

Research Article

THE STUDY OF THE RELATIONSHIP BETWEEN PURCHASING STRATEGIES ON PRODUCTION IMPROVEMENT AND PRIORITIZING EACH PROCUREMENT COMPONENT IN KHUZESTAN STEEL COMPANY

Fatemeh Naghavi, *Hassan Soltani and Fereshteh Mostafavi Rad

Department of Management, Science and Research branch, Islamic Azad University, Fars, Iran

**Author for Correspondence*

ABSTRACT

This study sought to examine the relationship between purchasing strategies (effective negotiation, supplier relationship and collaborative interactions, and cost effective management of supply-based management) on production improvement and prioritizing each procurement component to improve Khuzestan Steel Company products. The research is an applied and correlation – descriptive type, the analytic community is 289 employees of Khuzestan Steel Company out of which 127 were chosen as subjects by stratified random sampling technique. Two production strategies and procurement evaluation and improvement questionnaire were used to assess. For data analysis, the T-Student test, the Kolmogorov-Smirnov test, Pearson Solidarity test, simple and multiple regressions, independent two-sample t-test and ANOVA were used by SPSS software. The results show that there is a significant relationship between the four components of purchasing strategy (effective negotiation, supplier relationship and collaborative interactions, and cost effective management of supply-based management) and production improvement.

Keywords: *Production Process, Effective Negotiation, Supplier Relationship and Collaborative Interactions, Effective Cost Management*

INTRODUCTION

Optimal purchasing management of an organization is a tool that organization managers can use to achieve their goals. Since the overall strategy of the organization determines the goals, it is logical for a close relationship to exist between overall strategies of and organization and purchase strategies. More precisely there should be a rational relationship between the environment, business type, and set strategies of organizations for purchasing in order to create harmony between them. Harmony creates synergy in organizations.

Procurement strategies play a key role in the success of organizations in the field of competition. These strategies, if developed properly, could lead to the selection of strategies that, if implemented correctly and on time, achieve excellence and pioneering of the organization. Today's financial activities of the world are done by a combination of big, medium, and small organizations. In a turbulent and highly competitive market all of these organizations are looking for a win against their competitors and to satisfy the needs of their customers.

Strategic planning if developed and implemented soundly, is a useful tool for companies' success in the competitive global marketplace and can help keep them afloat. Because of the differences between small and large organizations in various fields of formulation, implementation and evaluation of programs, their purchasing strategies are different from one another.

This study sought to identify the impact of an effective negotiation strategy, supplier relationships and collaborative interactions, supply-base management and, fee-based management and their difference in order to help production improvement, so not only the organizations manage to achieve success in the competitive market through this, but also by understanding the existing differences in order to be more successful, be able to plan their activities more strategically.

Research Article

Research Literature

Procurement Strategies

Due to tremendous changes and developments in the area and intensity of competition in global markets, each organization has the urgent need to take advantage of Procurement strategies in order to survive and gain further success. Differences between organizations in various fields such as: size and nature of operations, sales or revenue, number of employees, investment amount, and etc. causes variety in the way of procurement strategy planning (effective negotiation, supplier relationship and collaborative interactions, and cost effective management of supply-based management). Different countries classify their organizations according to the mentioned measures.

One common aspect between us and the organization, regardless of the profound differences is that we are all consumers. All organizations have various needs like we do, and to meet their demands they purchase different goods and services. Supplier companies have the biggest market and they offer their products to that market. This market is an organizational market. Organizational market consists of all the organizations that produce different goods and services to be used in production of other goods and services, goods and services that will be resold, or rented or are brought to others (Wilson and Dominik, 1991). Institutional buyers are qualified with different levels of information, experience, and expertise in purchasing required goods and services. Similar purchases are not identical in two different organizations, because different procurement strategies might be used in different purchase situations. Understanding these differences can be useful in organizational marketing to create effective marketing strategies for organizational buyers. Therefore corporate marketing strategies must be designed, developed, and implemented based on the procurement situation of buyer organizations (Donald and Christopher, 2003). It is also important for a corporate marketer to know how different parts of an organization should play a role and give their opinion in procurement of that product.

Before recalling the name and consumer awareness was sufficient but now consumers have to be associated with certain advantages, in the past quality competition was very low but today world-wide product quality has increased. By reviewing the status of manufacturer and comparing it to current situation we find that as a result of these developments, the marketing science has shifted its focus from emphasis on product to direct emphasis on the consumer and now the consumer, identifying it, and its needs are a part of marketing strategy. Now we are looking to evaluate the effect of procurement strategies on production improvement.

Production Improvement

In the present business environment, rapid in progress changes, has made control over prices to try to stay in the global competition very hard and this has caused the steel companies to react quickly to doubts and uncertainty, therefore the rise of global competitors in domestic or international business has forced the organizations to react to changes in appearance in order to meet the demands of the market, as a result, the main strategy and partnership objective of organizations, is to develop a sustainable competitive interest (Husycson, 2007). Due to economic conditions and sanctions to the country and transformations that have been created in the business environment all companies in the industry are facing difficult and competitive conditions so that on one hand, production costs for companies have increased and on the other, they are trapped in a sales slump in the market.

As a result these factors have caused the companies to identify and take up strategies to get out of this situation. One of the key strategies is to pay more attention to the issues of procurement and logistics (Oskuee, 2011). The aim of any industrial activity is to create a product that is profitable in business and achievement of interest in commercial and industrial establishments is only possible through the right combination of human resources, money or capital, raw materials, machinery and management. In today's industry, material plays a vital role and without that the establishment cannot continue its activity and this material should be purchased at a right time, in a right place and with a decent quality and price and flaw in its procurement and supplement causes unemployment of other sections and increase in costs and eventually causes decrease in profitability of the corporation.

Research Article

In the recent decade, procurement task management in supply chain has been a challenge to establishments and the need to access an international competition level in the supplement area has increased fundamentally (Kareiak *et al.*, 2001).

In most industries the cost of raw material and components are the main cost of a product, therefore the procurement section can play a key role in efficiency and effectiveness of an organization, since they have a direct effect on decrease of the organization's profitability and flexibility (Ghodsi *et al.*, 2001).

In addition to this, since nowadays the suppliers have a fundamental effect on success or failure of a company, procurement that used to be considered as an absolute tactical tool, is now known as a strategic task (Goffin *et al.*, 1997).

Procurement is a key supportive activity in the manufacturing process, to create the excellence value for the company's production through input and services and facilities needed and at the same time increase the maintenance of manufacturing facilities (Monczka *et al.*, 2004).

In the new millennium, the structure and type of purchase and supply chain management play a vital role for organizations in order to face the new era in international competition (Monczka *et al.*, 2004).

Conceptual Model of the Research

This study sought to evaluate the impact of purchasing strategies, including (effective negotiation, supplier relationship and collaborative interactions, and cost effective management of supply-based management) on production improvement. Therefore the independent variables of the research are procurement strategies with four components of effective negotiation, supplier relationship and collaborative interactions, and cost effective management of supply-based management, and the dependent variable of the research is production improvement. Therefore, the conceptual model of the research which is derived from the general procurement strategies model on product implementation by Zeilayi and Trolgachanter (2009) is as follows.

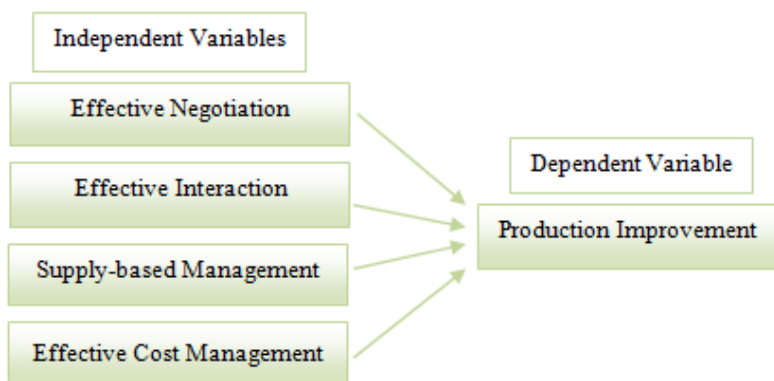


Figure 1: Conceptual Model of the Research

Hypotheses

Main Hypothesis

There is a significant relationship between procurement strategies and production improvement.

Sub-hypotheses

First Hypothesis: There is a significant relationship between effective interaction and production improvement.

Second Hypothesis: There is a significant relationship between cost management and production improvement.

Third Hypothesis: There is a significant relationship between Supply-based Management and production improvement.

Forth Hypothesis: There is a significant relationship between effective negotiation and production improvement.

Research Article

MATERIALS AND METHODS

In the present study the research method has been classified based on three bases: this project is considered applied-research aim-wise, applied-research study is indicated to a study that is done about daily life individual and collective problems, and employment and social problems. The goal of these studies is experimental facts in theoretical concepts of real problems in order to improve the process or the outcome (Delavar, 2005). Also the present study is classified in cross-correlation studies category according to its nature and method. On the other hand studies can be classified by whether they have been done in one period or several periods of time, to longitudinal and cross-sectional. Since the present study has been done in a fixed period of time, is cross-sectional. The study is classified as Commercial Strategic Management, and time-was it was done in the first three months of the solar year 2014 (Spring of 2014). In the present study the population includes all the employees of purchasing deputy of Khuzestan Steel Company which are 289 people. The researcher has determined 127 people as the sample mass and has distributed questionnaire randomly among the population.

Data Analysis

Table 1: Results of T-test done on components

Title	T Statistics	P-value	Mean difference and test amount	95% Confidence interval mean difference and		Test result	Condition
				Lower bound	Higher bound		
Effective Interaction	26.823	0.000	1.023	0.947	1.098	<i>Fail H₀</i>	Desirable
Cost Management	21.828	0.000	0.970	0.882	1.058	<i>Fail H₀</i>	Desirable
Supply-based Management	20.412	0.000	0.827	0.746	0.907	<i>Fail H₀</i>	Desirable
Effective Negotiation	19.656	0.000	0.896	0.806	0.987	<i>Fail H₀</i>	Desirable

As it is shown in table 1, all the components are in desirable condition and confidence intervals acquired for variables' mean difference are mentioned in the table.

The First Sub-hypothesis

There is a significant relationship between effective interaction strategy and production improvement. The H₀ hypothesis based on the correlation coefficient of two variables in the population being zero vs. the H₁ hypothesis based on the correlation coefficient of the population not being zero at the error level of 0.05, will be tested.

Table 2: Results of the correlation coefficient test of the “effective interaction” and “production improvement” variables

Frequency	Pearson correlation efficiency	p-value
127	0.730	0.000

As it is shown in table 2, the acquired p-value is much smaller that the error level of $\alpha= 0.05$, therefore the H₀ hypothesis based on two variables of "effective interaction" and "production improvement" being uncorrelated at 5% level is rejected, which means that these two variables are significantly correlated and the correlation coefficient acquired is 0.730, which show the existence of correlation between the two variables.

Research Article

The Second Sub-hypothesis

There is a significant relationship between cost management strategy and production improvement. The H_0 hypothesis based on the correlation coefficient of two variables in the population being zero vs. the H_1 hypothesis based on the correlation coefficient of the population not being zero at the error level of 0.05, will be tested.

Table 3: Results of the correlation coefficient test of the “cost management” and “production improvement” variables

Frequency	Pearson correlation efficiency	p-value
127	0.834	0.000

As it is shown in table 3, the acquired p-value is much smaller than the error level of $\alpha= 0.05$, therefore the H_0 hypothesis based on two variables of "cost management" and "production improvement" being uncorrelated at 5% level is rejected, which means that these two variables are significantly correlated and the correlation coefficient acquired is 0.834, which shows the existence of correlation between the two variables.

The Third Sub-hypothesis

There is a significant relationship between Supply-based Management strategy and production improvement. The H_0 hypothesis based on the correlation coefficient of two variables in the population being zero vs. the H_1 hypothesis based on the correlation coefficient of the population not being zero at the error level of 0.05, will be tested.

Table 4: Results of the correlation coefficient test of the “supply-based management” and “production improvement” variables

Frequency	Pearson correlation efficiency	p-value
127	0.625	0.000

As it is shown in table 4, the acquired p-value is much smaller than the error level of $\alpha= 0.05$, therefore the H_0 hypothesis based on two variables of "supply-based management" and "production improvement" being uncorrelated at 5% level is rejected, which means that these two variables are significantly correlated and the correlation coefficient acquired is 0.625, which shows the existence of correlation between the two variables.

The Forth Sub-hypothesis

There is a significant relationship between effective negotiation strategy and production improvement. The H_0 hypothesis based on the correlation coefficient of two variables in the population being zero vs. the H_1 hypothesis based on the correlation coefficient of the population not being zero at the error level of 0.05, will be tested.

Table 5: Results of the correlation coefficient test of the “effective negotiation” and “production improvement” variables

Frequency	Pearson correlation efficiency	p-value
127	0.683	0.000

As it is shown in table 5, the acquired p-value is much smaller than the error level of $\alpha= 0.05$, therefore the H_0 hypothesis based on two variables of "effective negotiation" and "production improvement" being uncorrelated at 5% level is rejected, which means that these two variables are significantly correlated and the correlation coefficient acquired is 0.683, which shows the existence of correlation between the two variables.

Research Article

Main Hypothesis

There is a significant relationship between procurement strategies and production improvement.

Table 6: Results of the correlation coefficient test of the components and production improvement.

Multivariate regression coefficient	Determination coefficient	Adjusted determination coefficient	Standard deviation estimates
0.976	0.953	0.952	0.07528

The acquired multivariate regression coefficient equals 0.976 which shows the strong correlation between the forecasting variables and criterion variable. According to the gained results, the adjusted determination coefficient for the model is 0.952, and we can say that 98% of changes of the criterion variable can be determined with the linear relationship between it and the forecasting variables.

Table 7: Analysis of variance of the model

Source of Changes	Total of second squared	Degrees of freedom	F-Statistics	P-Value
Regression	14.157	3	832/773	0.000
Residuals	0.697	123		
Total	14.854	126		

As it is seen in the analysis of variance of the model (7), acquired p-value regarding the test is much smaller than the error level of 0.05. Therefore the H_0 hypothesis based on the criterion variable of “production improvement” and forecasting variables in the population being uncorrelated is rejected and we can say that the criterion variable and forecasting variables are correlated.

Table 8: Influence coefficients condition of components in the model

Variables	Influence coefficients		Standard influence coefficients	Coefficient test	
	Coefficients	Standard deviation		T-statistics	P-value
Fixed Amount	0.000	0.000		0.000	1.000
Cost Strategy	0.286	0.000	0.417	1.8862	0.000
Interaction Strategy	0.314	0.000	0.393	1.8967	0.000
Supply Strategy	0.229	0.000	0.304	1.8580	0.000
Negotiation Strategy	0.171	0.000	0.257	1.8232	0.000

According to the data in table 8, the regression formula is as follows:

$$Y = 0/286X_1 + 0/314X_2 + 0/229X_3 + 0/171X_4$$

In which the variables are:

Y: “Production improvement”

X₁: “Cost Strategy”

X₂: “Interaction Strategy”

X₃: “Supply Strategy”

X₄: “Negotiation Strategy”

As it can be seen, all the forecasting variables are effective on production improvement and by knowing the amount of these forecasting variables we can forecast production improvement variable.

Research Article

RESULTS AND DISCUSSION

The First Sub-hypothesis

According to table 2 and table 8 we can conclude that there is a significant relationship between effective interaction and production improvement observed, in a way that the significance level is less than 0.05. Meaning that between effective interaction and production improvement there exist a significant relationship which is positive according to the calculated correlation coefficient and with an increase in effective interaction, production improvement also increases. On the other hand, the effect of effective interaction on production improvement was evaluated while considering other components through linear regression and the amount of regression correlation equals to 0.286. This indicates that the regression coefficient was significant and effective interaction has a significant effect of 0.730 on production improvement.

The Second Sub-hypothesis

According to table 3 and table 8 we can conclude that at the significant level of 0.05 between cost management and production improvement a significant relationship has been observed. This relationship was positive and equaled to 0.83 according to the calculated correlation coefficient and with an increase in cost management, production improvement also increases. On the other hand, the effect of cost management on production improvement was evaluated while considering other components through linear regression and the amount of regression correlation equals to 0.314 or $p < 0.05$. This indicates that the regression coefficient was significant and cost management has a significant effect of 0.834 on production improvement.

The Third Sub-hypothesis

According to table 4 and table 8 it can be concluded that the Pearson regression coefficient at the significant level of 0.00 was equal to 0.625 that according to this significant level we have concluded that there exists a significant correlation between supply-based management and production improvement. Also by evaluating the effect of supply-based management on production improvement through linear regression, the amount of regression coefficient was equal to 0.229 with significant level of zero, that this significant level indicates the effect between supply-based management and production improvement.

The Forth Sub-hypothesis

According to table 5 and table 8 we can conclude that at the significant level of 0.05 between effective negotiation and production improvement a significant relationship has been observed. The regression correlation calculated was positive and equaled to 0.683 and with an increase in effective negotiation, production improvement also increases. On the other hand, the effect of effective negotiation on production improvement was evaluated while considering other components through linear regression and the amount of regression correlation equals to 0.171. This indicates that the regression coefficient was significant and effective negotiation has a significant effect of 0.171 on production improvement.

ACKNOWLEDGEMENT

We are grateful to Islamic Azad University, Fars science and Research branch authorities, for their useful collaboration.

REFERENCES

- Skrik RB (1967)**. Principles of marketing: The management view, New York: Hot Rinehut and wenston, INC.
- Dunken T (1997)**. *Integrated Marketing Communications*, First Printing (Yas-e-Nabi Publication).
- Donald D and Christopher DG (2003)**. Purchasing Competence and Its relationship with manufacturing performance. *The Journal of Supply Chain Management: A Global Reviews do Purchasing and Supply* **10**(5) 210-218.
- Elleram LM (1995)**. Total cost of ownership: an analysis approach for purchasing. *International Journal of Physical Distribution & Logistics Management* **21**(1) 13-22.

Research Article

Elleram LM and Siferd SP (1998). Total cost of ownership: a key concept in strategic cost management decision. *Journal of Business* **19**(1) 55-84.

Fegghi N (1998). Strategic management structure of the organization, first printing, Islamic Azad University of Tabriz.

Ghodsipour SH and O'Brien C (2001). The total cost of logistics in supplier selection under conditions of, multiple sourcing, multiple and capacity constraint. *International Journal of Production Economics* **73**(1) 1-24.

Goffin LC and Percy (1997). Word-Class Purchasing Skill: An Empirical Investigation, *The Journal of Supply Chain Management*.

Gomes CF, Yasin MM and Lisboa JV (2006). Key performance factors of manufacturing effective performance: The impact of customers and employee. *The TQM Magazine* **18**(4) 323-340.

Harrison Jafati S and Karen HJ (2010). *Principles of Strategic Management*, Translation by: Arabi M, Almasi Fard MR, Mahkame.

Hoseini S and Nekou'ee Zadeh M (2011). Analyze the marketing strategies of service firms during the recession. *The Outlook of Business* **6**(3) 117-139.

Herrman TT and Befurt R (2006). Determinants of radical product innovations. *European Journal of Innovation Management* **9**(1) 20-43.

Husycson S (No date). Available <http://www.simonhazeldine.co.uk> [Accessed 13 August 2013].

Humphreys PK, Shiu WK and Chan FTS (2001). Collaborative buyer-supplier relationship in Hong Kong manufacturing firms. *Supply Chain Management: An International Journal* **6**(4) 152-162.

Jayaram J, Dörgr C and Vickery SK (1999). The impact of human resource management practices on manufacturing performance. *Journal of Operations Management* **18** 1-20.

Jahangard N (2003). Provide a framework for measuring the level of innovation Technology of Organizations- MA thesis (unpublished), Tarbiat Modarres University, Faculty of Engineering, and Department of Industrial Engineering.

Janda S and Seshadri S (2001). The Influence of Purchasing on Performance. *Journal of Business & Industrial Marketing* **16**(4) 294-308.

Joshi MP, Kathuria R and Porth SJ (2003). Alignment of strategic priorities and performance: an integration of strategic management perspectives. *Journal of Operations Management* **21** 353-360.

Mark B (2004). Understanding the mean of collaboration in the Supply Chain. *Supply Chain Management: an International Journal* **19**(1) 30-42.

Monczka R, Tern R and Handfield R (2004). *Purchasing and Supply Chain Management*, 3rd edition, Thomson Corporation, South-Western.

Monczka D, Malcolm and Christopher M (2004). *Y Marketing*, first Edition, palgrave Macmillan, 230-25.

Ndubis NO, Jantan M, Loo CH and Ayub MS (2005). Supplier selection and management strategies and manufacturing flexibility. *The Journal of Enterprise Information Management* **18**(3) 330-349.

Osku'ee Behrouz A (No Date). Development of management thoughts in the country, management weblog and knowledge era, Available: <http://osku.ee.persianblog.ir> [Accessed 9 March 2013].

Perry John (1969). *Profitable staff – Budget Advertising* (London: Business. Publications limited).

Sarmad Z (2005). *Research Methods in the Behavioral Sciences* (Tehran: Agah Publications).

Safar Zadeh H (2008). *Management Theories* (Puran Pajouhesh Publications).

Wilson D (1999). *Organizational Marketing*, First Edition (International Thomson Business Press) **11**(2) 120-129.

Zeilani S and Rajagopal P (2005). Supply Chain integration and Performance: US Versus Asian Companies. *Supply Chain Management: an International Journal* **10**(5) 379-393.