

AJPLSCM Vol. 2, Issue 01, Page:01-11,
January 2020, ISSN: 2676-2730
Impact Factor (SJIF): 6.782
Journal DOI: 10.15373/22501991
International Peer Reviewed & Refereed
Journal with Indexed Journal Platforms

web: www.damaacademia.com
email: editor@damaacademia.com
Download from Journal site
<https://damaacademia.com/ajplscm/>

Author(s)

Sohail Ayoub

Institute of Business & Management
UET Lahore
email: sohail.ayoub@ymail.com

Muhammad Waqas

Bahria University Islamabad
Email: mwaqas.mashraf@hotmail.com

Corresponding Author

Sohail Ayoub

Institute of Business & Management
UET Lahore
email: sohail.ayoub@ymail.com

Validation of Key Success Factors in Supplier development in automotive industry of Pakistan: an empirical study

Sohail Ayoub¹ | Muhammad Waqas³

Abstract

Purpose: Purpose of the study is to find the validation of key success factors in supplier development in automotive industry of Pakistan from supplier prospective.

Design /methodology/approach: Positivist approach is used for data collection. Research methodology is quantitative and cross-sectional study is used. Data is collected through questionnaire. Data is collected and analyzed from 107 professional working in automotive parts manufacturing industry in Pakistan. A mix of convenience and simple random sampling technique is used for data collection. Regression analysis is conducted to check the significance of the variables and model

Findings: Our finding is based on three independent and one dependent variable. There is significant positive relationship between key success factors for supplier development and supplier performance. Supplier development activities and supplier buyer communications have positive impact on supplier performance. Due to political and economic risk buyer approach towards supplier organization has no significant impact on supplier performance.

Practical Implications: This study is useful for the cars manufacturer and their supplier in automotive industry of Pakistan. This study is helpful for both buyer and supplier in understanding their efforts for supplier improvement which in turns affect the performance of the buyer. The research is also helpful for academic practitioners.

Originality/Value: This study was not done before in automotive industry of Pakistan. This is the first comprehensive study on supplier development in automotive industry of Pakistan from supplier prospective. This study adds value to literature on supplier development program in developing country.

Keywords: Supplier development, supplier buyer communication, supplier buyer relationship, supplier performance, key success factors, automotive industry, Pakistan

1.0 INTRODUCTION

Supply chain management is integration of many organizations for the purpose of the forward flow of material in achieving good competitive position and leading to effective organizational outcomes (Li, B.Ragu-Nathan, T. Ragu-Nathan & Rao, 2006; La Londe & Masters 1994). This chain includes many organizations working independently such as components manufacturer, logistic provider, assembler of the final product are parts of the supply chain (La Londe & Masters 1994). In early days, more focus was paid to the final stakeholder, that is, the customer. Increase of competition and change of the economy into global has made organization to focus on the core competencies and trend for the outsourcing has increased (Krause, Handsfield & Scannell, 1997). Automotive industry observed more outsourcing to their supplier even processes like testing, designing and some sub assembly which were previously considered the core activities of the car makers has been outsourced by the cars maker (Harrison, 2004; Veloso & Fixson, 2001).

Suppliers play a role as a strategic partner in creating a competitive advantage and it is also evident that supplier output has positive impact on buyer performance (Jabbour & Jabbour, 2009; Kwon et al., 2010). It is the demand of modern business to improve not only the capabilities of their own organization but also the capabilities of the supplier as well (Prajogo & Olhager, 2012). It is also accepted that to compete in market in modern economy the

buyer must have competent supplier in their base and utilize these suppliers to the maximum value through relationship (Carr & Pearson 2012; Dyer, 1996). Inability of the supplier to improve their performance is always an issue for buyer (Krause et al, 2000). Buyer rely on supplier for defect free products with on time delivery with minimum cost, however these outcomes are difficult to have in every supplier. The buyer may switch the supplier or may fix the problem of current supplier to avoid the uncertainties associated with locating a new supplier and organizations prefer to have 2nd option as this takes less time and cost (Abdullah, Laal & Mahrajan, 2012).

Most of the studies focused from buyer side and covers the buyer prospective only in supplier development activities. (Imam, Hussain & Raza 2015; Abdullah, Lall & Mahraj, 2003; Krause and Ellarm, 1997). Rebelledo and Nagati (2013) presented the supplier point of view. However, Krause, Handfield and Tyler (2006) covered both buyer and supplier side. In most of the cases of automotive industry proper study from supplier point of view could not be done as most of the suppliers are either from Small or medium enterprise (SME) or they have lack of management skills and information (Imam, Hussain & Raza, 2015). The research of Imam, Hussain and Raza (2015) focused on supplier relationship from buyer prospective. Dweiri, Kumar, Khan and Jain (2016) studied supplier selection in automotive industry of Pakistan using AHP technique. But the study from supplier prospective in automotive industry of Pakistan has not been done yet.

The objective of this study is to validate the key success factor recommended by buyer to enhance the capability of supplier from supplier prospective in automotive industry of Pakistan. Hence, this study seeks to bring out the key success factor for the buyers to enhance the capability of suppliers prospective in automotive industry in Pakistan. The following questions were prepared to collect the data from different organizations:

- Does buying organization attempts in making effective communication with supplier and what is their impact on supplier performance?
- How suppliers characterized buyer organization approach or philosophy towards their supplier and supplier performance?
- Is buyer engaged in supplier development activities to improve the performance of the supplier?

2.0 LITERATURE REVIEW

2.1: Supplier development activities

For effective Supplier buyer relationship, the supplier evaluation and sharing feedback of the supplier evaluation is the first step to identify supplier strength and weakness and hence areas of performance improvement (Joshi, Kharat, Raut, Kamble & Kamble, 2016; Trent & Monczka, 1999; Krause, 1997; Spekman 1985). Monetary or financial support which includes technology sharing, supplier training and provision of equipment and tooling to supplier also enhances their performance level and increase the trust between supplier and buyer (Wachiuri, W. Waiganio & Oballah, 2015; Lukhoba, 2015; Tungjitjarurn, Suthiwartnarueput & Pornchaiwiseskul, 2012; Vithalrao & Kant, 2017). The objective behind technical support to the supplier is to reduction of the supplier's cost and hence to improve the supplier performance (Krause, 1999). Effective training to supplier improves the performance of the supplier and result in competitive advantage (Kadir et al., 2011). Knowledge sharing in operational activities, incentive for future business and collaborative communication improves the supplier performance (Modi & Mabert, 2006). Buyer should encourage the supplier by awarding the incentive in the form of large volume of current business, certificate or future business in result of improve performance (Routroy & Pradhan, 2011).

The absence of any incentive causes de-motivation towards supplier and may cause poor performance (Sillanpaa, Shahzad & Sillanpaa, 2015). If the supplier performs well, buyer should give more volume to this supplier so other supplier may also be motivated to improve their performance. One of the advantages of giving more volume of business to the supplier increase the supplier dependency on buyer that leads to more commitment form supplier (Carr, Kaynak, Hartley & Ross, 2008). Another incentive is certification program and it is found companies having certification program for the recognition of their suppliers have improve performance as compared to those organizations where there is no certification program for the supplier (Carter et al., 1998).

2.2 Supplier Buyer Communication:

For more effective Supply Chain, material flow and information sharing from supplier to buyer plays critical role (Carr & Kaynak, 2007). Communication is considered as a "glue" that bind together many channels of distribution (Mohar & Nevin, 1990). Effective communication between supplier and buyer is a key factor for supply chain. Firms involving in a good communication with their supplier have more outcomes and effectiveness from their supplier

(Krause & Ellarm, 1997; Prahinski & Benton, 2003; Humphreys et al., 2004). Effective communication is one of the success factors for supplier development (Sillanpää, Shahzad & Sillanpää, 2015). The relationship between supplier and buyer develop when they constantly interact and communicate with each other (Lopez, Holeman & De Boer, 2012). For enhancing the supply chain coordination it is important for both supplier and buyer to share real time information so that important information related to supply Chain may not face distortion (Routroy & Pradhan, 2011). Timely and accurate information sharing is important for the both supplier and buyer firm overall performance (Handfield et al., 2000). It is commonly observed that supplier and buyer in automotive industry share their some sensitive information such as cost structure and market trend (Helper, 1991; Humphreys et al., 2004) and this is also one of the key requirements for supplier development program to be effective (Galt & Dale, 1991). Toyota pioneer of supplier development program in automotive industry expects smooth and honest communication from their supplier and encourage their supplier to share their problem with Toyota (Marksberry, 2012). This is true for other Japanese car makers as Japanese automakers prefer to select the supplier who shares information with their customer (Dyer, 1997).

Nissan also opened their channel of communication with their supplier to get more input from their supplier in new product development and also to transfer the expertise developed by Nissan to their supplier (Ekpokoba, 2005). To keep good working relationship with underperforming supplier, it is the buyer's management responsibility to find the appropriate way to communicate the problem and encourage the supplier for the solution (Prahinski & Benton, 2003). Communication between buyer and supplier motivate the supplier (Dalvi & Kant, 2017) and this result in reduction of misunderstanding and hence helpful in conflict resolution (Joshi, Kharat, Raut, Kamble & Kamble, 2016; Dalvi & Kant, 2017). Those organizations having effective communication with their supplier are able to anticipate the risks that may generate in the market (Akhavan, Shahabipouri & Hosnavi, 2017; Daft & Lengel, 1986). Firms involve in supplier development activities and having better performance more focus on information sharing and these firms also even ready to share their proprietary information with their customer (Krause & Ellarm, 1997). The collaborative efforts for solving problem and sharing actual information result in value addition for both supplier and buyer processes (Lamming, 1993).

Direct communication between buyer and supplier staff leads to more understanding between the two organizations (Grant, 1996). Organization which involve in joint product development with supplier increases supplier knowledge by making Cross functional teams from different organization may work together to solve a problem and the best result achieve when there is information sharing throughout the organizations for actual picture (Carr & Kaynak, 2007). There is lack of communication and inefficient handling of customer orders in Pakistan results in poor supplier performance (Imam, Hussain & Raza, 2015). The study focused the buyer side and involved four automakers in Pakistan. The study also identified supplier's inability to use modern technologies. Due to the dynamic changing environment of auto market, it is the manufacturer's responsibility to predict the changes in advance and manage their supplier accordingly. It will help both the manufacturer and supplier to share the financial resource more efficiently (Wachiuri, Waiganio & Oballah, 2015).

Williams (2007) found in their study that whenever there was information break there were used to increase the inventory level at different chain of the supply. Lakemond, Berggren and Weele (2006) proposed three types of coordination between supplier and buyer. In the first type of coordination broad information is communicated on regular basis. Supplier expects a sense of commitment, long term relation and fair treatment in the supplier development initiative and this can be achieved through frequent communication with supplier and improve and this can improve more cooperation with supplier (Prahinski & Benton, 2002). Batson (2012) emphasized on information up gradation and sharing with supplier as technology advancement makes it easier).

Similarly, poor communication with supplier result in buyer product failure (Newman & Rhee, 1990) and this poor communication lead to problems in different distribution channel (Mohr & Nevin, 1991). One another problem caused by poor communication is the creation of conflicts between buyer and supplier and sense of misunderstanding which might generate gap and incorrect strategies may be design (Etgar, 1979). However, more frequency of communication with supplier may negatively affect the supplier performance as supplier may take it as interference in their operational activities and business (Asare, Brashear, Yang & Kang, 2013). Similarly, if there is high frequency of the communication but lack timely sharing will negatively affect the supplier and buyer performance (Mohr & Nevin, 1990).

2.3 Buyer Approach Towards Suppliers' Organization

Supplier relationship is the way how a buyer company interact with their supplier and it is the image of a company how it places their customer (Nyamasege & Biraori, 2015). Motorola made advisory board and arrange supplier show to motivate the supplier involvement in supplier development program started (Gadde & Håkansson, 1998). Kadir et al (2011) study also found that Japanese organization have good relationship with their supplier as compared to American automaker. Quayle (2002) focused on proactive approach in buyer supplier relationship. Long term supplier buyer relationship plays a successful role in performance improvement (Nyamasege & Biraori,2015)). The primary potential benefits which drive the desire to partners include asset/cost efficiency, customer services improvement, marketing advantage, profit stability growth (Lambert, Emmelhainz & Gardner, 1996). Close collaboration between supplier and buyer increase mutual trust, information uniformity and long-term relationship (Yang & Zhang, 2016). Supplier undergo serious attempts in making investment and availability of human resource for those customers who give preferential status to them (Schiele et al, 2011).

Top management commitment is very important in building relationship with supplier (Pirzadeh, Abubakar & Rajeb, 2013). Suppliers participate only in supplier development activities if they are assured that it is mutual beneficial process both for supplier and buyer (Nagati&Rebellodo,2013). Most companies reduce their supplier development practices with those suppliers who are not performing according to the standards or performance level, however the companies keep extensive relationship with them (Batson,2012). Although buyer has always doubt about supplier commitment, but it becomes an opportunity for the supplier firm to achieve more market share. However due to political instability supplier and buyer are reluctant to build relationship in automotive industry of Pakistan to avoid any risk (Imam, Hussain & Raza, 2014). The study also found that due to economic condition and buyer more focus on CKD parts for critical parts is another reason for not building the effective relationship with supplier in automotive industry of Pakistan. Similarly, short term objective sometime is focused instead of long term that demolishes the effectiveness of the supplier development program (Watts & Hahn, 1993). Similarly, many organizations took supplier development program as operational activities and make it limited only to short term goals that make supplier development non effective (Larson, 2001). One another risk identified by Friedl and Wanger (2016) that competitor might take advantage of supplier development indirectly without any investment as this supplier might also have business with your competitor. The tier one supplier to cars manufacturer are well established however the tier 2 suppliers face many problems and it must be the tier 1 supplier to update and transfer the knowledge and expertise from the buyer to tier 2 suppliers (Shimono & Kato, 2017).

However one more thing to clarify that supplier development is not one day activity and the result of the supplier development take time and need commitment from both side (supplier and buyer) needs financial resources and appointing personnel for the implementation of the supplier development program (Ekpokoba,2005).It is also found that buyer select only few critical supplier for supplier development activities and focus their efforts to improve the performance of these supplier (Watts & Hahn,1993). Well design supplier development is not just enough to have rather it is important how it is communicated to the supplier and it is important to check the inefficiencies if there is happening and report immediately from both side (Forker, Ruch & Hershauer, 1999). Close collaboration between the supplier and buyer result in more process improvement however sometimes the result is not effective as much it should be. Since the buyer team have coordination with supplier top management and input of the employee who are the real process owner are not taken which leads to non-effectiveness of the supplier development program (Hartley & Jones, 1997). Kumar and Routory (2017) also pointed out the same issue in supplier buyer relationship in supplier development program. It is important to communicate and clear the objective behind supplier development program otherwise supplier will keep reluctancy towards the supplier development programs. There is always an organizational cultural difference between supplier and buyer firm that obstruct the implementation of the supplier development program, hence it is important to understand first all these non-similarities and accordingly design the supplier development program (Kumar & Rutory, 2016).

2.4 Supplier Performance

Through efficient supplier development buyer helps in reducing the cost of the supplier and then buyer get advantage of this cost reduction in price reduction as this is mutual interest process, which leads to competitive advantage (New,1995 and Wanger 2005). In other words, through supplier development program buyer improve the performance of the supplier that leads to competitive advantage of the buyer (Craus, Sucky & Durst, 2011). One of the key indicators for a successful supplier development program is the improve performance of the supplier (Watts

& Hahn, 1993). There are two basic goal behind supplier development are enhancement of the supplier prerational performance or secondly to improve the capability of the supplier (Cousin et al, 2008).Nissan with the help of their supplier development program has significantly reduce their development time and development cost by 40 % (Ekpokoba,2005).Buyer has higher dependencies in automotive industry for timely delivered supply; improve quality product and price that is less than competitor prices (Pirzadeh, Abu Baker & Rejab,2013). Thus, a well-developed supplier enables firms to have better quality, variability in demands and better customer satisfaction and becomes a source of competitive advantage (Sheth& Sharma,1997 ; Cusumano & Taikeishi ,1991; Hahn et al. ,1990). Supplier performance can be measured in terms of many factors such as quality performance (Maestrin et.al, 2017; Modi and Mabert,2007; Hahn et al.,1990), cost reduction (Maestrin et.al,2017; Hahn et al. 1990), lead time and delivery performance (Lukhoba , 2015 ; Maestrin et.al,2017). Price (MacDuffie, 1995). Wagner (2005) used cost reduction, quality improvement and on time delivery to measure the performance of the supplier. We used these factors to measure the supplier performance to check the impact of the critical success factors for supplier development.

2.5 Theoretical Framework

Theoretical frameworks of the research consist of three independent variables and one dependent variable. Three independent variables are adapted from Krause and Ellarm study (1997) and dependent variable, supplier performance is adapted from the Nagati and Rebolledo (2011).

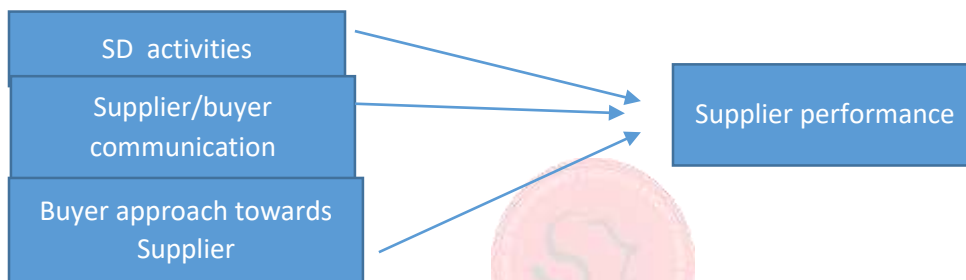


Fig 3.1: Theoretical framework; (source Krause & Ellarm, 1997; Nagati&Rebolledo, 2013).

- H1: Supplier development activities have positive relationship with supplier performance.**
- H2: Supplier buyer communication has positive relationship with supplier performance.**
- H3: Buyer approach towards supplier performance has positive relationship with supplier performance.**

3.0 Methodology

Quantitative methodology is used to conduct the research. Questionnaires were adapted from the Krause and Ellarm (1997) research work with supplier prospective. Items for supplier activities are based on comprehensive literature review. Although most of the items were covered in Krasue and Ellarm (1997), one item of technology sharing in supplier development activities is added from Lukhoba and Mutri (2015) supplier development model. After finalization of questionnaire, it was sent to a pilot sample size of 15 professionals from the auto parts engineering company to check the face validity. The three independent variables and one dependent variable were assessed on 5 points Likert scale with 1 representing strongly agree and effectiveness and 5 representing the least. Likert scale of 5 is commonly used to enhance the response rate and more quality of the response as this scale gives more clarity to the respondent increases (Babakus & Manglod, 1992). This study used a mix of systematic and convenience-based sampling for the study.

Data regarding supplier were obtained from PAPAM (Pakistan Association of Auto parts and accessories manufacturers). This study is limited only to Japanese cars manufacturer. There are three main players Pak Suzuki, Indus Motors Toyota and Honda. PAPAM has 286 members, out of which 69 members are tier one supplier to Pak Suzuki, Indus motors Toyota and Honda (PAPAM, 2017). Questionnaire were emailed to three members (assistant manager level as manager level people are difficult to access because of their busy schedule) from each organization (supply chain, production and Quality department) who directly involves in supplier development activities with buying organization, those organizations and later on also requested on LinkedIn due to less response rate with a target of 207 respondents.

4.0 Result

4.1 Reliability and Validity: To assess the internal consistency among the internal contents Cronbach alpha value is used.

Table 4.1: Summary of the reliability statistic for variables

Variable	Cronbach Alpha (α)	No Of item	Remarks
Buyer approach towards supplier organization (SAQ))	0.739	6	Valid
Supplier Development activities (SD)	0.875	11	Valid
Supplier buyer communication (SBR)	0.725	5	Valid
Supplier performance (SBR)	.740	4	Valid

4.2 Demographic: After following up, altogether 107 professionals from 43 organizations by different system component successfully responded to our questionnaire which shows that we have a response rate of 51.69 %.

Table 4.2 Summary of Respondent’s organization by different system components

Sr.No	Component	Frequency	Percentage(%)
1	Engine components	16	37.2
2	Lubrication system components	10	23.3
3	Chassis system components	8	18.6
4	suspension system components	5	11.6
5	Transmission system components	4	9.3
		Total 43	

Table 4.3 Type of organization based on their customer

Sr.No	Buyer organization	No of supplier who respond	Percentage (%)
1	Pak Suzuki motor company limited (PSMCL)	23	51
2	Indus motors Toyota (IMC)	11	26.04
3	Honda cars	8	19.04

4.3 Descriptive Statistic

Table 4.4 Descriptive statistic for variables

Variable	Number	Mean	Std. Deviation	Skewness	Kurtosis
Supplier development activities	107	2.1038	0.3940	-0.0570	-0.2120

Supplier communication	Buyer	107	1.98	0.742	0.03	-1.169
Buyer approach towards supplier organization		107	1.38	0.389	1.26	1.253
Supplier Performance		107	2.01	0.59	0.081	-0.895

The mean value for supplier development activities (SD) (2.10) shows that responses are in the direction of the positive side as data were assessed on Likert scale of 5 with 1 showing always and 5 showing never. Buyer engaged in supplier development activities with their supplier. The standard deviation for supplier development is (0.394) and skewness and kurtosis value is (-0.057) and (-.212) respectively.

Table: 4.5 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737 ^a	.544	.530	.40531

a. Predictors: (Constant), SAQ, SBR, SD

The value of R which is multiple correlation coefficients (.737) shows that supplier performance has positive relationship with supplier development activities, Supplier/buyer communication and buyer approach towards supplier organization. Similarly, the value of coefficient determination (R square = .544) 54.4 % shows that 54.4 % of the variation in supplier performance is explained by Supplier development activities, buyer approach supplier organization and supplier/buyer communication.

Table 4.6 ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.773	3	6.591	40.121	.000 ^a
	Residual	16.592	101	.164		
	Total	36.365	104			

a. Predictors: (Constant), SAQ, SBR, SD

b. Dependent Variable: SP

The Anova table shows that F value is significant (sig = .000 < .05) which means that dependent variable (supplier performance) percentage is reliable and model is valid.

Table 4.7 Coefficients of regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.119	.219		.544	.588
	SD (Supplier development activities)	.357	.137	.239	2.601	.011
	SBR (supplier communication)	.424	.058	.530	7.289	.000
	SAQ (Buyer approach towards supplier organization)	.219	.143	.144	1.534	.128

a. Dependent Variable: SP

The beta value (.357) from regression table shows for SD (supplier development) has positive relationship with supplier performance. The significance level for SD is also acceptable as $\text{sig} < .05$ which validate our hypothesis that supplier development has positive impact on supplier performance. The beta value (.424) from regression table 4.5 shows that there is positive relationship between supplier buyer communications with supplier performance. The significance level for supplier buyer communication is .000 which is also significant as significance level is $< .05$. This validates our 2nd hypothesis that supplier buyer communication has positive impact on supplier performance. The regression coefficient (β) (.219) shows that there is positive relationship between buyer approach towards organization and supplier performance. However, interestingly the significance level (.128) is higher than accepted level ($\text{sig} < 0.05$) which is against our hypothesis.

Regression Model: Based on above discussion and result the final equation for supplier performance is as follow.
Supplier performance (SP) = .357 * Supplier development activities (SD) + .424 * supplier buyer communication (SBR)

5.0 DISCUSSION

Regression coefficient ($\beta=.424$) shows that supplier buyer communication has positive impact on supplier performance. The significance value for the supplier buyer communication is also acceptable ($\text{Sig} = .000 < .05$) which also shows that our hypothesis is valid for the supplier buyer communication. Timely and actual information sharing plays a vital role in supplier development program and their impact on supplier performance. Communication is considered as a binding force among different stakeholders of the supply chain that connect all the parties through effective and timely shared information (Mohar & Nevin, 1990). Information sharing and communication in this rapidly changing global economy affects more significantly the performance of the organizations. Buyer supplier communication is one of the key success factors for the supplier development program (Krause & Ellarm, 1997: Sillanpää, Shahzad & Sillanpää, 2015).

We have interesting result from Buyer approach towards supplier organization. The regression coefficient ($\beta=.214$) shows that there is weak positive relationship between buyer approach towards supplier organization and supplier performance. However, the significance value for the buyer approach towards supplier organization is more than acceptable range ($\text{sig} = .128 > .05$) which shows that buyer approach towards supplier organization has no impact on supplier performance and which is contradictory to our hypothesis. As identified by Kumar & Rutory, (2016) there is always cultural differences between buyer and supplier organization so the approach of the buyer towards supplier organization or in other words the objective of the relationship towards supplier performance may not be clear to the supplier. Supplier may take the positive approach of the buyer into negative sense of dependency on the supplier by buyer. One another reason might be the focusing on short term goals instead of long term objective (Watts & Hahn, 1993) and due to political and economic situation of Pakistan both stakeholder take less risk in building relationship (Imam, Raza and Hussian, 2015) to increase the dependency on only few suppliers or customers.

6.0 CONCLUSION

The main purpose of the study is to validate the key success factors identified from literature and check the impact on supplier performance. After having analysis from the data received key success factors from literature were identified and grouped into three categories (supplier development activities, supplier buyer communication and buyer approach towards supplier organization). Positive relationship is found between supplier development activities and supplier performance. Increasing the supplier development activities, there will be improvement in the supplier performance. Similarly, positive relationship is found for supplier buyer communication which shows effective supplier buyer communication improves the supplier performance. However, the buyer approach towards the supplier organization is found that it has no significant effect on supplier performance. The result is obtained from 107 professionals working in automotive parts manufacturer and supplier to Pak Suzuki, Honda cars and Indus Motor Toyota. The reliability and validity of the data was checked and found positive. Regression analysis was done to check the model fitness and predictability of the dependent variable that is supplier performance.

6.1 Implications of the Study:

This is the first comprehensive study conducted in automotive industry of Pakistan on supplier development which covers the supplier perspective on supplier development in auto industry. This study first identified the key

success factor for supplier development in automotive industry and then their impact on supplier performance which in turns leads to the buyer competitive advantage. This research will help both buyer and supplier organization to assess the effectiveness of their supplier development program. It is found that success factors for supplier development significantly contribute the supplier performance improvement. Three key success factors were extracted from literature and it is found that supplier development activities and supplier buyer communication have positive impact on supplier performance.

This study will help the buyer organizations to understand the expectation of the supplier in supplier development program and it is also helpful for public institutions in regulating the automotive industry for Pakistan, especially in localization policy. The study also adds value to the literature on supplier development in automotive industry in developing countries which could be a basis for future research in supplier development in Pakistan. This study can also be generalized for other OEM in car industry of Pakistan

6.2 Limitations and Future Research

This study is limited to tier 1 supplier to Japanese cars manufacturer in automotive industry of Pakistan only. However, considering globalization of market view future research can also include other car manufacturers such as Kia motors (Korean Manufacturer), Faw motors (Chinese manufacturer) to get the broaden view. Future research can also include automotive parts supplier to other OEM like tractor manufacturer, motorcycle manufacturer. Some other variables like political situation and government regulation can also be included to study the supplier development program effectiveness. A comparative study with some other developing countries like India, Bangladesh and Sri Lanka could add more value to the existing research.

References

- Abdullah, R., &Maharjan, K. L. (2003). Critical elements of supplier development in the Malaysian automobile industry: parts and components procurement and supplier development practice at Proton. *Journal of International Development and Cooperation*, 9(2), 65-87.
- Akhavan, P., Shahabipour, A., & Hosnavi, R. (2018). How supplier knowledge impacts on organizational capabilities and willingness. *VINE Journal of Information and Knowledge Management Systems*, 48(1), 140-158.
- Batson, G. R. (2008) A survey of best practices in automotive supplier development. *International Journal of Automotive Technology and Management*
- Brandes, O., Brege, S., &Brehmer, P. O. (2013). The strategic importance of supplier relationships in the automotive industry. *International Journal of Engineering Business Management*, 5(Godište 2013), 5-17.
- Brown, S. L., & Eisenhardt, K. M. (1995). Product development: Past research, present findings, and future directions. *Academy of management review*, 20(2), 343-378
- Carr, A. S., & Pearson, J. N. (1999). Strategically managed buyer–supplier relationships and performance outcomes. *Journal of operations management*, 17(5), 497-519.
- Carr, A. S., Kaynak, H., Hartley, J. L., & Ross, A. (2008). Supplier dependence: Impact on supplier's participation and performance. *International Journal of Operations & Production Management*, 28(9), 899-916.
- Carter, J.R., Smeltzer, L. and Narasimhan, R. (1998), “The role of buyer and supplier relationships in integrating TQM through the supply chain”, *European Journal of Purchasing and Supply Management*, Vol. 4 No. 4, pp. 223-34.
- Cousins, P.D., Handfield, R.B., Lawson, B., Petersen, K.J., 2006. Creating supply chain relational capital: the impact of formal and informal socialization processes. *Journal of Operations Management* 24 (6), 851–863
- Dyer, J.H., 1996. How Chrysler created an American Keiretsu. *Harvard Business Review* 74 (4), 42–56
- Dyer, J.H., 1996. How Chrysler created an American Keiretsu. *Harvard Business Review* 74 (4), 42–56
- Dweiri, F., Kumar, S., Khan, S. A., & Jain, V. (2016). Designing an integrated AHP based decision support system for supplier selection in automotive industry. *Expert Systems with Applications*, 62, 273-283.
- Dweiri, F., Kumar, S., Khan, S. A., & Jain, V. (2016). Designing an integrated AHP based decision support system for supplier selection in automotive industry. *Expert Systems with Applications*, 62, 273-283.
- Friedl, G., & Wagner, S. M. (2016). Supplier Development Investments in a Triadic Setting. *IEEE Trans. Engineering Management*, 63(2), 136-150.
- Grant, R. M. (1996). ‘Toward a knowledge-based theory of the firm’, *Strategic Management Journal*, 17, pp. 109–122.

- Hahn, C.K., Watts, C.A. and Kim, K.-Y. (1990), "The supplier development program: a conceptual model", *Journal of Purchasing and Materials Management*, 26(2), 2-7.
- Handfield, R.B., Krause, D.R., Scannell, T.V. and Monczka, R.M. (2000), "Avoid the pitfalls in supplier development", *Sloan Management Review*, Vol. 41 No. 2, pp. 37-49
- Handfield, R. B., Krause, D. R., Scannell, T. V., & Monczka, R. M. (2006). Avoid the pitfalls in supplier development. *Supply Chains and Total Product Systems: A Reader*, 58
- Humphreys P. K., Wong Y. K., Chan F. T. S., Integrating Environmental Criteria into the Supplier Selection Process, *Journal of Materials Processing Technology*, Vol. 138, No. 1- 3 (2003) pp. 349-356.
- Hoegl, M., & Wagner, S. M. (2005). Buyer-supplier collaboration in product development projects. *Journal of management*, 31(4), 530-548.
- Imam, A., Hussain, N., and Raza, A. (2105) Effective supplier management in automobile industry in Pakistan. *Journal of Applied Environmental and Biological Sciences J. Appl. Environ. Biol. Sci.*, 5(12), 167-177
- Jabbour, A. B. L., & Jabbour, C. J. (2009). Are supplier selection criteria going green? Case studies of companies in Brazil. *Industrial Management & Data Systems*, 109(4), 477-495.
- Joshi, S., Kharat, M., Raut, R., Kamble, S., & Kamble, S. (2017). To examine the relationships between supplier development practices and supplier-buyer relationship practices from the supplier's perspective. *Benchmarking: An International Journal*, 24(5), 1309-1336.
- Kadir, K. A., Tam, O. K., & Ali, H. (2011). Patterns of supplier learning: Case studies in the Malaysian automotive industry. *Asian Academy of Management Journal*, 16(1).1-20
- Kant, R., & Dalvi, M. V. (2017). Development of questionnaire to assess the supplier evaluation criteria and supplier selection benefits. *Benchmarking: An International Journal*, 24(2), 359-383.
- Krause, D. R., & Ellram, L. M. (1997). Success factors in supplier development. *International Journal of Physical Distribution & Logistics Management*, 27(1), 39-52.
- Krause, D.R., Handfield, R.B. and Scannell, T.V.,(1998). An empirical investigation of supplier Development: Reactive and strategic processes. *Journal of Operations Management*, 17(1), 39-58.
- Krause, D. R., Handfield, R. B., & Tyler, B. B. (2007). The relationships between supplier development, commitment, social capital accumulation and performance improvement. *Journal of operations management*, 25(2), 528-545.
- Lakemond, N., Bergrenn, C., & Weele, V. A., (2006) Coordinating supplier involvement in product development projects: a differentiated coordination typology. *R & D Management*, 36 (1), 54-66
- La Londe, B. J., & Masters, J. M. (1994). Emerging logistics strategies: blueprints for the next century. *International journal of physical distribution & logistics management*, 24(7), 35-47.
- Lambert, M. D., Emmelhainz, M. A., & Gardner, J. T., (1996), "Developing and Implementing Supply Chain Partnerships", *The International Journal of Logistics Management*, 7(2), 1-18
- Li, W., Humphreys, P. K., Yeung, A. C., & Cheng, T. E. (2007). The impact of specific supplier development efforts on buyer competitive advantage: an empirical model. *International Journal of Production Economics*, 106(1), 230-247
- Lettec, F., Wyatt, C., & Evans, S., (2010). Buyer-supplier partnerships during product design and development in the global automotive sector: Who invests, in what and when?. *Int. J. Production Economics* 127(2), 307-319
- Lukhoba, E. J., (2005). Effect of supplier development on supplier performance: a survey of food manufacturing companies in Kisumu County. *International Journal of Economics, Commerce and management*. 3 (2). 1146-1159
- MacDuffie, J. P., & Helper, S. (1997). Creating lean suppliers: diffusing lean production through the supply chain. *California management review*, 39(4), 118-151
- Maestrini, V., Luzzini, D., Maccarrone, P., & Caniato, F. (2017). Supply chain performance measurement systems: A systematic review and research agenda. *International Journal of Production Economics*, 183, 299-315.
- Marksberry, P. (2012). Investigating "The Way" for Toyota suppliers: A quantitative outlook on Toyota's replicating efforts for supplier development. *Benchmarking: An International Journal*, 19(2), 277-298.
- Modi, S. B., & Mabert, V. A. (2007). Supplier development: Improving supplier performance through knowledge transfer. *Journal of operations management*, 25(1), 42-64. Modi, S. B., & Mabert, V. A. (2007). Supplier development: Improving supplier performance through knowledge transfer. *Journal of operations management*, 25(1), 42-64.
- Mohr, J. and Nevin, R. (1990), "Communication strategies in marketing channels: a theoretical perspective", *Journal of Marketing*, Vol. 54, pp. 36-51

- Newman, R. G., & Rhee, K. A. (1990). A case study of NUMMI and its suppliers. *Journal of Purchasing & Materials Management*, 26(4), 15-21.
- New,J,S.,(1996) A framework for analyzing supply chain improvement,IJOPM,16(4),19-34
- Nyamasege O,J., & Biarori,O,E., (2015) , Effect of supplier relationship management on the effectiveness of supply chain management in the Kenya public sector. *International Journal of Managing Value and Supply Chains (IJMVSC)* 6(1), 25-32
- Pirzadeh. Z, AH, A B.,&Rajeb (2013). Relationships between automaker and supplier in order to investigate any conflict or cooperation: a case study of Proton.*Inter disciplinary journal of contemporary research in business*, 5(4).284-290
- Prahinski, C, &Benton,W.C (2004) Supplier evaluations: communications strategy to improve supplier performance. *Journal of operations Management*, 22(2004), 39-62
- Prajogo, D., &Olhager, J. (2012). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration. *International Journal of Production Economics*, 135(1), 514-522.
- Nagati, H., &Rebolledo, C. (2013). Supplier development efforts: The suppliers' point of view. *Industrial Marketing Management*, 42(2), 180-188.
- Rajagopal, A., & Rajagopal, A. (2008). Dynamics of buyer? supplier codependency for optimising functional efficiency. *International Journal of Services and Operations Management*, 4(4), 399.
- Routroy, S., & Pradhan, S. K. (2014). Analyzing the performance of supplier development: a case study. *International Journal of Productivity and Performance Management*, 63(2), 209-233
- Sánchez-Rodríguez, C., Hemsworth, D., & Martínez-Lorente, Á. R. (2005). The effect of supplier development initiatives on purchasing performance: a structural model. *Supply chain management: an international journal*, 10(4), 289-301.
- Sheth,N,J., &Sharma, A., (1997), supplier relationship ; emerging issues and challenges, *Industrial marketing management* 26,91-100
- Sillanpää, I, Shahzad, K., &Sillanpää, E. (2014). Supplier development and buyer-supplier relationship strategies—a literature review. *International Journal of Procurement Management*, 8(1-2), 227-250.
- Spekman, R. E. (1985). Competitive procurement strategies: building strength and reducing vulnerability. *Long Range Planning*, 18(1), 94-99.
- Takeishi, A. (2001). Bridging inter-and intra-firm boundaries: management of supplier involvement in automobile product development. *Strategic management journal*, 22(5), 403-433.
- Tungjitjarurn, W., Suthiwartnarueput, K., &Pornchaiwiseskul, P. (2012). The Impact of supplier development on supplier performance: The role of buyer-supplier commitment, Thailand. *European Journal of Business and Management*, 4(16), 183-193.
- Veloso, F., & Fixson, S. (2001). Make–buy decisions in the auto industry: new perspectives on the role of the supplier as an innovator. *Technological Forecasting and Social Change*, 67(2-3), 239-257.
- Wachiuri,E.,Waiganio,E., and Oballah,D.,(2015). Role of supplier development on organizational performance of manufacturing industry in Kenya: a case of East Africa breweries limited. *International Journal of Education and Research*.3 (3) 683-693
- Watts, C. A., & Hahn, C. K. (1993). Supplier development programs: an empirical analysis. *International Journal of Purchasing and Materials Management*, 29(1), 10-17.