

A Survey on Impact of Outsourcing on Effectiveness of Structural Dimensions of Organization and Productivity (A Case Study of Esfahan Mobarakeh Steel Company)

Dr. Iraj Soltani

Assistant professor, member of scientific board in Islamic Azad University of Najaf Abad, Iran

Ayaz Esmaeely

M.A. of industrial engineering (system and productivity) Islamic Azad University of Najaf Abad, Iran

DOI: 10.6007/IJARBSS/v3-i12/471 URL: <http://dx.doi.org/10.6007/IJARBSS/v3-i12/471>

Abstract:

Outsourcing is applied to transfer doing of internal processes or activities to external provider under a specific contract. This research aimed to examine impact of outsourcing on 8 dimensions of organizational structure including: complexity, centralization, hierarchy, formality, professionalism, specialization, standardization, personnel ratio and consequently impact on organizational effectiveness and productivity. Statistical population was consisted of 98 employees including managers, and supervisors in Mobarakeh Steel Company (M.S.C.) which 77 persons were selected as sample. To gather data a 67 items questionnaire was used. Its reliability was determined by selecting scientific and valid components and opinion of organizational experts and thesis advisor and its validity was 0.97 using Cronbach's α . SPSS was used to analyze data. The results show that outsourcing had positive effect on all 8 dimensions and also improved productivity and effectiveness of structure.

Key words: Outsourcing, Organizational Structure Dimensions, Complexity, Centralization, Hierarchy, Formality, Professionalism, Specialization, Standardization, Personnel Ratio, Productivity.

Introduction

Dynamic and complex environment and expansive changes related to information technology (IT) has made changes in organizational structures unavoidable. In responsiveness and adaptation to environmental needs, organizational new forms have been created to reinforce horizontal integration and create simple and fluid organizational structures and processes and also satisfy internal and external customers. One of the most important common features of these structures, is to provide resources from outside of organization and horizontal communication. With regard to recent changes and progresses in competitive environment, viewpoints of organizations and companies have changed. These changes are so rapid that no organization can do all the things alone. Because the cost of investment required for R&D, product design, process transfer and substitution of new tools is very high, don't allow

organizations and companies with strong vertical integration to retain their competitive ability in all activities, thus it is better for organizations and companies to welcome outsourcing, to provide resources from outside of organization means to buy goods and services which previously provided within the organization, from outside. so new forms of organizational structure created to meet environmental needs that the most important common features include:

- ✓ To provide resource from outside of organization
- ✓ Network communications between sectors and units
- ✓ Flexible organizational boundaries
- ✓ Rely on knowledgeable employees

Outsourcing has effects on organization including change in organizational structure of companies, this change requires flexibility in organization, as organizations provide their resources through outsourcing, although use unlimited outside resources instead of their limited resources, but they should be prepared to cope with outside more variable condition , rather than preparation for cope with internal less variable condition . (Hassan pour, 2003) .

In the first glance, it seems that organizations with outsourcing trend in comparison to those that do activities through internal sections, have less internal complexity, but their relationship to outside of organization is more complex and wider. Thus, it is vital for organization to determine in what contexts and to what extent use outsourcing in order to create a productive and effective organization. Considering the afore said matters, this research was conducted to examine the impact of outsourcing on effectiveness of productivity and organizational structural dimensions in order to help planners in effective outsourcing . In category of organizations theory three main dimensions of organizational structure are: complexity, formality and centralization. Although these three elements are considered as main and important dimensions of organizational structure but are not universal. The relation between strategy and organizational structure is undeniable that means there is relationship between strategy and dimensions of organizational structure i. e complexity, formality, centralization, professionalism, standardization, hierarchy, specialism and personnel ratio. (Alvani, Danaee fard, 2009).

Considering the interaction of today's organizations with their environment, should adopt strategies to reach main goals and success. There is no doubt that organizational structure is one of the strong tools for implementing strategies. Change in strategies causes change in organizational structure thus organizational structure should be designed in such a way that facilitate implementation of strategy and access to goals. Without a strategy and a clear mission, organization cannot design a successful structure. Based on Chandler research in an action and reaction cycle, change in strategy causes change in structure, and this change in structure will cause change in strategies. In organization without a clear strategy, there will be no desirable organizational structure or design. so, compass of organizational structure should be strategies of that organization. Although, a few organizations select and arrange, their strategy based on individuals and their structure, so, strongly should be said that structure of organization has impact on its strategies. compiled strategy should be effective and applicable. So if a strategy needs much changes in structure should not be considered an attractive option.

particularly if organization is not agile against changes , thus structure can shape the way of strategy selection. (parsaeian and arabee, 2006). Today's organizations put outsourcing in their basket of their strategies as – an attractive option and a means to achieve goals, because outsourcing has many advantages that causes organizations to welcome it under difficult condition and accept its challenges and costs. With refer to aforesaid cases, Mobarakeh steel company like other organizations faced challenges and incentives related to using outsourcing. Advantages and incentives are as follows:

- 1- Promotion of organizations focus on main activities.
- 2- Access to external resources.
- 3- Concentration of management on key and main activities.
- 4- Increase coordination between units in doing main activities due to using common resources.
- 5- In repair activities:
 - ✓ Avoidance of much centralization which causes decline in responsibility, waste time in coordinating and increasing cost in this area.
 - ✓ Avoidance of decentralization which makes H.R allocation and other repair resource to needy units slow or impossible.
 - ✓ Avoidance of too Mach decentralization which makes using experts , skilled human resourcing removes a great deal of centralization disadvantages and causes access to advantages of decentralization

Theoretical framework of research

Out sourcing

Chase (2004) define outsourcing as "The act of transferring some of internal activities and responsibilities of decision making to an external provider company" thus outsourcing allocation or reallocation of trade activities including service or production from an internal resource to an external provider company. thus outsourcing allocation or reallocation of trade activities including service or production from An internal resource to an external resource based on a mutual contract . In contrary in some instances it is possible to use insourcing in some activities. (said javadin et al. 2011).

Outsourcing patterns

Out sourcing has multiple patterns that is used based on conditions and organizational strategy.

- 1- Full outsourcing: in full outsourcing generally transfer of over than %80 of expected activity is delegated to an external provider or vendor and is mainly task or competency outsourcing. This type of outsourcing is complicated and risky and due to high volume of work, it will be long term project and its advantages will result in long term. This type of outsourcing is better for those organizations with experience of outsourcing small projects (said javadin et al. 20011).
- 2- Within organization out sourcing: in this type of outsourcing authority and responsibility of doing work is delegated to units and employees of within organization. This type is generally done in specialism fields and is defined as research or even executive projects and is delegated to an organizational unit or a team consisted of individuals in different units. This type of delegation has advantage due to give employees motivation and ability, lower costs

and high speed in doing project, but issues such as quality decline, its generalization to employees current duties and non – specialism duties in organization should be considered. Many organizations have organizational mechanisms such as participation groups, project teams and etc. (Nasr, 2009).

- 3- Selective outsourcing: this type of outsourcing is a substitution for full outsourcing and is used when organization delegated small parts of a function . Never the less, selective outsourcing is not the cure of all problems because it requires too much attention due to mutual dependencies of its control mechanism . In the other hand organization should have a systemic attitude toward expected activity and through which ensure that outsourced parts can rejoin organization without much cost and disorder. Additionally, because it is possible for organization to Outsource other parts in the future, it should be able to act in such a way that current and future activities be coordinated (said javadin et al, 2011).

Organizational structure and its dimensions:

Dimensions of organization design

Organization has two dimensions include:

- 1- Structural dimension
- 2- Contextual dimension

Structural dimension has a view on within organization and considers internal features, it is possible to compare organizations through these dimension.

Contextual dimension represents whole organization including largeness, technology type, environment and goals of organization. Contextual dimension introduces position of organization and has impact on structural dimension. Of Course, depended on largeness, structural dimension represents organization and embedded environment of structural dimension and for this reason it maybe vague.

Structural dimension:

Structure includes eight Dimension As follows:

- 1- Complexity
- 2- Formality
- 3- Centralization
- 4- Professionalism
- 5- Specialism
- 6- Standardization
- 7- Authority hierarchy
- 8- Personnel ratio

Of course there Is no consensus about this classification and some including Stephan divide dimensions in to 3 main dimensions.

Including complexity, centralization and hierarchy and believes that other dimension originate from these 3 main factors.

But it is sure that these dimensions exist in organization and are observable and comparable to each other (parsaeian and arabee, 2011)

Complexity:

Complexity is due to numbers of activities or active subsystems within organization, complexity dimension includes horizontal complexity, vertical complexity, geographical or space complexity (Alvani and Danaee fard, 2009).

Formality:

In every organization there is evident and documents that in which regulations, policies, duties, authorities and are referred to. Considered the size of organization whatever the more these evident and documents, the greater is formality, in organization with less formality, their employees have more freedom to act and able to use their initiatives more frequently, but there will be multiple tastes and different behaviors (parsaeian and Arabee, 2010).

Centralization:

Centralization refers to the extent in which decision making is Centre on a given point or unit of organization. If almost important decisions are made in different sections and by different individuals, it is the indication of low centralization or decentralization in the case decision making by top management, it mean centralization, but if required information for decision making is transferred down ward to top management and information are monitored and then transferred upward, it is considered decentralization (Alvani and Danaee fard. 2009).

Specialization :

Specialization refers to the fact that how separated are activities and for each element a given employees is considered. Specialization increases along with division of labor. If an organization has high Specialization, there will be high division of labor between employees, and every employees dose a limited range of activities. Conversely if there is low Specialization, every employees dose a wider range of activities and duties. In specialism organizations due to limited work done by every employees graduate employees become burn – out due to lack of variety and will be de motivated, in the other hand some of them in detrimental and difficult posts, will be affected by job diseases and even might turn over their job or become retired due to their job. One solution to prevent above disadvantages is job rotation System which Reduce destructive effects greatly, but job rotation system also has its own problems (parsaeian and Arabee 2010).

Standardization

If similar activities in organization are done in a similar way it means there is standard in that organization. Large organizations with different along with circles or different geographical regions have multiple levels and layers, in other words they have complexity. Some of these organizations in spite of high complexity insist that similar activities in different circles and places be done similarly. Thus it is said that these organizations compared to other organizations have high level of standardization. In organizations with high levels of standardization, creativities and initiatives doesn't simply result in changing methods and work processes and substitution of a new method many take a long time. But instead their performance procedure for new and previous customers will be familiar and known. (Alvani and danaee fard 2009).

Professionalism

Professionalism in an organization refer to academic, formal training and education for holding job in that organization. If to hold a job in an organization requires high university education, or participation in long term training courses, such an organization will have high level of professionalism. training courses are sometimes theory courses can include human courses and practical and skill courses can include technical, engineering and medical (Said Javadin, 2009).

Hierarchy of authority

Hierarchy of authority means that every individual in organization should work under the supervision of a given person and report to a given person and it determines that each manager has what extent of supervision and control. In other words, hierarchy of authority determines the number of individual under supervision a given manager and what their levels in organization is. If the number of individuals under supervision a manager is low, hierarchy will be much and organizational layers will be increased and vice versa. Hierarchy of authority in organizational structure is specified through the lines that link units. (parsaeian and arabee, 2010).

Personnel ratios

Personnel ratios is the ratio of numbers of employees in different sections Of organization such as staff, support and operational units. also, personnel ratios refer to the proportion of supervisors to workers or proportion of managers to all employees, as the definitions show, personnel ratios can be the outcome of other dimensions such as centralization, hierarchy, complexity or even factors like specialization (Alvani and Danaee Fard, 2009).

Indicators of organizational structure effectiveness

Organizational effectiveness

In recent years analyzers increasingly attracted to interesting topic of organizational effectiveness. from theory viewpoint, right organizational structure causes organizational effectiveness, in first view points that is possibly related to decade of 1950, effectiveness was defined as the extent an organization reaches its goals, because there was ambiguity in this definition, researchers less use it and gradually corrected it. In decades 1960 and early of 1970 wide researches was conducted related to organizational effectiveness which resulted in multiple criteria as follow: general effectiveness, task skill, productivity, efficiency, profit, morale, absenteeism, job satisfaction, replacement, turn over, flexibility / adaptation and..... , which all of them can not be deployed in all organization, some of these criteria are more important than others , researchers also found that because effectiveness factors are different in various organizations , it is not possible to present a single definition .Through deep survey's on effectiveness in 1990 decade, this issue was demonstrated for researchers that effectiveness requites multiple criteria which evaluate multiple duties based on different features. (Alvani and Danaee fard, 2009).

And also it was demonstrated that organization is created through logical coordination in activities of several individuals in order to achieve common purposes and goals, based on division of labor of tasks and by hierarchy of authority and responsibilities . one conclusion from aforesaid definition is that organizations be defined and designed as a sum of individuals who do

informed activities. coordination and direction is done by organizations members to reach common goals or specific goals . In addition, organization should activate employees to cope with problems that might result in prevent ting or blocking access to organizational goals . In such a case organizational effectiveness is actualized (McAulley et al, 2007) .

Approaches to organizational effectiveness

There are various approaches to organizational effectiveness which each see effectiveness from the window of Their own approach and each has its own strength and weakness points.

Some of these approaches are as follows:

- 1- Goal achievement approach
- 2- Approach based on internal processes
- 3- Strategic interested approach
- 4- Approach based on providing resource
- 5- Competitive values approach
- 6- Euro pen fundamental quality management (EFQM) approach.

Conceptual framework

With regard to aforesaid matters, conceptual frame work is shown in pattern No 1.

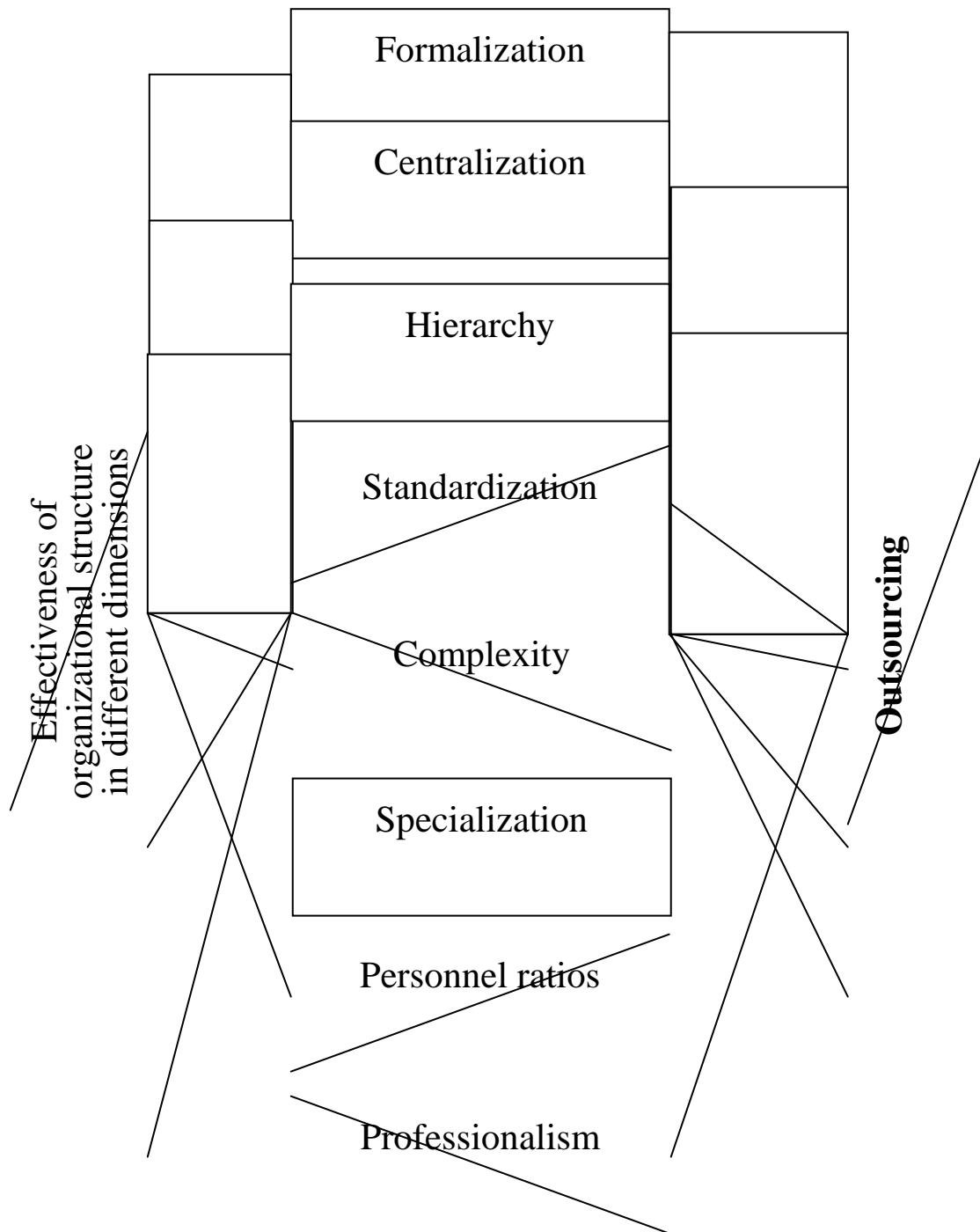


Fig (1): Conceptual framework

Research questions

The main question: how does outsourcing effect on effectiveness of organizational structural dimension?

The minor questions:

- 1- What impact has outsourcing on reducing formalization on organizational structure?
- 2- What impact has outsourcing on complexity of organizational structure?
- 3- What impact has outsourcing on balancing centralization in organizational structure?
- 4- To what extent does outsourcing cause standard effectiveness in organization?
- 5- To what extent does out sourcing increase professionalism in organization?
- 6- To what extent does out sourcing reduce hierarchy in organization?
- 7- To what extent does out sourcing balance personnel ratios in organization?
- 8- To what extent does outsourcing cause specialization in organization?
- 9- To what extent does out sourcing increase productivity due to reduction in man – hour on product unit in organization?

Methodology

This research is a survey – type. In this research 77 out of 98 employees from statistical population of managers, supervisors and bosses in M.S.C were selected as sample and were surveyed. A questionnaire was used to gather data in which The questions are based on M.S.C organizational structure for outsourcing, it has 67 items with 5 likert options from completely agree to completely disagree. In this research field study has been used to gather data including following stages :

- ✓ Studying types of organizational structure for outsourcing company's activities and present organizational structure components was gained. This list is consisted of 67 components and 9 main indicators from the perspective of structure for outsourcing.
- ✓ Grouping 67 components in to 9 main groups according to conducted researches for outsourcing structure.
- ✓ Compilation a questionnaire based on components and main indicators in M.S.C separately so that questions are grouped as follows: questions 1 to 11 related to complexity, questions 12 to 17 related to decision making – common understanding – hierarchy, questions 18 to 22 related to centralization, questions 23 to 27 related to formalization, questions 28 to 33 related to professionalization , questions 34 to 41 related to standardization , questions 42 to 46 related to personnel ratio , questions 47 to 54 related to specialization and question 55 to 67 related to productivity . To determine reliability content reliability was used, in this regard quality and scientific models of organizational structure was used and using experts, thesis advisor and consulting advisor reliability was confirmed. questionnaire validity was calculated based spss software and using α cronbakh it was 0.97. To analyze data in descriptive statistical level frequency , percentage , mean, standard deviation and inferential level , t - tests and Tukey was used .

Findings:

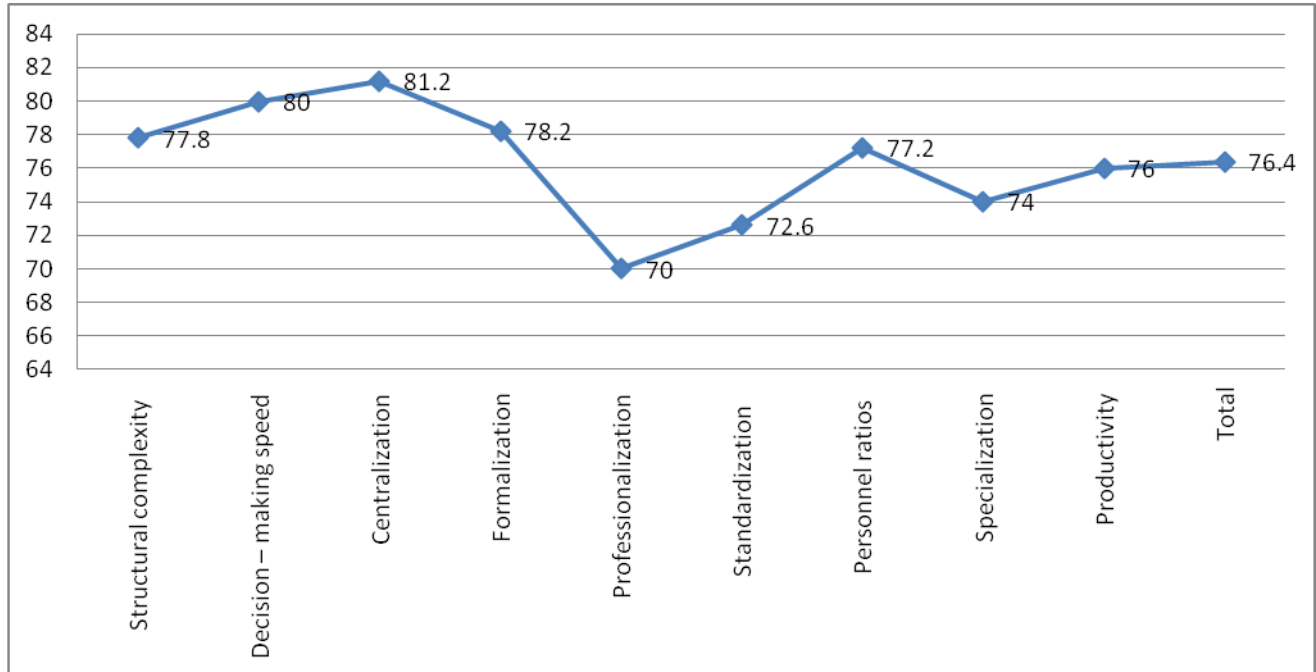
Calculation of main indicators mean

In this section main indicators mean of organizational structure dimensions in outsourcing from the general viewpoint in M.S.C is calculated and presented. Table 1 shows descriptive statics of main indicators related to organizational structure dimensions.

Table 1: Descriptive statics of main indicators of organizational structure dimensions

Row	Title	Numbers of questions	Mean	Standard deviation	Percentage mean	Normality sing
1	Structural complexity	11	3.89	0.61	77.8	0.116
2	Decision – making common – understanding hierarchy	6	4	0.56	80	0.171
3	Centralization	5	4.06	0.62	81.2	0.167
4	Formalization	5	3.91	0.57	78.2	0.462
5	Professionalization	6	3.50	0.73	70	0.191
6	Standardization	8	3.63	64	72.6	0.152
7	Personnel ratios	5	3.86	0.73	77.2	0.215
8	Specialization	8	3.70	0.64	74	0.181
9	Productivity	13	3.80	0.58	76	0.112
Total		67	3.82	0.47	76.4	0.104

As you see in table 1, mean of points for "centralization, decision making speed, formalization, structural complexity, and personnel ratio is greater that total mean (3.82). and productivity, specialization, standardization, professionalization, is less than total mean.



Calculation of development priority index (CPI)

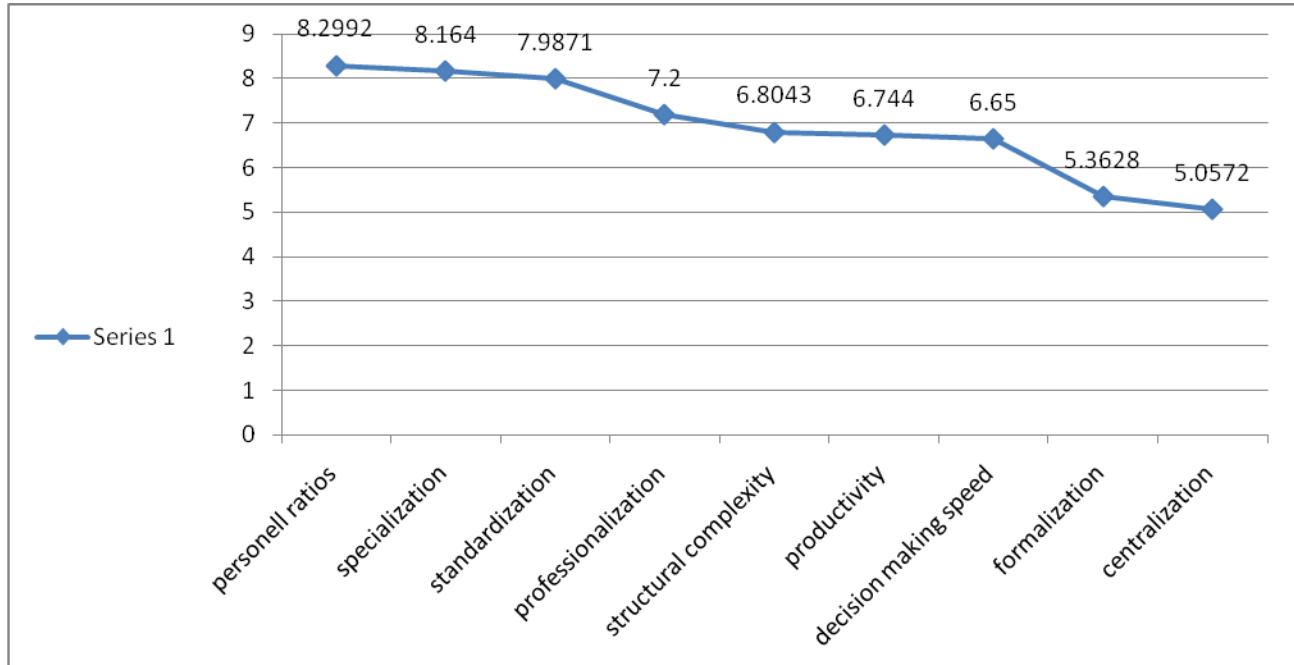
Development priority indicators for indicators of organizational structure dimensions has been calculated according to Ulrich standard and comparison to its world rate. Ulrich used a mathematical simple formula for weighting 21 competency factors and called it development priority index (DPI). underlying logic of this formula is relatively easy. human resource as a weight for developing competency in an atmosphere with following characteristics , should work hard:

- 1- Competency factor has a strong adjustment with performance
- 2- Improvement range is extra ordinary expansive

To measure "strong adjustment with performance" he used relative impact of each competency factor on individual performance. value of "improvement range". includes 5 minus mean of competency factor amount . using competency amount in the from of 5 – point or score allowed him to determine human resource profession in an expected competency how far is from " ideal " it should be mentioned that survey scale of 5 is considered as a highest possible point or score. Thus an index with very desirable attraction will get 5 points. through 5 – mean point, the amount of "closeness to ideal" will get. using DPI in this research is important because shows that in the case of outsourcing which structural dimensions will be most desirable and which will be less desirable or even will have negative effect .Considering this negative effect will be necessary in the case of deciding on outsourcing.

So, DPI turns points of impact and skill to relative priorities , its formula is:

$$DIP = (\text{percentage of effect}) . (5 - \text{point of mean})$$



Impact of out sourcing on main indicators by T- single sample test

T-single sample test for each parameter represents that mean of expected characteristic whether is significant with 3 differences or not? In the case of significant difference, how much is the difference? if mean difference from statistical terms is more than 3 shows that outsourcing has positive impact on that given characteristic and is considered strength point and if mean difference in less than 3 shows that outsourcing has negative impact on that characteristic of organizational structure, and if this negative impact reduces organizational effectiveness, it should be avoided or be considered as an improvement area in order to be corrected pre or post outsourcing. Also if mean difference is equal to 3, it mean that outsourcing has not significant impact on that characteristic. Table 2 shows the impact of outsourcing on main indicators from the general point view of M.S.C

Table 2: T – single sample test for main indicators

Row	Question	Total percentage impact	t- value statistic	Degree of freedom	Sig	Difference from 3
1	complexity	0.613	12.89	76	0.000	0.890
2	Decision – making common – understanding hierarchy	0.665	15.74	76	0.000	1.006
3	Centralization	0.538	15	76	0.000	1.64
4	Formalization	0.492	13.93	76	0.000	0.906

5	Professionalization	0.480	5.99	76	0.000	0.5
6	Standardization	0.583	8.51	76	0.000	0.626
7	Personnel ratios	0.728	10.29	76	0.000	0.857
8	Specialization	0.628	9.63	76	0.000	0.702
9	Productivity	0.562	12.08	76	0.000	0.805

Considering the fact that in all cases $\text{sig} < 0.05$, so is significant and all differences are greater than 3. It is concluded that generally, main indicators in outsourcing have strength point. In other words, outsourcing not only has no negative impact on organizational structure, productivity, and organizational effectiveness, but also has positive impact.

Correlation coefficient between main indicators :

To calculate correlation coefficient between main indicators of organizational structure in outsourcing and from the viewpoint of M.S.C, using pearson correlation test, correlation coefficients between main indicators of organizational structure was examined, the results are shows in table 3.

Table 3: correlation coefficient between main indicators

	Structural complexity	Hierarchy, Common understanding	Centralization	Formalization	Professionalization	Standardization	Personnel ratios	Specialization	Productivity	total
Structural complexity	1	0.749	0.598	0.471	0.501	0.5499	0.549	0.644	0.435	0.807
Hierarchy, Common understanding		1	0.662	0.520	0.469	0.606	0.730	0.682	0.452	0.866
Centralization			1	0.460	0.283	0.396	0.465	0.531	0.314	0.690
Formalization				1	0.420	0.485	0.480	0.525	0.438	0.730
Professionalization					1	0.397	0.456	0.435	0.399	0.663
Standardization						1	0.495	0.576	0.479	0.730
Personnel ratios							1	0.681	0.491	0.800
Specialization								1	0.523	0.829
Productivity									1	0.666
Total										1

Dark boxes represent that correlation between these factors relative to other main indicators of organizational structure are at maximum. The greatest correlation is related to " decision making speed – common understanding with specialization , structural complexity and personnel ratios . Totally the greatest is related to decision making speed – common understanding – hierarchy.

Discussion and Conclusion

This research with the title of " impact of out sourcing on effectiveness of organizational structure and productivity " was conducted in 2013 . in this study 67 components and 9 main indicators were determined that were consisted of :

Structural complexity , decision making speed – common understanding – hierarchy , centralization , formalization , professionalization , standardization , personnel ratios, specialization , productivity . based on results , impact of outsourcing on structural dimensions effectiveness are as follows respectively : impact of outsourcing on effectiveness of structural complexity = 77.08% , impact of outsourcing on effectiveness of decision making speed – common understanding – hierarchy = 80% , impact of outsourcing on effectiveness of centralization = 81.2% , impact of outsourcing on effectiveness of formalization = 78.2% , impact of outsourcing on effectiveness of professionalism = 70% , impact of outsourcing on effectiveness of standardization = 72.6% , impact of outsourcing on effectiveness of personnel ratios = 77.2% , and impact of outsourcing on effectiveness of specialization = 74% , impact of outsourcing on effectiveness of productivity = 74% , as you see , centralization , decision making speed , formalization , structural complexity , personnel ratios is greater than total mean , and productivity , specialization , standardization , professionalism is lesser than total mean . DIP for indicators of organizational structure dimensions was calculated according to Ulrich standard and its comparison to world rate. The usefulness of DIP in this research is due to the fact that shows in the case of outsourcing which structural dimensions create the most desirability and which shows the least , or even will have negative effect and needs considering this negative effect when out sourcing . based on results according to this index , development priority of organizational structure dimensions involve respectively : personnel ratios, specialization, standardization, professionalism , structural complexity , productivity , decision making speed , common understanding , formalization and centralization , according to t – test out sourcing totally has positive impact on structural dimensions and productivity . using Pearson correlation test , the value of correlation between indicators were measured and determined that the most correlation is related to " decision making – common understanding – hierarch " with structural complexity and personnel ratios , which shows that mentioned in dictators are affected more from out sourcing and because the mean of these indicators is more than 3, and $\text{sig} < 0.05$, so , generally has positive impact on effectiveness of organizational structure and productivity of organization. Previous researches a bout outsourcing have not been directly related to the impact of outsourcing on effectiveness of organizational structure and productivity . or such researches were not available , thus it is not possible to compare the results of this research to similar research completely . what can be raised as the result of this research is that outsourcing will result in improving organizational structure in all 8 dimensions of structure and it means that when outsourcing there is no worry about harming or destructing structural foundations and even improve them. For example outsourcing improves personnel ratios and balances these ratios . In the other hand , outsourcing causes a part of organizational duties be transferred to out of organization and the number of employees will be reduced . Based on agent theory reduction in organization in organizational size will result in reducing agent section and also reduction in agent costs in organization. The concept of positive impact of outsourcing on complexity index means that outsourcing reduces problems due to horizontal , vertical and geographical complexity and increases effectiveness and productivity , also there is

relation between complexity and hierarchy and as a result personnel ratios, As, Based on results , outsourcing has positive impact on structure complexity , personnel ratios and hierarchy so the result of this research is not contradictory and is confirmed . considering the a foresaid matters it is possible to present the results of this research in figure 2.

a

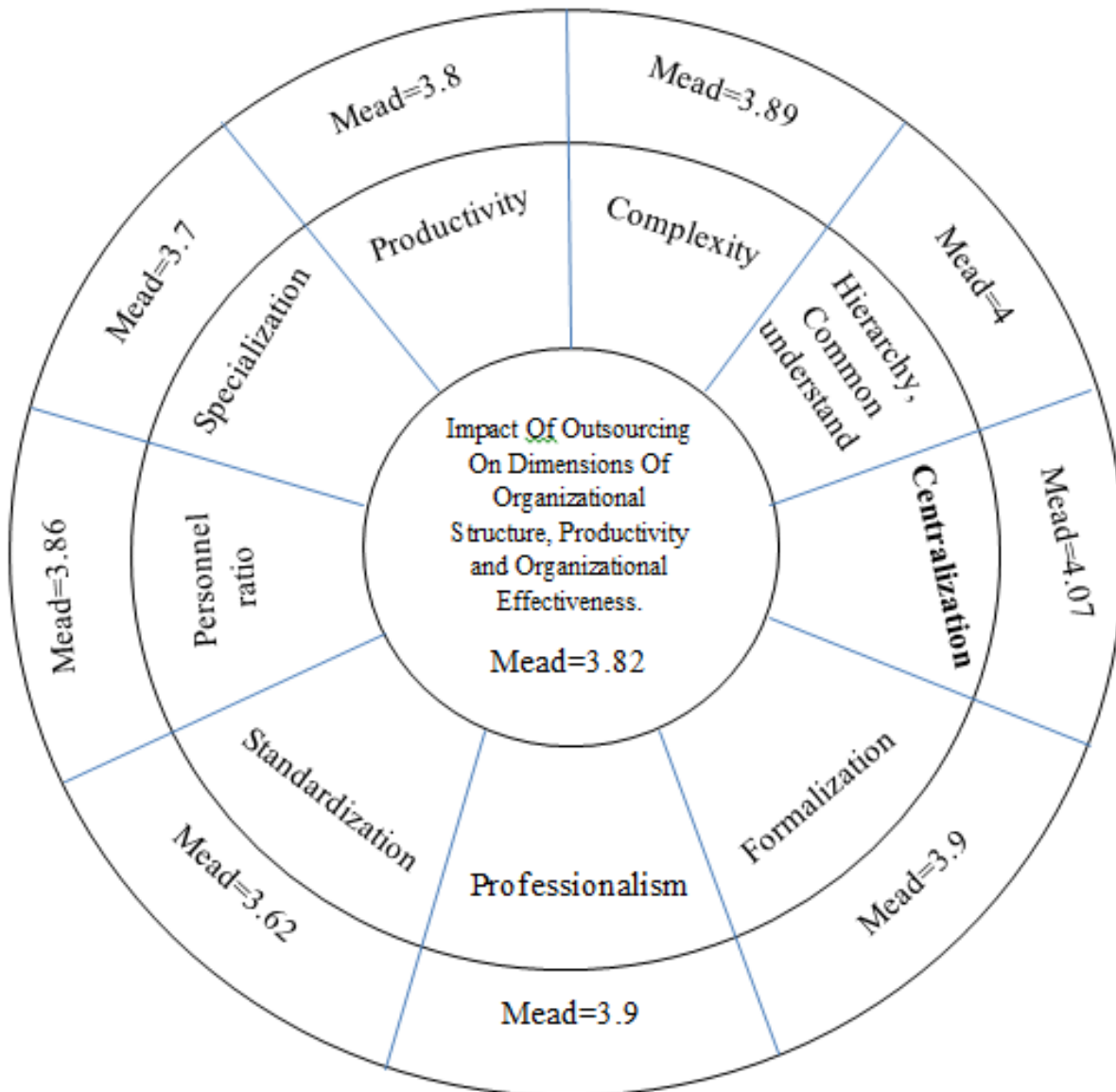


Figure 2: impact of outsourcing of effectiveness of main indicators of organizational structure and productivity

References :

- David (2006) . Strategic Management . Translated : Parsaeian and Trabee Daftar – e Pajooheshhaye Farhangee. Ed. 9.
- Hassan pour .A (2003) . organizational new structures , tadbir journal, quarterly , No 137
- Nasr – e – Azadani , E. to determine out sourcing indicators , for production and service organizations , M.A. thesis , najaf- Abad Azad university
- Robins. A (2009) Organization Theory , Structure and Organizational Design translated by Alvani , M and Danaee Fard . H. Ed 28 Tehran