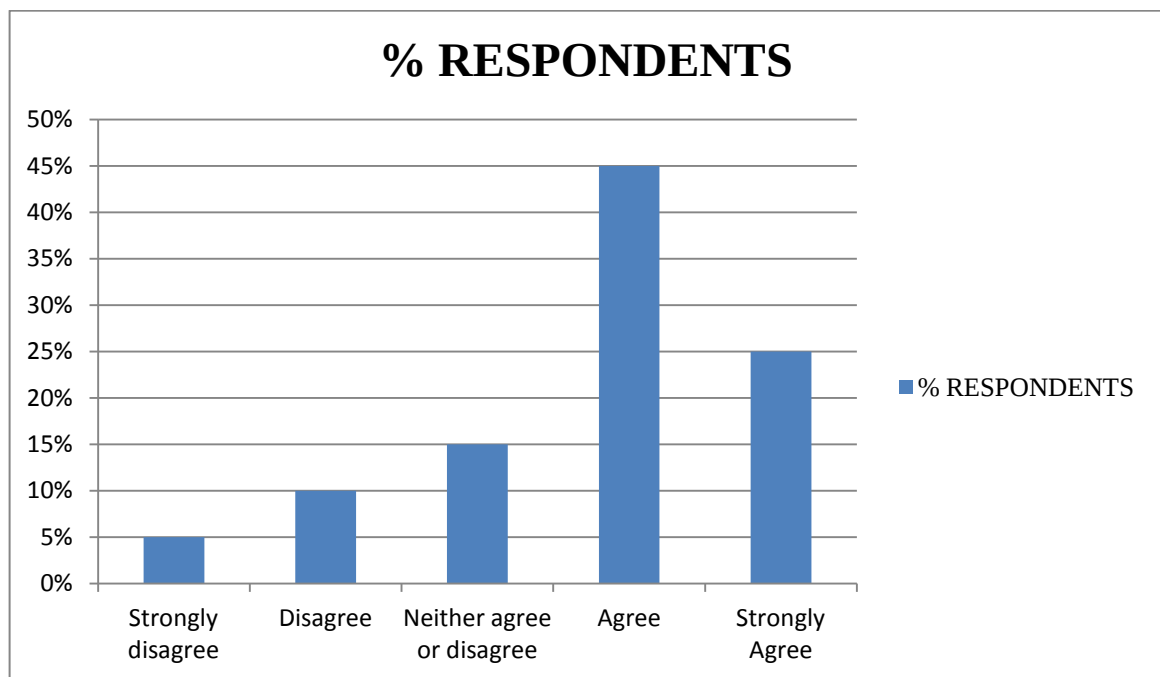


INTERPRETATION:

From the above data I interpret that 0% respondents are highly disagree, 0% respondents are disagree, 5% respondents are neither agree or disagree, 70% respondents are agree and 25% respondents are highly agree with above statement.

. Q9 After implementation of SAP by business operations under stock/ over stock condition has reduced

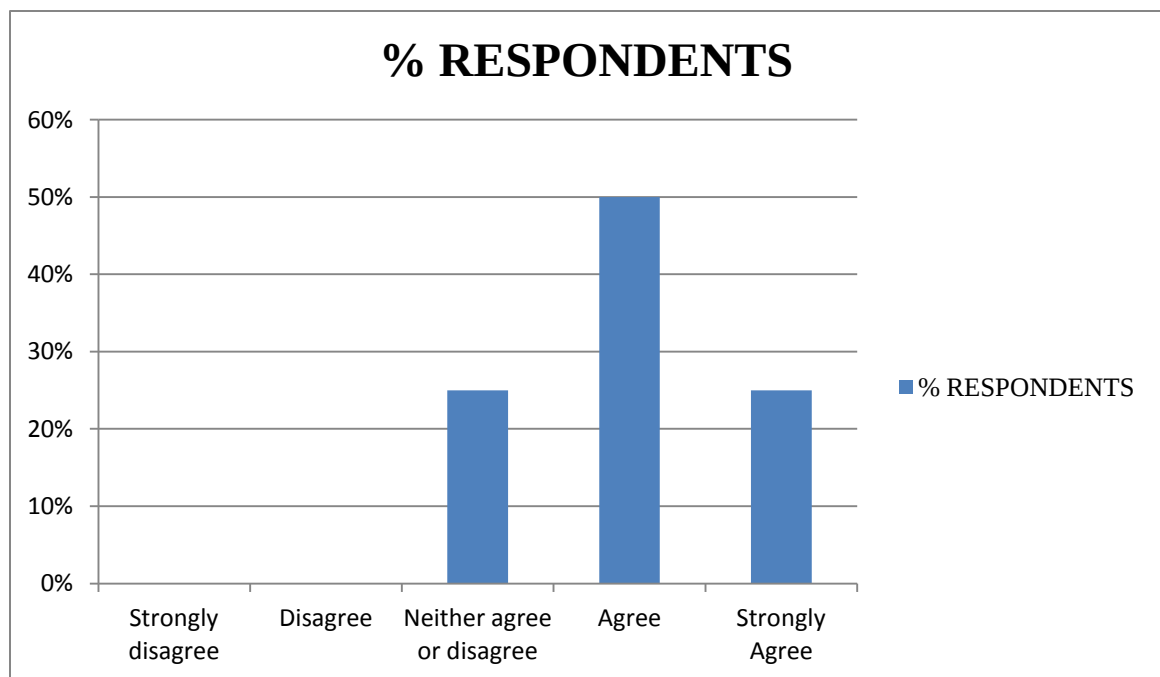
PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	1	5%
Disagree	2	10%
Neither agree or disagree	3	15%
Agree	9	45%
Strongly Agree	5	25%



INTERPRETATION: From the above data I interpret that 5% respondents are highly disagree, 10% respondents are disagree, 15% respondents are neither agree or disagree, 45% respondents are agree and 25% respondents are highly agree with above statement.

Q10.Delivery reliability has improved after implementation of SAP.

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	0	0%
Disagree	0	0%
Neither agree or disagree	5	25%
Agree	10	50%
Strongly Agree	5	25%

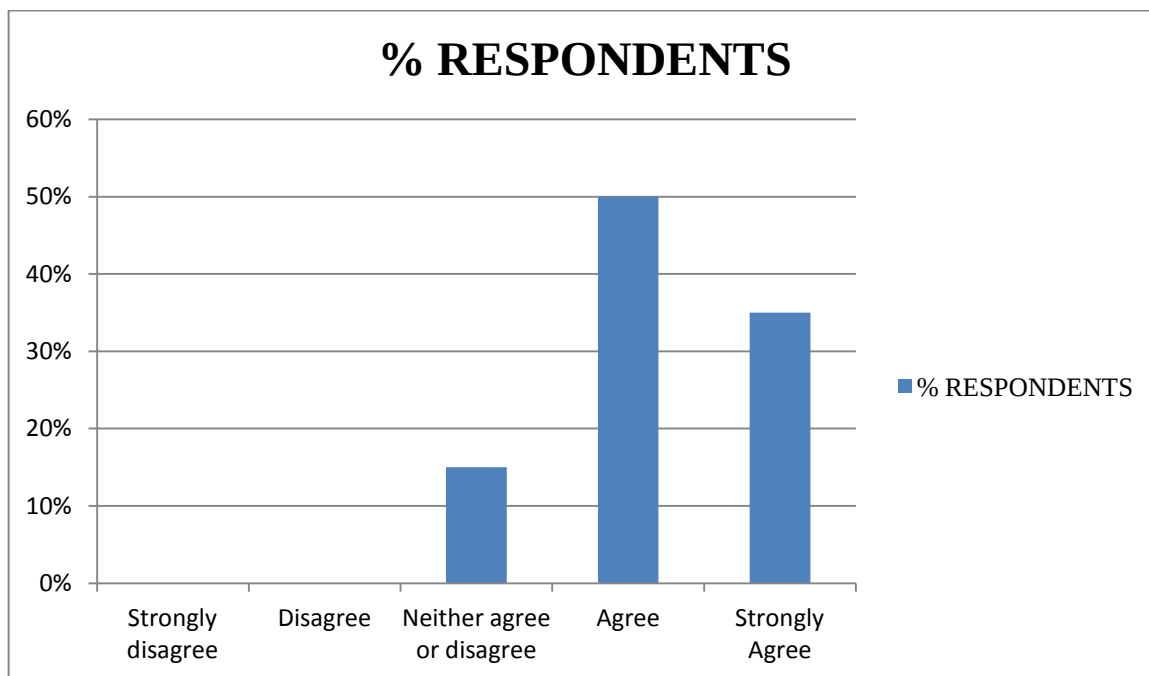


INTERPRETATION:

From the above data I interpret that 0% respondents are highly disagree, 0% respondents are disagree, 25% respondents are neither agree or disagree, 50% respondents are agree and 25% respondents are highly agree with above statement.

Q11.SAP system is fully implemented by business operations in Pharmaceutical Company.

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	0	0%
Disagree	0	0%
Neither agree or disagree	3	15%
Agree	10	50%
Strongly Agree	7	35%

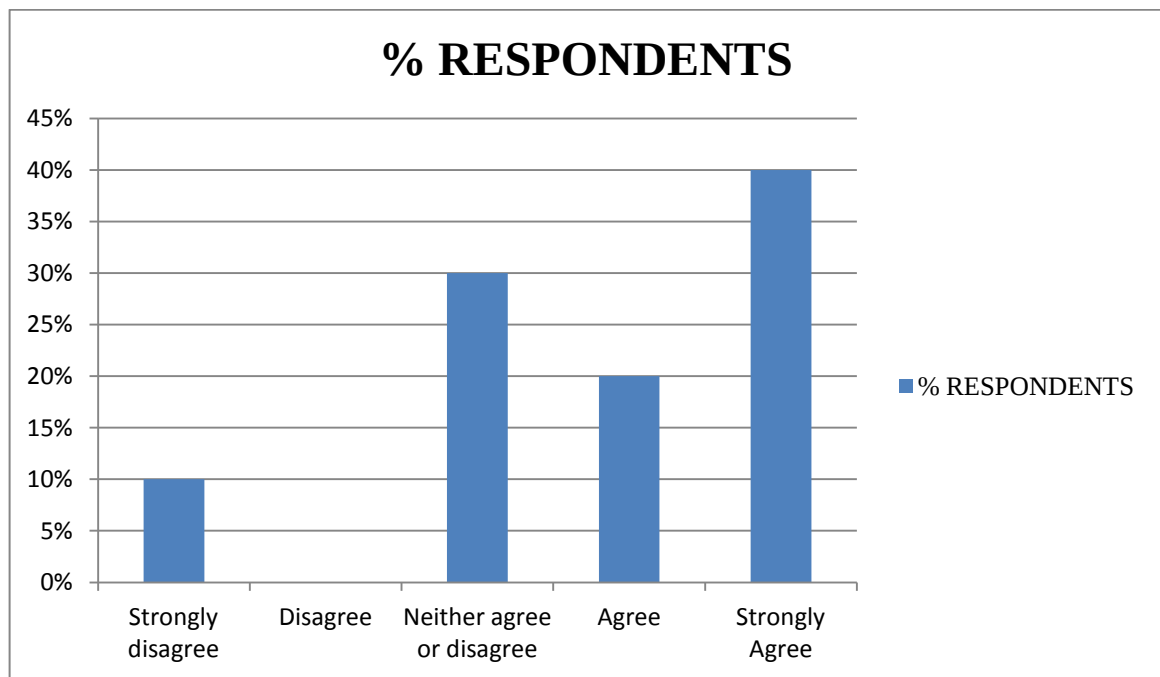


INTERPRETATION:

From the above data I interpret that 0% respondents are highly disagree, 0% respondents are disagree, 15% respondents are neither agree or disagree, 50% respondents are agree and 35% respondents are highly agree with above statement.

Q11.The employees of Pharmaceutical Company who deal with SAP system are properly trained.

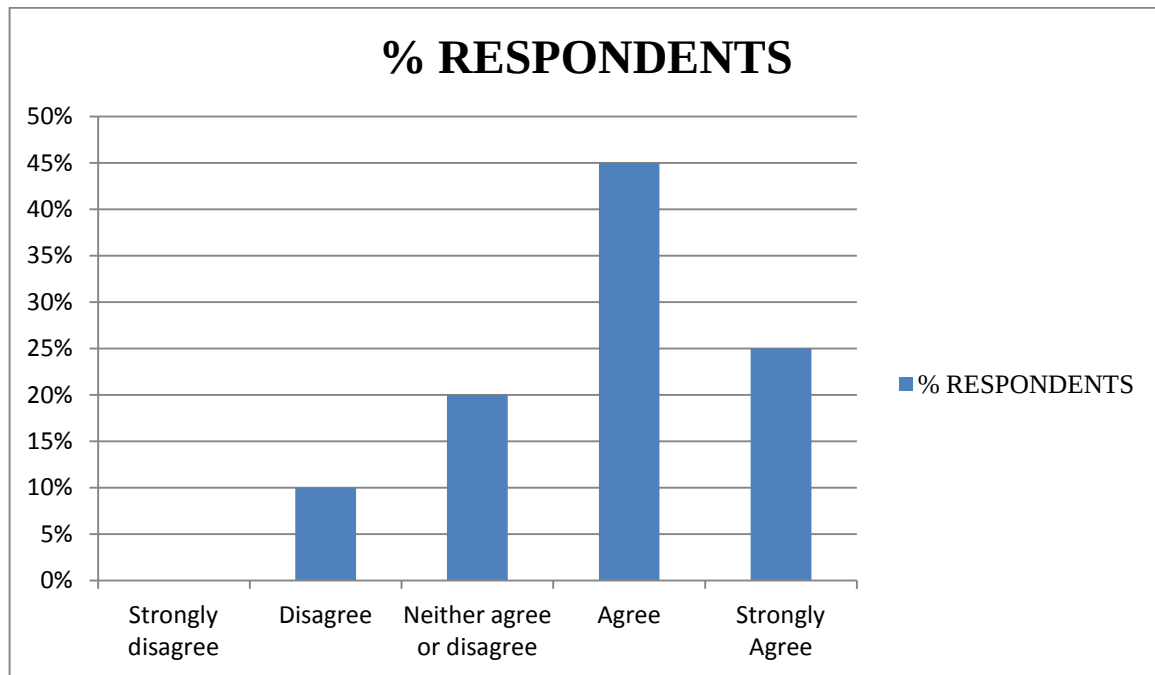
PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	2	10%
Disagree	0	0%
Neither agree or disagree	6	30%
Agree	4	20%
Strongly Agree	8	40%



INTERPRETATION: From the above data I interpret that 10% respondents are highly disagree, 0% respondents are disagree, 30% respondents are neither agree or disagree, 20% respondents are agree and 40% respondents are highly agree with above statement.

Q12 The system helps to detect any problem occurring during the operation of Pharmaceutical Company.

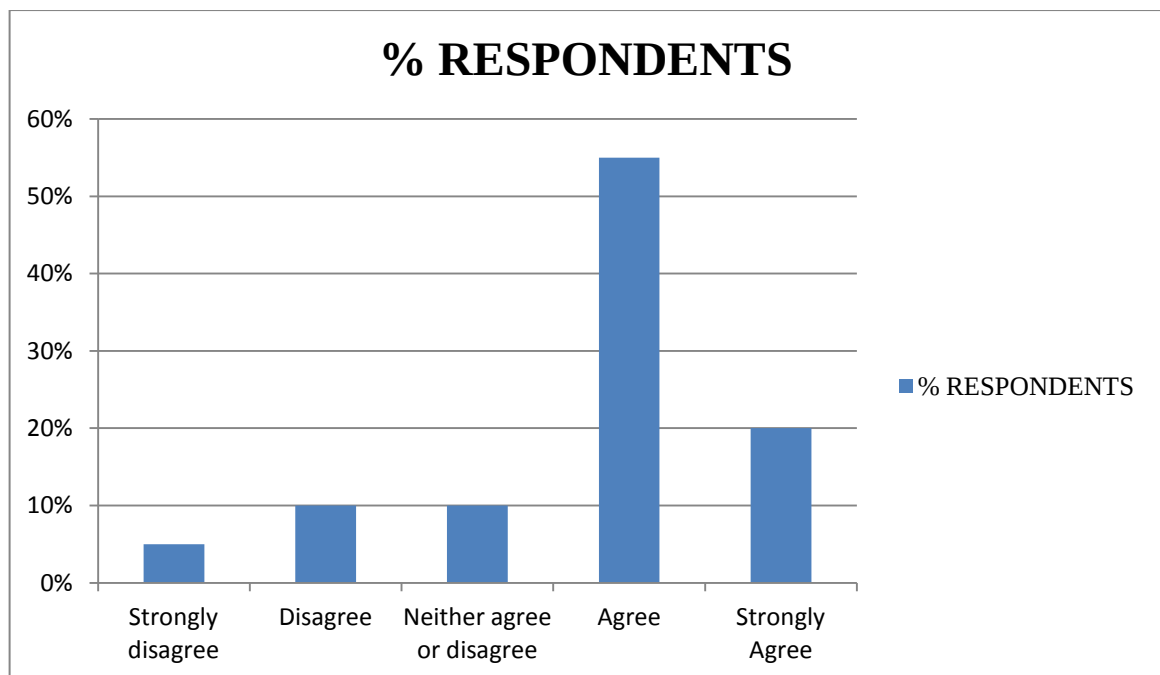
PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	0	0%
Disagree	2	10%
Neither agree or disagree	4	20%
Agree	9	45%
Strongly Agree	5	25%



INTERPRETATION: From the above data I interpret that 0%, respondents are highly disagree, 10% respondents are disagree, 20% respondents are neither agree or disagree, 45% respondents are agree and 25% respondents are highly agree with above statement.

Q13 All the features of SAP software are useful for business operations.

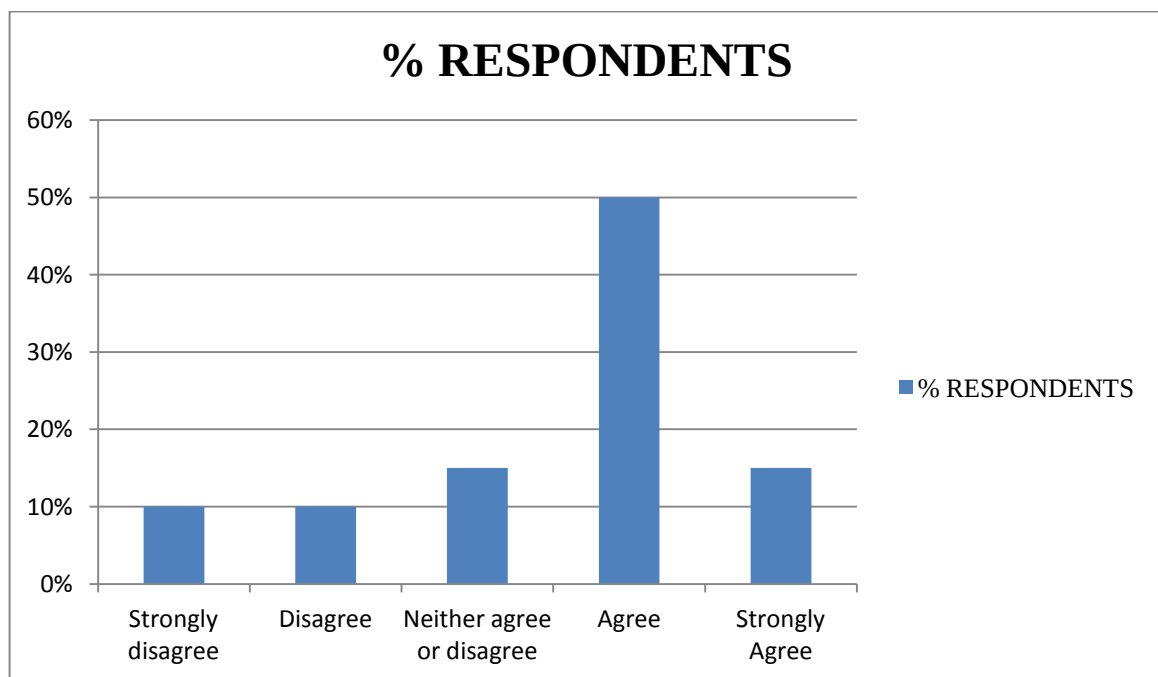
PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	1	5%
Disagree	2	10%
Neither agree or disagree	2	10%
Agree	11	55%
Strongly Agree	4	20%



INTERPRETATION: From the above data I interpret that 5%, respondents are highly disagree, 10% respondents are disagree, 10% respondents are neither agree or disagree, 55% respondents are agree and 20% respondents are highly agree with above statement

Q14 By the help of this software you can finish more work in less time.

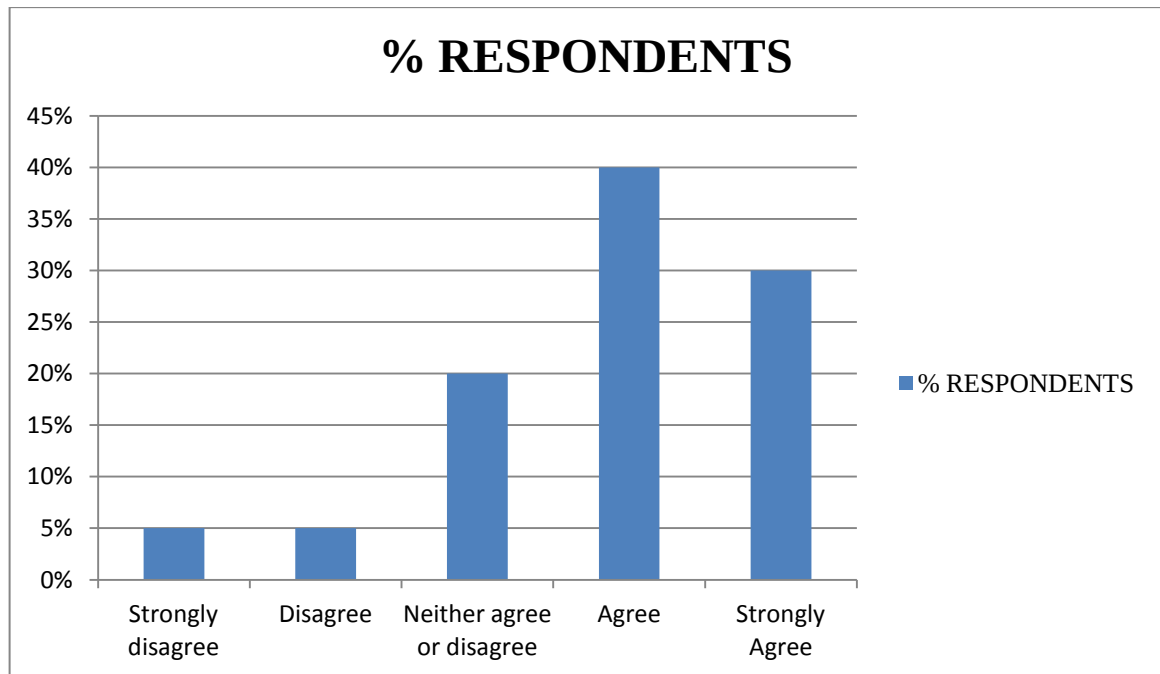
PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	2	10%
Disagree	2	10%
Neither agree or disagree	3	15%
Agree	10	50%
Strongly Agree	3	15%



INTERPRETATION: From the above data I interpret that 10%, respondents are highly disagree, 10% respondents are disagree, 15% respondents are neither agree or disagree, 50% respondents are agree and 15% respondents are highly agree with above statement

Q 15 SAP software has improved my work efficiency and productivity.

PARTICULAR	NO OF RESPONDENT	% OF RESPONDENT
Strongly disagree	1	5%
Disagree	1	5%
Neither agree or disagree	4	20%
Agree	8	40%
Strongly Agree	6	30%



INTERPRETATION:

From the above data I interpret that 5%, respondents are highly disagree, 5% respondents are disagree, 20% respondents are neither agree or disagree, 40% respondents are agree and 30% respondents are highly agree with above statement.

Scale: Likert scale

Data analysis technique: ANOVA

Data analysis software: SPSS

Significance level: 0.10

Mean of each Statement:

Mean	SAP_for_purchase_order	3.8000	-.0500	.2646	3.2533	4.3369
	Purchase Order Availability	4.2500	.0625	.1661	4.0500	4.6500
	Material_indent_easy_and_smooth_by_SAP	4.0000	.0625	.2372	3.4664	4.4434
	material_issue_easy_and_smooth_by_SAP	4.0500	.0625	.1739	3.8033	4.4467
	issue_return_easy_and_smooth_by_SAP	4.2000	.0550	.1157	4.0500	4.4934
	understock_and_overstock_condition_reduced	3.7500	.0175	.2397	3.3566	4.2000
	Delivery_reliability_improved	4.0000	.0275	.1736	3.7033	4.3500
	SAP_system_is_fully_implemented	4.2000	.0000	.1267	4.0033	4.4500
	Employees_are_properly_trained	3.8000	-.0300	.2764	3.2631	4.3902
	SAP_helps_to_detect_problems	3.8500	.1125	.1468	3.7066	4.3836
	All_the_features_of_SAP_are_useful	3.7500	.1475	.1534	3.6033	4.1000
	By_SAP_you_can_finish_more_work_in_less_time	3.6000	.0550	.2288	3.3033	4.1869
	Improved_work_efficiency_and_productivity	3.8500	.1350	.1599	3.6566	4.2000

From the means we can conclude that respondents have given highest agreement to the following statements:

SAP software is useful for better purchase order availabilities.

Issue return of the material has become easy and smooth after implementation of SAP software.

SAP system is fully implemented in Pharmaceutical Company.

HYPOTHESIS TESTING

Hypothesis:

1) H_0 : There is no impact of total work experience of employees on agreement that SAP software has improved work efficiency and productivity.

H_1 : There is impact of total work experience of employees on agreement that SAP software has improved work efficiency and productivity.

ANOVA							
Improved_work_efficiency_and_productivity							
			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		8.283	3	2.761	3.097	.057
	Linear Term	Unweighted	1.314	1	1.314	1.474	.242
		Weighted	1.189	1	1.189	1.333	.265
		Deviation	7.095	2	3.547	3.978	.040
Within Groups			14.267	16	.892		
Total			22.550	19			

INTERPRETATION:

Here as the significance level is less than the critical value (0.10) and so we reject our null hypothesis and accept alternative hypothesis. It means that there is impact of total work experience of employees on agreement that SAP software has improved work efficiency and productivity.

2) H_0 : There is no impact of total work experience of business operations executive on agreement that all the features of the SAP software are useful.

H_1 : There is impact of total work experience of employees on agreement that all the features of the SAP software are useful

ANOVA							
All_the_features_of_SAP_are_useful							
			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		4.226	3	1.409	1.286	.313
	Linear Term	Unweighted	.671	1	.671	.612	.445
		Weighted	.606	1	.606	.554	.468
		Deviation	3.620	2	1.810	1.652	.223
Within Groups			17.524	16	1.095		
Total			21.750	19			

INTERPRETATION:

Here as the significance level is greater than the critical value (0.10) and so we accept our null hypothesis and reject alternative hypothesis. It means that there is no impact of total work experience of employees on agreement that all the features of the SAP software are useful.

3) H_0 : There is no impact of total work experience of business operations executive on agreement that SAP system is fully implemented in Pharmaceutical Company.

H_1 : There is impact of total work experience of business operations executive on agreement that SAP system is fully implemented in Pharmaceutical Company.

ANOVA							
SAP_system_is_fully_implemented							
			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		1.105	3	.368	.728	.550
	Linear Term	Unweighted	.429	1	.429	.848	.371
		Weighted	.240	1	.240	.474	.501
		Deviation	.865	2	.433	.855	.444
Within Groups			8.095	16	.506		
Total			9.200	19			

INTERPRETATION:

Here as the significance level is greater than the critical value (0.10) and so we accept our null hypothesis and reject alternative hypothesis. It means that there is no impact of total work experience of employees on agreement that SAPsystem is fully implemented in Pharmaceutical Company.

4) H_0 : There is no impact of time serving in this Pharmaceutical Company on agreement that the employees of Pharmaceutical Company who deal with the SAP system are properly trained.

H_1 : There is impact of time serving in this Pharmaceutical Company on agreement that the employees of Pharmaceutical Company who deal with the SAP system are properly trained.

ANOVA							
Employees_are_properly_trained							
			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		3.200	3	1.067	.610	.618
	Linear Term	Unweighted	.000	1	.000	.000	1.000
		Weighted	.232	1	.232	.133	.720
		Deviation	2.968	2	1.484	.848	.447
Within Groups			28.000	16	1.750		
Total			31.200	19			

INTERPRETATION:

Here as the significance level is greater than the critical value (0.10) and so we accept our null hypothesis and reject alternative hypothesis. It means that there is no impact of time serving in this Pharmaceutical Company on agreement that the employees of Pharmaceutical Company who deal with the SAP system are properly trained.

5) H_0 : There is no impact of time serving in this Pharmaceutical Company on agreement that SAP system is useful for maintaining the availability of purchase order.

H_1 : There is impact of time serving in this Pharmaceutical Company on agreement that SAP system is useful for maintaining the purchase order.

ANOVA							
SAP_for_purchase_order							
			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		2.133	3	.711	.540	.662
	Linear Term	Unweighted	1.029	1	1.029	.781	.390
		Weighted	.273	1	.273	.207	.655
		Deviation	1.861	2	.930	.707	.508
Within Groups			21.067	16	1.317		
Total			23.200	19			

INTERPRETATION:

Here as the significance level is greater than the critical value (0.10) and so we accept our null hypothesis and reject alternative hypothesis. It means that there is no impact of time serving in this Pharmaceutical Company on agreement that SAP system is useful for purchase order.

8.0 Conclusion.

From Observations

- As an advantage to implementation of SAP software the business operations for handling material issue becomes easy and smooth.
- But sometimes problem occurs, like change in consignee, buyer and address. For e.g. some other address or name of consignee is entered instead of the required one, the system does not allow issue the correct bill for the order and dispatch material in the list.
- Manual correction is required at that time. But a little modification should allow issue of other information. For that regular mails are necessary.
- Secondly, the procedures for altering the information of any kind of material to be dispatched have also become easy and smooth after implementation of SAP software by business operations executive.
- But, on the negative side, this system is somewhat lengthy and slow limiting one to do more work in less time and it requires highly skillful works for working on it.
- Whereas delivery reliability has somewhat improved after better coordination of business operations executive and the logistic department.
- Link up problem with Inward data.
- On the other hand, the review of transport systems provides a clearer notion on transport applications in logistics activities.
- The development of logistics is still vigorous in the following decades and the logistics concepts might be applied in more fields.

- From the project I conclude that SAP system with business operation skill can be fully implemented in Pharmaceutical Company for maintaining successful flow of smooth and refined dispatches of the consignment handling operations.

From Survey:

- All respondents are in agreement of the statements that,
- Business operations are useful for maintaining smooth flow of purchase order process and refined dispatches of the consignment.
- SAP system is a basic tool of business operations for maintaining the coordination between the business operations and logistic department.
- There is no impact total work experience of employees on agreement that all the features of SAP system are useful.
- There is no impact of total work experience of employees on agreement that SAP system is fully implemented in Pharmaceutical company.
- There is no impact of time serving in this Pharmaceutical Company on agreement that the employees of Pharmaceutical company who deal with the SAP system are properly trained.
- There is impact of total work experience of employees on agreement that business operations has improved my work efficiency and productivity in maintaining the time to time dispatches.

9.0 SUGGESTIONS

From my observations during my project, I being a business operations executive present a few suggestions to improve the Supply Chain System and logistics in a developing pharmaceutical company.

- Business Operations should be given priority to perform functions in SAP system to increase the efficiency of the company.
- A skilled professional should be enrolled for the complete and exclusive tracking of the consignments and the shipping documents.
- Proper training to sales operations staff who deals with SAP system makes an integral part for effective process for purchase orders and other modifications in the system.
- Improvements to Purchase module should be made like:
 - Non-returnable billing should be done by SAP.
 - The transportation vehicles depending upon the incoterm should be booked or managed in so time by the logistic department so that the dispatches should take place at time.

10.0 References:-

1. Operations research - contemporary role in Managerial decision making “sangeeta agrawal 200, kr Subramanian & s.kapoor” Omkarananda institute of management and technology, rishikesh-249192 (uttrakhand), India, Indian institute of technology, roorkee-247667, India.
2. Theory in international business- Robert Grosse* and Jack N. Behrman**
‘‘Director, Center for International Business, School of Business Administration, University of Miami, Coral Gables, Florida’’
3. Supply Chain Management “Habib and Jungthirapanich, 2009b, 2009c, 2010a, 2010c, 2010h, 2010i” - Applications and Simulations “American International University - Bangladesh (AIUB) Bangladesh”.
4. Proceedings of the Eastern Asia Society for Transportation Studies, Vol. 5, pp. 1657 - 1672, 2005 “Yung-yu TSENG PhD Candidate Transport Systems Centre University of South Australia, Michael A P TAYLOR Director Transport Systems Centre University of South Australia”.
5. BTRE (2001) Logistics in Australia: A Preliminary Analysis. Bureau of Transport and Regional Economics, Canberra,
<http://www.btre.gov.au/docs/wp49_contents.htm>.
6. Carroll, J. (2004) The magical reserve tracing system-RFID. Taiwan CNET,
<http://taiwan.cnet.com/enterprise/technology/0,2000062852,20087071,00.htm>
7. Chang, Y.H. (1998) Logistical Management. Hwa-Tai Bookstore Ltd., Taiwan.

- a. Cooper, M.C., Lambert, D.M. and Pagh, J.D. (1997) Supply chain management: more than a name for logistics, International Journal of Logistics Management, Vol. 8, No. 1, 1-13.
8. Council of Logistics Management (1991) Definition of Logistics.
<http://www.cscmp.org/>
.
9. Drucker, P.F. (2001) Management Challenges for the 21st Century. Harper Business.
10. Fair, M.L. and Williams, E.W. (1981) Transportation and Logistics. Business Publication
Inc., USA.
11. Ho, J.K. (1997). What can contemporary systems thinking offer to logistics management as a
management discipline, European Journal of Purchasing and Supply Management, Vol. 3,
No. 2, 77-81.
12. Krumwiede, D.W. and Sheu, C. (2002) A model for reverse logistics entry by third-party
providers, Science Direct, Vol. 30, 325-333.
13. Potrol (2003) Inner freight transport and city logistics. Potrol transport teaching material.

14. Reynolds-Feighan, A.J. (2001) Air freight logistics. In A.M. Brewer, K.J. Button and D.A.
15. Hensher (eds.), Handbook of Logistics and Supply-Chain Management. Elsevier Science Ltd., UK, 431-439.
16. Rogers, D.S. and Tibben-Lembke, R.S. (1998) Going backwards: reverse logistics trends and practices. The University of Nevada, Reno.
17. Ross, D.F. (1998) Competing through Supply Chain Management: Creating Market winning Strategies through Supply Chain Partnerships. Chapman and Hall, New York.
18. Taniguchi, E., Thompson R.G., Yamada, T. and Duin R. (2001a) Introduction. In City Logistics: Network Modelling and Intelligent Transport Systems. Pergamon, 1-15. Taniguchi, E., Thompson, R.G. and Yamada, T. (2001b) Recent advances in modelling City Logistics. In E. Taniguchi and R.G. Thompson (eds.), City Logistics II. Institute of Systems Science Research, Japan, 3-33.
19. Cooper M. C. and L. M. Ellram. , "Characteristics of Supply Chain Management and the Implications for Purchasing and Logistics Strategy, " International Journal of Logistics Management, (4: 2), 1993, pp.13-24
20. Sang Man Kim, An Empirical Investigation of the Impact of Electronic Commerce on Supply Chain Management: A Study in the Healthcare Industry
21. Subhrajit Chakraborty and Dr. Akshay Zanjurne, Supply Chain Management in Healthcare, Lucknow Wednesday, 21 March 2012.

22. Cherian, Samuel; Kasiviswanadh Gonapa; Chaudhary, P K; Mishra, Ananya, Supply chain dynamics in healthcare services, International Journal of Health Care Quality Assurance 23.7 (2010): 631-42.
23. Acharyulu, G V R K; Shekbar, B Raja., Role of Value Chain Strategy in Healthcare Supply Chain Management: An Empirical Study in India, International Journal of Management, 29.1 (Mar 2012): 91-97