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# THE IMPACT OF FLEXIBLE SUPPLY CHAIN MANAGEMENT PRACTICES ON CUSTOMER SATISFACTION

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## ABSTRACT

*The sole reason of research conducted was to know the impact of flexible supply chain management practices on customer satisfaction. Different literature reviews done in this research emphasized on the fact that the customer satisfaction has create an impact on supply chain practices. In this research focus was on Manufacturer sector. This research was of quantitative in nature and data was collected through close ended questionnaires. The sample size was set to 250. Descriptive analysis, reliability test, correlation and regression tests were run for study. All hypothesis were accepted in conducted research. Outcomes of the study showed the optimistic and significant relation between Flexible SCM Practices on Customer Satisfaction. Supply Chain Management Practices are not taken serious in every organization. To research on this topic, I will show that there is a strong impact of Flexible Supply Chain Management Practices on Customer Satisfaction.*

***Keywords**: Flexible Supply Chain Management Practices, Customer Satisfaction, Supplier Flexibility, Manufacturing Flexibility, Logistics Flexibility, Information Sharing.*

## INTRODUCTION

SCM is a chain which link with the every component of supply process and the manufacturing starting from raw materials to the consumers, and the supply chain of all the firm work as a unified virtual business entity (Ellinger, Shin, Northington & Admas, 2012). The next SCM goes to recycling. (Beamon, 1998). SCM focuses on the supplier side, in what way organization consume their supplier's expertise, its capability and the processes to enhance competitive advantage and within an organization, the more functions are involved, logistics, distribution, manufacturing, materials, and transportation. Gunasekaran, Patel & Tirtiroglu (2001) classified SCM development into two categories, the procurement and the logistics categories in order to trace the

SCM development. The competition has been taken a next level of change. Now the competitions are not in between the organizations, but it is between the supply chains (Ellinger, Shin, Northington & Admas, 2012).To advance the usefulness and competence of the organization's supply chain, it will add value in your supply chain, in order to remain in a competition, (Singh & Sharma, 2014). Stakeholders of an organization involves customers, the most important stakeholder of any organization. Customers are the main reason of your success in your business. To fulfill your customer's need, you have to add value in your supply chain. Increase the efficiency in order to satisfy your customers. And in order to satisfy the customers, the quality of your supply chain must be prove (Beamon, 1998). The article is based upon SCM practices to know the impression and relationship of flexible SCM practices on customer satisfaction. The article covers maximum aspects of SCM to know the impact. The research methodology has been used in this study which moves onto the data collection. In this article the observations are based on secondary data which is mainly collected through websites, articles and journals. This data has been thoroughly studied to get to the relationships among variables. The article is based upon four hypothesis. With increasing competition globally, the Supply Chain Management Practices has evolved to a level which is now linking together tiers of supply chain i.e. the suppliers and customers. Every organization in almost every sector is trying to adopt SCM Practices for achieving competitive advantage which is called as enabler in Supply Chain. The key task in SCM is considered as to plan and control different business processes from the initiation point i.e. raw material from suppliers to consumption point which is consumer for maximizing value for consumers. To achieve exceptional performance from the entire supply chain, we need to manage the activities within the supply chain and coordinate between them accordingly. Therefore, supply chain integration (SCI) is measured as one of the effective means (Chu, Chang & Huang, 2011). Various investigators have acknowledged SCM Practices main four factors; Supplier capabilities, Manufacturing capabilities, Logistics capabilities and information sharing are the major contributor in any organizations success for increasing customer value. Organization's major success depends upon its capability to perform in the market environment. To achieve customer value, company must possess with efficient capability in suppling, manufacturing and logistics side, as these are the core of supply chain while with effective flow of information. Moreover source, make and deliver as discussed in SCOR model; more they are efficient and stronger the company's supply

chain would be better and the flow of information lessen the chances of miscommunication. Due to changing needs of customer and changing market environment, fast changing trends it is now important to bring flexibility in working process ever than before to compete in the market and to achieve customer satisfaction. Further it has been suggested that by the support of real time information firms are capable to manage demand of customers effectively. With the increased flexibility levels firms may able to grow additional cooperative relations with clients and suppliers grounded on keen understanding of demands that makes supply chain of a firm to react more rapidly and excellently to shifting consumer and suppliers need. Following are the four factors upon which this study is based upon to achieve customer satisfaction.

- Supplier Flexibility; Satisfying customers specially by offering item information to them, getting orders from them, linkage with customers to oversee demand and making requested item delivery organized. Shared visions lead to trust and flexibility in new product and delivery (Chu, Chang & Huang, 2011).
- Manufacturing Flexibility; Manufacturing is typically internal and difficult to transfer therefore it can be the core activity of company that is why it is valuable. Bringing flexibility in manufacturing dimension of the organization to strengthen operations on the basis of which company be able to compete (Chavez, Wantao Yu, Jacobs & Feng, 2017).
- Logistics Flexibility; The capability to react rapidly and resourcefully to client's changing desires in terms of inbound and outbound supply, support and services (Zhang, Vonderembse & Su Lim, 2005). It helps organization to satisfy demand simultaneously rather than forecasting and then reacting to the orders.
- Information Sharing; It is the capability of an organization to share information with supply chain partners in a very effective and efficient methodology. It is most imperative tool to gain integrated and coordinated supply chain.

Globally the supply chain has evolved to its fourth stage i.e. extended integrated enterprise, where supply chain is completely integrated within the organization as well as with the suppliers and their suppliers and on forward side to retailer to distributers to consumers. In order to this, their supply chain practices are getting higher. They have more resources to fulfill the customer

demand in an efficient way. Customer satisfact ion is considered to be the key factor for getting the competitive advantage over the rivals globally but in Pakistan we are not able to achieve the customer satisfaction and customer loyalty for our business in an efficient way due to not focuses on the supply chain management practices because we are lagging way too far from the world in terms of Information Sharing in Supply Chain Management. If we continue to ignore the fact about customer satisfaction factor, we will find it more and more difficult to complete in the global market. Thus it is necessary to find the effectiveness of information sharing, flexibility in supply, manufacturing and logistics dimension of the supply chain management practices on customer satisfaction.

## THEORETICAL FRAMEWORK

Managing supply chain practices today has become complex ever than before. Businesses today are facing a lot of pressure in order to improve their performance so that they can deliver the best possible output to the consumer and to remain competitive in the market. At first customer weren't clearly aware of their needs, demands and wants. The process was typical starts from supplier or manufacturer or service providers and ends to the customer receiving the product or service without putting any extra effort, where suppliers to customers were satisfied with it. But as the time passes need emerges it clarifies that there is need to add more value to the process. As awareness rises customer now has become more and more conscious about their needs, in order to satisfy them flexibility is required throughout the chain, every department in their own area should try to become more and more flexible in order to provide a better output. Differentiation between companies now merely depends upon their capability to manage numerous difficulties in order to control the price and provide better quality service, therefore this attribute justifies that today competition is not among companies but among their supply chains (Ellinger, Shin, Northington & Admas, 2012). Good supply chain not merely targets to fulfill their customers' needs but wants to amuse them by their performance which has increases the competition and options for the customer. Flexibility is a difficult, multidimensional and inflexible to capture idea (Sethi & Sethi, 1990). Flexibility in terms of customer's perspective can be define as usage justifying the cost, level of quality, expanding the range of product variety, increasing the product or service availability, able to respond quickly, lesser lead time, innovation or even after sales service. For customer's perspective companies need to put cross functional efforts in order to exclude bottleneck,

increase responsiveness and to gain competitive edge (Mark & Su-Lim, 2005). Flexibility from organization's perspective could be lowest possible cost, minimizing the internal production structure, reducing capacity constraint, reduce freight cost, and reduce uncertainty through better control, and upgrade technologies and most importantly to be efficient but without compromising customer preference.

**Flexibility in Supply Chain**

In this era of globalization as needs and requirement of customer are changing very quickly also product lifecycle has been shorten companies are now force to lessen cost and lead time, increase the consistency of item by altering their development time to time same is the reason that SCM has grown into vital part of almost every business plan, more strengthen the supply chain is more effective and improved results would be. Supply chain to become approachable towards marketplace needs requires to optimize available resources therefore flexibility in supply chain is important for organization's success. (Singh & Sharma, 2014) The size of supply chain of every other organization differ from one another but there are some core decisions made at critical stages from supply chain perspective that are Planning. Sourcing, Manufacturing, Delivering and Return. Major level of flexibility of a supply chain also may depends upon flexible sourcing, flexible manufacturing and flexible logistics and information sharing.

**Supplier's Flexibility**

In SCM, the flexibility of supplier can be taken as an instrument to tackle uncertainties. Suppliers are flexible when are able to provide more than the activity for which they are originally hired (Chan, Bhagwat & Wadhwa, 2014). From organizations perspective supplier flexibility can be presented in a way that organization is capable enough to have multiple supplier for same operation in this way they're flexible enough to get that task completed from an alternate supplier of their choice (Chan, Bhagwat & Wadhwa, 2014). In order to have supplier flexibility an organization may add alternative supplier rather than who are currently in the supply chain to perform the operation or organization can increase the flexibility of existing supplier in supply chain to proceed other than particular product or task. Although by growing the numbers of suppliers it is possible that quantity supplied per supplier can be decreases due to which it may results in not availing quantity discount, also increase in number of supplier may also increases

the complexity to manage, however rising the flexibility of supplier who already exists possibly manage this drawback and adds some advantage like with the rising demand of flexible manufacturing system in quickly shifting variety of product it is more suitable to go with existing suppliers that may also benefit in using the additional manufacturing dimensions of the supplier (Chan, Bhagwat & Wadhwa, 2014). From last few years researchers have given attention towards role of supplier's development to customer satisfaction (Chu, Chang & Huang, 2012). Supply chain management is better recognized due its capabilities to lessen lead time by incorporation and logistics management, although it has several other scopes like enhancing performance of SC partners. As per previous studies part of production has moved from producers of products and services towards supplier (Chu, Chang & Huang, 2012). Through flexibility of supplier the purchaser can react to the fluctuations in marketplace due to shorter life cycle of product. According to Chan, Bhagwat, and Wadhwa (2014) flexibility is dynamic for the achievement of supply chain, as it occurs in an uncertain conditions. In order to gain competitive edge and to dominate in market it is important to create goodwill among customers same is the reason that it is essential to deliver best possible product and service, as supply chain starts from supplier companies with this goal need to focus on supplier development (Sanchez, 1995). In supply chain management there is an actual or original supplier of the product, because of manufacturing flexibility presented in suppliers the company may also go for substitute supplier between their existing suppliers rather than the original one for that particular product. Along with business, companies also need to get involve in supplier development, as per previous studies if concentrated on cluster methodology for supplier development in close vicinity for more control and vertical incorporation in supply chain the intentions can be implementation of JIT, reduction in freight cost and lead time, to reduce uncertain situation, transfer of technology if capable enough, for close synchronization, to reduce capacity constraint and importantly utilizing advantages of supplier's manufacturing flexibility. The cluster approach for flexible supplier development in supply chain management may help in better control and synchronization of activities such as supply planning, production control, logistics movement, demand planning and etc. (Sanchez, 1995). If integration with supplier is smart and strong it enables organization to take more knowledgeable decisions and avoid bottle neck and uncertainties. Strategic supplier partnership relationship exercises assume an imperative job in SCM (Zhang, Vonderembse, & Lim, 2003). Through cozy

association supply chain partners may stake risks and compensate, and retain the connection on long term grounds (Cooper & Ellram, 1993).

**Manufacturing Flexibility**

Manufacturing capabilities has most strong association with business performance. As these activities are performed within the company which are not easy to replicate and allocate so they become valuable and inimitable. At first manufacturing capabilities were considered as dimension on the basis of which companies compete therefore more focus was on decision and practices regarding the operational structure (Chavez, Yu, Jacobs & Feng, 2017). Before manufacturing capabilities were referred as operating capabilities and outcome while as per present studies refer it as manufacturer's definite competitive asset against major competitor in market (Chavez, Yu, Jacobs & Feng, 2017). Manufacturing capabilities are basically related to operational management but is also utilize in additional jobs like purchasing therefore can be protracted to supply chain. In order to make your manufacturing capabilities more flexible it is important to have closer supplier relationships like product quality is most significant and core component for supply chain management and closer relationships with supplier are result in to attain product quality improvement (Sanders, 2014). Flexibility in manufacturing can be referred as a capability to adjust and react to variations in manufacturing product's capacity in order to provide consumers separate action or in order to present innovative product or service in the market place (Chavez et al, 2014). Therefore flexibility in manufacturing entails the capability to react to unique desires and product or service modernization to gain range of manufacturing results. Organizations are now also engage in utilizing big data to facilitate greater level of overall network coordination, beside this to achieve the formation of competencies that permit organization with firm and effective reaction to consumer requirements (Sanders, 2014). Quality has a major optimistic influence on satisfaction of customers. Typically studies are more focused on that quality is an element that is seen as point to where product meets production specification, however it is also suggested that other than quality there are more aspects on upon which manufacturing standards may relay like functionality, features, and fitness for use or even styling. Although it is another debate that what customers perceives as a quality, as for customer quality can be in fitness for use or features or product functionality. When actual data flows through the supply chain it permits company in a way to lower merchandise defects and wastages with in manufacturing area (Lee et al, 2013). Quality is typically said to be

optimistic provider in achieving customer satisfaction (Chavez et al, 2014). A cost capability involves producing product and service at a level of cost where product or service provided is priced appropriately to satisfy customer while with a profit margin for organization (Slack et al, 2009). It is also suggested that manufacturer are apprehensive to somewhat extend with cost (Ward et al, 1998) therefore cost can be said as very substantial competency of manufacturing meanwhile other capabilities effect it. Furthermore sharing of upgraded information among supply chain functions known to be allied with key cost enhancement (Jones & Towill, 1997). On the other hand flow of poor quality information may result in rise in total cost for responsive supply chain that may leads to chances of loss of customers (Rossin, 2007). More the unnecessary indirect channels, more it will lead to lower customer satisfaction. In supply chain management channels should be design in a way that it should be related to satisfaction. Manufacturers either can distribute their product directly or indirectly through use of different channels such as distributors, brokers and retailer. Usually it is suggested that more the indirect chancel means longer the chain where far customer is from originator there is chances of more complexity, time taking means from the producer of the product to customer (Stern & El-Ansary, 1992). Below such condition, might be chances of loss of customer base as manufacturer may fails to meet customer expectation that leads to lower level of satisfaction. Channels with in supply chain must be configured where it must influence customer service-satisfaction link. As per channel theory concept more the subsidiary channel is lesser power manufacturer devises above marketing dimension which includes price, promotion strategy, outlet types due to numbers of intermediaries those are involve to make the product sell to customer (Cateora, 1990).

**Logistic Flexibility**

Logistics flexibility involves major attributes that are range, mobility and consistency which are blend with the component of flexibility that are demand management and purchasing flexibility, the blend of attributes and components cofounded logistics flexibility concept (Upton, 1995). It is about organizational capability to react rapidly to the requirement for distribution, assistance and facilities that is achieve through planning and governing the movement also storage of mechanisms, parts, inventory also associated info from point of beginning to the point of depletion. It involves movement inside and outside organization. The synchronization and strong linkage between planning, sourcing, production and distribution enhance firm's capability to

react to the changing requirements of the marketplace. Flexibility in logistics involves four constituents those are supply flexibility and purchasing flexibility that can be categorized internal competence while other two are distribution flexibility and demand management flexibility that can be categorized as external capabilities. As per Day (1994) competence could leads to straight and optimistic impact on capabilities. In addition to this demand management and distribution are outward element of opposition which possibly directly leads to customer satisfaction. Firm is set to have supply flexibility when is able to deliver range of inbound supplies for the rapid production. Supply flexibility in logistics have an indirect impact customers through supplying materials on time to satisfy customer orders. Like supply flexibility, purchasing flexibility may also have an indirect impact on customer satisfaction through excellence, speediness and rate of the purchased material where again inbound logistics plays an important role to make timely delivery of purchased material in right condition. On the other hand demand management flexibility and distribution flexibility are outbound element of the logistics that involves variety of needs of customers that company is able to serve and types of packaging & mode of transportation respectively. The outbound logistics flexibility has a direct impact on customers. Distribution flexibility is capability to maintain the merchandise, boxing, warehousing and distribution of products in order to satisfy consumer requirements efficiently (Zhang et al, 2002). Distribution flexibility includes parts, product and flow of information also it requires smartness in actions like packaging, warehousing, and outward transportation. The mentioned capabilities must be strategically planned as they are directly visible to customer and create an impact through delivery, speed and quality. While consistency is view through quality and delivery of various out going products. Firsthand experience of customers are based on performance of distribution system. Demand management flexibility is known as the capability of the organization to react to the number of consumer requirements intended for services, time of delivery, price, and quantity rapidly and resourcefully. In order to accomplish this companies promote shortest customer interaction, gather data about their demand, utilize customer-supplied information to develop and distribute products (Schneider & Bowen, 1995). Services like billing, repairing and setting up products at client's location, getting and inspecting deliveries and enhancing products features are part of demand management.

**Information Sharing**

It is the capacity of the organization to create awareness by sharing

information with supply chain associates in an operative and capable methodology. Operative information sharing is measured as one of the most imperative capabilities of supply chain progression. (Allen & Wilburn, 2002) specified that information ought to be interoperable. It has also been seen the technical movement of internet what's more, e- com offers a novel chance to generate a "smart" incorporated supply chain (Yee, 2005). (Allen & Wilburn, 2002) specified that sharing of information as the entrance to remote data among professional partners along these lines allowing them to display the growth of products and orders as they go over different practices in the supply chain. Information sharing has now shown the ability to substitute physical movement of goods in a way that with the advancement in information technology supply chain partners are able to work with tight coordination in order to optimize supply chain's wide performance. Information sharing is the basic enabler of tight coordination among partners that has been greatly supported by advance information technologies. In today's vibrant market environment information sharing has become essential in order to deal with rapid changing customer preferences that has increased customization of products and modification of demand mix (Yee, 2005). To cater this trend of customization and demand mix that has create an influence on supply chain performance companies need to understand this and should properly react to the demand in order to satisfy customer. As discussed that information sharing in supply chain may create influence on several customer related decision such as; it may impact total customer wait time, can affect customer order incongruity, information sharing among supply partners may significantly also influence product stock age and process time, and can also impact on transit time.

**Customer Satisfaction**

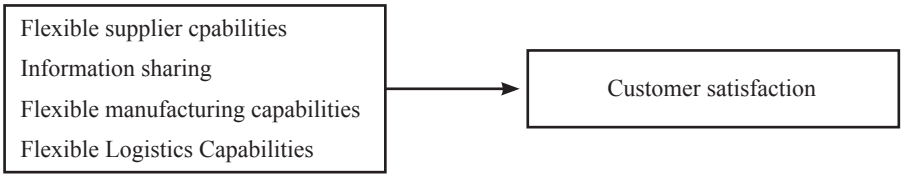
The capability of the firm to produce advanced levels of customer satisfaction is view that create differentiation and same is the reason that it has grown into a crucial component for numerous organizations and their commercial strategy. Customer satisfaction can be seen as a measure or tool that how product or service provided by firm are performing that whether they are able to fulfill or surpass customer expectation (Fornell, 1992). Customer satisfaction metrics are able to indicate that how well and successful company is at generating and communicating products to marketplace (Anderson, Fornell, & Lehmann, 1994). Improving customer satisfaction levels are essential to firms because customer satisfaction has an influence on monetary enactment (Anderson, Fornell, & Lehmann, 1994). From microeconomic view, customer

satisfaction can be linked with rise in market stake and profitability (Anderson et al, 1994). Customers search for new ranges, improved services, advanced quality, and quicker delivery. The connection with consumers has bowed a deliberate matter for the present businesses. (Fornell, 1992), who observe that organizations would infer better results on the off chance that they stay, occupied with collaborative relationship with customers. Customers usually in every organization are on top priority for the management same is the reason that higher customer satisfaction achievement has become key element for every business, customer satisfaction maybe considered as a tool or measure that how well company's product or services are performing in the market, does it meet exceed or lesser than expected (Ellinger, Shin, Northington & Admas, 2012). Today we are living with those trends that changes every fast that has create a big challenges for companies to remain connected with their customers and tries to make uncertain environment certain, in order to succeed in increased uncertainty, companies must quickly respond customer changing needs (Mark A & Jeen Su-Lim, 2005). To make customers feel special by providing them differential design, product, delivery it requires companies to apply flexibility from supply chain viewpoint and process perspective (Mark A & Jeen Su-Lim, 2005).

**Hypothesis Development**

Flexible Supply Chain Practices

Figure 1. Conceptual framework – The impact of flexible SCM practices on customer satisfaction.




By using above mentioned studies as a reference subsequent Hypothesis are created to inspect the impact of flexible supply chain management practices on customer satisfaction

H1; Flexibility in supplier capabilities increases customer satisfaction

H2; Information sharing leads to increased customer satisfaction

H3; Flexibility in manufacturing capability dimension leads to customer satisfaction

H4; Flexibility in logistics capabilities increases customer satisfaction

## METHODOLOGY

### Research Approach & Type

Research design used here was survey. Research conducted was cross-section, it examine sample taken from the population at a particular timeframe. The research was accompanied from industrial employees, part of manufacturing related companies. As targeted audience was in huge number therefore to extract sample convenient based sampling was used. Prime data collection was collected from respondent with the help of questionnaire which was administrated with the use of selected companies. The questionnaire contained five point Likert scale structured questions. Principled contemplations kept from side to side by every one of the means in direct of current investigation, for instance, intentional support, withdrawal whenever, regarding participant's perspectives and protection so participants' classification was not broken. The participants' assent revelation was looked for before the meeting because of ethical reasons and as it included intentional investment. Privacy was seen in securing all information gathered inside the extension.

### Research Design

This article was designed in such a way so as to get maximum info from sources within given time limit. This research is quantitative in nature. Hypothesis for each factor of supply chain was formed to define the impact of flexible SCM Practices on Customer Satisfaction so, there were four hypothesis created in this research. Questionnaire was formed in order to collect the primary data that involved questions related to all five factors of supply chain. Questions were designed in such a way so as to build a connection between SCM Practices and customer satisfaction. Data was also collected by various discussions and observations because it's quantitative research. After collecting the data different statistical tools were used to analyze it.

### Research Population

As employees of different organizations of manufacturing firms were involved here to participate, therefore population was in large number. Employees who are actually responsible for making decisions are management level employees who were part of the study, as we can't take responses from lower level employees who are not aware of supply chain or who have no authority.

**Sample Size & Sampling Technique**

Sample size was drawn of 250 respondent approx. on the basis of convenience therefore 250 questionnaires were given out to collect data for the study. In total 25 questions were asked from respondent. In this research, convenience sampling was undertake for collection of data as population was in a large number. Convenience sampling is a non-probability based sampling where population is huge can't be calculated in exact numbers, here data is extracted from respondent whoever is easily available from the population.

**Research Instruments**

Research instrument for primary research consists of a questionnaire which is crafted on the basis of five Likert scale;

- Strongly Agree (5)
- Agree (4)
- Neutral (3)
- Disagree (2)
- Strongly Disagree (1)

**Data Analysis Method**

The questionnaire addressed all the variables sensibly for getting response from our sample regarding the impact of flexible supply chain management performance. SPSS based software was used for the purpose of analysis of the collected data. Reliability and regression check were run for data analysis. Outputs which were obtained after applying tests were presented in the form of tables and further interpretation was done to explain the significance of the obtained results.

## RESULTS

Four factors upon which study is based upon; supplier flexibility, manufacturing flexibility, logistics flexibility, and information sharing in manufacturing industry. Customer satisfaction is also measured in the likewise. There were many areas which can be covered for our research but due to some constrains we focused on selected areas for each driver. The conceptual framework that I have presented consists of four hypothesis relationships which include Information Sharing, Supplier Flexibility, Manufacturing Flexibility, Logistics Flexibility and Customer Satisfaction Variables.

## DEMOGRAPHIC STATISTICS

Table 1: Statistics

| | | Gender | Age | Educational status |
|---|---|---|---|---|
| N | Valid | 252 | 252 | 252 |
| | Missing | 0 | 0 | 0 |
| Mean | | 1.48 | 2.26 | 2.52 |
| Median | | 1.00 | 2.00 | 3.00 |
| Std. Deviation | | .500 | .790 | .665 |
| Variance | | .250 | .624 | .442 |

The statistics of the demographic represents the respondents of the study which highlights the characteristics of the respondents. The questionnaire of the study represents following demographic questions along with frequencies of responses.

Table 2: Gender

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1 | 132 | 52.4 | 52.4 | 52.4 |
| | 2 | 120 | 47.6 | 47.6 | 100.0 |
| | Total | 252 | 100.0 | 100.0 | |

The table above mention represents the gender of 252 respondents. Most of them are male, as mention above 52% are male while 47% are female.

Table 3: Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1 | 12 | 4.8 | 4.8 | 4.8 |
| | 2 | 192 | 76.2 | 76.2 | 81.0 |
| | 3 | 30 | 11.9 | 11.9 | 92.9 |
| | 4 | 6 | 2.4 | 2.4 | 95.2 |
| | 5 | 12 | 4.8 | 4.8 | 100.0 |
| | Total | 252 | 100.0 | 100.0 | |

The table mention above represents that there were 252 respondents and mostly they were from the age of 23 to 26, they were around 76 % of the total respondent. However a lower frequency of the responses were of age bracket 31 to 35.

Table 4: Educational Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1 | 12 | 4.8 | 4.8 | 4.8 |
| | 2 | 108 | 42.9 | 42.9 | 47.6 |
| | 3 | 120 | 47.6 | 47.6 | 95.2 |
| | 4 | 12 | 4.8 | 4.8 | 100.0 |
| | Total | 252 | 100.0 | 100.0 | |

Anothere demographic factor here was analyze that is education status of the respondent, to know whether respondent is a graduate, post graduate, under graduate or other than this. The above mention table represents that most participants were of post graduated status that were of 47% of all.

**Descriptive Analysis**

Table 5: Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| CS | 252 | 2.00 | 5.00 | 4.3333 | .77819 |
| SF | 252 | 2.00 | 5.00 | 4.2143 | .83363 |
| IS | 252 | 2.00 | 5.00 | 4.0000 | .75743 |
| MF | 252 | 3.00 | 5.00 | 4.0238 | .67351 |
| LF | 252 | 2.00 | 5.00 | 3.9722 | .71636 |
| Valid N (list wise) | 252 | | | | |

The above table of descriptive analysis displays the central tendency and variation of every variables; customer satisfaction, supplier flexibility, information sharing, manufacturing flexibility and logistics flexibility.

**Reliability Analysis**

Reliability test show that how closely each variable is related to other variable. In reliability test we look at Cronbach's alpha value as it tells the internal consistency of the variable within our model. Reliability test was run on the collected data to identify the internal consistency of our variables.

Cronbach's alpha should be above than 0.60 for accepting any model, therefore with our results we can see that the internal consistency of our variables in model is high and thus it is acceptable.

Table 6: Summary of Reliability Analysis

| Variables | Cronbach's Alpha | No of Items |
|---|---|---|
| CS | 0.807 | 5 |
| SF | 0.794 | 5 |
| IF | 0.864 | 5 |
| MF | 0.781 | 5 |
| LF | 0.729 | 5 |

Separate reliability test were run for each variable we have in this study and its summary is been shown in above mentioned table. As we know Data with a reliability index above than 0.60 is always significant and reliable .as we lookout on the table given above all variable are having Cronbach's alpha values above then 0.60 which makes constructs more reliable.

## CORRELATION

Correlation analysis is used to assess the limit to which the variables have an association with one another. In this article the correlation test has been conducted to measure the linkage among Customer Satisfaction, Supplier Flexibility, Information Sharing, Manufacturing Flexibility and Logistics Flexibility. The result of the correlation in this study has used Pearson Correlation which is presented below:

Table 7: Correlations

| | | CS | SF | IS | MF | LF |
|---|---|---|---|---|---|---|
| Pearson Correlation | CS | 1.000 | .848 | .730 | .441 | .503 |
| | SF | .848 | 1.000 | .644 | .417 | .390 |
| | IS | .730 | .644 | 1.000 | .656 | .558 |
| | MF | .441 | .417 | .656 | 1.000 | .571 |
| | LF | .503 | .390 | .558 | .571 | 1.000 |
| Sig. (1-tailed) | CS | . | .000 | .000 | .000 | .000 |
| | SF | .000 | . | .000 | .000 | .000 |
| | IS | .000 | .000 | . | .000 | .000 |
| | MF | .000 | .000 | .000 | . | .000 |
| | LF | .000 | .000 | .000 | .000 | . |
| N | CS | 252 | 252 | 252 | 252 | 252 |
| | SF | 252 | 252 | 252 | 252 | 252 |
| | IS | 252 | 252 | 252 | 252 | 252 |
| | MF | 252 | 252 | 252 | 252 | 252 |
| | LF | 252 | 252 | 252 | 252 | 252 |

The table above shows that customer satisfaction and supplier flexibility have a correlation value 0.848 which shows that the association between both the construct is high. It shows that flexibility in supply dimension has a strong impact on customer satisfaction. Similarly it is also shows the higher correlation among satisfaction of customer and information sharing variables. The correlation value is found to be 0.730.Therefore better the flow of information more efficiently company may perform to satisfy customer. Then comes the correlation between customer satisfaction and manufacturing flexibility, it is lower as compare to the correlation of customer satisfaction with other variables, it shows correlation of 0.441 but still create an strong impact. The correlation between logistics flexibility and customer satisfaction is around 0.503 which indicate a good association between customer satisfaction and logistics flexibility.

## REGRESSION

The regression check was taken to know the impact of flexible SCM practices through five variables. The analysis for regression is shown below

Table 8: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .889[a] | .791 | .788 | .35861 |

*a. Predictors: (Constant), LF, SF, MF, IS*

The above mention table shows R square value which is 0.791 which indicated that the impact of Flexible Supply Chain Management Practices is around 79%. Adjusted R square value is more purified value which shows how much variables in our model explains other variable which is considered as significant value.

Table 9: Anova[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 120.236 | 4 | 30.059 | 233.744 | .000[b] |
| | Residual | 31.764 | 247 | .129 | | |
| | Total | 152.000 | 251 | | | |

*a. Dependent Variable: CS*

*b. Predictors: (Constant), LF, SF, MF, IS*

The table of anova represents the significance value of .000 that indicates the regression model is suitable to predict the results.

Table 10: Coefficients

| Model B | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. Lower Bound | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | Std. Error | Beta | | | | Upper Bound | |
| 1 | (Constant) | .443 | .158 | | 2.797 | .006 | .131 | .755 |
| | SF | .594 | .036 | .636 | 16.712 | .000 | .524 | .664 |
| | IS | .323 | .048 | .314 | 6.689 | .000 | .228 | .418 |
| | MF | -.129 | .047 | -.112 | -2.744 | .007 | -.222 | -.037 |
| | LF | .155 | .040 | .143 | 3.848 | .000 | .076 | .235 |

*a. Dependent Variable: CS*

The table here mentions shows the significance of variables: the customer satisfaction has significance of .006 which is lower than the threshold. The significance to supplier flexibility is 0.00 which means that it is acceptable. Supplier flexibility do has an impact on customer satisfaction. Then information sharing significance also lies within the range hence is acceptable i.e. 0.00. Manufacturing flexibility shows significance of 0.007 which is good as it is within the range of acceptance also its coefficient value shows the reverse relationship. Lastly logistics flexibility also meets the criteria having significance level of .000. When the value of significance is below than 0.05 then there is a probability that the constructed hypothesis can be true. Hence it proves that flexible supply chain management practices do have impact on customer satisfaction.

## SUMMARY OF HYPOTHESIS TESTING

Table 11: Summary of Hypothesis

| S.No. | Hypothesis | Status | Sig. Value |
|---|---|---|---|
| 1 | Flexibility in supplier capabilities increases customer satisfaction | Accepted | .000 |
| 2 | Information sharing leads to increased customer satisfaction | Accepted | 000 |
| 3 | Flexibility in manufacturing capability dimension leads to customer satisfaction | Accepted | .007 |
| 4 | Flexibility in logistics capabilities increases customer satisfaction | Accepted | .000 |

All variables are accepted summarizing that flexible SCM practices has impact on the satisfaction level of customer.

## DISCUSSION

### Hypothesis 1

Results obtain from our analysis shows that there is an optimistic impact of flexible SCM practices from supplier's perspective on customer satisfaction thus it leads to increased satisfaction from customer. With the help of SCM practices, factors like Strategic supplier relationship, supplier's involvement, supplier development has been able to increase flexibility from supplier's end and has been more accurate than it was before. Sharing of information between partners was one of the major problems in supply chain due to which service was in decline which leads to poor satisfaction at customer end. Problem seems to reduce to some extend with the implementation of proper Flexible SCM practices.

### Hypothesis 2

As per results obtained from our analysis of data which shows the positive impact of information sharing on customer satisfaction. Through the help of supply chain management practices, Information sharing has been more accurate than it was before. Information sharing which was one of the major problem in supply chain because of which service decline, excessive inventories, sales decline, inaccurate planning of capacities, deprived production schedules, late deliveries, growing logistics cost and etc. problems were also rising. These problems reduce with the implication of flexible supply chain management practices. As mention above if implications of SCM practices are controlled and sharing of information among factors is accurate, it will eventually result in improved performance of entire supply chain and increased flexibility.

### Hypothesis 3

Results obtain shows the positive influence of flexible manufacturing capabilities on satisfaction of customer. As discussed per (Chavez, Yu, Jacobs & Feng, 2017) in their research paper they conducted it was shown that manufacturing capabilities has positive relationship with customer satisfaction. Similar results are shown as per collected data. Manufacturing capabilities has most strong and prominent association with firm's

performance. With help of bringing flexible practices of supply chain management manufacturing ability has been increased than it was before. It was observed that more focused towards cost and quality dimension increases the level of flexibility which helps in satisfying customer, also short and only needed channels of distribution helps to avoid distortion between manufacturer and customer.

**Hypothesis 4**

As per results through data analysis it indicates the positive impact of logistics flexibility on customer satisfaction. As per (Zhang, Vonderembse & Su lim, 2005) research on logistics flexibility it shows the positive, durable and direct association among flexible logistics capabilities and consumer satisfaction. In order to bring flexibility, both inbound and outbound logistics need to be accurate, as outbound logistics have direct impact on customer satisfaction while if inbound logistics isn't efficient enough it will eventually create trouble for outbound logistics.

## CONCLUSION

This research delivers observed validation aimed at framework that categorizes four important dimensions of Flexible SCM practices and describes the connection among SCM practices, customer satisfaction. It scrutinizes four hypothesis.

Since we have tested the impact of SCM Practices onto the customer satisfaction statistically and it's been concluded that Flexible SCM Practices does contribute in enhancing the performance of supply chain. With further research this study can also be generalized to other sector as well. Our four hypotheses related to SCM Practices were tested and proved. Hypothesis displays the positive impact of flexible supply chain practices on customer satisfaction. As per statistics it is extract that supplier flexibility has the most impact.

Current research is done to evaluate the impact of SCM Practices factors on Customer Satisfaction. It is necessary to implement SCM practices on every manufacturing organization. The factors of SCM practices are used to enhance efficiency and effectiveness of supply chain management.

As of the examination outcomes, it concludes that flexible SCM practices improve customer satisfaction. Consequently there is requirement

for manufacturing industry to consider creating flexible supply practices, flexible manufacturing practices, flexible logistics practices and practices of information sharing. Based on the theory according to which customer satisfaction upgrades loyalty of customer, shows the requirement for organizations to develop the nature of company's services and indulgence customers as organization's main need with the goal that they wind up faithful to the company and furthermore prescribe the association's offerings of products to other people.

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