

Investigating the Effect Outsourcing of Activities on Human Resources in Zarand Power Plant

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Abstract: Studies on outsourcing help managers realize its positive effects and find solutions in an efficient management in order to use human resources optimally. In addition, policy makers pay attention to these factors in determining their executive policies and plans to hire and employ human resources. They also guide organization managers in more effective use of methods. The aim of this study is to examine the relationship between outsourcing of activities and human resources. The population of this study consisted of 25 managers of Zarand power plant. Due to the small number of population, all people are considered as sample. In this study, outsourcing questionnaire was used to collect data in which all questions are in the form of Likert scale. Structural equation model was used to analyze data. To determine the validity and reliability of questionnaire, content validity and Cronbach's alpha coefficient were used, respectively in which Cronbach's alpha coefficient was obtained as 0.91 for outsourcing of activities. Lisrel Software was used to analyze data, test hypotheses other analyses of the study. Results showed that there is no relationship between outsourcing and job security of employees, salary and income level and their creativity and accountability. On other hand, there is relationship between outsourcing of activities and creativity, expertise of labor force, efficiency, service quality and reduction in costs.

Key words: Outsourcing, efficiency, service quality, Zarand power plant, expertise

INTRODUCTION

It is a long time that the approach of delegating tasks to forces out of organization is used in developing countries. In this regard, developed countries in East Asia have achieved remarkable successes in reduction of costs related to production and services. India and China are among these countries. However, the approach of delegating tasks out of organization or outsourcing them is a new approach with short history in our country. Perhaps, this belief has not been established among managers and officials of our country which this method can lead to increased productivity, reduced costs and more participation of employees (Kiel, 2006).

Today, organizations are living in a world where the dynamicity, change and complexity are their main elements and they have to create a flexible structure and use resources out of organization to use fleeting opportunities of present time. In this regard, reduction in government activities and movement toward downsizing such as re-engineering, privatization, outsourcing and contracting are common and predominant methods.

Nowadays, organizations do not try to do all their required activities but each organization keeps one or two key activity for itself that has competitive advantage or value creation while they outsource other activities. Privatization is executive, financial and legal process implemented by governments in many countries to carry out reforms in economic and administrative system of country. Privatization has not always brought successful results and it has failed in some cases such as the failure of privatization in Pakistan. In Iran, privatization has always been considered in development plans both before and after 1988 Islamic revolution and it has entered to new phase by notification of Article 44 of the constitution.

All managers constantly delegate their tasks to others. Managers outsource tasks, since there are some people who do them with lower cost, faster and better. That is why we ask them to help us. Due to the shortage of managers, organizers try to delegate administrative functions and tasks to those who receive lower pay to perform these tasks. Due to costs, whether actual costs (salary) and opportunity costs (time and effort), organizations outsource their tasks. However, given the

expected goals of executing this rule and law is outsourcing in Zarand power plant has produced successful results?

Literature review

Outsourcing: Outsourcing occurs when a company delegates whole or part of internal business tasks to an external service provisioner. Its advantages include improved business results including greater attention to core capabilities, increased efficiency, increased flexibility so on. According to Rabinovich *et al.* (1999), logistics outsourcing is expanding rapidly as a source of competitive advantage and saving in logistic costs. Given the growing pressure to reduce costs and provide better services, many logistic users have outsourced their activities to third-party logistic companies (353).

While many organizations are seeking to manage their logistic operations strategically, they found that organizations lacking basic features fails to gain competitive advantage. As a result, organizations increasingly want to outsource their activities (Sadiq and Saad Al-Abdali, 2005).

Outsourcing was primarily related only to assignment of parts procurement and other non-key services while today it has expanded and it almost includes each of company activities including key and non-key activities, business processes, IT processes, construction activities, distribution and customer support activities. Through well-executed outsourcing plan, strategic benefits and competitive advantage are created, leading to advantages including improved quality, lower costs, increased flexibility.

Another advantage of outsourcing is that manufacturers are not forced to have expertise in the transportation warehousing and so on. Manufacturers are also not involved with complexities of these affairs and they focus on production. Therefore, focus on key competencies, freeing resources, reducing transportation costs, flexibility, improved providing of service to customer, increased rate in delivering the orders, reengineering of supply and distribution networks are just some of the reasons for outsourcing (Sahay and Mohan, 2006).

Today, organizations do not show tendency to do all their needed activities themselves but each organization keeps one or two key activities that are creating competitive advantage for itself and it does other works and tasks through other businesses in which activities have key competences.

Outsourcing is an appropriate way for organizations to reduce costs, focus on core processes and capabilities,

improved services, improved skills, reduced time in commercialization of ideas increased competitive advantage of organizations and information and communication development has facilitated and accelerated this process in recent years.

History of outsourcing: According to “Android and Nada Kakabadseh”, transfer of tax collection task (by the government) in Roman times was the first form of outsourcing. In the 18 and 19th centuries, the maintenance of lights of street, management of prisons, highway maintenance and tax collection activities had been transferred to contractors in England. At same time in the United States and Australia, delivering postal service in France, constructing and managing rail lines and distribution of water resources had been outsourced.

Considering outsourcing it can be said that this word was used for the first time in 1989 to explain the Kodak’s decision in transferring information technology activities to one of the subsidiary companies “IBM” as a business strategy. However, before that many companies were not conducting all their activities but they were assigning the activities allowing them less competitiveness possibility to external contractors.

In fact, it can be said that the idea of outsourcing emerged for the first time in Adam Smith’s book called nations’ value published in 1776.

In his famous sentence, Adam Smith said this is a true idiom that prudent maters of a family do not construct something in the house that its cost is higher that its purchase.

The definition of outsourcing: The word outsourcing is abbreviation of using external resources (Nayak *et al.*, 2007). In previous studies, numerous definitions have been proposed for outsourcing that all of the are common in some features and in some aspects. In Oxford Dictionary, outsourcing means the supply of services by the contract from external sources.

Some of other definitions are as follows: outsourcing is defined as a process of transferring particular responsibility related to business done by a group of employees of company to a group of people other than employees of company (Zhu *et al.*, 2001).

Chase: outsourcing is the practice of transferring some internal activities of the company and decision-making responsibility of these activities to external suppliers (Schniederjans *et al.*, 2006). According to the definitions proposed, we consider it in this study as transferring or assigning some of part of the main activities of the company to external contractors in a formal or informal contract.

Loh and Venkatraman (1992) defined outsourcing as “considerable cooperation of external sellers in supplying physical and human resources related to infrastructure of buyer organization”. Outsourcing is not a new issue and deciding on the question of “what should be produced inside the organization and what should be supplied outside of organization?” has been discussed in business for long time.

Theoretical bases of outsourcing back to concept of transaction cost and this concept is stated by Williamson (1975)'s Theory of Transaction Costs. In this theory, transaction cost is the only criterion for outsourcing decisions. Researchers have used various theoretical approaches to study outsourcing activities the most common approach is to increase profits. Decision to outsource or not to outsource cannot be made without careful consideration of the usefulness of its application. Increasingly outsourcing of key operation in business and emphasis on partnership have resulted in more attention of scientific articles to outsourcing relations. Outsourcing is a strategic process that if it is not implemented properly, organization is faced with many difficulties in achieving its objectives. To implement this plan, managers must be familiar with traps and challenges of this process and try to avoid them. Some of these traps are as follows.

- Lack of management commitment
- Limited knowledge of the methodology of outsourcing
- Lack of an appropriate correspondence plan for outsourcing
- Inability to recognize risks of outsourcing
- Inability to exploit external sources of knowledge
- Lack of using the best internal resources
- Hastiness in initiating
- Lack of understanding of cultural differences

With regard to outsourcing and its impacts, Peter Drucker says that it is in fact a fundamental change in the world organizations' structure. This means that there is no need for large commercial companies, government departments, hospital and large universities to become an organization in which large number of people are employed. Such institutions are converted to organizations where higher income and notable results can be achieved, since they focus on the activities assigned to them, they do those tasks that organizational goals are related exactly for them. They do those tasks and functions that they know them well and pay wage and reward for their doers based on value of that task. Remaining service tasks of such organizations are

assigned for external institutions. Outsourcing means strategic exploitation of third-party companies' resources to provide operational services or business processes continuously (Chou *et al.*, 2006).

Reasons of outsourcing: There are many reasons for outsourcing that Klepper and Jones (1998) have divided them into two categories: tactical and strategic.

Tactical reasons include: reducing or controlling operating costs, increasing capital (outsourcing reduces need to invest on non-core organizations' tasks), no need to internal sources (companies outsource because they do not have the resources needed), elimination of problematic issues (outsourcing is a way of assigning tasks that are problematic or not controllable for management), liquidity (due to cash payments arising from the transfer of assets from the organization to the supplier).

Strategic reasons for outsourcing include improving the focus on the business (outsourcing causes the organization to focus on core activities while the non-core tasks and activities are done by external contractors), access to the capabilities of suppliers (suppliers have resources and capabilities to be able to meet the needs of its customers), using the advantages of re-engineering (outsourcing is mainly a result of business processes redesigning), shared risk with suppliers (outsourcing leads to sharing risk with supplier), redirecting the resources (outsourcing causes that organization redirects its resources from non-core activities to core activities).

Arnold (2000) has provided a complete examination on determining activities that should be outsourced. Activities that should be outsourced should not be among the core activities and tasks of organization. In fact, activity that an organization does it better than others in the market and the activity that is core competence of organization should not be outsourced. Therefore, when there is a significant difference between qualities of services provided by suppliers in comparison to the resources inside the organization, organization makes decision to use capabilities out of organization.

Outsourcing levels: Outsourcing levels can be divided from different views. In a classification, outsourcing can be examined in two areas of “products” (production and manufacturing) and ‘services’ (supporting activities). In the field of manufacturing, technology development activities, manufacture of parts and components can be assigned to a supplier for production. Outsourcing can be done in affairs and activities including support services such as guarding and security, custodianship, food

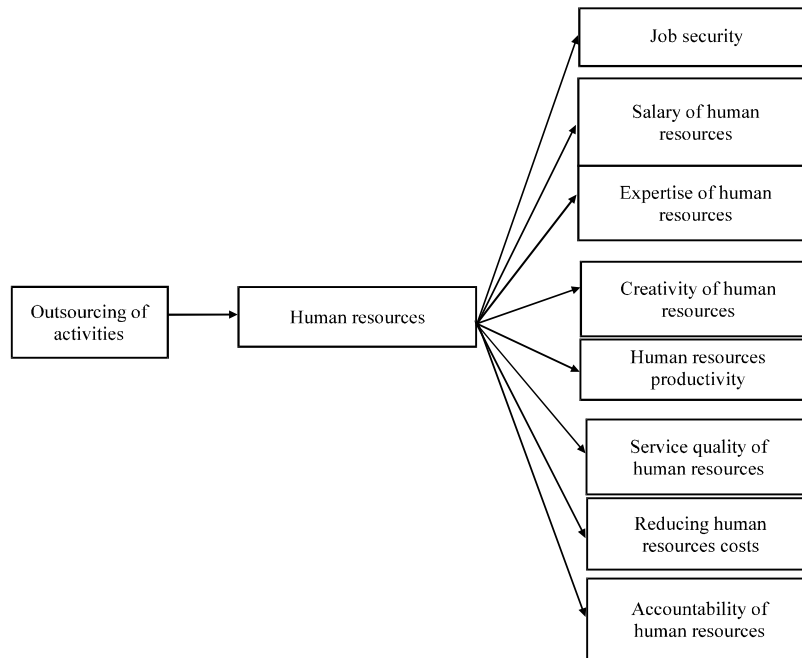


Fig. 1: Conceptual model of study

service, etc., services and information services, planning and project control, salary of employees affairs (payroll), utilities (facilities and so on) of temporary labor force, warehousing and inventory management, travel services and customer satisfaction services. However, from another perspective, outsourcing can be divided into individual level (displacement and transfer of a given situation), task (such as assigning tasks of welding or accounting department) and processes (such as assigning entire production process of a piece).

Additionally, in another classification, outsourcing can be divided into two operational and strategic levels. In general, outsourcing is considered strategic when it is consistent with long-term strategies of organization (or benefits of outsourcing affected organization for several years and outsourcing results, both positive and negative results are considered important for organization) (Fig.1).

Hypotheses of study:

- There is relationship between outsourcing of activities and job security of human resources.
- There is relationship between outsourcing of activities and salary and benefits of human resources
- There is relationship between outsourcing of activities and expertise of human resources
- There is relationship between outsourcing of activities and creativity of human resources
- There is relationship between outsourcing of activities and productivity of human resources

- There is relationship between outsourcing of activities and service quality of human resources
- There is relationship between outsourcing of activities and reduced costs of human resources
- There is relationship between outsourcing of activities and accountability of human resources

MATERIALS AND METHODS

Data required for this study was collected through a questionnaire that its reliability was tested. Researcher used a questionnaire that all its questions were on Likert scale to collect data. The data were analyzed by LISREL Software. The population of this study consisted of 25 managers and supervisors of Zarand power plant. Due to the limited number population, all managers were selected as sample of study.

To determine the validity and reliability of questionnaire, content validity and Cronbach’s alpha coefficient were used, respectively. Reliability value was obtained 0.91. In the current study, after drawing analytical model of study based on data by Path Diagram Software, measurement model was obtained by implementing Perlis application of Lisrel Software. Using B coefficients and t-test, hypotheses of study were tested. Fit indices of the model was calculated automatically by implementing Perlis application for considered model.

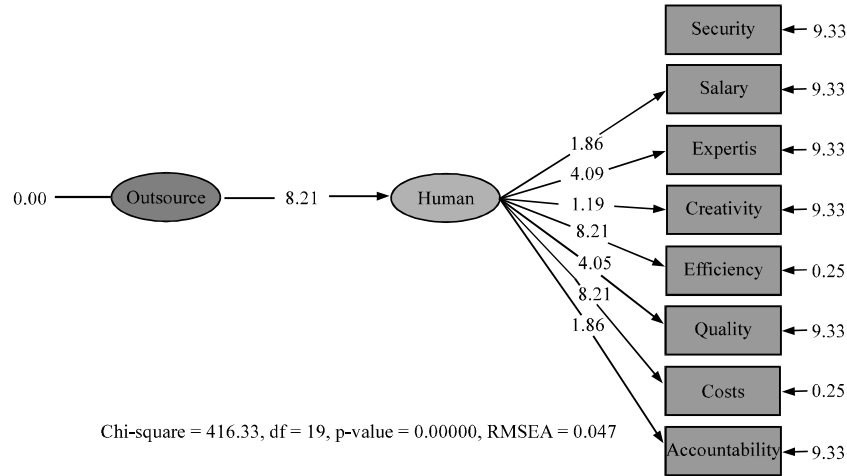


Fig. 2: Base model with t-values

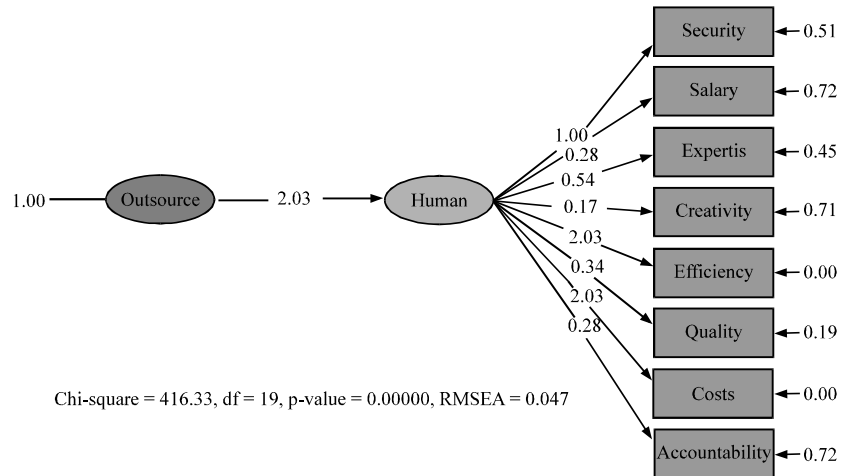


Fig. 3: Base model with path coefficients

Table 1: Fit indices of model of study

Fit index	Standard values	Estimated values
Degrees of freedom	-	19.00
RMSEA	0.05	0.047
NFI	0.90	0.910
NNFI	0.90	0.940
CFI	0.90	0.950
RMR	0.05	0.058
GFI	0.90	0.750
AGFI	0.90	0.710

Data analysis: As it is seen in Table 1, CFI or GFI indices are at acceptable levels.

Structural model test: In this study, confirmatory factor analysis was used to test the measurement model and path analysis was used to confirm structural model of study. Two following diagrams represent general models

of Lisrel software output that includes both structural model and measurement model that they will be examined in detail later (Fig. 2 and 3).

RESULTS AND DISCUSSION

Hypotheses 1: There is relationship between outsourcing of activities and job security of human resources. Based results shown in Table 2, the impact of independent variable on dependent variable was supported by data and the path these two variable create is significant and positive (significant at 5% error level) ($\beta_{22} = 1$). As a result, it can be said that there is relationship between outsourcing of activities and job security with 95% confidence. There is relationship between outsourcing of activities and salary and benefits of human resources.

Table 2: Results of first hypothesis test

Hypothesis	Coefficient	Result
There is relationship between outsourcing of activities and job security of human resources	1	Rejected

Table 3: Results of second hypothesis test

Hypothesis	Coefficient	t-statistic	Result
There is relationship between outsourcing of activities and salary and benefits of human resources	0.28	1.86	Rejected

Table 4: Results of third hypothesis test

Hypothesis	Coefficient	t-statistic	Result
There is relationship between outsourcing of activities and expertise of human resources	0.54	4.09	Confirmed

Table 5: Results of fourth hypothesis test

Hypothesis	Coefficient	t-statistic	Result
There is relationship between outsourcing of activities and creativity of human resources	-0.17	-1.19	Rejected

Based results shown in Table 3, the impact of independent variable on dependent variable was supported by data and the path these two variable creates significant and positive (significant at 5% error level) ($t = 1.86$, $\beta_{22} = 0.28$). As a result, it can be said that there is relationship between outsourcing of activities and salary and benefits with 95% confidence.

Hypothesis 3: There is relationship between outsourcing of activities and expertise of human resources.

Based results shown in Table 4, the impact of independent variable on dependent variable was supported by data and the path these two variable create is significant and positive (significant at 5% error level) ($t = 4.09$, $\beta_{22} = 0.54$). As a result, it can be said that there is relationship between outsourcing of activities and expertise with 95% confidence.

Hypothesis 4: There is relationship between outsourcing of activities and creativity of human resources.

Based results shown in Table 5, the impact of independent variable on dependent variable was supported by data and the path these two variable create is significant and positive (significant at 5% error level) ($t = -1.19$, $\beta_{22} = -0.17$). As a result, it can be said that there is relationship between outsourcing of activities and creativity with 95% confidence. There is relationship between outsourcing of activities and efficiency of human resources.

Based results shown in Table 6, the impact of independent variable on dependent variable was supported by data and the path these two variable create

Table 6: Results of fifth hypothesis test

Hypothesis	Coefficient	t-statistic	Result
There is relationship between outsourcing of activities and efficiency of human resources	2.03	8.21	Confirmed

Table 7: Results of sixth hypothesis test

Hypothesis	Coefficient	t-statistic	Result
There is relationship between outsourcing of activities and service quality of human resources	0.34	4.05	Confirmed

Table 8: Results of seventh hypothesis test

Hypothesis	Coefficient	t-statistic	Result
There is relationship between outsourcing of activities and reduced costs of human resources	2.03	8.21	Confirmed

Table 9: Results of eighth hypothesis test

Hypothesis	Coefficient	t-statistic	Result
There is relationship between outsourcing of activities and accountability of human resources	0.28	1.86	Rejected

is significant and positive (significant at 5% error level) ($t = 8.21$, $\beta_{22} = 2.03$). As a result, it can be said that there is relationship between outsourcing of activities and efficiency with 95% confidence. There is relationship between outsourcing of activities and service quality of human resources.

Based results shown in Table 7, the impact of independent variable on dependent variable was supported by data and the path these two variable create is significant and positive (significant at 5% error level) ($t = 4.05$, $\beta_{22} = 0.34$). As a result, it can be said that there is relationship between outsourcing of activities and service quality with 95% confidence.

Hypothesis 7: There is relationship between outsourcing of activities and reduced costs of human resources.

Based results shown in Table 8, the impact of independent variable on dependent variable was supported by data and the path these two variable create is significant and positive (significant at 5% error level) ($t = 8.21$, $\beta_{22} = 2.03$). As a result, it can be said that there is relationship between outsourcing of activities and reduced costs with 95% confidence.

Hypothesis 8: There is relationship between outsourcing of activities and accountability of human resources.

Based results shown in Table 9, the impact of independent variable on dependent variable was supported by data and the path these two variable create is significant and positive (significant at 5% error level) ($t = 1.86$, $\beta_{22} = 0.28$). As a result, it can be said that there is relationship between outsourcing of activities and accountability with 95% confidence.

CONCLUSION

Results of first hypothesis showed that t-value between capabilities of outsourcing of activities and job security is $1 < 1.96$. Therefore, based on t-test with critical value of 0.05 at the 95% confidence level, null hypothesis cannot be rejected. Therefore, the first hypothesis of researcher was not confirmed and it can be said that there is no significant relationship between outsourcing of activities and job security with 95% level.

Results of second hypothesis showed that path coefficient value between outsourcing of activities and salary and benefits of human resources is 0.28 and t-value is $1.86 < 1.96$. Therefore, based on t-test with critical value of 0.05 at the 95% confidence level, null hypothesis cannot be rejected. Therefore, the second hypothesis of researcher was not confirmed and it can be said that there is no significant relationship between outsourcing of activities and salary and benefits of human resources with 95% level.

Results of third hypothesis showed that path coefficient value between outsourcing of activities and expertise of human resources is 0.54 and t-value is $4.09 < 1.96$. Therefore, based on t-test with critical value of 0.05 at the 95% confidence level, null hypothesis cannot be rejected. Therefore, the third hypothesis of researcher was not confirmed it can be said that there is no significant relationship between outsourcing of activities and salary and expertise of human resources with 95% level.

Results of fourth hypothesis showed that path coefficient value between outsourcing of activities and creativity of human resources is -0.17 and t-value is $-1.19 < 1.96$. Therefore, based on t-test with critical value of 0.05 at the 95% confidence level, null hypothesis cannot be rejected. Therefore, the fourth hypothesis of researcher was not confirmed it can be said that there is no significant relationship between outsourcing of activities and creativity of human resources with 95% level.

Results of fifth hypothesis showed that path coefficient value between outsourcing of activities and efficiency of human resources is 2.03 and t-value is $8.21 < 1.96$. Therefore, based on t-test with critical value of 0.05 at the 95% confidence level, null hypothesis can be rejected. Therefore, the fifth hypothesis of researcher was confirmed it can be said that there is significant relationship between outsourcing of activities and efficiency of human resources with 95% level.

Results of sixth hypothesis showed that path coefficient value between outsourcing of activities and

service quality of human resources is 0.34 and t-value is $4.05 < 1.96$. Therefore, based on t-test with critical value of 0.05 at the 95% confidence level, null hypothesis can be rejected. Therefore, the sixth hypothesis of researcher was confirmed and it can be said that there is significant relationship between outsourcing of activities and service quality of human resources with 95% level.

Results of seventh hypothesis showed that path coefficient value between outsourcing of activities and reduced costs is 2.03 and t-value is $8.21 < 1.96$. Therefore, based on t-test with critical value of 0.05 at the 95% confidence level, null hypothesis can be rejected. Therefore, the seventh hypothesis of researcher was confirmed and it can be said that there is significant relationship between outsourcing of activities and reduced costs with 95% level.

Results of eighth hypothesis showed that path coefficient value between outsourcing of activities and accountability is 0.28 and t-value is $1.86 < 1.96$. Therefore, based on t-test with critical value of 0.05 at the 95% confidence level, null hypothesis cannot be rejected. Therefore, the eighth hypothesis of researcher was not confirmed and it can be said that there is no significant relationship between outsourcing of activities and accountability with 95% level.

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