



## Calculating benefits received from Business Process Outsourcing (BPO): An empirical study of a food industry company in Iran

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### Abstract

Today, outsourcing is recognized as one of the most effective strategies in the business world. In this regard, outsourcing of business processes is considered to be one of the most common forms of outsourcing. The purpose of this study is to provide In-depth and quantitative analysis of the benefits of BPO in a dairy plant in Iran and how these benefits affect the willingness of senior plant managers to increase the levels of outsourcing of business processes. Therefore, Structural Equation Modeling (SEM) based on BPO Benefit Analysis is used. The population of the study consisted of 50 managers who all answered a questionnaire containing 20 questions. Responses were analyzed using the Partial Least Squares (PLS) method. The research method is a quantitative experimental one. The findings of this study show that cost planning has a higher value than real cost savings and this is one of the benefits of BPO.

**Keywords:** Outsourcing; Business process outsourcing (BPO); Partial least squares (PLS) method; Structural Equation Modeling (SEM).

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### 1. Introduction

Nowadays, companies are facing a highly competitive environment in which they must evolve permanently. Business Process Outsourcing (BPO) is seen among the most widely adopted strategies for surviving in such an environment, especially for small and middle-size companies. Indeed, the efficiency and the way of performing the business processes (BPs) of a company have a great influence on the quality of its products or services and therefore on customers' satisfaction (Zarour and Benmerzoug, 2019). On the other hand, the complexity of the business environment, an intense competition among producers, resource constraints and many other factors have led manufacturing organizations to move towards optimizing processes and decisions to ensure the growth of the organization. It is obvious that specialization, and thus the scope of activities, will only be possible if some of the tasks are outsourced. In fact, outsourcing is the transfer of part of the core or non-core activities of the

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organization based on the decisions taken, which results in a reduction in the vertical integration rate. Traditionally, outsourcing means getting value for the organization without the organization itself being involved in the value acquisition process (Yang and Chen 2006). Therefore, outsourcing refers to products and services that were previously provided by the organization itself and within the company. Many businesses, including private sectors, government, non-profit organizations, charities and educational and research institutions, have incorporated the benefits of outsourcing strategy in all their organizational dimensions for their overarching goals (Saaty 2005). Contemporary research on outsourcing has predominantly adopted a macro-level view of the firm by applying economic theories or strategic management concepts (Dibbern et al., 2004). Unfortunately, these approaches leave aside the understanding of “the motivations, preferences or attitudes of individual stakeholders and their impact on the outsourcing decision” (Dibbern et al. 2004, p. 42). Consequently, thorough understanding of how key decision makers would value the risks and benefits of business process outsourcing (BPO) has not yet been fully understood. (Busi and McIvor, 2008). Furthermore, the historically strong focus on IT outsourcing (ITO<sup>1</sup>) has facilitated a broad discussion of IT-related issues, whereas the specific benefits of BPO have not gained much attention in academic literature (Borman, 2006; Lacity et al., 2009). This is surprising as BPO is a well-known concept for some time. Business processes in which IT plays an important role have become prime candidates for BPO. One industry whose way of carrying out business processes has dramatically changed is the dairy industry. Virtually, every BPO engagement, the service provider assumes responsibility for both the business process and the underlying IT services. Thus, the BPO client transmits a set of information input to the service provider who executes the process and passes processed data back to the client. However, in the Iran marketplace, studies of service providers and market research firms indicate that the BPO adoption rate is still unexpectedly low. So, this raises the question: What are the main factors that hinder and drive the intention to increase the level of BPO from the perspective of key decision makers in organizations?

The necessity of the present study is to increase the understanding of the BPO decision by answering the following questions:

- What is the “role of perceived benefits” within the decision whether or not to outsource business processes?
- What are the “most prominent benefits”, senior managers associate with BPO?

This research combines the theoretically and empirically stated benefits BPO in a coherent structural equation model (SEM). The model is tested using a questionnaire, which was given to the managers in charge of one of ten defined business processes in a large dairy company in Iran.

The results offer new insights into the benefits associated with BPO. Remarkably, in a survey conducted in the same field in the German banking industry, the benefit of core competencies is of a particular importance, while here in the dairy industry it seems to be of virtually no importance in a BPO context.

The paper starts with a review of the literature on the benefits of outsourcing and research on BPO, followed by an elaboration of the underlying theories used to develop the research model. After a discussion of the hypothesis of the model, the quantitative survey is described. Finally, the survey results are analyzed and conclusions for practice and research drawn.

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<sup>1</sup> Information technology outsourcing

## 2. Literature Review

There is hardly a more salient question faced by industrial leaders than “which aspects of our value chain should we perform internally to our organization and which aspects should we source externally?” Some have addressed this question as the classic make-or-buy decision or the decision as to the extent of vertical integration. More recently, this demarcation of firm boundaries has been studied from the perspective of outsourcing. When considering outsourcing, firms are evaluating whether or not to reverse a prior decision to “make”. In other words, outsourcing involves the re-shaping of existing firm boundaries. Outsourcing can further be conceptualized as a process which begins with the development of a sound business case for outsourcing followed by the implementation of the external sourcing model, and ultimately the management of the relationship with the provider.

### 2.1. Business Process Outsourcing

Business Process Outsourcing (BPO) is a common and well-known business practice that yields business added-value among other advantages (Boukadi et al., 2019). In addition, the business process outsourcing (BPO) remains among the most adopted strategies by organizations to cope with the harsh competition of today’s market (Zarour and Benmerzoug 2019). Outsourcing has been analyzed and debated in the fields of labor and labor organizations, management, and the organization of production since the mid-1980s and early 1990s (Rodríguez Miglio, 2018). From another perspective, Outsourcing means subcontracting of service or activity to a third party (Drtina, 1994) for strategic use of company’s resources, to generate company’s values and gain competitive edge (Quinn 1999). It has become a very popular way to building competitiveness by focusing corporate efforts and stripping organizations down to their core functions (Benn and Percy, 2002). Successful companies that practice outsourcing leverage their capabilities and investments of others by exploiting three areas such as functional activities performed in-house; complementary, integrative, or duplicative activities scattered throughout the company; and disciplines, subsystems, or systems in which outsiders have greater expertise or capabilities for innovation. Hence, while leaving the non-core activities or functions to specialized third parties, companies can focus on their core competencies and improve overall performance. In competitive business environment, companies focus on core activities and outsource non-core functions to others (Kim and Won, 2007). Companies are increasingly adopting business process outsourcing (BPO) that outsources non-core business processes as well as supporting information technology. Therefore, BPO is defined as “the management of [a] specific business process [. . .] by a third party, together with the IT that supports the process” (Halvey and Melby, 2000, p.1), while a business process is defined as a “set of logically related tasks performed to achieve a defined business outcome” (Davenport and Short 1990, p.12).

### 2.2. Perceived benefits of BPO

It is no longer new that customer perceived value for product and services are now greatly influenced by its psychological and social advantages. In order to meet up with the increasing operational cost, response time, quality and innovative capabilities many companies turned their fixed operational cost to a variable cost through outsourcing (Oluyinka et al., 2017) and also while some firms have already adopted and implemented BPO, others are still evaluating it, while some have not yet seriously considered it. Rather than seeking to explain variation in the current degree of BPO across food industries, we focused on the variation in their attitude and intention to increase the current level of BPO. In the food industry, particularly the dairy industry, business process outsourcing is very common. As a result, we intended to count the benefits of BPO, by using an extensive research literature, and rank them to help the managers in making better decision.

Perceived BPO benefits aid in reaching an organization's objectives, which are achieved by reaching a higher level of efficiency or effectiveness in performing business processes, e.g. by reducing costs or closing gaps in different types of resources (Featherman and Pavlou; Kim et al., 2008). Looking at the research on traditional outsourcing methods, we can see that we have reached an acceptable position, but the lack of such research on outsourcing of business processes with quantitative methods is felt. Therefore, the present study is the first quantitative research study on the perceived benefits of BPO with Structural Equation Modeling (SEM), in Iran and in a food dairy industry, that had been implemented in German banking industry. Moreover, it provides valuable insights into the perception of management and how the benefits associated with BPO are valued. Besides, the study represents a new model by testing the relative impact of BPO benefits which influences the decision to do BPO and it also establishes a context for pure experience for further studies.

### **3. Structural Model**

This research provides a model by testing the relative influence of the major benefits as taken from the literature on IS outsourcing. The analysis is devoted to analyzing the perceived benefits as a major influencing factor to provide solid empirical grounding for further studies which includes a set of successfully tested formative indicators for structural equation modeling. In fact, the goal is to develop a saturated model to evaluate the relationship and the hypothesis of the research. Structural equation modeling is a comprehensive approach to test hypotheses about the relationship between observed variables and latent variables.

One of the strongest and most appropriate methods of analysis in the behavioral and social science research is a multivariate analysis, owing to the fact that the nature of these issues are multivariate and cannot be solved by the two-variable approach (each time only one independent variable is considered with a dependent variable). Multivariate analysis refers to a series of methods that the main characteristics of them are the Simultaneous analysis of the K-independent variables with the n dependent variable. The Structural equation modeling (SEM) technique, which uses partial least squares (PLS), was chosen for testing. PLS was preferred due to the small sample size. PLS produces consistent parameter estimates for sample sizes as low as 20, which made PLS appropriate for our analyses. The PLS-calculations were performed with PLS Graph version 3.0. We adopted the framework developed by Heiko Gewald (2010). He divided the benefits of BPO in Banking Industries of Germany, into four dimensions (benefit facets): cost advantages, quality improvements, specialized resources and core competencies. The above-mentioned factors were implemented in dairy food industry in Iran, Shiraz, in our study.

#### **3.1. Model Testing (Measurement Reliability and Validity)**

In structural equation modeling methodology, it is initially necessary to study the construct validity to be determined if the indicators chosen to measure the desired constructs are accurate. For this purpose, we used the Confirmatory Factor Analysis (CFA). This indicates that the factor load of each index must have the t-value of greater than 1.96 with its own construct. In this case, this indicator has the required accuracy to measure the construct or the latent trait. In table 1 the quantity of factor load for the indicators of each construct is shown.

In structural equation models, in addition to the construct validity, some tests for convergent validity and discriminant validity were performed in order to assess the quality of our measurement instrument.

Convergent validity is represented by indicator and construct reliability. The first was examined by looking at the construct loadings: in our model, all loadings were significant at the 0.001 level and above the recommended 0.6 parameter value (tests were conducted using the bootstrap routine with 500 and 800 re-samplings), as it can be seen in table 1.

Construct reliability was tested by examining the composite reliability (CR) and the average variance extracted (AVE<sup>1</sup>). The estimated indices were all above the threshold of 0.6 for CR and 0.4 for AVE (see table 1).

Discriminant validity was assessed in two ways. First, we examined the cross-loadings, obtained by correlating the PLS component scores of each latent variable with its respective blocks of indicators and all other items included in the model. As seen in Table 4, the loading of each indicator was higher for its respective construct than for any other. In addition, every construct loaded highest with its own indicators.

Now the structural model of the SEM is described by defining its constructs (latent variables) and elaborating the indicators which form these constructs. Based on this reasoning, the hypotheses for the assumed relationships between the constructs are explicated. Figure 1 depicts the structural model. The indicators on the left form the four-benefit constructs which are respectively aggregated to form the overall benefits construct.

The overall perceived benefits construct is one major influencing factor for the attitude towards BPO. In line with the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980), this study focuses on the attitude towards BPO as main influencing factor on the intention to outsource business processes, the final dependent construct.

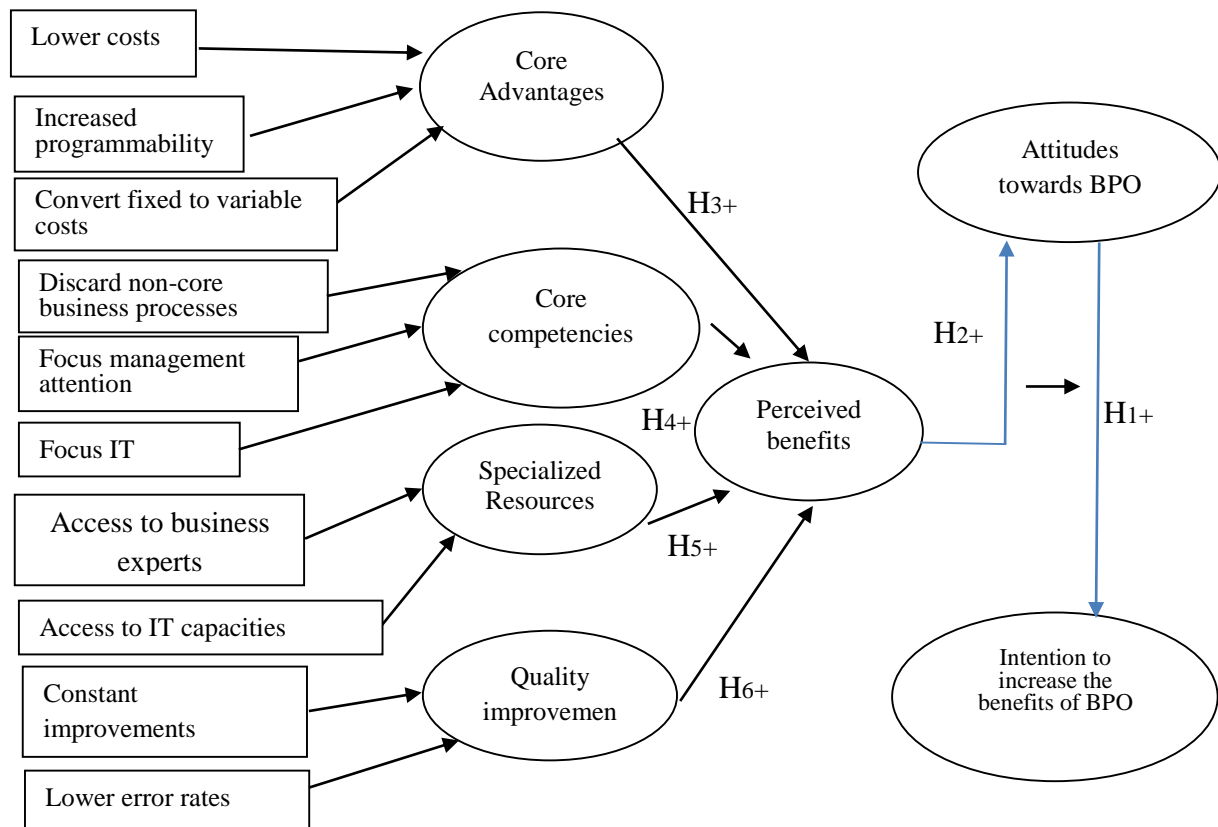


Figure 1. Structural model of the perceived benefits of BPO

The intention to increase the level of BPO is the ultimate dependent variable in this model. This is defined as the manager’s expression of support for the outsourcing of the process he is responsible for, barring unforeseen events (Ajzen and Fishbein, 1980). Based on the TRA, a positive attitude towards BPO is expected to positively influence the intention to increase the level of BPO.

<sup>1</sup> Average Variance Extracted



The relationship between attitude and intention is well discussed in the IS literature (The study of Venkatesh et al. (2003) provides a review of studies testing this relationship).

A positive attitude towards BPO is assumed to positively influence the intention to increase the level of BPO. In line with TRA, the attitude towards BPO is defined as the overall evaluative appraisal, made by a manager who is responsible for a business process, by having that process outsourced to an external service provider. The relationship between attitude and intention is based on TRA, which states that the beliefs about an outcome (in this case, the perceived benefits) shape the attitude toward performing a behavior. Attitude, in turn, influences intention to perform the behavior and, ultimately, influences the behavior itself (Wixom and Todd 2005; Venkatesh et al., 2003).

H1, which is shown as a high-level attitude towards BPO, positively influences the intention to increase the level of BPO in a dairy company.

The overall perceived benefits of BPO are conceptualized to form the behavioral beliefs towards BPO. They are defined as the aggregate of the potential gains (quantitative and qualitative) in the pursuit of a desired outcome. This relationship has been empirically tested in several environments (Featherman and Pavlou, 2003; Pavlou and Gefen, 2005). Benamati and Rajkumar (2003) confirmed this relationship in the context of application development outsourcing. Jurison (1995) conceptualized that the level of perceived benefit is a major driver within the outsourcing decision process.

H2, known as a high level perceived benefits of BPO, positively influences the attitude towards BPO in a dairy company.

Cost advantages assume that external vendors can provide business functions at lower costs due to specialization and the realization of economies of scale and scope (Levina and Ross, 2003). Further arguments name the economies of scope based on the assumption that external vendors are able to share the assets required to produce different outputs. Furthermore, outsourcing is associated with the potential to transform fixed into variable costs (Huber 1993; Currie and Willcocks, 1998) and increased cost transparency and programmability (Clark, 1995). Thus:

H3, refers to the fact that the higher the perceived cost advantages of BPO, the higher the overall perceived benefits of BPO would be.

Focusing on core competencies frees up resources which are used more productively in areas that create value. While the support for this argument has been mixed with regard to IT outsourcing (Dibbern et al., 2004), it may play a role in BPO, since business process performance is more directly linked to value creation than that of IT services. Therefore, we postulated:

H4, refers to the fact that the higher the perceived ability focus on core competencies through BPO, the higher the overall perceived benefits of BPO would be.

Access to specialized resources. Access to specialized resources, outsourcing service providers offer a set of services to their clients. Because of learning curve effects, the vendor develops skills in handling the offered processes (Lamberti and Pohler, 2004). Furthermore, economies of scale allow the service provider to utilize special resources (e.g., tax specialists for processing exotic mutual funds). Access to leading edge IT resources has been shown to be one of the main indicators of IS outsourcing success and an important driver for outsourcing decisions. Thus:

H5, represents the fact that the more BPO is associated with access to specialized resources, the higher the overall perceived benefit of BPO would be.

Quality improvement is a reason why some corporations choose to outsource. This is often associated with gain in efficiency and effectiveness (Buco et al., 2004). Banks expect the service provider to incorporate industry, best practices and total quality management procedures.

The quality of transaction processing can have a direct impact on customer satisfaction. In terms of better quality, companies also expect the service provider to provide a constant cycle of process improvements (Rebouillon and Bauer, 2001). Thus:

H6, refers to the fact that the higher the perceived quality improvements through BPO, the higher the overall perceived benefits of BPO would be.

#### **4. Survey method**

In terms of nature and objectives, this research (a quantitative empirical study), is of the kind of applied researches. On the other hand, from the sight of the method of collecting and analyzing data, it is a kind of descriptive – correlation.

##### **4.1 Case study**

A quantitative experimental study of the Fars dairy industry factory was conducted by using a questionnaire. The questionnaire included 20 questions with 7 variables and the definition of their constituent indicators that managers and experts had been involved with.

##### **4.2 Questionnaire development**

Every construct in the research framework was measured by a set of survey questions. Wherever possible, existing measures were implemented, translated into Persian and adapted to the BPO context. Main contributors of previously tested indicators (translated from German into English) are shown in table 1. The questionnaire was intensively discussed with knowledgeable researchers and it is pre-tested independently with managers of the company and the masters not included in the sample. Based on these insights, the questionnaire was modified and finalized.

**Table 1. Loadings and significance level of deployed indicators (n = 50).**

Construct	Indicator	Load/ weight	P level	CR	AVE
Cost advantages	Q1.Outsourcing lowers the costs that arise from executing a business process	0.823	0.001	---	---
	Q2.Outsourcing the process results in better programmability of the cost of process execution.	0.581	0.001		
	Q3.Outsourcing converts the fixed costs of process execution into variable costs.	0.680	0.001		
Specialized resources	Q4.Through outsourcing the company gains access to business experts whose knowledge is not available within the company.	0.983	0.001	---	---
	Q5. Through outsourcing more efficient hardware than that available within the company is at our disposal. (IT capabilities)	0.925	0.001		
Core competencies	Q6.Outsourcing the company is able to discard non-core business processes.	0.613	0.001	---	---
	Q7. Outsourcing the management is in a better position when concentrating on developing the core business.	0.740	0.001		
	Q8.By outsourcing the company, IT systems can be directed more appropriately towards its core business.	0.811	0.001		
Quality improvements	Q9.Outsourcing the process ensures that the performance of the process can be monitored well and constantly improved.	0.864	0.001	---	---
	Q10.The outsourced process can be performed with a lower error rate by the service provider.	0.812	0.001		
Perceived benefits	Q11.Outsourcing of business processes has many advantages.	0.849	0.001	0.821	0.739
	Q12.Outsourcing of business processes is a useful instrument for corporate management.	0.824	0.001		
	Q13.Overall, I consider outsourcing of business processes to be a useful strategic option.	0.884	0.001		
Attitude towards BPO	Q14.Overall, my attitude towards outsourcing of business processes is positive.	0.867	0.001	0.830	0.650
	Q15.The outsourcing of business processes is an attractive alternative to internal production.	0.832	0.001		
	Q16.I believe that the benefits of BPO outweigh the associated risks.	0.840	0.001		
	Q17.Overall, the outsourcing of business processes provides our company with added value.	0.832	0.001		
Intention to increase level of BPO	Q18.If there is a superior offer; the process I am in charge of should be outsourced.	0.964	0.001	0.872	0.788
	Q19.The company should increase the existing level of outsourcing.	0.808	0.001		
	Q20.I support further outsourcing of business processes.	0.711	0.001		

#### 4.2.1 Questionnaire validity

In order to calculate the validity of the study, two methods of content validity and construct validity were implemented. Although the questionnaire was quite standard, with respect to its implementation in the food industry, it was given to eight professors and experts, so that they opine about choosing appropriateness or inappropriateness of variables of the research.



Therefore, the CVR<sup>1</sup> index that is a comprehensive approach to calculate the content validity was applied. The results show that all items have a good CVR index, and the experts have identified the appropriate measurement of concepts for their validity (please see the index).

#### 4.2.2 Questionnaire reliability

Table 2. Convergent validity through cross-loadings (n = 50)

Dimensions in order to the variables of the model							Items
Intention to increase the BPO levels	Attitudes towards BPO	Perceived benefits	Quality improvement	Core competencies	Specialized resources	Cost advantages	
0.110	0.049	0.079	-0.016	0.379	-0.483	0.823	Q1
0.419	-0.083	-0.206	0.578	-0.330	0.011	0.581	Q2
-0.165	0.053	-0.051	0.292	-0.081	0.145	0.680	Q3
-0.456	-0.038	0.231	-0.089	0.472	0.983	0.184	Q4
-0.289	0.126	0.002	-0.236	-0.577	0.925	0.266	Q5
0.124	-0.590	0.020	0.560	0.613	0.133	-0.187	Q6
0.163	0.422	-0.020	-0.289	0.740	0.123	-0.083	Q7
-0.187	0.013	0.155	0.079	0.811	0.208	-0.115	Q8
0.009	-0.072	-0.067	0.864	0.196	0.186	0.023	Q9
0.177	0.061	-0.085	0.812	0.171	-0.402	0.091	Q10
0.212	0.067	0.849	0.225	0.247	-0.300	-0.177	Q11
0.251	-0.169	0.824	0.118	0.179	-0.251	-0.356	Q12
-0.529	0.109	0.884	0.533	-0.490	0.333	0.505	Q13
-0.197	0.867	0.129	-0.043	0.017	-0.121	0.236	Q14
0.531	0.832	0.135	0.353	-0.158	0.043	-0.601	Q15
-0.276	0.840	0.119	-0.273	0.125	0.086	0.299	Q16
0.073	0.832	0.174	-0.170	0.271	0.156	-0.048	Q17
0.964	0.118	-0.052	-0.056	-0.282	0.235	-0.043	Q18
0.808	0.173	0.110	-0.065	0.004	-0.236	0.035	Q19
0.711	0.173	-0.207	0.270	-0.081	-0.117	0.046	Q20

For the measurement of the reliability of data, we have used the internal consistency method. One of the most important indicators of internal consistency is Cronbach's alpha test, which shows how the test questions can measure a single trait. Alpha for all structures is 0.7, which indicates the validity of the questionnaire. The respondents thought that the content of the variables related to each construct is the same. Results showed that the alpha for each construct by removing some of their variables does not show a significant improvement. However, all the indicators chosen to measure the constructs of the study have the required reliability, which can be considered acceptable.

#### 4.3 Sample characteristics

The number of samples considered in this study, was 50 employees of all units in Fars Pegah Dairy Co., who have worked there in 2011 (including senior managers and experts).

Nine types of the company processes were selected which are shown in the next table. The distribution of responses according to the business processes can be seen in table 3. For each of the processes, the responsible manager was chosen as a respondent. Moreover, empirical evidence on outsourcing the decision-making process has shown that the manager who was responsible for the entire service was the final decision maker, in most cases.

<sup>1</sup> Content Validity Ratio

**Table 3. Response per process**

Process	Number of responses	Percentage
Supplying milk & raw material	8	16
Movement of goods	6	12
Loading	5	10
Lift truck activities	4	8
The final package	10	20
Services	4	8
Quality control of raw milk & the final products	5	10
Technical department	3	6
Production department	5	10
Total	50	100

The current state of BPO adoption within the company was captured by asking the respondents to choose one of the six options in Table 4.

**Table 4. Status quo of BPO decision across the company**

Option	Item	Number of responses	percentage
1	The company has already outsourced the process.	25	50
2	An outsourcing project is currently in progress.	9	18
3	The outsourcing option is currently under investigation.	10	20
4	The company has not yet considered outsourcing the process.	3	6
5	The company decided against outsourcing the process.	2	4
6	The company has already decided to reintegrate.	1	2
Total		50	100

After considering and refining the variables and ensuring the accuracy in the measurement of the indicators and variables which were related to the concepts, the weight factors of the constituent indicators were checked.

**Table 5. Weight factor values for the indicators that make up the latent exogenous variables**

Result	Variable ranking	P level	t-value	Factor weights	Sign of indicators	Latent variables
Approved	3	0.001	2.420	0.551	Q1	Cost advantages
Approved	2	0.001	3.032	0.556	Q2	
Approved	1	0.001	3.347	0.616	Q3	
Approved	1	0.001	3.181	0.590	Q4	Access to specialized resources
Approved	2	0.001	2.948	0.537	Q5	
Approved	2	0.001	2.263	0.378	Q6	Core competencies
Approved	3	0.001	3.657	0.339	Q7	
Approved	1	0.001	3.135	0.636	Q8	
Approved	1	0.001	2.179	0.607	Q9	Quality improvements
Approved	2	0.001	2.647	0.442	Q10	

The results of the weight factors of the indexes, influencing the latent variables, show that all of the ten indicators on the four latent variables: cost advantages, accessing to specialized resources, focusing on the key competencies, and improving the quality, have a statistically significant effect due to the fact that the t-value is more than 1.96.

The results suggest that on the latent variable, which is "cost advantages", the three index components are effective. The greatest effect is related to the indicator: convert fixed to variable costs. In addition, the results show that the greatest effect on the access to the specialized resources is the access to business experts with the weight factors of 0.590

When it comes to the latent variables, three indicators affect the core competencies. The weight factors show that the greatest effect belongs to the “focusing on the IT systems” with the weight factors of 0.636. Finally, on the latent variable, the “quality improvement” is affected by two indicators. According to the factor loading, the indicator of “constant improvement” with the factor weight of 0.607 has the greater effect.

### 5. Hypothesis testing (Structural model)

The assumptions were examined in terms of the Structural equation models that its result is provided in the following section. Considering the results from checking the relationships between independent and dependent constructs using the related coefficient, we can focus on the significant effects among the research constructs. To evaluate the Significance of path coefficients or Beta, Bootstrapping method was used. For this purpose, the resumption, for the two samples of 500 and 800, was implemented and the results show that in both cases no changes in the significance or the meaningfulness of the parameters have happened and the results have firmly accredited.

**Table 6. Linear direct effect of the role of the research constructs**

Number of resumption		R <sup>2</sup>	Sig.	Beta	On the construct	From the construct
800 BS	500 BS					
3.195	3.191	0.70	0.01	0.675	Perceived benefits	Cost advantages
2.402	2.400		0.01	0.566	Perceived benefits	Access to specialized resources
2.388	2.386		0.01	0.531	Perceived benefits	Focus on core competencies
3.248	3.247		0.01	0.652	Perceived benefits	Quality improvements
4.218	4.215	0.68	0.01	0.535	Attitude towards BPO	Perceived benefits
4.555	4.490	0.88	0.01	0.432	Intention to increase BPO levels	Attitude towards BPO

The quantitative results of the SEM calculation are discussed in the sections thereafter.

#### 5.1 Perceived benefits, attitude and intention

Hypothesis 1: A high level of attitude towards BPO positively influences the intention to increase the level of BPO in a dairy company.

According to the results of table 6, it is clear that this influence has the quantity of 0.432 and owing to the fact that the t-value for this coefficient is estimated to more than 1.96, we have enough reason to refuse the hypothesis 0. Therefore, attitude towards the BPO positively influences the intention to increase the BPO levels. This coefficient is statistically significant and shows that 88% of the changes of the variable: intention to increase the BPO levels depends on the attitude towards BPO.

Hypothesis 2: A high level of perceived benefits of BPO positively influences the attitude towards BPO in a dairy company.

This influence has the quantity of 0.535. Thus, it can be concluded that the understanding of the benefits of BPO has a positive effect on the attitude of the managers to outsource the business. This effect is statistically significant and is a positive value. The results show that 68% of the changes in variance of the managers’ attitude towards BPO depend on the understanding of managers, which comes from the BPO that shows a significant amount.

The fundamental assumption of the model was supported with strong empirical evidence suggesting that perceived benefits have a strong positive influence on the attitude towards BPO, which positively influences the intention to increase the level of BPO.

## 5.2 Perceived benefits facets

Hypothesis 3: The expected cost advantages through the BPO, positively influences the understanding of the manager from the benefits of outsourcing.

According to the table 6, this effect has the value of 0.675. This variable among the four latent variables has the strongest effect on the managers' understanding of the perceived benefits.

Hypothesis 6: The higher the perceived quality improvements through BPO, the higher the overall perceived benefits of BPO would be.

According to the table 6, this value has the value of 0.652. Therefore, this latent variable has the second greatest effect on the perceived benefits of BPO. In other words, the managers' perceived benefits of BPO depend on the understanding from the quality improvement.

Hypothesis 5: The more BPO is associated with access to specialized resources, the higher the overall perceived benefit of BPO would be.

We saw that this effect has the value of 0.566. Therefore, this path of coefficient, among the four predictable variables of the perceived benefits of BPO, has the third rank.

Hypothesis 4: The higher the perceived ability focus on core competencies through BPO, the higher the overall perceived benefits of BPO would be.

At last, this effect has the value of 0.531. Among the four predictable variables of the perceived benefits, the variable which focuses on core competencies through BPO has the fourth effect.

The results of the table 5 and 6 are depicted in these diagrams.

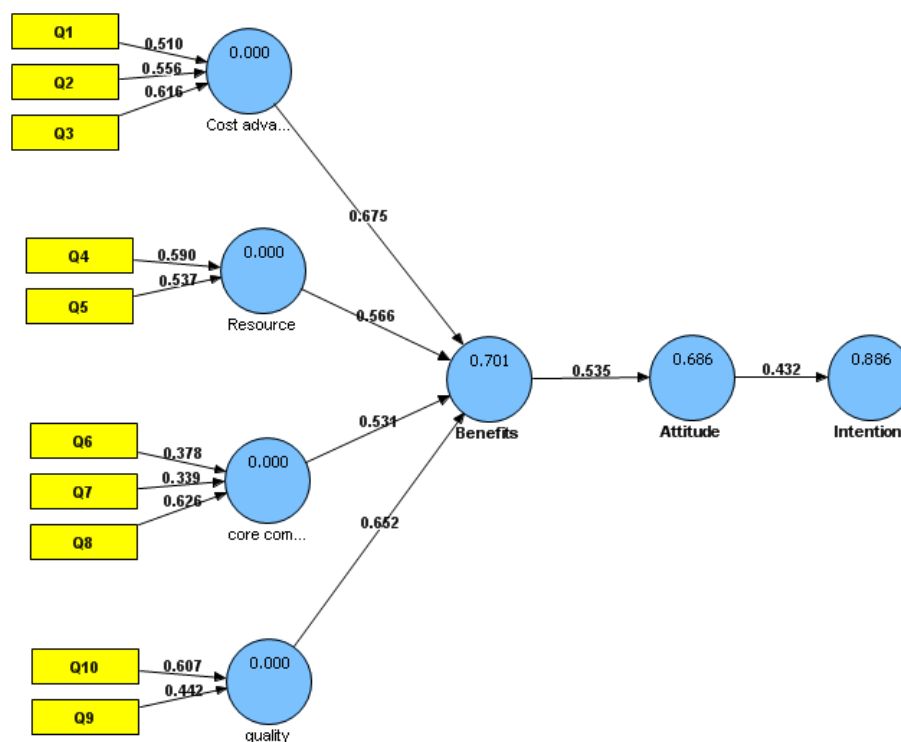


Figure 2. Results of PLS-calculation

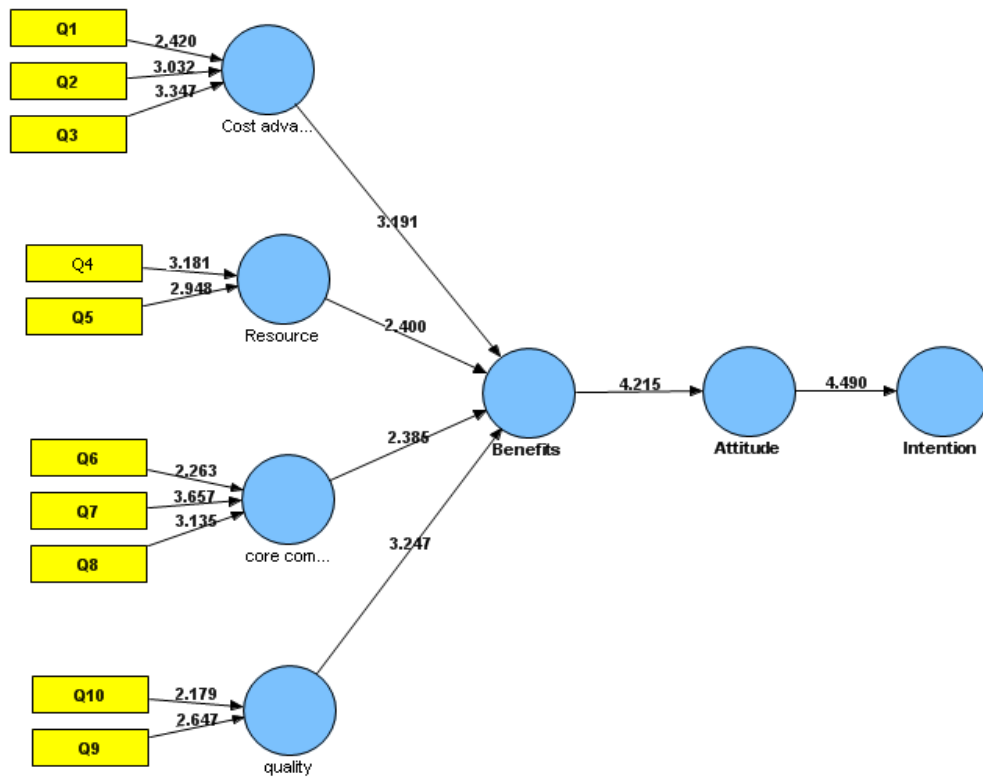


Figure 3. T-value of the path coefficient (the effect of research variables)

### 5.3 Fitting the structural model

Finally, in order to demonstrate the validity of research findings, we used indicators of structural model fitting by partial least squares. APC and ARS indicators show that the relationship between variables is well known and the highest coefficient was used to test hypotheses because the value is significant, as it has been shown in the following table (Table 7).

Table 7. The indexes for checking the validity of the estimated model

Result	Significance level	Quantity	Index
Most of the variance in the data, with the existing relationship, is expressed.	0.01	0.757	ARS
The existing coefficients for the causal relationships are repeatable and have the accuracy required for the expression of relations.	0.01	0.565	APC

### 5.4 Implications

Our study produced a set of benefits to be considered in the BPO decision. A company that opted either for or against BPO may question the strong focus on either efficiency or effectiveness. For service providers, our study gives important factors to emphasize when offering services to dairy factories. The assessment of perceived benefits showed that potential clients appear to be shifting their focus from cost savings to increased business process value and quality factors like process improvements and divestment of non-core business processes. This offers a way for rethinking the outsourcing proposal; providers will succeed if they are able to offer additional business value

Our study also shows that the perceived benefits of BPO are significantly moderated by an organization's BPO history. Adopters strongly focus on efficiency, while non-adopters focus more on effectiveness. The outcome of a previous decision may restrain the role of alternatives in subsequent decisions - even to the extent in which the decision maker insists on previous decisions. This suggests the existence of path dependency in outsourcing decision-making.

Academically, other researchers may benefit from this study as it empirically shows that perceived benefit is in fact a major driver within the BPO decision context. The results of this study provide rare and valuable insights into the attitude formation of senior management. The in-depth analysis of the construction of benefit perception in a BPO context will aid the extension and further development of BPO-specific research models.

### **5.5 Limitations of the study**

Our study focused exclusively on the dairy industry in Iran, Shiraz, thus the results may not be representative of other industries or among other countries. This is of special importance if one takes the inherent reference framework of outsourcing and the associated responsibilities into account, as required by national Iran regulations.

Furthermore, in this study, Structural Equation Quantitative Research Method (SEM) was selected as the most suitable method for BPO benefits in a dairy plant. And by providing the questionnaire to the experts and senior executives of the dairy plant, key determinants of effective selection of outsourcing of business processes were determined, and then a comprehensive model of BPO was developed. The model developed in a logical process leads to decision making. It can also be a guide for managers to make decisions about using BPO, although it only allows the use of quantitative criteria for decision-making. So for resolve this limitation, method analytical network process (ANP) that has both qualitative and quantitative criteria for decision-making is suggested as future research outlook. Another limitation that the research faces is the possibility of bias and deviation of the elites and senior managers in expressing their opinions when filling out the questionnaire to determine the research indicators. So Pairwise comparisons method and Group decision making method are suggested as outlook of the research. Also, in order to further enhance this model's ability to make appropriate decisions, for the outsourcing of business processes, as another outlook of the research, the development of this model for application in uncertain spaces using fuzzy methods and data envelopment analysis model are suggested.

## **6. Conclusion**

Since outsourcing has become a standard of performance in many organizations and has become one of the most important and strategic issues in the organization, in recent years many organizations have maintained their competitive advantage with BPO in regional and global markets. The business process outsources some of the organization's activities due to the complexity and uncertainty of the process of the time requirement and precision to prevent the failure of the process in the organization. This, in turn, requires strong outsourcing management in the organization. In fact, to avoid any problems in the business outsourcing process, strategic decisions should be made and appropriate organizational strategies should be selected in this area. To make the right strategic decisions in the BPO, recognizing the key factors and criteria that influence the selection of appropriate strategies and suppliers is vital. Therefore, managers of organizations should choose the right strategy for outsourcing their organization with proper understanding of the status of their organization and the factors affecting the outsourcing process. Since the Managers are faced with a complex decision-making environment and a variety of criteria in choosing the strategic option for outsourcing activities, the necessity of employing appropriate and efficient quantitative methods in choosing outsourcing strategy and selecting suppliers is increasingly important. To conclude, this paper presents the quantitative



and empirical benefits of BPO in the form of a structural equation modeling (SEM) and provides some interesting findings, which include the fact that cost programs have a higher value than cost savings which are real and this is one of the benefits of outsourcing the business process. This means that the BPO market has become mature. Moreover, the dairy company has become more sensitive to BPO service marketing claims, in comparison with the previous years. In addition, the empirical findings in this study indicate that perceived benefits play a crucial role in forming senior managers' intention to outsource business processes. It is also shown that the arguments drawing a focus on the core competencies should be deployed with extra care in a BPO context.

Contrary to formerly conducted research, cost reduction does not score as the top benefit of BPO, not even within the cost advantage construct. The advantages of senior managers' values such as increased converting fixed to variable costs and programmability are much higher. This indicates the desire to reduce cost or performance variances, rather than solely reducing the cost basis.

Contrary to the formerly research implemented in Germany, degree of importance of the constructs in dairy companies includes cost advantages, quality improvements, access to the specialized resources and focus on the core competencies. Therefore, the managers should consider this ranking and of course pay more attention to the variable: focus on the core competencies in the companies.

Accessing to business professionals among other indicators has relatively high weight, and this is not irrelevant to the advantage of quality improvement. This means that the use of some experts outside the company will increase quality and improve it. Hence, as it can be expected the quality improvement was the second highest variables among the others.

Moreover, the companies should be careful that the rank and degree of these benefits can vary. According to experts and senior managers, the amount of them can influence the attitude and the desire of managers to outsource business processes more or less.

For future investigation, the following suggestions are made to the enthusiasts of this field:

- Study on what type of business outsourcing is beneficial to the businesses
- Implementation of this method in other industries
- Using the combinations of AHP and BPO
- the security of companies that use outsourcing to combines BPO and IT

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## Appendix A.

Calculation of the content validity using CVR

construct	Indicators	CVR
1. Cost advantages	Q1. Outsourcing lowers the costs that arise from executing a business process	0.75
	Q2. Outsourcing the process results in better programmability of the cost of process execution.	1.00
	Q3. Outsourcing converts the fixed costs of process execution into variable costs.	1.00
2. Specialized resources	Q4. Through outsourcing the company gains access to business experts whose knowledge is not available within the company.	1.00
	Q5. Through outsourcing more efficient hardware than that available within the company is at our disposal. (IT capabilities)	1.00
3. Core competencies	Q6. By outsourcing the company is able to discard non-core business processes.	1.00
	Q7. By outsourcing the management is in a better position to concentrate on developing the core business.	0.75
	Q8. By outsourcing the company IT systems can be better directed towards its core business.	1.00
4. Quality improvements	Q9. Outsourcing the process ensures that the performance of the process can be better monitored and constantly improved.	1.00
	Q10. The outsourced process can be performed with a lower error rate by the service provider.	0.75
5. Perceived benefits	Q11. Outsourcing of business processes has a lot of advantages.	1.00
	Q12. Outsourcing of business processes is a useful instrument for corporate management.	1.00
	Q13. Overall, I consider outsourcing of business processes to be a useful strategic option.	1.00
6. Attitude towards BPO	Q14. Overall, my attitude towards outsourcing of business processes is positive.	1.00
	Q15. The outsourcing of business processes is an attractive alternative to internal production.	1.00
	Q16. I believe that the benefits of BPO outweigh the associated risks.	1.00
	Q17. Overall, the outsourcing of business processes provides our company with added value.	1.00
7. Intention to increase level of BPO	Q18. If there is a superior offer, the process I am in charge of should be outsourced.	1.00
	Q19. The company should increase the existing level of outsourcing.	1.00
	Q20. I support further outsourcing of business processes.	1.00

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