



## **Impact of Supply Chain Capabilities on Supply Chain Performance: Moderating Role of Organizational Innovative Climate**

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### **Abstract**

*The purpose of this study is to examine the relationship between supply chain Information sharing, supply chain coordination, supply chain activity integration, supply chain responsiveness and supply chain performance. This study will also examine how organizational innovative climate is moderating the relationship between supply chain capabilities and supply chain performance in case of manufacturing industries of SITE area Karachi, Pakistan. Non-probability sampling method will be utilized for this research study following the convenience sampling approach. In view of the researcher's comfort and limitations, just those workers will be incorporated as the respondents in our research study, who will be easily accessible and effectively receptive in the SITE area of Karachi, Pakistan. Besides, the research will also follow the snowball procedure. This research study had proposed valuable outcomes from the chosen predictors on overall supply chain performance. By incorporating supply chain capabilities like information technology management managers can create a competitive edge for their organization because of the fact that such capabilities are difficult to imitate, which reduce the risk of competitors using the same techniques more difficult. Information technology has already revolutionized, it has made possible for the managers to get their hands on quality information on right time to make strategic decisions and achieve goals set by the top management. This research study had proposed important results from the picked indicators on overall supply chain performance. By joining supply chain capabilities like information technology management supervisors can make a serious edge for their association in light of the fact that such capabilities are hard to emulate, which diminishes the danger of contenders utilizing similar procedures progressively troublesome. Information technology has just upset, it has made feasible for the administrators to get their hands on quality information on the opportune time to settle on vital choices and accomplish objectives set by the top management.*

**Keywords:** SCM capabilities, supply chain coordination, Supply chain integration, supply chain performance

## **INTRODUCTION**

The idea behind choosing this significant topic of performance of supply chain in the manufacturing industries of Karachi, Pakistan is to distinguish the key capabilities that drive a firm to build its supply chain performance along with certain value adding features, and to check how organizational innovative climate moderates the relationship in order to strengthen the relation of capabilities and performance. Supply chain capabilities not only assists an organization to accomplish its objectives but also helps in giving better product and services as compare to the competitors and provide an edge for competition. In this way, a better supply chain helps an organization to capture highest market share and maintains customer contentment and trustworthiness. To demonstrate the significance of the research, a set of close-ended questionnaire were spread among the managers of various manufacturing companies of Karachi Pakistan, for this a quantitative methodology is being utilized and data was gathered through

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chosen questionnaire following a positivist methodology. A positive set of reaction was given by managers in regards to supply chain capabilities in particular industry.

In the traditional era of business the most significant components of business management were finance, marketing, sales and human resource management while the least thought was given to distribution of goods/services and information flow through open markets. Consistently expanding rivalry has motivated companies to not just develop their inner operations, for example, controlling process and stock management but also integration in their supply chain process. In the past years, loads of studies have been led and much has been written on company's development and performance, which is legitimately affected by supply chain management. Business process integration can help in value creation for the customers; this would bring customers and suppliers in the value creation chain (Porter, 1985). Supplier integration directly affects competitive operational performance, it make firm's operations responsive and agile (Tan & Tracey, 2007). Integrating various departments of supply chain such as logistics, warehousing, distribution has led firms to achieve synergy which has added on the whole of supply chain performance (Mentzer, 2012). However, to ensure the availability of products and services in the market various activities and processes are required which management of supply chain sees, and all its functions can be observed as a single entity if they are integrated (Mukhopadhyay & Kekre, 2002).

It has been highlighted in earlier studies that suppliers are less benefited from inter organizational systems. Initially Information technology was only helpful in automation of manual processes which included ordering etc. later development in information technology made communication easier and maximizes information sharing which included the suppliers also (Icasati-Johanson & Fleck, 2003). The relationship between information system and performance of the firm is not direct (Santhanam & Hartono, 2003). According to a research study conducted by Forrester Research, in US firms are totally relying on Information technology because of the advantages it brought along, such as reduced lead time, firms responsiveness, robustness, higher performance throughout the supply chain, timely delivery of products to final consumers and their satisfaction (Christopher, 2000). Flow of information has the same importance as flow of goods in supply chain (Power, 2005).

Coordination is process of where two or more areas of the firm work together to build understanding and align organizational goals. They share organizational resources to obtain the required goals (Quinn, 1999). Manager who form coordination and built an atmosphere where they share control over the processes increases the system efficiency. They obtain organizational goals set by the top management through synergy which they create during the process (Mentzer, 2012) Moreover, Managers should work to build trust and long term relationships with supply chain members and the successful coordination totally depends on trust and willingness created by the managers (Min, et al., 2005). In the competitive market increasing product diversity, customization and the ability to act in response to the orders of customers are critical in providing competitive advantage. Across industries like fashion (Christopher, 2000) personal computers (Kapuscinski, 2004), consumer electronics (Catalan, M. and Kotzab, H, 2003) companies are modifying their strategies to provide high product variety and maximize their responsiveness. Recently, the discussion is all about mass customized products (Limpel and Mintzberg, 1996).

Supply chain responsiveness has been gaining greater consideration in operational management across industry, and has been considered one the important themes in the research field, it's not only a prototype of operations but also can perfectly rest at the centre of many strategies, like lean thinking (Womack, 1996). In last few years, a rising researchers have paid attention towards knowing what is organizational innovate climate how organizational workers are responding to it .they explored and discussed in different point of views and still it is debated. Its effect on the workers creativity and supply chain performance has been verified and experienced by many studies and those who give supportive environment can get maximum benefits from the workers who are creative (Lale.G.and Arzu, 2009) (Pettersson, 2005) defined organizational innovative climate as a organizational intangible asset and a guarantee for competitive edge.

This paper would extend our understanding about the current situation of organizational innovative climate of manufacturing firms of Karachi Pakistan and how it is strengthening the supply chain capabilities to increase the performance of supply chain. To check if there is any momentous impact of supply chain capabilities on supply chain performance in manufacturing industries specifically in Karachi Pakistan and to check how organizational innovative climates moderates the relationship between supply chain capabilities and supply chain performance to strengthens it. This study is about to find why firms specifically the

manufacturing industries of Karachi Pakistan focus primarily on their supply chain capabilities that results in better supply chain performance of their organizations.

## REVIEWED LITERATURE

### Organizational Innovative Climate

Ezorsky (The probability of creativity and innovation in an organization is determined by the climate an organization is providing, that's why innovation at workplace got much of researchers attention. Researchers have different opinions about climate of innovation. It's sort of cognition by the workers of organization to the features of innovation, creativity and innovation prop up which plays a vital role in linking employee behaviour and organizational perspective (James, 2008). Innovative climate is perceived as productive indicator for development or improved performance (Shalley, 2004; Isakensen, 2002) so this is considered as a key variable to understand the performance of organization and organizational change (Carmeli, 2007; Schneider, 1996; Sundgren, 2005; Ekvall, 1997). Identified that innovative environment separates one organization from others provides an edge; this is because of the investment done by the organization for the innovative accomplishments. Others are of the opinion that it is a prime variable inclined by organizational and psychosomatic processes that will persuade organizational efficiency (Isakensen, 2002).

### Supply Chain Capabilities

Performance of supply chain is reliant on the capability of a firm to exploit its on hand resources in accordance with the change in dynamic market, this exploitation of the recourses will provide competitive edge to the firm, competitive edge in the form of operational efficiency and cost efficiency can be gain through various components i.e. information management, coordination, integration and responsiveness. Information management is all about communicating the knowledge in information among the key stakeholders who align their services according to the needs. Secondly, coordination among departments to act upon the shared information, and work for maximum output. Thirdly, integration between flow of information and flow of materials and lastly responding quickly to the external stimuli i.e. customer orders for their satisfaction (Wu F. C., 2006)

### Supply Chain Information Sharing

Information sharing is all about efficient and effective exchange of firm's information with the supply chain allies. The information exchanged should be frequent so that it should remain effective. In the supply chain process information, sharing is measured as one of the key components .It should always originate from a credible source and should be in a proper way (Mohar & Sohi, 2005). There are two facets of information exchange, i.e. quality and quantity. The key one is quality and now the whole paradigm is changing towards quality of information being share as it is important for decision making and for setting realistic goals, on the other hand, quantity is considered as least important aspect (Bhattacharya, et al., 2014). It's not necessary to share each everything with your partners, disclosing critical information is losing of power that is why firms are hesitant in sharing their inside information with the supply chain partners. Another reason is, they might become their rivals in future and can create hurdles in the competition (Lai, Wong, & Lam, 2015; Fawcett, Osterhaus, Magnan, Brau, & McCarter, 2015).

Stated that massive investments in information technology would be of no use until and unless there is willingness to share the information and that is not only the transactional information but the strategic supply chain information. (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2012) Are of the opinion that supply chain partners can make strategic decisions from the information they get. By point of sale system suppliers can forecast the demand and also can keep track of the inventory to avoid any shortcoming. This would optimize the service level and help in scheduling the shipments and extra inventory holding would also reduce. Information can be shared using various technologies and a variety of technologies are being installed in B2B and B2C relationships. Studies have proved that effective exercise of information technology in supply chain communications has made it efficient and effective and facilitates the proper flow of material (Soliman & Youssef, 2010). It also supports activities like sourcing and procurement, order fulfillment to make them proficient (Swaminathan & Tayur, 2003)

### Supply Chain Activity Integration

Activity integration is one of the significant components in supply chain management, it is defined as the synchronization of independent proceedings of supply chain that are conceded to obtain operational efficiency, which benefits both firm and supply chain partners (Zhao & Yueng, 2008). Activity integration is anxious with efficient flow of supply chain information, raw materials, products and services to strategically impact all the supply chain members. These processes are carried effectively to sustain potential customers to have competitive edge (Chan & Moon, 2016). According to the black box theory of supply chain integration and superior supply chain performance it is important to integrate all the internal on-going process with the external processes which are carried out by third party supply chain providers .this integration would create value for both firm and supply chain partners .(Porter, 1985; Li & Rao, 2013). Further extended that dimensionally internal and external integration both behaves differently but, it is but it is very important for the supply chains to make themselves capable to maintain synchronization among the processes of internal and external environment and maintain a proper flow in the market.

Integrated logistic activities are the reason for competitive advantage and it is much needed in today's business world. Such integration is good for the health of the firm and for the suppliers who would maintain a proper flow of materials being part of supply logistic integration; it allows the firm to produce smoothly and makes the overall all chain flawless ,now the boundaries are also getting hazy between producer and supplier (Cao& Zhang, 2011). Performance management and integration has strong relationship (Kannan & Choon Tan, 2010). Eltantawy and Giunipero (2009) added that various links can be formed with the suppliers, it will help in providing quality of materials, this will in return increase the inbound operational performance as well as out bound. The strategic associations among companies are based on joint trust, these elongated orientation and commitments are named as relational integration (Dyer & Hatch, 2006). Such integration is common in Pakistani industries and this trust based integration has built over the years. Investment in latest technology for integration with partners won't increase the performance of the firm and firm cannot obtain the true benefits of it until and unless they change their way of doing business with the involvement of top management (Richey, Roath, Whipple, & Fawcett, 2010; Campbell & Sankaran, 2005). Has categorized Integration into two types i.e. Internal and external. Internal integration is assimilation intensity and strength in inter departmental activities such as procurement and warehousing departments should be aligned to obtain the best results . on the other hand external integration includes the assimilation strength between your customer and supplier, in this a manufacturing firm coordinates with external stakeholders to exercise best operational practices. Coordination with critical customers comes under integration with customers and coordination with critical supplier is an aptitude that comes under supplier integration (Silvestro & Lustrato, 2014).

### **Supply Chain Coordination**

Coordination in supply chain refers to the capability of a firm to incorporate and align its operations with its supply chain associates to achieve their desired goals and objectives (Wu & Cavusgil, 2006). It includes various operations such as ,coordination with suppliers for raw materials, logistics coordination to get cost effective benefits, coordination with human resource for distinctive outcomes etc. it not only minimize organizational costs but also improve operational efficiency and maintains vigorous relationships with partners (Sahin & Robinson, 2002). Firms are working to build and enhance inter functional coordination and coordination among employees. In this way firms will be able to communicate their desired information inside the firm and align their supply chain activities with the demands of their customers (Prajogo, 2016). Knowledge coordination is also exercised in which information across the firm is matched which helps to avoid duplications and reduces wastage (Handfield & Bechtel, 2002). Higher coordination in supply chain activities will improve supply chain performance and provide competitive benefit to the firm through different cost efficient ways; this includes purchasing of raw materials to their conversion into fine finished products. Planning and predicting in coordination helps the manufacturer and supplier to obtain their objectives and goals. Coordination in activities like, problem solving creates a strong affiliation between the partners and this will lead to long term relationships. (Qrunfleh & Tarafdar, 2014). For optimal supply chain performance in every level of manufacturing products supply chain capabilities play a vital role , coordinative environment will help the organization to align its activities with the dynamic market conditions and improve its overall performance (Prajogo & Olhager, 2012).

### **Supply Chain Responsiveness**

In the presented literature there is great confusion between firms responsiveness and flexibility, mostly these are used to illustrate different activities of manufacturing. (Slack, 1987) ; (Gindy, 1999) and these terms were used interchangeably throughout the entire supply chain (Handfield and Bechtel, 2002; Lummus, 2003). In the last recent decades two new concepts have been

introduce, legality and agility (Goldman, S.L. and Nagel, 1993) (Naylor, 1999) which propose responsiveness and flexibility in the operations of manufacturing and works as key precept of firms competitiveness. According to (Matson, 1999) production responsiveness is the capability of a system to get its operational objectives in the existence of internal failure supplier and customer turbulence. These are related to the three types of ambiguities namely process, supply and demand uncertainty explained by Davis (1993). According (McCutcheon, 1994) responsiveness is same a lead time delivery, so, a manufacturing system is said to be more responsive if it is delivering a product with shorter time. Catalan (2003) define responsiveness as the ability to catch the market signals to respond and adapt time effectively. Integration among supply chain allies can both increase and decrease the responsiveness of supply chain. There are many ways to boost the responsiveness and they might be costly than others, still individual echelons cannot assessed the responsiveness of the supply chain.. As a result, responsiveness can only be tacit by determining the receptiveness of each member and their contacts.

Thus, responsiveness is a speed at which a supply chain system can amend its outputs in response to any external incentive e.g. any order from customer (Holweg, 2007). Hypothesis for testing are as follow:

H1: Supply chain coordination positively affects supply chain performance.

H2: Information sharing positively affects supply chain performance.

H3: Supply chain activity integration positively affects supply chain performance.

H4: Supply chain responsiveness positively affects supply chain performance.

H5: Organizational innovative climate moderates a relationship between supply chain coordination and supply chain performance in a way that it strengthens the relationship.

H6: Organizational innovative climate moderates the relationship between information sharing and supply chain performance in a way that it strengthen the relationship.

H7: Organizational innovative climate moderates the relationship between supply chain activity integration and supply chain performance in a way that it strengthens the relationship.

H8: Organizational innovative climate moderates the relationship between supply chain responsiveness and supply chain performance in a way that it strengthens the relationship

## DATA ANALYSIS AND DISCUSSION

### Reliability

Reliability is a measure to indicate that the instrument to be used in the research is good and create reliable results (Sekaran & Bougie, 2013). The most commonly used test to check the internal consistency is Cronbach's Alpha ( $\alpha$ ). It is acceptable if alpha is greater than 0.6, whereas 0.8 is considered as excellent value.

Table 1: Reliability

| Level                             | Alpha value | No. Of items |
|-----------------------------------|-------------|--------------|
| Organizational innovative climate | 0.85        | 5            |
| SC Information Sharing            | 0.76        | 4            |
| SC Coordination                   | 0.82        | 5            |
| SC activity Integration           | 0.799       | 5            |
| SC Responsiveness                 | 0.77        | 5            |
| SC Performance                    | 0.92        | 10           |

As per the set slandered values of alpha the above values (0.85, 0.76, 0.82, 0.799, and 0.92) of alpha fulfill the acceptable standard and indicates that the instrument used for the collection of data is reliable

### Descriptive Statistics

Descriptive statistics show us the characteristics of a data indicating two basic measures of data: the mean or central tendency and the variability of spread. The centre of the set data is described by central tendency whereas the variability describes the scattering of the data within the set. Table 2 below is showing the descriptive statistics

Table 2: Descriptive

|   | N   | Minimum | Maximum | Mean   | Std. Deviation |
|---|-----|---------|---------|--------|----------------|
| Coordination (COD)                      | 158 | 1.00    | 4.80    | 2.0456 | .66271         |
| Information Sharing (IS)                | 158 | 1.00    | 4.50    | 2.1060 | .65587         |
| Activity Integration (AI)               | 158 | 1.00    | 4.00    | 2.0291 | .63239         |
| Responsiveness (RES)                    | 157 | 1.00    | 5.00    | 2.0051 | .65396         |
| Organizational Innovative Culture (OIC) | 158 | 1.00    | 5.00    | 2.1342 | .74027         |
| Supply Chain Performance (SCP)          | 156 | 1.00    | 4.90    | 2.0417 | .63133         |
| Valid N (listwise)                      | 155 |         |         |        |                |

### Correlation

According to (Lomax & Vaughn, 2007) the value of correlation ranges between +1 and -1, perfect positive correlation is indicated by 1 and -1 describes perfect negative relation between any two variables whereas Zero means no linear relationship, further, coefficients having value  $\geq 0.4$  indicates a moderate relationships and  $\geq 0.5$  indicate a strong affiliation between the variables.

Table 3: Correlation

|     |                     | COD    | IS     | AI     | RES    | OIC    | SCP |
|-----|---------------------|--------|--------|--------|--------|--------|-----|
| COD | Pearson Correlation | 1      |        |        |        |        |     |
|     | Sig. (2-tailed)     |        |        |        |        |        |     |
|     | N                   | 158    |        |        |        |        |     |
| IS  | Pearson Correlation | .655** | 1      |        |        |        |     |
|     | Sig. (2-tailed)     | .000   |        |        |        |        |     |
|     | N                   | 158    | 158    |        |        |        |     |
| AI  | Pearson Correlation | .711** | .677** | 1      |        |        |     |
|     | Sig. (2-tailed)     | .000   | .000   |        |        |        |     |
|     | N                   | 158    | 158    | 158    |        |        |     |
| RES | Pearson Correlation | .520** | .478** | .586** | 1      |        |     |
|     | Sig. (2-tailed)     | .000   | .000   | .000   |        |        |     |
|     | N                   | 157    | 157    | 157    | 157    |        |     |
| OIC | Pearson Correlation | .440** | .478** | .445** | .550** | 1      |     |
|     | Sig. (2-tailed)     | .000   | .000   | .000   | .000   |        |     |
|     | N                   | 158    | 158    | 158    | 157    | 158    |     |
| SCP | Pearson Correlation | .702** | .620** | .658** | .552** | .385** | 1   |
|     | Sig. (2-tailed)     | .000   | .000   | .000   | .000   | .000   |     |
|     | N                   | 156    |        |        |        |        |     |

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

Table no 3 is shows positive values which indicate a strong association between the variables. The highest value is stuck between coordination and Supply chain performance ( $r=0.702$ ) which indicates a strong relationship as compare to other.

### Regression

Regression analysis is a numerical method that helps you to study the affiliation between two or more than two variables of interest. According to (Chatterjee & Hadi, 2006) such analysis is carried out to determine the impact on any dependent variable with different independent variables.

Table 4: Multiple Regression technique

| Model Summary |       |          |                   |                            |
|---------------|-------|----------|-------------------|----------------------------|
| Model         | R     | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1             | .762a | .581     | .570              | .41457                     |

a. Predictors: (Constant), Responsiveness, information sharing, coordination, activity integration

The R represents the quality of prophecy of dependent variable and the value .762 shows a fine level of prophecy. The R Square value ( called the determination coefficient ) is the amount of disparity accounted for by the regression model above and ahead of the mean model. The value of R square 0.581 indicates that the independent variables explicate 58.1% of the variability.

Table 5: ANOVA

| Model |            | Sum of Squares | df  | Mean Square | F      | Sig.  |
|-------|------------|----------------|-----|-------------|--------|-------|
| 1     | Regression | 35.788         | 4   | 8.947       | 52.057 | .000b |
|       | Residual   | 25.780         | 150 | .172        |        |       |
|       | Total      | 61.568         | 154 |             |        |       |

a. Dependent Variable: Supply chain performance

b. Predictors: (Constant), Responsiveness, information sharing, coordination, activity integration

The value of F in the ANOVA table tells whether the regression model is vigorous for the data or not.  $F(4, 150) = 52.057$ ,  $p < .005$  shows that the independent variables considerably foretell that the regression model and dependent variable are good fit for the data.

Table 6: Coefficients

| Model |                      | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig. |
|-------|----------------------|-----------------------------|------------|---------------------------|-------|------|
|       |                      | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant)           | .278                        | .130       |                           | 2.142 | .034 |
|       | coordination         | .366                        | .077       | .386                      | 4.772 | .000 |
|       | information_sharing  | .161                        | .074       | .169                      | 2.186 | .030 |
|       | activity_integration | .163                        | .086       | .163                      | 1.889 | .061 |
|       | Responsiveness       | .171                        | .064       | .176                      | 2.659 | .009 |

a. Dependent Variable: Supply\_chain\_performance

In the above table 6, the value of  $\beta$  and t for Coordination are ( $\beta=0.386$ ,  $t=4.722$ ) information sharing are ( $\beta=0.169$ ,  $t=2.186$ ) and for responsiveness are ( $\beta=0.338$ ,  $t=2.659$ ), with  $p < 0.005$  respectively. Except for activity integration for which  $t=1.88$  and significant at 0.061 which are not meeting the standard criteria , thus the hypothesis H1, H2, and H4 are accepted and H3 is rejected.

## Moderation

Moderation obscures an interaction effect, whereas adding a moderation variable changes the extent of the affiliation between two variables. A multiple regression is carried out to assess the possession of a moderating variable. To check moderation, we will be checking at the interaction points between independent variable and moderator.

Table 7: Coefficients

| Model |   | Unstandardized Coefficients |            | Standardized Coefficients | T      | Sig. |
|-------|---|-----------------------------|------------|---------------------------|--------|------|
|       |   | B                           | Std. Error | Beta                      |        |      |
| 1     | (Constant)                                | -.001                       | .057       |                           | -.017  | .987 |
|       | Zscore(coordination)                      | .658                        | .064       | .660                      | 10.352 | .000 |
|       | Zscore(organizational_innovative_culture) | .093                        | .063       | .094                      | 1.466  | .145 |
| 2     | (Constant)                                | -.018                       | .061       |                           | -.287  | .774 |
|       | Zscore(coordination)                      | .647                        | .065       | .649                      | 9.912  | .000 |
|       | Zscore(organizational_innovative_culture) | .089                        | .064       | .090                      | 1.398  | .164 |
|       | Interaction_1                             | .038                        | .050       | .045                      | .752   | .453 |

a. Dependent Variable: Zscore(Supply chain performance)

Table 8: Coefficients

| Model |            | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|-------|------|
|       |            | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant) | .000                        | .063       |                           | -.004 | .997 |

|   |       |      |       |       |      |
|---|-------|------|-------|-------|------|
| Zscore(information_sharing)                             | .561  | .071 | .565  | 7.888 | .000 |
| Zscore(organizational_innovative_culture)               | .115  | .071 | .115  | 1.612 | .109 |
| (Constant)  | .010  | .069 |       | .145  | .885 |
| Zscore(information_sharing)                             | .566  | .073 | .570  | 7.793 | .000 |
| Zscore(organizational_innovative_culture)               | .116  | .072 | .117  | 1.628 | .106 |
| Interaction_2   | -.021 | .058 | -.024 | -3.69 | .713 |
| a. Dependent Variable: Zscore(Supply chain performance) |       |      |       |       |      |

Table 9: Coefficients

| Model   | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig. |
|---|-----------------------------|------------|---------------------------|-------|------|
|   | B                           | Std. Error | Beta                      |       |      |
| 1 (Constant)  | -.003                       | .060       |                           | -.055 | .957 |
| Zscore(activity_integration)                            | .608                        | .067       | .608                      | 9.009 | .000 |
| Zscore(organizational_innovative_culture)               | .112                        | .067       | .113                      | 1.671 | .097 |
| 2 (Constant)  | .003                        | .063       |                           | .044  | .965 |
| Zscore(activity_integration)                            | .614                        | .070       | .614                      | 8.745 | .000 |
| Zscore(organizational_innovative_culture)               | .113                        | .067       | .114                      | 1.679 | .095 |
| Interaction_3   | -.014                       | .042       | -.021                     | -3.23 | .747 |
| a. Dependent Variable: Zscore(Supply chain performance) |                             |            |                           |       |      |

Table 10: Coefficients

| Model   | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig. |
|---|-----------------------------|------------|---------------------------|-------|------|
|   | B                           | Std. Error | Beta                      |       |      |
| 1 (Constant)  | -.004                       | .067       |                           | -.053 | .958 |
| Zscore(Responsiveness)                                  | .493                        | .081       | .492                      | 6.076 | .000 |
| Zscore(organizational_innovative_culture)               | .108                        | .081       | .109                      | 1.342 | .181 |
| 2 (Constant)  | .014                        | .072       |                           | .190  | .850 |
| Zscore(Responsiveness)                                  | .523                        | .093       | .521                      | 5.648 | .000 |
| Zscore(organizational_innovative_culture)               | .109                        | .081       | .110                      | 1.355 | .177 |
| Interaction_4   | -.031                       | .046       | -.054                     | -6.67 | .506 |
| a. Dependent Variable: Zscore(Supply chain performance) |                             |            |                           |       |      |

Table 7 ,table 8 ,table 9 and table 10 are showing that the individual relationship is significant for all variables but the value of P is > 0.05 for all interaction predictors ,which means all are insignificant and moderation dose not exists between the variables ,therefore we reject H5,H6,H7 and H8.

## Discussion and Conclusion

The empirical results showed that there exists a significant relationship between supply chain capabilities and supply chain performance in case of manufacturing industries of Karachi Pakistan , except for activity integration. By incorporating these capabilities firms can smoothly run their production processes, efficiency in logistics and timely deliveries with shorter lead times can be ensured and firms can respond to the external instabilities effectively through this the overall performance of supply chain can be improved. Any manufacturing firm that wants to increase their performance must consider these capabilities. This study showed there is no relationship between integration and supply chain performance, these is lack of integration among the partners of manufacturing industries ,thus, it has no impact on performance of supply chain.

Likewise, the results showed that there is absence of moderation factor between the capabilities and supply chain performance, this depicts that manufacturing firms are not encouraging innovative environment, most of them are working in traditional ways, employees on the senior posts are of old mind set and usually discouraging the innovative ways. This research study has many limitations due to time constrains. It has only taken the sample from Karachi Pakistan; future research can employ many other major cities of Pakistan. The sample size for this study is 154; Future research could employ larger sample size with

variety of respondents. Moreover, some other capabilities can be taken into consideration in future research by including mix methodological technique i.e. both qualitative and quantitative aspects.

## CONCLUSION

In the light of above facts and figures, it is safely concluded that supply chain capabilities have significant and positive impact on supply chain performance. Firms can enhance their performance by endorsing the chosen capabilities. Making information system stronger and efficient can provide firms with authentic and useful information, strong communication channel is considered as back bone of any organization. Becoming responsive and agile in today's world is key factor for gaining competitive edge over your competitors and for sustaining in the unpredictable market firms must have to work on their responsiveness. On the other hand manufacturing firms should work on integration of their activities to align every action within the organization as well with their partners. Moreover, innovation and innovative climate is key for the success of the organization in today's competitive world without this key factor a firm cannot sustain in near future, manufacturing firms need to work on innovation and should encourage innovative environment.

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