



RESEARCH ARTICLE

EFFECT OF KAIZEN ON THE COMPETITIVE ADVANTAGES

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ABSTRACT

The paper presents the applied of kaizen and support the competitive advantage of industrial companies – Khartoum state. The researcher tested the following hypothesis: There are significant relationship between applied the kaizen and support the competitive advantage of industrial companies -Khartoum state. The study reached some findings from which: In competitive environment, kaizen may be used as a better way of working for change and continuous cost improvement, kaizen Contributes to support the competitive advantage of industrial companies - Khartoum State. The study recommended following: Make use of kaizen to reduce waste in production processes, do more studies in all the Sudanese industrial companies to the benefit of adoption the kaizen to support the competitive advantage.

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INTRODUCTION

The problem

The spread of globalization and increased competition, helps companies to pay attention to the strategic tactics to support competitive advantage in the short-term and long-term. Suffers companies at the present time of constant development in the fields of technology and the evolution of the methods used to reduce costs and maximize profitability and increase quality, thus companies must keep abreast of all the developments in the modern business environment so that it can satisfy the desires of customers and support competitive advantage, through the above is the problem of study the following questions: -

Is there an effect to applied the kaizen on reduce costs in industrial companies - Khartoum State?

The Objectives

Study aimed to identify to concept the kaizen and knowledge the effect to reduce costs in industrial companies - Khartoum State.

The importance

The importance of scientific study in the kaizen recently used and there are few studies that have addressed the issue of kaizen in order to reduce costs, thus considered this subject in addition to libraries for use graduate students in the field of cost, is the practical significance of the study in the need to capitalize on the industrial companies - Khartoum State of the possibilities available and new technologies used to reduce costs, including kaizen, leading to support the competitive advantages of the products of these companies.

Hypothesis

To achieve the objectives of the study were tested this hypothesis: There is significant relationship between applied the kaizen and support the competitive advantage of industrial companies –Khartoum state.

Methodology

Researcher used deductive approach to identify the problem of the study and formulate hypotheses, historical approach, and inductive approach to test the hypotheses.

1.Theoretical Framework

Kaizen & Kaizen costing

Vechalekar (2010) explained kaizen is a Japanese word meaning continuous development and improvement, and knew

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of continuous improvement as a way to reduce costs and introduce incremental improvements on production during the product life cycle. Elsanafi (1996) knew kaizen it is "critical examination of the functions of the product in order to implement these functions with a high degree of trust and reliability and at the lowest possible cost. Khalil (2014) many American companies applied kaizen Japan originally posted behind this substantial results supported a competitive advantage, as applied to other British companies this system and achieved significant results including reducing the additional cost, reduce response time to customer requests, improve product quality, reduce defects ratios in products, reducing maintenance time and reduce supply time and time examining the materials contained. and Iman (2002) determine the concept of kaizen as a series of successive and constant changes without end, which does not necessarily require huge capital expenditure, but you need to emphasize the commitment of every individual to bring about these changes, Where the company can provide high quality with the possibility of diversification in their properties without products that concomitant rise prices, and kaizen approach provides a solution to that problem and of reducing activities that do not add value to products. Janabi (2009) said that kaizen has several principles are as follows:

- Not the end of kaizen is continuous as long as the organization is continuing, this existence requirement.
- Kaizen a comprehensive process.
- Kaizen operations need to the efforts of all employees in the organization.
- The use of time for excellence about competitors.
- Participation and teamwork because the kaizen a collective responsibility.
- Kaizen is based on the technological means available.

Kaur (2104) explained Kaizen costing was originated as cost management practice in Japanese companies after World War II. Kaizen costing is known "Genkakaizen" in Japanese companies. Kaizen costing method is used in manufacturing stage of the existing products as cost reduction process. Kaizen costing focuses on continuous improvement in all processes, customers' satisfaction and on involvement of all employees of company. Kaizen costing is derived by Japanese automobile companies. Monden *et al.* (1991) defined kaizen costing as

"The system to support the cost reduction process in the manufacturing phase of the existing model of product and is also relevant to other downstream (non-manufacturing) costs"

2. Analytical framework

Ministry of Industry - Khartoum State, comprehensive industrial survey

Throw the number of industrial companies – Khartoum state, the researcher took a sample of industrial companies, strong 100 company, Researcher distributed (300) questionnaire forms among some of the workers in the field selected randomly, (280) Forms were collected as 93%. Table (2) below shows the number of questionnaires that were distributed to the sample study and recovered them.

Filed study data 2016: The researcher used frequencies, percentages, median, Chi-square, for the analysis of questionnaire data. Through Table (3) the researcher observes that all of the sample agree with the hypothesis phrases. Through the Table (4) there is divergence of the views of the sample, some of them agree and neutral, to test the presence of statistically significant differences between the numbers of approvers and neutrals and non-consenting to the results, was used chi square test for significance of differences between the answers on all phrase from hypothesis phrases. And Table (5) illustrates the chi square results on hypothesis phrases. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 56.0. a Through Table (5) it turned out to be Chi-square Asymp. Sig (.000) less than 5%, and this confirms There is significant relationship between applied the kaizen and support the competitive advantage of industrial companies –Khartoum state, this shows validity of the study hypothesis.

RESULTS

- 1- In competitive environment, kaizen may be used as a better way of working for change and continuous cost improvement.
- 2- Kaizen determination of cost reduction targets and with the involvement of all levels employees.
- 3- Kaizen Contributes to support the competitive advantage of industrial companies - Khartoum State.

Table 1. Number of Industrial Companies – Khartoum state

Sector	Number of companies	Percent
Metallic & non-metallic	509	47.93%
Food products	195	18.36%
Chemicals & Petrochemicals	120	11.30%
Textile & Leather products	69	6.50%
Paper & Printing	60	5.56%
Machinery	47	4.43%
Metal	34	3.20%
Woods	28	2.64%
Total	1062	100%

Table 2. Sample Study

Sector	Distributed	Recovered	Percent
Metallic & non-metallic	87	81	93%
Food products	63	57	90%
Chemicals & Petrochemicals	39	36	92%
Textile & Leather products	33	30	91%
Paper & Printing	33	31	94%
Machinery	30	30	100%
Metal	10	10	100%
Woods	5	5	100%
Total	300	280	93%

Table 3. Frequency distribution and percentage of the views of the study sample to study hypothesis phrases

Phrases	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
The Company has a qualified accounting system and human resources to apply kaizen.	55 19.6%	89 31.8%	131 46.8%	4 1.4%	1 0.4%	280 %100
The low prices of competitors' products requires a trend towards the applied kaizen.	51 18.2%	78 31.1%	148 46.9%	3 1.1%	0 0	280 %100
kaizen is a system to reduce the cost from a strategic perspective.	88 31.4%	101 36.1%	74 26.4%	11 3.9%	6 2.1%	280 %100
kaizen system contribute in identification and measurement of the products cost in correctly.	94 33.6%	132 47.1%	24 8.6%	20 7.1%	10 3.6%	280 %100
Kaizen contributes to reduce the cost of products through reducing losses and waste at all stages of production.	80 28.6%	112 40%	55 19.6%	18 6.4%	15 5.4%	280 %100
kaizen contributes to resource exploitation optimally by excluding activities that do not add value to the product.	63 22.5%	168 60%	44 15.7%	3 1.1%	2 0.7%	280 %100
Kaizen provides non-financial data by identifying unnecessary activities.	197 70.4%	38 13.6%	24 8.6%	15 5.4%	6 2.1%	280 %100
Increased competition requires applied the kaizen to reduce the cost of products.	193 68.9%	42 15%	21 7.5%	17 6.1%	7 2.5%	280 %100
kaizen helps to support the competitive advantages for companies.	98 35%	46 16.4%	133 47.5%	3 1.1%	0 0	280 %100
kaizen contribute to achieving the aspirations of customers.	60 21.4%	144 51%	50 17.9%	18 6.4%	8 2.9%	280 %100

Spss data 2016.

Table 4. Median

Phrases	Median	explanation
The Company has a qualified accounting system and human resources to apply kaizen.	4	Agree
The low prices of competitors' products requires a trend towards the applied kaizen.	3	Neutral
kaizen is a system to reduce the cost from a strategic perspective.	4	Agree
kaizen system contribute in identification and measurement of the products cost in correctly.	4	Agree
Kaizen contributes to reduce the cost of products through reducing losses and waste at all stages of production.	4	Agree
kaizen contributes to resource exploitation optimally by excluding activities that do not add value to the product.	4	Agree
Kaizen provides non-financial data by identifying unnecessary activities.	5	Strongly Agree
Increased competition requires applied the kaizen to reduce the cost of products.	5	Strongly Agree
kaizen helps to support the competitive advantages for companies.	4	Agree
kaizen contribute to achieving the aspirations of customers.	4	Agree

Spss data 2016.

Table 5. Chi-square test

Phrases	Chi-Square	df	Asymp. Sig
The Company has a qualified accounting system and human resources to apply kaizen.	220.2214	4	.000
The low prices of competitors' products requires a trend towards the applied kaizen.	141.429	3	.000
kaizen is a system to reduce the cost from a strategic perspective.	141.036	4	.000
kaizen system contribute in identification and measurement of the products cost in correctly.	208.143	4	.000
Kaizen contributes to reduce the cost of products through reducing losses and waste at all stages of production.	122.107	4	.000
kaizen contributes to resource exploitation optimally by excluding activities that do not add value to the product.	328.679	4	.000
Kaizen provides non-financial data by identifying unnecessary activities..	453.750	4	.000
Increased competition requires applied the kaizen to reduce the cost of products.	430.571	4	.000
kaizen helps to support the competitive advantages for companies.	140.257	3	.000
kaizen contribute to achieving the aspirations of customers.	206.143	4	.000

Spss data 2016.

Recommended

- 1- Make use of kaizen to reduce waste in production processes.
- 2- Do more studies in all the Sudanese industrial companies to the benefit of adoption the kaizen to support the competitive advantage.

Conclusion

Through the theoretical framework and field study it can be concluded that kaizen is used to reduce waste in all stages of the production process. It is recognized that the industrial companies in need of further research work in this area. Therefore, further research that will improve the aspects of consciousness, and these factors are very important to the success of kaizen in most industrial companies in Sudan.

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