

## An Empirical Study on the Usage of 3<sup>rd</sup> Party Purchase and its Benefits to Manufacturing SMEs of Karachi

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### Abstract

*This study investigates potentials for third-party purchase services offered by 3PL providers from the perspective of manufacturing SMEs in Karachi. The study was based on trust and capacity of 3PL provider and then using the 3PP services and its benefits to the SMEs. The results collected from 38 usable sample showed that there is no significant relationship between the 3PP opting by SMEs and SMEs will not get any benefit from the 3PL providers. This study is first time ever conducted in Pakistan and following the research conducted by Mr. Yangyan Shi in New Zealand and China.*

**Keywords:** 3<sup>rd</sup> party purchase, third party logistics, 3<sup>rd</sup> party users

### 1. Introduction

In Pakistan, it is estimated that 90% of the businesses are small or medium enterprises which is employing around 80% of Pakistanis who have non agricultural background. These enterprises contribute nearly 40% of total GDP of Pakistan. SMEs in Pakistan are so scattered that there is no proper record available for exact number of business units but still there is approximate figure of around 3.14 millions of small organizations in Pakistan. Thus we can say that the importance of small and medium firms cannot be ignored. (SMEDA, 2000). SMEs are playing major role in economy of most of the countries. SMEs have limited financial and managerial resources so it is a big challenge for them and they are unable to come up with innovative ideas for purchasing (Joseph I. Scully, 1994). Mostly these small firms ignore basic purchasing techniques due to which their purchasing cost squeezes their profit margin. 3PL service providers are playing crucial role in the supply chain and many of the organizations are outsourcing their logistics activities and focus to develop their products (Langley Jr & Sink, 1997). According to (The Express Tribune, 2014), SMEs contributes by 30% in total exports.

### 2. Brief Literature Review

#### Critical Literature Review

SMEs play a major role in economic growth of a country and are the main sources of providing new jobs. As larger firms downsize and outsource more functions, the weight of SMEs in the economy increases. Purchasing has been fundamental and important part of supply chain formation. Purchasing is regarded in many companies as a major strategic function (Ellram, 1994). Relationship between buyer and supplier is based upon the trust. This trust is build on the basis of information sharing, benefit sharing and commitment. The conflicts between parties decrease the trust and benefits sharing (Moore, 1998). So this relationship is based upon trust. Combination and arranging the goals and strategic plans in one line helps to achieve the target. These elements are fundamentals of supply chain. According to citation, external buying practices, supply based influence, association of supplier and buyer, growth of vendor and its evaluation might not be sufficient to promote purchasing into strategic role (Ram Narasimhana, 2001).

As cited in (Zazulina, 2010) paper, there are six possible sourcing strategies for a company, which are (1) sole sourcing by means of purchase from only one seller, (2) multiple-sourcing (purchasing from two or more sellers), (3) parallel sourcing strategy, that means combining one or more sources, (4) backward and vertical integration sourcing strategy it involves of purchasing from source itself, (5) “make in-house” strategy, decision to supply the material or service yourself, (6) Single sourcing strategy as the author writes “result of being forced to buy from one supplier only as a result to such market factors as location, exclusive design rights, customer specifications and quite possibly buyer inertia” (Quayle, 2002).

For any project, supplier and buyer integration becomes important. For this purpose selection of supplier for the lowest price is not only criteria, there are other factors which must be considered (Kenneth J. Petersen, 2005). Till the last two decades contracting and procurement has been neglected in SCI (supply chain integration) and selecting the partners at purchasing end. A decade ago, supply chain still was placed at operational position. It was considered that if supply chain does well it will increase the performance of operational side only. But Photis proved in 2005 that an effective relationship between supplier and buyer increases the service quality and the performance of the whole supply chain including the performance of logistics service providers (LSPs) (Photis M Panayides, 2005).

Most of the SMEs understand the importance of procurement so to reduce the cost of COGs but they ignore it due to small capital standings, buying powers, lack of knowledge of procurement techniques and lack of interest on expansion on the business. It is found in studies that there is difference in purchasing practices of small enterprises and medium enterprises. Medium sized businesses are more formalized than that of small business. (Paik, 2011). Selection of partners plays vital roles in purchasing (Eriksson, 2011). If the buyer concentrates on improving purchasing expertise then it will help to grow up the business (Seung, 2014).

Supplier selection in small to medium size enterprises is performed mostly in traditional way (Park, 2001). SMEs may use the 3PP service to reduce their costs and improve the purchasing power by collaboration with their 3PL providers. 3PL providers will consolidate the demands and will be in position to negotiate with suppliers on behalf of their customers and finally adding value in supply chain (Yangyan Shi, 2016). When small firms make purchases, they go for small volumes according to their capacity and need. However, when purchasing is made on large volumes then a saving the cost even on small unit will add up large contribution in profit. Similarly if material costs around 40% of the product's total cost then acquiring material with a small reduction in price will increase profit considerably (Sagar, 2016).

Small firms can cut down their costs of buying material by outsourcing their purchasing function. This function not only benefits the firms but also increases interests of already connected 3PL providers and their clients to become collaborators or partners. Partnership plays important role in supply chain integration and help reducing the costs of purchasing function in small firms thus they could focus on their primary product or service (Yang Shi, 2016).

It is also found that most of SMEs don't take interest in expansion so they don't focus enough on the purchasing side even they know the importance of this function. (Awu, 2015). The effective benefits can be achieved from the successful evaluation, focusing and resolving of key problems. The research found from several researches and also surveys proved that SMEs differ in nature across the world and so their buying behavior also changes according the geographical location. A survey was conducted within Karachi, a metropolitan of Pakistan which showed different approaches towards running the businesses. They spend more on purchasing knowingly only due to the buyer power, majorly.

This article is structured in FIVE parts. Part I has been discussed above which introduces that we have chosen this topic, How SMEs can get benefits from their 3PL providers by outsourcing purchasing function in manufacturing industry of Karachi?. In Part II conceptual framework, hypothesis and research question are defined. Part III analyses the data collected, in Part IV we will discuss the results and in last Part V the article will be concluded with suggestions to future research and the limitations to this study.

## **II. Conceptual Framework Model and Hypothesis**

A minor contribution in savings can provide more benefits to the small and medium businesses. If small businesses do efforts to save their purchasing costs they can get more benefits. As cited in research conducted by Yangyan Shi, local 3PL providers are looking to add the valued services in their portfolio so to differentiate themselves in market (Ellegaard, 2006). The SMEs neither have power to buy bulk quantities nor the capacity to manage & hold the inventory. So they prefer to outsource these supply chain functions to reduce their costs.

However, they don't want to outsource their basic activities whereas contribution of third parties can add value in the supply chain (Win, 2008).

**Research Question:** In this research paper, we have tried to analyze, investigate and conclude the following research question.

“How SMEs (Small Medium Enterprises) can cut purchasing costs by outsourcing their purchasing function from 3PL providers trusting on them on basis of their capacity to consolidate demands?”

So outsourcing the purchasing function can provide benefit to the small and medium organizations.

H<sub>0</sub> : By outsourcing the purchasing function from 3<sup>rd</sup> party, SMEs cannot get benefits.

H<sub>1</sub> : By outsourcing the purchasing function from 3<sup>rd</sup> party, SMEs will get more benefits.

The third party logistics providers will require a sufficient capacity to meet the demands of the buyers. If they don't have enough capacity to buy the consolidated materials then buyers will not have interest to outsource their purchasing function to such service providers.

H<sub>0</sub> : If 3PL provider has capacity to fulfill buyer's bulk demands, SMEs will not go for 3<sup>rd</sup> party purchase.

H<sub>2</sub> : If 3PL provider has capacity to fulfill buyer's bulk demands, SMEs will go for 3<sup>rd</sup> party purchase

If the buyer has trusts on the 3<sup>rd</sup> party logistics provider then they can work together for long time. Previous studies have suggested that trust plays significant role on the relationship between the parties (Robert B. Handfield, 2002).

H<sub>0</sub> : Trust is not basic factor for outsourcing the purchasing function from 3<sup>rd</sup> party logistics providers.

H<sub>3</sub> : Trust is not basic factor for outsourcing the purchasing function from 3<sup>rd</sup> party logistics providers.

### Conceptual Framework

Here we have defined total four variables depending on each other. The conceptual framework shows the sequence of dependability in figure 1.

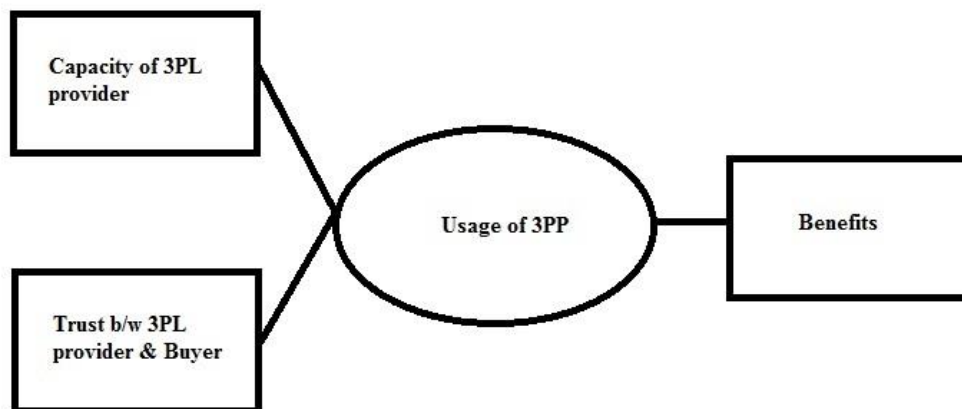


Figure 1

Capacity of 3PL provider and trust on 3PL plays important role while selecting them as a third party purchaser on the behalf of SMEs. If SMEs outsource their purchasing function then they will get more benefits. For the first instance, capacity and trust are independent variables which effect on usage of 3PP service from their 3PL

providers. However, if they have developed relationship with 3PL as 3PP then they can get more benefits so benefits are depending upon outsourcing purchasing activity.

### III Methodology

#### a. Sample

The study was conducted on manufacturing firms of Karachi from different industries. Industrial Categories & there breakdown is appended in appendix to this paper at table 1. Total 165 questionnaires were served by means of email, by hand and online on Google forms from which we received 38 usable responses. This turned into 23% usage respondents' data. There are around 400,00 SMEs working in Karachi city however the number of manufacturing firms is around 50% of these and other are in services industries (The Express Tribune, 2014). The SMEs are so scattered that right number of the firm could not be determined.

#### b. Instrument

A questionnaire was served to the respondents which was adapted from a recent research by Mr. Yangyan (Yang Shi, 2016). The instrument was developed to answer the basic questions for the user perspective. The questionnaire was served online, as well as filled by hand and also structured interviews were also arranged on the basis of this questionnaire.

#### c. Methodology

The researched used regression to find Pearson correlation between the variables and to conduct the tests using SPSS v20.

### IV Analysis

#### *Descriptive*

In this study, total 38 useable responses were received from 10 industries. One by one descriptive detail is given in Table 1.

#### *Validity*

The validity of questionnaire was carried out through SPSS reliability test which show the value of Cronebach's Alpha=.775 (show in table "validity") which shows that the questionnaire is reliable and further correlation and regression can be run.

#### *Usage of 3PP vs Trust & Capacity of 3PL*

We used the correlation test using SPSS v20 to analyze the collected data. In first part we will analyze the trust and capacity factor convincing the users to outsource their purchasing activities. The results are appended below in Table 2.

In table 2 we can see 3PP (DV) has weak negative relationship (-0.064) with trust factor and weak positive relationship with capacity the 3PL provider. Trust has a strong positive relationship with capacity of 3<sup>rd</sup> party logistics providers. The relationship shows the  $p > 0.05$  i.e. 3PP to trust  $p=0.351$  & 3PP to capacity  $p=0.490$  hence both  $H_2$  &  $H_3$  are rejected and null hypothesis are accepted.

#### *Usage of 3PP and Benefits to Users*

An analysis was conducted that if SMEs opt to outsource the purchasing activities then will they get advantages and benefits or not? A correlation between the usage of 3PP and benefits was calculated and following results were received (appended in Table 3).

The results between usage of 3<sup>rd</sup> party purchase and benefits in table 3 describe that there is a weak relationship between both variables i.e. value of correlation is -.207. Significant level between these variables is also low i.e.  $p=0.106$  which is greater than 0.05  $H_1$  is also rejected.

## Key Regression

### Relationship between Trust, Capacity and usage of 3PP

The variables defined in first part of the conceptual frame work define the table 4 to evaluate the coefficients. A construct between Trust and 3PP usage constructed a slope i.e. -0.082 which explains very low relationship between both variables. The relationship with second independent variable with 3PP usage narrates a positive relationship with a slope value of 0.05. The p-values among variables show that there is weak relationship in predictors. i.e. for Trust and 3PP  $p=.642$  and for capacity and 3PP  $p=.784$  which is  $p>0.05$ .

R square in the table 5 shows 6% intentions to use 3PP. Value and p value 0.561 which is  $p>0.05$  which show a very weak predictor of opting 3PP services.

### Relationship between usage of 3PP and its Benefits

The value of slope between usage of 3PP and its benefits to the users show the negative relationship as  $b=-.154$  and significant level  $p=.212$  which is  $p>.05$  that mean there is weak relationship between 3PP usage and its benefits.

Construction of model summary shows R square value is .043 that means 4% relation between the variables. The p value is 0.40 which is  $> 0.05$  hence there is no significant relation between the usage of 3PP and its benefits.

### Liner Relationship

A Normal P-P linear relationship plot shows that how the values are deviated from the mean. In our analysis following Normal P-P Plot of regression between dependent variable 3PP usage and independent variables Trust and Capacity of 3PL shows that maximum values were on linear plot and no value found outlier. The relationship between all three variable is positive linear.

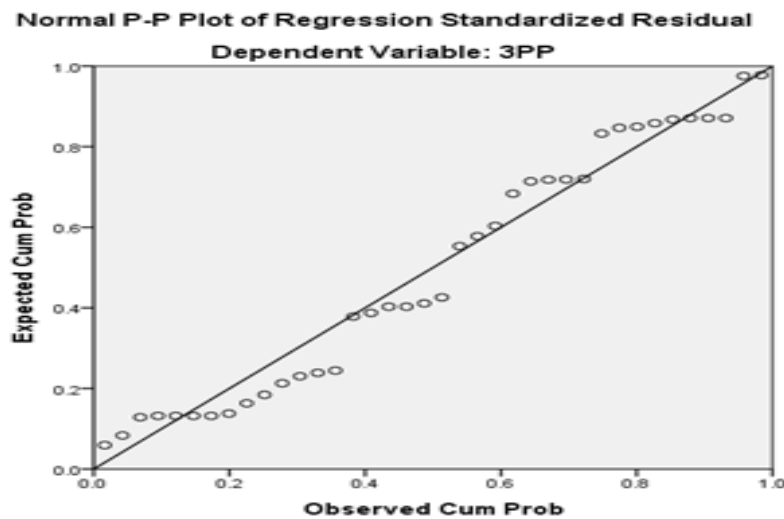
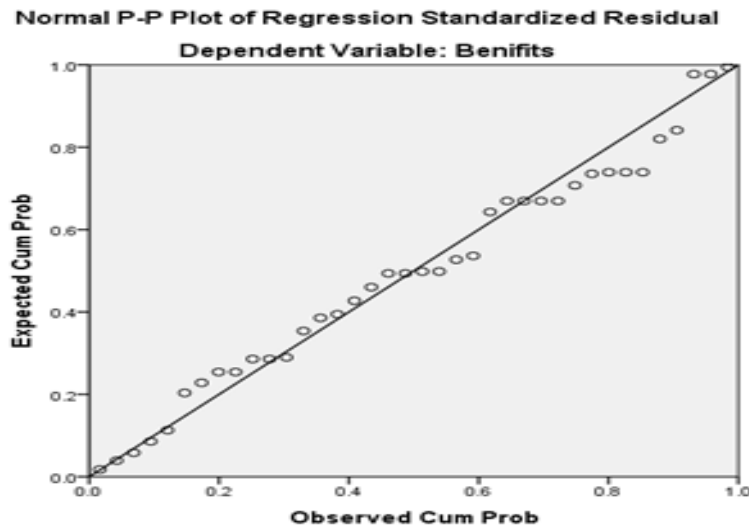


Figure 2

While analyzing the dependent variable “*benefits*” with “*usage of 3PP*” it was found that all the values were lying on the straight line and no value found deviated from mean. The relationship between both the variable is positive linear.



**Figure 3**

## V Conclusion

The study was conducted with hypothesis that manufacturing SMEs of Karachi would get benefits by using 3PP services to reduce the purchasing costs. But the consequences of this study show that hypothesized statements are rejected and SMEs in manufacturing industry will not intended to outsource the purchasing function. Moreover, the SMEs think that they will not get any benefits by using 3PP services provided by their 3PL providers. **Limitation** to this paper is that the study was constrained to manufacturing industry only. Future research suggests that more industries like services, retailers etc can also be considered. Moreover, other factors like frequency of transactions, bulk purchases and assets specificity can be studied in Pakistan.

## Tables from SPSS Analysis

### Industrial Distribution

	N	Marginal Percentage
Industrial Categories	Shoes Manufacturing	2 5.3%
	Apparel Manufacturing	5 13.2%
	Leather Garments	4 10.5%
	Construction	5 13.2%
	Textile	5 13.2%
	Woodworks	4 10.5%
	Machinery Manufacturing	3 7.9%
	Home Appliances	4 10.5%
	Chemical	4 10.5%
	Embroidery	2 5.3%
	Valid	38
Total	0	
	38	

**Table 1**

### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.775	.795	4

### Validity

**Correlations**

		3PP	Trust	Capacity
Pearson Correlation	3PP	1.000	-.064	.004
	Trust	-.064	1.000	.544
	Capacity	.004	.544	1.000
Sig. (1-tailed)	3PP	.	.351	.490
	Trust	.351	.	.000
	Capacity	.490	.000	.
N	3PP	38	38	38
	Trust	38	38	38
	Capacity	38	38	38

**Table 2**

**Correlations**

		Benefits	3PP
Pearson Correlation	Benefits	1.000	-.207
	3PP	-.207	1.000
Sig. (1-tailed)	Benefits	.	.106
	3PP	.106	.
N	Benefits	38	38
	3PP	38	38

**Table 3**

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.518	.655		5.368	.000
	Trust	-.082	.176	-.094	-.469	.642
	Capacity	.050	.181	.055	.276	.784

**Table 4**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.079 <sup>a</sup>	.006	-.051	.561

**Table 5**

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.247	.418		10.153	.000
	3PP	-.154	.121	-.207	-1.271	.212

**Table 6**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.207 <sup>a</sup>	.043	.016	.4041

**Table 7**

Questionnaire

1	Select one that best describes how many years your organization has partnered with 3PL providers or customers	Less than or equal to 2 years	More than 2 years but less than 5 years	More than 5 years, but less than 10 years	More than 5 years, but less than 10 years	More than 10 years, but less than 15 years	More than 15 years
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2	Effective purchasing is key to your products' competitive positioning."	1 (Strongly Disagree)	2(Disagree)	3(Neutral)	4(Agree)	5 (Strongly Agree)
3	Your organization is confident that outsourcing purchasing services from 3PL providers would achieve your goals.	1 (Strongly Disagree)	2(Disagree)	3(Neutral)	4(Agree)	5 (Strongly Agree)
4	You are certain that outsourcing purchasing services would meet your service requirements.	1 (Strongly Disagree)	2(Disagree)	3(Neutral)	4(Agree)	5 (Strongly Agree)
5	You may not benefit much if your 3PL provider is not capable of purchasing large orders.	1 (Strongly Disagree)	2(Disagree)	3(Neutral)	4(Agree)	5 (Strongly Agree)
6	Your 3PL provider has high volume and purchasing power sufficient to negotiate the price downwards.	1 (Strongly Disagree)	2(Disagree)	3(Neutral)	4(Agree)	5 (Strongly Agree)
7	You believe that using consolidation in real procurement practice could reduce purchasing costs.	1 (Strongly Disagree)	2(Disagree)	3(Neutral)	4(Agree)	5 (Strongly Agree)
8	You would like to share purchasing risks with 3PL providers.	1 (Strongly Disagree)	2(Disagree)	3(Neutral)	4(Agree)	5 (Strongly Agree)
9	You expect to offer purchasing services for a relatively long period.	1 (Strongly Disagree)	2(Disagree)	3(Neutral)	4(Agree)	5 (Strongly Agree)
10	You are comfortable in working with 3PL providers.	1 (Very Uncomfortable)	2(Uncomfortable)	3(Neutral)	4(Comfortable)	5 (Very Comfortable)

Q11 Please rate your perceived level of importance for the following based on the services offered by 3PL providers.

S/N	The services offered by 3PL providers	Not using	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Transportation						
B	Warehousing						
C	Purchasing						
D	Freight consolidation						
E	Inventory management						
F	Product returns						
G	Order management						
H	Cross docking						
I	Packaging						

Q12 When deciding to outsource purchasing functions, to what extent has each of the following influenced your decision?

S/N	Factor	Least Important	Less Important	Neutral	Somewhat Important	Very Important
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A	Purchasing Cost reduction					
B	Improved customer service					
C	Focus on core activities					
D	Lack of purchasing technology					
E	Lack of purchasing expertise					

Q13 Please indicate the importance you ascribe to the information that you get from a Request for Proposal (RfP).

S/N	Criteria	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Price					
B	Capacity					
C	Financial strength of your 3PL provider					
D	The quality of the management of your 3PL provider					
E	Information system capabilities of your 3PL provider					

Q14: What is the influence on your outsourcing purchasing decision of the following?

S/N	Reason	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Your 3PL provider is trustworthy					
B	Your 3PL provider has a strong reputation					
C	Your 3PL provider Improves your competitive market position					
D	Your 3PL provider offers economic benefits to you					
E	Your 3PL provider helps you achieve workforce cost reductions					

## Reference

- i. Awu, B. K. (2015). *Development of Procurement Function among Construction SMEs in Ghana. Thesis, Department of Building Technology, .*
- ii. Ellegaard, C. (2006). *Small Company Purchasing: A Research Agenda. Journal of Purchasing & Supply Management , 272-283.*
- iii. Ellram, L. C. (1994). *Strategic purchasing: a history and review of the literature. International Journal of Purchasing and Materials Management , 10-18.*
- iv. Eriksson, P. E. (2011). *Partnering in engineering projects: Four dimensions of supply chain integration. Journal of Purchasing & Supply Management , 50.*
- v. Joseph I. Scully, S. E. (1994). *International Procurement Strategies: Challenges and Opportunities for the Small Firm. Production and Inventory Management Journal , 39-46.*
- vi. Kenneth J. Petersen, R. B. (2005). *Supplier integration into new product development: coordinating product, process and supply chain design. Journal of Operations Management , 371.*

- vii. Langley Jr, C., & Sink, H. L. (1997). *A Managerial Framework for the Acquisition of Third-Party Logistics Services* . *Journal of business logistics* , 163-190.
- viii. Moore, K. R. (1998). *Trust and Relationship Commitment in Logistics Alliances: A Buyer Perspective*. *Journal of Supply Chain Management* , 24-37.
- ix. Paik, S.-K. (2011). *Supply Management in Small and Medium-Sized Enterprises: Role of SME Size*. *Supply Chain Forum* , 10-21.
- x. Park, D. &. (2001). *Supplier selection practices among small firms in the United States: Testing three models*. *Journal of Small Business Management* , 259-271.
- xi. Photis M Panayides, M. S. (2005). *The Impact of Integrated Logistics Relationships on Third-Party Logistics Service Quality and Performance*. *Maritime Economics & Logistics* , 36-55.
- xii. Quayle, M. (2002). *Purchasing policy in Switzerland: An empirical study of sourcing decisions*. *Thunderbird International Business Review* , 205-236.
- xiii. Ram Narasimhana, A. D. (2001). *Performance, The impact of purchasing integration and practices on manufacturing* . *Journal of Operations Management* , 593-609.
- xiv. Robert B. Handfield, C. B. (2002). *The role of trust and relationship structure in improving supply*. *Industrial Marketing Management* , 367-382.
- xv. Sagar, R. (2016). *How does purchasing behaviour vary between SME*. Thesis .
- xvi. Seung, K. P. (2014). *A Portfolio Approach to Purchasing Development in Small and Medium Sized Enterprises (SMEs)*. Thesis , 1-10.
- xvii. SMEDA, P. (2000). 34. From 1:  
[http://www.smeda.org/index.php?option=com\\_content&view=article&id=7:state-of-smes-inpakistan&catid=15](http://www.smeda.org/index.php?option=com_content&view=article&id=7:state-of-smes-inpakistan&catid=15)
- xviii. *The Express Tribune*. (2014, August 20). *Progress analysis: SMEs vital to long-term sustainable growth, says Thaver*. *The Express Tribune* . Karachi: *The Express*.
- xix. Win, A. (2008). *The Value a 4PL Provider Can Contribute to an Organisation*. *International Journal of Physical Distribution & Logistics Management* , 674-684.
- xx. Yang Shi, T. A. (2016). *Third-party purchase: an empirical study of Chinese third-party logistics users*. *International Journal of Operations & Production Management* .
- xxi. Yangyan Shi, T. A. (2016). *An empirical study of third-party purchase: New Zealand users' perspective*. *Applied Economics* , 5448-5461.
- xxii. Zazulina, M. (2010). *STRATEGIC APPROACH TO PURCHASING*. Unpublished .