

## Assess and Prioritize Systemic Risks from the Perspective of Outsourcing Activities

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**Abstract:** The aim of the research is to identify and prioritize risks facing organizations outsource their operations from a system perspective. The main research question is to outsource the systems perspective, what risks there? And one of the risks of outsourcing is more important? For this purpose, in the municipality engines of 115 managers and employees were studied. The results indicate that nine the risk for outsourcing that have a positive correlation with risk and credit risk when the highest priority of the lowest priority.

**Key words:** Risk, outsourcing, engines, systems, perspective

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### INTRODUCTION

The world of business and industry with many transformations and changes such as globalization, outsourcing and strategic alliances in the face. As a result of risk management activities, including commercial and non-profit has become more important. With increasing national and international competition in products and services and the customers want more variety of products across distribution channels to maximize customer access at the lowest cost producers strata modern business environment with increasing pressure to meet demand, the implementation of products and service demands of customers and increase the effectiveness of costs faced (Noorbakhsh, 2015).

Outsourcing of issues which in recent years has attracted much attention. Outsourcing actually get the resources that they suffer from a shortage in the believe that companies with a trade union with its major trading companies can achieve the following results: reducing transaction costs, increasing the quality of goods, lower prices for customers, increase customer satisfaction, access to market information, acquire new knowledge and flexibility (Raee and Saeedi, 2006).

Outsourcing as a means of development organizations and promote productivity in the form of downsizing in recent years and the managers and officials of the organizations and implemented in different ways. While considerable academic research on the use of outsourcing in manufacturing activities is unfortunately limited scientific studies in the field of outsourcing services is not available. Given these points is an important issue for those involved in the outsourcing business is how a company decides to outsource activities and what activities they do and risks

encountered in outsourcing with what Bourne is generally what a manager should consider when making decisions about outsourcing the answers to four key questions are:

- Why Outsource? In general, organizations should choose outsourcing strategy or not? What if the benefits and risks
- Which activity? What kind of activities should be organized and what activities should be outsourced its own
- To whom? The organization selected for outsourcing activities to service providers assign service providers feature-counter in other words, capable of delivering up to date, superior performance, reputation, customer satisfaction, how is committed to continuous improvement
- How? After outsourcing activities in the organization how to run

Institute outsourcing (1996, Institute Web Page Outsourcing) with >1,200 companies in order to understand why companies are outsourcing their activities to the conclusion that 10 potential advantages of the use of outsourcing are: to increase the company's focus on a specific activity, accessibility on a global level, availability of funds, accelerate the business benefits resulting from the restructuring, dividing the risk, freeing up resources for other purposes, injecting cash into the company, reduce and control operating costs, access to domestic sources, manage tasks difficult or uncontrollable. Cases referred not only to profit from outsourcing to reduce costs in the show, but in some cases it may be important to them is more important than reducing costs (Jafari, 2009).

Risks encountered in outsourcing activities that include:

- Risk timetable (Delay): Inability to deliver the final product in the specified period
- Technical risks: The inability of technology and technical capacity to provide the expected performance
- Financial risk: The inability to complete the project under budget
- Risk culture: The customer values and assumptions that affect the behavior patterns of the ruling groups and the intellectual and moral quality standards may be different in different groups
- Risk reputation beliefs and negative comments related to an organization than its people
- Intellectual property (intellectual property): The threat of the use made of the idea to create a product or service
- Flexibility: The inability of the organization to respond to internal or external potential changes at the right time with low-cost and efficient manner
- Subordination and obedience: The inability of the organization to comply with the regulations of the country or the whole world
- Quality: Inability final delivery of the product or service to meet customers' expectations. (Shaban and Shayan, 2011)

Various industries are expanding day by day and complexities surrounding the increasing production. The competition is very intense manufacturing activity is taking shape on product quality and growth of new technologies, changing attitudes from mass production to lean production and the production the pressure to pull production, customer demand the same high quality is a priority. In this respect, identifying and prioritizing risks of production, harm reduction and reduce customer dissatisfaction and possible carries. Planning and timely corrective measures can reduce the risk of production processes and ultimately enhance customer satisfaction and increase market share had hoped. With the establishment of quality management systems in the 1980s and re-engineering in the 1990s and knowledge management in the 2000s and meet the requirements that the approach of "prevention of errors and failures" into action covered, the ability to provide confidence that the processes planned in the organization to operate effectively and meet the goals of the organization, is established.

The aim of this research is to identify the relationship between risk and their relationship with each other and to identify the main risks of outsourcing as the most important factor by which we can identify the profitability and cost reduction we achieved in the studied

organizations. Also recently prioritize risks, outsourcing is one of the key factors in the success of the project is competitive. Because they understand the risks of outsourcing, managers are trying to reduce the likelihood of negative outcomes on the project and the progress in the quality of the product or service to increase their competitive advantage. As well as to identify and prioritize the risks resulting from the production or service downtime and reduce customer dissatisfaction harm reduction makes it possible and to plan and carry out timely corrective actions and can reduce the risk of production processes and ultimately enhance customer satisfaction and increase market share had hoped. Widespread and growing use of different management systems in organizations as well as favorites to assess the risks, the need for research requires.

**Research review:** Thinkers such as Marx, Keynes and Galbraith period in which economic theory and practice managers like Henry Ford 3 on the positive aspects of the economic performance of large-scale industry and mass production were highlighted and managers to set up and integrate complex were encouraging in all aspects and all activities related to the production of a product is done within the company (Ali and Sadegh, 2012). The main motive behind this strategy there are four:

- This strategy potentially take advantage of economies of scale advantages for their company provides
- Horizontal integration opportunities to benefit from a larger market provides the power
- The collection mixed with increasing range and variety of products potentially provide security and confidence for the company
- Vertical integration the company more control over things such as the possible sources of raw materials or distribution channels

Therefore, in the 1950s and 1960s was the common attitude of diversification of products, expansion of the company and benefit from economies of scale advantages but in 1970 the company concluded that it lacked agility are necessary for competitiveness and it is acknowledged that large enterprises are inefficient and global market and in the 1980s the inefficiencies associated with the onset of the global recession and the expanded believe that due to the inefficiency of the link and expand their companies. Therefore, the strategy of the social enterprise should reverse direction and better power companies to increase flexibility and creativity and focus their efforts on a limited number of activities. In 1975, as the transparency of

assets by Williamson 2 was developed sense. Williamson theory-based foundation that companies need the savings in transaction costs 3. According to the above costs and exchange traded investment products based on the characteristics of the parent company to be established provider. The transaction costs in an industry 'takes the willingness of companies to outsourcing relationships are fewer and larger organizations and on the other hand also increase the cost and reduce bureaucracy within the company flexibility to prevent companies from getting too big And encourages them to cooperate with other companies. In the 1980s, some Western governments aimed at downsizing the public sector and reduce your Policies to transfer some activities to the private sector and contractors were expelled. Such reform has affected both the outsourcing approach:

- This action results reinforced the belief that contractors can more services with respect to the efficiency and effectiveness of their internal governmental organizations
- Outsourcing services in many areas of the public sector, develop and boom were of such services and the development of corporate services

Changes in management style emerged in the 1980s in that business strategies business ideas became central to the prevailing idea and consultants, managers encourage companies to take advantage of this policy and the general tendency of the early 1980s, especially in some areas of the market has been to reduce public integrity.

In the 1990s, Japanese automakers were used using network providers and was followed by Western automakers. Then the pharmaceutical industry were among the industries taking actions to reduce their levels of public integrity and its focus on research and development activities as well as the development of some stages of the production process that focused on value creation than to other activities and then the electronics industry, including those in who were on this path (Rahanandeh, 2012)

## **MATERIALS AND METHODS**

The study of classification based on correlation method and nature of research is done using observed data the main aim of this study found little relationship between two or more variables and if there is a relationship between intensity is measured. The research methodology of deductive-inductive study of the way in

which the maximum theoretical foundation and library, paper, internet collected and reject or the hypothesis of the study and application of appropriate statistical methods, inductive reasoning has been used in generalizing the results This study is completely functional in terms of purpose and based on the analysis of data collected from the Isfahan Motor Services of their municipal.

### **Question and main hypothesis**

**Question:** Which of risks in the studied organizations are outsourcing more important?

**The main hypothesis:** It seems that the risks of outsourcing in the Isfahan municipal Motor Services of a positive relationship with each other.

### **Secondary hypotheses:**

**Hypothesis 1:** Risk timetable, technical and financial risk are credit positive relationship with.

**Hypothesis 2:** Credit risk and flexibility are positively associated with risk of culture.

**Hypothesis 3:** Risk financial, cultural and agreed activities are positively related to credit risk.

**Hypothesis 4:** Risk quality is positively related to intellectual property.

**Hypothesis 5:** Risk timetables, quality, culture and activities are flexible in favor of a positive relationship with risk.

**Hypothesis 6:** Technical risk, reliability and flexibility are positively associated with the risk agrees.

**Hypothesis 7:** Technical risks, timelines, flexibility, pro-activity and ownership are positively correlated with quality.

**Research tools:** Using two questionnaires that one questionnaire outsourcing risks according to the number of employees from 100 employees as of the statistical population and other questionnaires which prioritize these risks were distributed among 15 managers of the organization. Statistical population of Esfahan motor services municipality staff for the following in the 100 questionnaires have been collected:

$$n = \frac{Z_{\alpha/2}^2 Pq}{d^2 + \frac{Z_{\alpha/2}^2 Pq}{N}}$$

Table 1: Reliability of the questionnaire

Row	Dimensions	No of questions	Cronbach's alpha values (%)
1	Credit	1-7	79.20
2	Time	8-9	77.20
3	Technical	10-13	75.90
4	Financial	14-19	83.80
5	culture	20-21	79.90
6	Flexibility	22-23	78.90
7	Activity	24-27	72.50
8	Quality	28-31	83.00
9	Ownership	32-33	72.50

Table 2: Compare couple

Rating	Weight	The sum of all rows	Variables
1	0.193859	1.74473	Time
5	0.129352	1.164171	Technical
2	0.134089	1.206805	Financial
4	0.13058	1.175221	Culture
3	0.131814	1.186325	Flexibility
6	0.090107	0.810961	Positive Activity
7	0.066319	0.596869	Quality
9	0.060741	0.546669	Ownership
8	0.063139	0.56825	Credit

- p = Likelihood of successfully integrated 0.5
- q = Probability of successfully integrated 0.5
- d = Value of 0.085 error
- N = Total statistical society, 319
- S = Sample size = 93.8

**Reliability of the questionnaire:** In this study to test reliability (Table 1) Cronbach's alpha coefficient was used for this purpose in the questionnaire were distributed between 30 and 70% higher coefficient variables of the show is reliable. The data collected so the possibility of using regression techniques were analyzed using the comparative method, using a couple of multi-criteria decision-making techniques, risk of outsourcing were prioritized. As a result prioritize the Table 2 is shown.

**RESULTS AND DISCUSSION**

**Normality and research data:** For data normalization, the research aimed to test the following hypothesis: The null hypothesis: the data are normal. Alternative hypothesis: the data are not normal. According to the results of Kolmogorov-Smirnov (Table 3), significant level of most variables is larger than 05/0 so the null hypothesis is accepted as normal variable distribution. So we use parametric tests and regression.

**Analysis of variance demographic information**

**Durbin Watson:** In regression analysis, especially when variables are studied during a time interval may change over time does not follow a specific pattern to distinguish this model from the Durbin-Watson test. This test is one of the most famous tests to detect autocorrelation is has the following limitations shown in Table 4 and 5:

- This test only shows the autocorrelation of the first order
- To apply this test there should be no missing observations
- Lagged dependent variable should be a model on the right
- Intercept regression model should be

**Study question:** Which of risks in the studied organizations are outsourcing more important? To examine this question, we first paired comparison table were prepared from data collected from 15 managers was completed. Then, by calculating the geometric mean managers, by comparison test was normal. By calculating average line, the risk weight determined based on the rating of risks was carried out. The first hypothesis: the risk timetable, technical and financial risk are credit positive relationship with.

Using regression analysis, the relationship between risk timetable, technical and financial credit risk and the credit risk results showed a positive relationship between financial risk and credit risk in exchange for a unit change in the size of 0.415 change in financial risk created be shown in Table 6.

**Checking the second hypothesis:** Credit risk and flexibility are positively associated with risk of culture. The results of the test showed that culture has a positive relationship with risk, credit risk and flexibility in exchange for a unit change in credit risk and flexibility, respectively 0.308 and 0.369 change in risk culture is created. Checking the third hypothesis: financial risk, credit risk are positively in favor of culture and activities shown in Table 7.

The results of the test showed that there is a positive relationship between financial risk, credit risk and other risks not directly related to the credit risk and financial risk as much as 0.444 per unit change in change in credit risk is created shown in Table 8.

**The fourth hypothesis:** the risk of intellectual ownership is positively correlated with quality. The results of the test showed that quality risk is positively correlated with the risk ownership in exchange for a unit change in quality risk as much as 0.2560 change in risk caused ownership shown in Table 9.

**Fifth hypothesis:** the risk timetables, quality, culture and activities are flexible in favor of a positive relationship with risk.

The results of the test showed that the risk of pro-active quality and flexibility has a positive relationship with risk. And risks timetable and culture

Table 3: Research normality

Indexes	Credit	Time	Technical	Financial	Culture	Flexibility	Positive activity	Quality	Ownership
Number	94.00000	100.000	98.0000	99.0000	98.000	99.000	99.000	98.000	99.00000
Average	3.769	3.875	3.7806	3.5522	3.301	3.5556	3.7045	3.625	3.64650
Standard deviation	0.51406	87437.000	0.63435	0.70173	0.98635	0.8832	0.68359	0.71278	0.84893
The absolute highest standard deviation	0.131	197.000	0.101	0.09	0.121	0.218	0.112	0.11	0.083177
The highest positive deviation	0.083	0.127	0.101	0.057	0.088	0.122	0.06	0.088	0.12000
Most negative deviation	-0.131	-0.197	-0.089	-0.09	-0.121	-0.218	-0.112	-0.11	-0.17700
Kolmogorov-Smirnov	1.269	1.968	0.999	0.896	1.195	2.168	1.118	1.093	1.75700
The significance level	0.08	0.001	0.271	0.398	0.115	0	0.164	0.183	0.00400

Table 4: Analysis of variance demographic information

Rows	Demographic variables	Research variables	Significant level	Comments
1	Side	Ownership	0.634	Same
2		Quality	0.17	Same
3		Activity in favor	0.323	Same
4		Flexibility	0.146	Same
5		Culture	0.368	Same
6		Financial	0.946	Same
7		Technical	0.953	Same
8		Time	0.259	Same
9		Credit	0.342	Same
10	Degree of education	Ownership	0.816	Same
11		Quality	0.223	Same
12		Activity in favor	0.177	Same
13		Flexibility	0.467	Same
14		Culture	0.072	Same
15		Financial	0.039	Not the same
16		Technical	0.035	Not the same
17		Time	0.284	same
18		Credit	0.682	same
19	Marital status	ownership	0.389	same
20		Quality	0.025	Not the same
21		Activity in favor	0.499	Not the same
22		Flexibility	0.219	same
23		Culture	0.672	same
24		Financial	0.11	same
25		Technical	0.184	same
26		Time	0.218	same
27		Credit	0.363	same
28	Gender	ownership	0.315	same
29		Quality	0.804	same
30		Activity in favor	0.345	same
31		Flexibility	0.194	same
32		Culture	0.518	same
33		Financial	0.817	same
34		Technical	0.441	same
35		Time	0.154	same
36		Credit	0.808	same

Table 5: Durbin-Watson test

Hypothesis	Durbin-Watson	To accept or reject errors
1	1.5<1.758<2.5	Correlation rejects errors
2	1.5<2.071<2.5	Correlation rejects errors
3	1.5<2.455<2.5	Correlation rejects errors
4	1.5<2.179<2.5	Correlation rejects errors
5	1.5<2.2<2.5	Correlation rejects errors
6	1.5<1.685<2.5	Correlation rejects errors
7	1.5<1.803<2.5	Correlation rejects errors

have nothing to do with the risk of flexibility. And in exchange for a unit change in quality risk and agree to arrange activities, as much as 0.312 and 0.332. Change in risk caused flexibility shown in Table 10.

**Sixth hypothesis:** technical risk, reliability and flexibility are positively associated with the risk agrees.

The results of the test showed that the risk of technical flexibility and pro-activity is positively correlated with risk and credit risk do not agree and no association with the risk for a unit change in risk and technical flexibility, respectively, the size of 0.45 and 0.232. Change in risk activity caused agrees shown in Table 11.

**The seventh hypothesis:** technical risks, timelines, flexibility, pro-activity and ownership are positively correlated with quality.

The results of the test showed that the risk of ownership flexibility, time and quality is negatively correlated with risk. Technical risk and quality risk and have no connection to the activities agreed in exchange

Table 6: Test hypothesis 1

Rows	Variables	Coefficients	Standardized coefficients	Test statistics	Significant level	Relationship or lack of relationship
1	Time	0.1	0.12	1.127<1.96	0.263>0.05	Not related
2	Technical	0.104	0.092	0.871<1.96	0.386>0.05	Not related
3	Credit	0.57	0.415	3.589>1.96	0.001<0.05	Related

(Credit) = 0.618+0.57 (financial)

Table 7: Test hypothesis 2

Rows	Variables	Coefficients	Standardized coefficients	Test statistics	Significant level	Relationship or lack of relationship
1	Credit	0.587	0.308	1.96<3.27	0.05>0.002	Related
2	Flexibility	0.400	0.369	1.96<3.928	0.05>	Related

(Flexibility)0.4+(credit) =-0.29+0.587 (Culture)

Table 8: Hypothesis 3

Rows	Variables	Coefficients	Standardized coefficients	Test statistics	Significant level	Relationship or lack of relationship
1	Culture	0.107	0.208	1.96<1.857	0.067>0.05	Not related
2	Financial	0.31	0.444	1.96<3.846	0.000<0.05	Related
3	Pro-activities	-0.012	-0.017	1.96>-0.017	0.886>0.05	Not related

(Financial) = 2.369+0.31 (credit)

Table 9: Hypothesis 4

Rows	Variables	Coefficients	Standardized coefficients	Test statistics	Significant level	Relationship or lack of relationship
1	Quality	0.305	0.256	1.96<2.586	0.05>0.011	Related

(Quality) = 2.532+0.305 (intellectual ownership)

Table 10: Hypothesis 5

Rows	Variables	Coefficients	Standardized coefficients	Test statistics	Significant level	Relationship or lack of relationship
1	Quality	0.391	0.312	1.96<3.037	0.05>0.003	Related
2	Time	0.031	0.03	1.96>0.325	0.05<0.746	Not related
3	Culture	0.094	0.104	1.96>-1.03	0.05<0.306	Not related
4	Pro-activities	0.438	0.332	1.96<3.382	0.05>0.001	Related

(Pro-active) 0.438+(quality) 0.391+0.076 = (flexibility)

Table 11: Hypothesis 6

Rows	Variables	Coefficients	Standardized coefficients	Test statistics	Significant level	Relationship or lack of relationship
1	Flexibility	0.346	0.450	1.96<4.852	0.05>0.000	Related
2	Technical	0.257	0.232	1.96<2.275	0.05>0.025	Related
3	Credit	0.100	0.075	1.96>-0.702	0.05<0.485	Not related

(Technical) 0.257+(Flexibility) = 1.134+0.346 (pro-active)

Table 12: Hypothesis 7

Rows	Variables	Coefficients	Standardized coefficients	Test statistics	Significant level	Relationship or lack of relationship
1	Flexibility	0.261	0.328	1.96<3.358	0.05>0.001	Related
2	Technical	0.13	0.111	1.96>1.213	0.05<0.228	Not related
3	Time	0.213	0.251	1.96<2.806	0.05>0.006	Related
4	Pro-activities	0.154	0.145	1.96>1.442	0.05<0.153	Not related
5	Ownership	0.163	0.194	1.96<2.323	0.05>0.023	Related

(Ownership) 0.163+(time)+0.213 (Flexibility) = 0.231+0.261 (quality)

for a unit change in risk and time flexibility and ownership, respectively, to 0.328 and 0.251 and 0.194. Change in risk quality is created shown in Table 12.

Research by Gandhi in 2012 was carried out, the results showed that the risk timetable as 0.19163, technical risk and credit risk as much as 0.30221 0.14669 make changes in the financial risk in research all three risk was positively associated with risk were financial.Risk and credit risk as much flexibility as 0.21912 0.24601 make the change in risk culture in this study, both risk was positively associated with risk of culture. Financial risk as much as 0.16617, 0.1792 as risk culture and risk activity

0.18813 agree to make changes in the credit risk in this study had all three risk is positively related to credit risk. Changes in intellectual ownership risk, quality risk as much as 0.25034 make the most of the research quality risk is positively associated with the risk of intellectual ownership. Risk timeline as 0.27562, 0.14795 enough quality risk, risk culture and risk activities as 0.12058 0.19011 agree to changes in the risks they create flexibility in the study had all four risk was positively associated with the risk of flexibility. Risk flexibility as 0.26371, technical risk and credit risk as much as 0.22397 0.15063 agree to make the change in the risk of all three risk was

positively associated with the risk in this study were agreed. Risk timeline as 0.28628, 0.19386 technical risk as much risk as much flexibility 0.21536, 0.13094 and risks ownership the risk as much as 0.1288 in favor of a change in the quality risk they create in the study every five risk was positively associated with risk their quality.

Because of the relationship between credit risk and financial: human factors, systems, infrastructure, internal processes and investment in reducing liquidity risk, value for money and financial help. The relationship between risk due to lack of technical and financial timelines: Timely delivery of services and the expertise and knowledge of project management contractor and employer to reduce liquidity risk, value for money and finance is not effective.

Because of the correlation between credit risk and flexibility with culture: human factors, systems, infrastructure, internal processes, capital and labor flexibility in creating effective cultural communication and reduce conflict.

Because of the relationship between financial and credit risk: liquidity and money in improving the efficiency of human factors, systems, infrastructure, also because of the absence of effective internal processes and investment relationship between culture and activities consistent with conflict of communication and cultural and business strategy, operational systems and human factors technology, systems, infrastructure, internal processes and capital is not effective.

Because of the relationship between risk and ownership qualities: resources, information, quality of service and the power and profit share plan is effective. Because of the relationship between quality and proactive and flexible: resources, information, service quality and business strategy planning, operational systems and technology contractor opportunistic and flexible work effectively behave. Also, due to the lack of communication between the timeline and culture with flexibility: Timely delivery of services and to make connections and reduce cultural conflicts behave opportunistic and flexible work contract is not effective.

Because of the relationship between flexibility and technical agrees with activity: opportunistic and flexible behave contractor and the contractor and the employer and knowledge of project management expertise in business strategy, technology and operational system is effective. Because of the lack of communication between the capital and activities also agree: human factors, systems, infrastructure, internal processes and investment in business strategy, technology and operational system is not effective.

Because of the relationship between flexibility, time and property contractor opportunism and flexibility

behave, quality work and timely delivery of services and power and profit share resources, information, quality of service and also due to the lack of effective planning the relationship between technical and quality activities in accordance with: contractor and employer expertise and knowledge of project management and business strategy, technology and operational system resources, information, quality of service and planning is not effective.

It is better to reduce the financial risk managers, credit risk into consideration. And also it is necessary to reduce the risk culture within the organization the flexibility to take risks in the first place and then to be given credit risk. In addition, it is better to reduce credit risk, financial risks to consider and also to reduce the risk of intellectual ownership should consider the quality of risk.

## **CONCLUSION**

To reduce the risk of flexibility should be the first step in favor of risky activities and then consider the quality of risk. And to reduce the risk in favor of better flexibility and technical risk to consider. And to reduce the risk of flexible risk better quality, timeline and examine intellectual ownership.

## **RECOMMENDATION**

It is recommended to future researchers to determine the association between risks of outsourcing, use of structural equation. As well as risks of outsourcing to examine different perspectives. Researchers can similarities between the rating and risk classification of client and vendor perspective and can be studied in the industry rankings another risk to consider outsourcing. Solutions for real cost savings should consider outsourcing project.

## **LIMITATIONS**

One of the limitations of this study, like most experimental research designs, limited sample size that could potentially affect your rankings. Taking into account the risks of outsourcing in the organization, it can be said that due to the complexity of the project, size and duration of projects, the risks are different, which should be considered. View seller is not considered in the review of the risks of outsourcing. If they must strive to reduce risks. Access to drivers and survey work is time-consuming and time-consuming and troublesome for researchers.

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