

## Evaluation of Human Resources Re-engineering and Knowledge Management Processes on the Economy of Sirjan free Trade zone (Iran)

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**Abstract:** Any organization or company is a social institution based on the target operating and coordinated system that is associated with the external environment. In the past when the environment was relatively stable for more organizations they had taken advantage of opportunities by gradual changes and less satisfaction. With the passage of time, all over the world, organizations have found that only changes in a gradual way may not reduce their existing problems and sometimes it is necessary to save the organization and infrastructure by basic and comprehensive changes in the organization. Nowadays, throughout the world, these revolutionary changes have been named as reengineering. Process of reengineering is a current task in which the organization replaces the original business processes, so the organization moves from function-oriented to process-oriented. In these circumstances, knowledge management and re-engineering are considered as an important source of competitive advantage and can lead to important results, which should be investigated. The purpose of this study is to evaluate the effect of re-engineering and human resources management processes on knowledge-based economy of Sirjan free trade zone. Required data were obtained by open interview from 385 experts employed and engaged in free trade zones through random sampling method in 2015. The results of the survey were based on questionnaire data and linear regression analysis showed that knowledge management processes variable has a significant positive impact ( $p < 0.01$ ) on economy of Sirjan free trade zone. The test results showed that the re-engineering of human resources variable also had significant positive impact on the economy of Sirjan Special Economic Zone ( $p < 0.01$ ). Finally, on the basis of research findings and outcomes, some applicable suggestions will be provided for better improvement.

**Keywords:** Economy, Free trade zone, Human resources, Knowledge management, Re-engineering

Received: 01 December 2016 / Accepted: 03 February 2017 / Published: 28 April 2017



### INTRODUCTION

It is believed that re-engineering can be implemented with small and cautious steps. The case is the case of zero or one; in other words, a change not realized, or if realized, from the root of change achieved. Re-engineering does not mean that what is there before we fix or additional changes and leave intact the original structure; Reengineering means starting from point zero, i.e. setting aside old ways and taking a new glimpse of work (Bahraini, 2007).

The definition of re-engineering process has been introduced as a key word process, the number of tasks that together provide customer's desired value. The first step understands the process of re-engineering major. The fundamental aim of re-engineering process is the difference between tasks and processes, such as the difference between the part and the whole, the task is a unit of work, one activity that usually does but the process, and some of the tasks associated with each outcome bring valuable customer view (Sedighian, 2004).

The world after the transition from the agricultural revolution was a key source of land, capital and labor and the industrial revolution, which was the main source of control information revolution,

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has been the key source of wealth creation and income is knowledge (Monavarian & Asgari, 2004). At the present time, competitive advantage is not only of access to data, but also through the creation and acquisition of new knowledge achievable (Davenport & Perosak, 1998).

Likely to achieve strategic competitiveness in the twenty-first century organizations have understood that this is important, and their survival depends on the ability to capture the intelligence, cleverness, and transfer it into usable knowledge and to disseminate it through organization (King & Zeithmal, 2003). Knowledge of the capabilities and competencies of organizational human capital and perhaps the foundation and root of all competitive advantages considered (Hitt, Ireland & Hoskisson, 2005).

Sirjan Special Economic Zone as one of the most important free trade zones, now runs competitive surprising developments. Due to the re-engineering of human resources, knowledge management processes in Sirjan Special Economic Zone are considered as a competitive advantage and create the atmosphere of this important incentive in this area not only to life and survival, but also the prosperity and development of the town of Sirjan and consequently the country there.

## **LITERATURE REVIEW**

Zeynali (2012) in his master's thesis entitled "The implementation of enterprise resource planning priorities with total quality management and process re-engineering" reviewed the application process and implementation of enterprise resource planning systems that pay technical-social challenges. Strategic and operational levels will affect companies and the expected return would not necessarily support its implementation. Many factors affect the successful implementation. Identify risk factors and other management systems that are complementary or contradictory, and the success and failure of this combined system are changed, it is very important.

Marzbanfard (2011) in his master's thesis as "critical success factors in implementing ERP from a financial perspective", stated the organization of the enterprise resource planning system as a strategic tool for looking at the competition. ERP systems today play an important role in the management of the business unit, and also as the backbone of the organization. Although we know ERP as a useful tool, but in practice there are many problems effective in persuading people to implement.

Jafari, Akhavan, Nour and Fesharaki (2007), did a study titled "Re-engineering-based approach with the aim of", in spite of the dramatic increase in re-engineering concepts and theories, most organizations that have followed, have not achieved success in its implementation. Researchers have many reasons for the failure of reengineering projects.

One of the most important causes of failure is lack of body awareness and strength of human resources in the face of changes to its organization. This paper presents a new approach and a conceptual model and inspired management methods based on objective, staff and partner organizations with the goal of understanding the need for change in order to achieve those objectives by employees, element resistant to change greatly relieved and helped to change. Using the model with the combination of re-engineering methodologies and management practices based on the target, the participation of human resources in order to achieve the goals of the programs has increased, causing widespread re-engineering of the entire organization and cooperation for the success of the project re-engineering of all the members achieving the goals of the organization. Knowledge management is a multi-step process to follow. The following steps are well-known to the life cycle of knowledge management (Gupta & Sharma, 2004).

### **Re-Engineering Methodologies**

Re-engineering methodologies include a fixed set of techniques and guidelines that enables one to re-organize business operations and organization processes, and allows them to operate by less expensive knowledge management (Yeung, 2004).

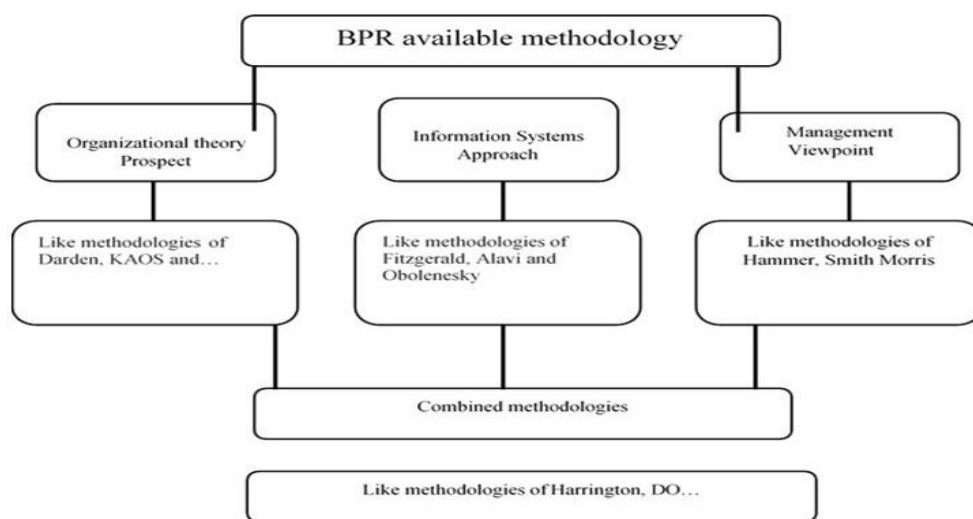


Figure 1. Divided reengineering methodologies

### Model foundations of knowledge management

This model has been introduced by Probst, Raub and Romhardt (2000). Mentioned model, which sees knowledge management as dynamic cycle stages, includes eight components, consisting of two cycles, inner and outer. All of these cycles integration forms feedback.

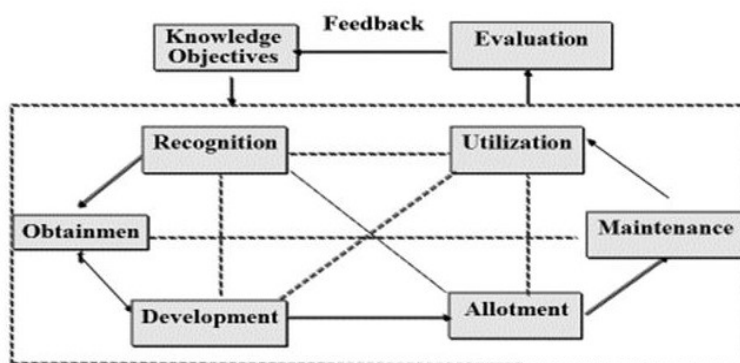


Figure 2. Components of the mode

### Free trade zones

After World War II, many countries became independent and they had sought for eliminating the effects of backwardness and retardation to obtain development. In this direction, Iran also proposed the establishment of free trade areas by the government economic team for industrial achievement as an outflow policy from government closed economy (Latifi & Aminaghai, 2008). Although the prospect of establishing free zones in Iran was interesting, but their performance has not been successful because of defects resulting from lack of implementation tools and development strategy. Iran has 8 Free Trade Zones, which include Kish, Qeshm, Chabahar, Aras, Anzali, Arvand, Maku and Sirjan.

### Sirjan free trade zone

Sirjan Free Trade Zone (SFTZ) is located at 3 kilometers of north Sirjan city with an area of 1380 ha nearby Tehran- Bandar Abbas transit road, rail and Sirjan airport and 175km far from Bandar Abas, the city of shadow and the largest commercial port in Iran. SFTZ was established in 2002 and contains facilities such as 24-hour customs office and responsive to the needs of applicants - Specific transport terminals and railway platform with digital bascule - direct flights between Tehran and Sirjan - international freight services - quick and inexpensively loading facilities - customs facility and laboratory for

control and inspection - monetary and foreign exchange services for export and import - insurance offices and capital goods guarantee services cold stores and warehouse storage with 5000 tons capacity.

### METHOD AND MATERIALS

This study aims to “assess the impact of Human Resource re-engineering and knowledge management processes on the economy of ‘Sirjan Free Trade Zone’ as an applied research”. The descriptive analytic research manner has been used to describe what has been achieved. The main focus of the research was primarily on 2015, however past and future relevant to the current situation were also considered. Correlation coefficient was used to find relationship and scales between variables. This project experienced geodesic survey. Required data were collected by literature review, library documents and questionnaire in field research. Questionnaire has been used to describe the views of staff. The questionnaire consists of three parts including brief explanation of how to be complete, personal information and points related to human resources to assess the impact of re-engineering and knowledge management processes. In this study, Cronbach’s alpha formula was used to determine the reliability of the test and calculating the internal consistency and total Variance. Therefore, below formula was used to calculate amount of alpha.

$$r_{\alpha} = \frac{J}{J-1} \left( 1 - \frac{\sum_{j=1}^n S_j^2}{S^2} \right)$$

The study population consists of all experts in Sirjan Free Trade Zone and their number is infinite, to determine the minimum required sample size, Cochran Formula used: Minimum required sample size = n

$$n = \frac{z^2 pq}{d^2}$$

$$n = \frac{(1/96)^2 (0/5)(1-0/5)}{(0/5)(1-0/5)} \approx 385$$

The correlation coefficient is a mathematical measure for describing relationship between direction and amount of two variables. Correlation coefficients were used to measure a variety of samples, most notably through Pearson’s correlation. The correlation coefficient always fluctuates between +1 and -1.

$$\rho_{x,y} = \frac{con(x,y)}{\sqrt{(var(x))(var(y))}} = \frac{\sigma_{x,y}}{\sigma_x \sigma_y}$$

Therefore, in this study to evaluate the effect of variables (human resources reengineering, knowledge management processes and economy) the Pearson regression tests were also used.

### RESULTS AND DISCUSSION

The descriptive analysis of sample community survey regarding Gender and Education of objective community is given as below in figure 3 and table 1. The results indicate that 5.7% of the sample are female and 94.3 percent are male.

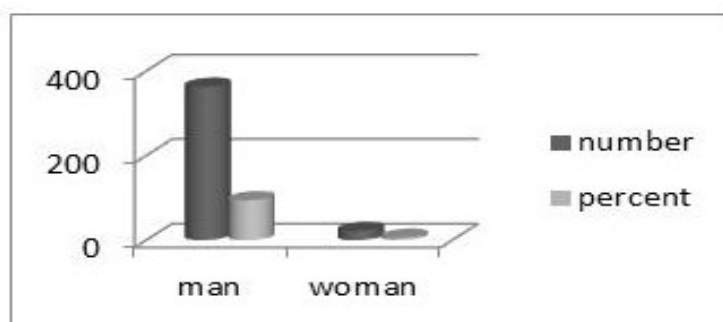


Figure 3. Gender distribution

The research finding implies that 27.5% of the sample community have an associate, 51.9% bachelor and 20.5% have a master's degree.

Table 1: Demographics details

Education	Number	Percent
Associate Degree	106	27.5
BS	200	51.9
MA	79	20.5
Total	385	100

The analytical results of the study hypothesis, according to the research report, are explained as below. In order to use parametric tests in the analysis of research data, the data must be provided so that the assumption of normal distribution of variables was analyzed through the Kolmogorov-Smirnov test.

Table 2: Kolmogorov-Smirnov related statistics

Variable	Knowledge Management Processes	Re-engineering Human Resources	Economy Special Economic Zone
Kolmogorov-Smirnov valued	2.603	2.125	2.562
Sig.	0.199	0.120	0.152

Kolmogorov-Smirnov test results show that the distribution of variables was normal and can be a parametric test. In this study is two-variable linear regression, hypothesis used in the analysis. 4-3-1-Knowledge management processes re-engineering human resources Sirjan Special Economic Zone has a significant impact. To predict changes in Sirjan Special Economic Zone through process re-engineering, human resources, knowledge management, and to examine the relationship between bivariate regressions is used when the results are as follows:

Table 3: Specifically, regulators regression analysis the impact of knowledge management processes re-engineering human resources Sirjan special economic zone

Regression	Statistical Indicators	Correlation	$R^2$	$R^2$ Adjusted	F	Significance level
	1		0.6028	0.370	0.369	225.145

Table 3 indicates correlation between knowledge management processes and re-engineering human resources of Sirjan Special Economic Zone. The correlation coefficient between these two variables is 608/0 and with a significant level (000 / 0p). According to the adjusted coefficient of determination (369/0), knowledge management processes have a significant effect ( $p < 0/01$ ) on re-engineering the human resources of Sirjan Special Economic Zone.

Table 4: The results of regression coefficient for knowledge management processes and re-engineering human resources of Sirjan special economic zone

Model	Statistical Indicators	Regression coefficients	Standard error	Standard beta	T	Significance level
	Constant		0.810	0.160		5.057
Knowledge management processes		0.722	0.048	0.608	15.005	0.000



Figure 4. Effect of variable regression, of re-engineering processes and knowledge management on human resources of Sirjan special economic zone

For one unit increase in knowledge management processes, there will be increase in re-engineering human resource of 722/0 units in Sirjan Special Economic Zone. Can be the regression equation to predict the re-engineering of human resources of Sirjan Special Economic Zone, set by knowledge management processes: Knowledge management processes (722/0) + 810/0 = reengineering human resources of Sirjan Special Economic Zone. Re-engineering human resources of Sirjan Special Economic Zone economy has a significant impact. Sirjan Special Economic Zone in order to predict changes in the economy through re-engineering human resources and to examine the relationship between bivariate regressions is used when the results are as follows:

Table 5: Regression analysis identified predictors of re-engineering the human resources' impact on the economy of Sirjan special economic zone

Regression	Statistical Indicators				
	Correlation	$R^2$	$R^2$ Adjusted	F	Significance level
1	0.775	0.600	0.599	574.482	0.000

### The correlation analysis results

The correlation coefficient between these two variables is 775/0 and with a significant level (000 / 0p). According to the adjusted coefficient of determination (599/0), re-engineering human resources has a significant effect ( $p < 0/01$ ) on the Sirjan Special Economic Zone economy.

Table 6: Implying Re-engineering human resources and economic regression coefficients of Sirjan special economic zone

Model	Statistical Indicators				
	Regression coefficients	Standard error	Standard beta	T	Significance level
Constant	0.081	0.091		0.889	0.375
Re-engineering human resources	0.673	0.028	0.775	23.968	0.000



Figure 5. Effect of variable regression, re-engineering of human resources in the economy of Sirjan special economic zone

For one unit increase in the re-engineering of human resources, there will be increase of 673/0 units in Sirjan Special Economic Zone economy. Can be the regression equation to predict the economy of Sirjan Special Economic Zone, set by the re-engineering of human resources: Re-engineering human

resources (673/0) + 081/0 = economy of Sirjan Special Economic Zone. Knowledge management processes of Sirjan Special Economic Zone economy have a significant impact. Sirjan Special Economic Zone in order to predict changes in the economy through knowledge management processes and to investigate the relationship between them bivariate regression is used when the results are as follows:

Table 7: Characteristics regulators regression analysis on the economic impact of knowledge management processes on Sirjan special economic zone

Regression	Statistical Indicators				
	Correlation	$R^2$	$R^2$ Adjusted	F	Significance level
1	0.593	0.352	0.350	207.882	0.000

Table 7 indicates correlation coefficient between knowledge management processes and economy of Sirjan Special Economic Zone. The correlation coefficient between these two variables is 593/0 and with a significant level ( $p=0.000$ ). According to the adjusted coefficient of determination (0.350), knowledge management processes have a significant effect ( $p < 0.01$ ) on the Sirjan Special Economic Zone economy.

Table 8: Regression coefficient knowledge management processes and economy of Sirjan special economic zone

Model	Statistical Indicators				
	Regression coefficients	Standard error	Standard beta	T	Significance level
Constant	0.216	0.141		1.533	0.126
Knowledge management processes	0.612	0.042	0.593	14.418	0.000

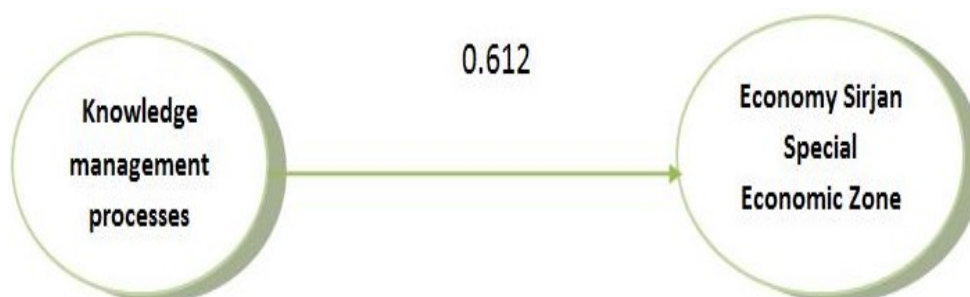


Figure 6. The effect of variable regression, knowledge management processes on the economy of Sirjan special economic zone

For one unit increase in knowledge management processes, there will be increase of 612/0 units in Sirjan Special Economic Zone economy. Can be the regression equation to predict the economy of Sirjan Special Economic Zone, set by knowledge management processes: Knowledge management processes (612/0) + 216/0 = economy of Sirjan Special Economic Zone.

### CONCLUSION AND SUGGESTIONS

Study results imply that knowledge management process has significant impact on human resource re-engineering. Knowledge management process includes any process or action such as production, learning, earning, capture, extension with adaptation and application in the society. Knowledge is power and it will increase organizational operation and productivity. Research finding shows that knowledge had positive and significant effect on human resource re- engineering of Sirjan Free Trade Zone.  $R^2_{adj} = 0.339, p < 0.01$

Research finding depicted that human resource re- engineering has significant effect on economy of Sirjan free trade zone. Human resource re- engineering of an organization is overall approach that considers relationship of organizational competition strategies with personnel and internal data process-

ing in an appropriate manner. This relationship can be obtained and improved by new instrument and instructions. Study finding exhibited that human resource re-engineering had positive and significant repercussion on economy of Sirjan Free Trade Zone. ( $R^2_{adj.} = 0/599; p < 0/01$ )

Knowledge management process demonstrated an economic effectiveness on Sirjan Free Trade Zone. Therefore, study outcome indicates that knowledge management process has positive and significant dent on economic position of Sirjan Free Trade Zone. ( $R^2_{adj.} = 0/350; p < 0/01$ ).

With regards to above results, following recommendations are suggested:

Companies' managers should try to consider particular staff and personnel from external resources and use their knowledge for organizational development.

Quality service providing can be regarded as one of the managers' main objectives in organizational improvement. Companies may attempt to have bright path and prospect in their human resource changing.

Accreditation and responsibility given to human resource re-engineering team for alight and measurable goals must be considered as one of the organizational approaches in companies.

### RESEARCH LIMITATIONS

One of the limitations faced by researchers in this study includes lack of cooperation from some people in completing the questionnaire. Inventory is seen as a limitation. This means that the questionnaires check their attitude, not fact, that is a limitation.

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