Indian Journal of Fundamental and Applied Life Sciences ISSN: 2231– 6345 (Online)
An Open Access, Online International Journal Available at www.cibtech.org/sp.ed/jls/2015/01/jls.htm
2015 Vol.5 (S1), pp. 5064-5068/Jamali and Hojjati
Research Article

IDENTIFYING AND RANKING FACTORS AFFECTING VALUE CHAIN OF BUSHEHR'S ELECTRONICINDUSTRY

***Jamali Gh.[1] and Hojjati V.[2]**
[1]Department of Industrial Management, Persian Gulf University, Bushehr, Iran
[2]Department of Industrial Engineering, Persian Gulf International Branch, Islamic Azad University, Abadan, Iran
**Author for Correspondence*

ABSTRACT
The main objective of this paper is to identify and rank, through a descriptive survey method, the factors that affect the value chain of Bushehr's electronic industry. The statistical population of paper includes all the staff, electricians, managers, and workshop supervisors of Bushehr's electronic industry. The data is collected through the standard questionnaire of the Likert scale. In this study, in hope of determining the effectiveness of the Porter model parameters on Bushehr's electronic industry, six hypotheses, including input supply, production operations, output supply, marketing and selling, after sale services, and support activities, were investigated. According to the results, all hypotheses are associated with less than 0.05significance levels. Furthermore according to Friedman ranking test, the priorities ranking is as follow respectively: marketing and selling, output supply, after sale services, input supply, support activities, and production operations. Hence, the above-mentioned company, through adjusting its activities to Porter model, following specific plans in terms of marketing, and finally eliminating extra activities, can bring about the highest level of products' value added.

Keywords: *Value Chain, Electronic Industry*

INTRODUCTION
Considering the limitation of human resources and global competition to capture more market share, companies are required to follow a competition-effective strategy. In addition, numerous agencies and modern production methods have led to more and faster use of resources. Consequently, companies, through production cost reduction and value added increase, are looking for ways to create competitive advantage in their production processes. Porter's model of value chain is among the models used for calculating production value added of different organizations. The model can be used not only for identifying and classifying but for ranking activities. Furthermore; value chain model became widespread in 90s, holding the first mangers' tool in strategic management. Nowadays, various industries, including furniture, automotive, and even agricultural and laboratory-related products, are benefiting from value chain especially Michael – Porter's. Furthermore; several factors related to this model are identified and their significance levels are determined. For instance, the impact of information technology on the value chain of Petronet Company, organizational Information company (Tafresh, 2009).

Theoretical Aspect of Research
Value chain in an industry is a set of chain-like-done operations through which the value is achieved. Products will go through this chain, bringing about value to the final products. According to Moonan and Zhang (2013), the chain value is a set of value-increasing and other required activities which all, during the main processes, use the same resources to provide the customers with a product or a group of products. Michael Porter, a business-related expert, established his chain value model in 1985. Based on this model, the influential activities on service and production organizations can be divided into main value-increasing activities and the supportive ones (Mansouri, 2009). It is noteworthy that general educational design pattern (ADDIE model) based on this model, in hope of designing educational systems and staff training, has been used for decades. In fact, the organized educational design patterns are mostly based on this pattern. In addition, its simple nature can enable us to have a general view of every educational design structure (Mansouri, 2007).

Khan (1997) provided an e-education framework of eight components, including this model's manual on a big project and an international design method. The mentioned paper, done according to some extra and detailed aspects, was focused on the details of e-education and some of ADDIE's components. Eight pedagogy components are as follow: technology, design, user interface, assessment, management, resources supply, and ethical and organizational aspects (Khan, 2010). Richard N Model: this value chain analysis model enables the organizations to evaluate their e-education activities and find out the activities imperfections (Katz, 2003).

Table 1: Review of the Literature

Author(s)	Topic	Result	Years
Bahraini and Houshangi	Study and analysis of quality management impact on chain value knowledge management of the organization	In this paper, human-related dimensions in quality management are investigated so that their influence on chain value knowledge management be determined.	2009
Rajab *et al.*,	Establishing a model of e-supply chain's risk-influencing factors	It showed that the current focus, contrary to past being on products, is now on customers.	2010
Kahram *et al.*,	Application of Porter's chain value model in health-related organizations	Not only were they able to reduce treatments' costs but also they improved the results of diabetic patients' treatments.	2014
Augusto and Souza	Study and analysis of old rubber value chain in reverse logistic chain	By using petroleum coke instead of rubber and analyzing the associated sensitivity, they determined the borders of profit and costs reduction. Also, goals of reducing pollution and improving life quality of future generations might be achieved.	2013
Marymin *et al.*,	Study and analysis of natural rubber value chain in hope of green using and improving of rubber supply chain	The results showed that use of natural rubber combined with latex and minimizing waste production are the best strategy for improving the efficiency of green chemistry. In addition, the best way is to use water.	2014
Demond and Endor	Improving domestic rice value chain	Considering 11 African countries from 2008 to 2012, the domestic rice can compete with imported rice provided that the domestic rice be associated with appropriate internal and external quality characteristics for urban consumers, so this is very important for policy makers.	2014
Kyps	Study and analysis of setting free the air transport value chain and the role of government policies	It showed that, in hope of more effective air transport, the non-discriminatory access should be guaranteed to make the airport infrastructure exclusive and market development be the criterion by which airport capacity is devoted. In addition, the computer should also be taken into consideration.	2014

Based on this model, organizations, in hope of achieving their goals and eliminating the existing imperfections, can choose an appropriate business model and consider the value chain components to evaluate the strong and weak aspects (Low, 2000). Broker model: description of chain value done based on this model enables the organization to determine the suppliers and the required services. It is noteworthy that all the components should be revised. In this model, the main duty of a center is to function as an interface to provide customers with products so that the customers and products, through informational tools, connection equipment, and e-education packages, are connected (Oblinger, 2000). Nowadays, various industries, including furniture, automotive, and even agricultural and laboratory-related products, are benefiting from value chain especially Michael – Porter's.

MATERIALS AND METHODS

Methodology

This paperused a combination of descriptive and survey-based method. Considering the proposed model, being based on Porter's value chain model, independent variables of the model are as follow: the main 5 components, being combined with further support activities (IT, infrastructure, supply, etc.), are input supply, production operations, output supply, marketing and selling, and after sales services. Then the following hypotheses were test:

H_1:Supply input significantly effect on Bushehr's electronic industry value chain.
H_2:Production operations significantly effect on Bushehr's electronic industry value chain.
H_3:Output supply significantly effect on Bushehr's electronic industry value chain.
H_4: Marketing and selling significantly effect on Bushehr's electronic industry value chain
H_5:After sales services significantly effect on Bushehr's electronic industry value chain
H6: Supportive activities significantly effect on Bushehr's electronic industry value chain

RESULTS AND DISCUSSION

Analysis of the Findings

To analyze the research hypotheses, *Pearson* Correlation *Coefficient* test is used. As shown in table 2, all the hypotheses are associated with significant level of less than .05.

Table 2: Results of research's hypotheses tests

Hypothesis	Variable	r	R^2	Sig.	Result
1	Input supply and Bushehr's electronic industry	.48	.23 .10	.000 .000	accepted
2	Production operations and Bushehr's electronic industry	.33	.11	.000	accepted
3	Output supply and Bushehr's electronic industry	.36	.13	.000	accepted
4	Selling and marketing and Bushehr's electronic industry	.38	.14	.000	accepted
5	After sales service and Bushehr's electronic industry	.42	.18	.000	accepted
6	Support activities and Bushehr's electronic industry	.45	.20	.000	accepted

Analyze the Results of the Data

According to the results in table 2, since the significance levels are less than .05, the Pearson correlation coefficients were all positive, so the hypotheses are confirmed. In other words, the following activities have an impact on chain value of Bushehr's electronic industry and bringing about value added: receiving input equipment, transferring materials and parts company, matching of orders with standard electricity distribution companies, collection activities, such as milling, welding, bending, painting, types of machines, being new and modern, and the appropriate allocation of places available for storage of the

finished product, needing to be delivered to customers, the use of vehicles for the delivery of products, pricing products, types of advertising to attract customers, providing timely service to customers, repair and replacement of defective parts during warranty and covering the objections, appropriate infrastructure such as the Internet, information technology companies in order to provide the latest model of the development of electrical equipment, process automation, and in-service classes.

The Results of the Test Rankings

In hope of ranking the factors that are affecting value chain of Bushehr's electronic industry, Friedman test, a non-parametric test, equivalent of variance analysis test with repeated values, is used. This test, comparing the mean rankings of the variables, evaluates the mean differences, bringing about the results shown in table 3.

Table 3: The results of the ranking factors affecting value chain of Bushehr's electronic industry

Variable number	Factor	AverageRating	Rank
4	Marketing and Selling	5.85	1
3	Output supply	5.43	2
5	After sales services	5.23	3
1	Input supply	5.17	4
6	Support activities	4.95	5
2	Production operations	4.33	6

Analyze of Results Obtained from Friedman Ranking Test

According to the results, the fourth variable (marketing and selling), with an average rating of 5.85, has got the highest priority and the second variable (production operations), with a minimum average rating of 4.33, has got the last priority. Table (4) shows the test statistical features. Since the test's significant level, being equal to 0.000, is less than 0.05, the variables' rankings are different.

Discussion and Conclusion

According to the test and confirmation of research hypotheses, we conclude that all the indicators of Porter's value chain model influence Bushehr's electronic industry. Also, the ranking of the variables are different which are marketing and Selling, output supply, the after sale services, input supply, supply activities, and production operations respectively.

In other words, Bushehr's electronic industry, adjusting its current activities to Porter's model, having plans in hope of putting a greater emphasis on marketing and selling, and eliminating extra activities , can achieve the highest value added of the products.

REFERENCES

Bahrain Kiomars HM (2009). Study and analysis of quality management in the development of knowledge management value chain. *Management Journal* **83** 99-118.

Demont M and Ndour M (2014). Upgrading rice value chains: experimental evidence From11Africanmarkets.globalfoodsecurity, Available: Http://Dx.doi.org/10.1016/J.gfs.2014.10.001I .

Kahram Far Ali, Kazemzade Brothers and Reza Kahram Far Zahra (2014). Application of Porter's value chain model in health-related aspects. *Razi Journal of Medical Sciences* **21**(121) 28-18.

Katz RN (2003). Selecting Models and External Partners for e-learning Initiatives. *Research Bulletin* **11**(5) 6-7.

Khan BH (2004). The People - Process - Product Continuum in ELearning: The E-Learning P3 Model. *Educational Technology* **44**(5) 33-40.

Khan BH and Emad Ghaeni (2011). *E-education Management*, first print (Publications of industrial management organization) Tehran.

Knieps G (2014). Market versus state in building the aviation value chain. *Journal of Air Transport Management* **41** 30-37.

Low J (2000). The value creation index. *Journal of Intellectual Capital* **1**(3) 252-262.

Mansouri S (2007). Investigation of e-education application models in high education centers, offering an appropriate model for University of Tehran. *M.A thesis*, *Top* University of Management Industry Organization.
Mansouri S (2009). Investigation of Business model in e-education industry, collection of articles from e-education Conference, Tehran University of Science and Industry.
Marimin Darmawan MA, Machfud Islam Fajar Putra MP and Wiguna B (2014). Value Chain Analysis for Green Productivity Improvement in the Natural Rubber Supply Chain: A Case Study. *Journal of Cleaner Production*, doi: 10.1016 / j.jclepro.2014.01.098.
Moonan and Zhang (2013). The global value chain architecture. *The World Economy* 3090.
Oblinger D and Kidwell J (2000). Distance learning: Are we being realistic?United States. *EDU Cause* **35**(4) 34-36.
Porter Michael E (1985). *Competitive Advantage: Creating and Sustaining Superior Performance* (New York: Free Press).
Rajabzade HoseinZadeh and Nalchy Gar (2010). Providing risk-influential factors in e-supply Chain and evaluating their influence on organizational Performance. *TechnologyInformation Management* 78-59.
Tafresh M (2009). The effects of information technology on organizational value chain. *Wisdom Magazine* 139.