

## **LOGISTICS OUTSOURCING IN FRESH VEGETABLE AND FRUIT SECTOR**

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### **INTRODUCTION**

Outsourcing has become an important management strategy that companies have been applying extensively in recent years. Logistics activities have an important place among the activities that firms tend to outsource due to the high initial investment costs and the need for specific expertise.

Logistics outsourcing enables companies to make significant gains, particularly in focusing on core competencies, providing significant cost savings, and financial and operational flexibility. However, in addition to these gains, it is possible that companies will face various risks ranging from the loss of basic competence to privacy and security problems as a result of the inefficiencies in outsourcing company selection and process management.

The average losses in the fresh fruit and vegetable sector, which has an annual transaction volume of 100 billion TL, are around 25 billion TL [WWW 1]. While total loss rates in the sector are around 10 to 30%, these losses can be much higher in some product groups, such as 50% or even 60%. Losses occur during harvest (4–12%), transportation (2–8%), market preparation (5–15%), storage (3–10%) and consumption (1–5%) stages [WWW 3].

It is possible to list the main factors effective in product losses as follows [WWW 2]:

- inadequate harvesting techniques and methods,
- insufficient handling and collection containers,
- unskilled labor,
- lack of due diligence to the various processes and activities on the supply chain, such as handling, transportation, distribution, classification and packaging,
- insufficient cold chain facilities.

The management of logistics activities is much more difficult especially in companies with international market focus due to the rapid deterioration of the fresh vegetable and fruit products and their hypersensitivity to environmental conditions [Abak et al. 2010]. Speed and time factors come to the forefront and it becomes difficult to realize the logistics process or activities with the internal resources at the appropriate quality and cost level. Along the value chain from manufacturer to final consumer, the fulfillment of logistics processes and activities by specialist companies in this field is particularly important in reducing product quality and quantity losses [Pezikoğlu et al. 2014]. In this context, the aim of the study is to reveal the perspectives of the companies operating in the fresh vegetable and fruits sector regarding the logistics outsourcing process on the axis of benefit and risk. At the same time, the criteria which are effective in the selection of service providers of these firms have been tried to be determined.

The findings of the study show that logistics outsourcing has a long history in the fresh vegetable and fruits sector. However, it is seen that logistics outsourcing is handled mostly at operational and tactical level and it is remarkable that a strategic outsourcing is quite limited. This situation leads to lower than expected benefits and gains of companies from logistics outsourcing process.

## **AIM AND METHOD**

In this study, logistics outsourcing practices in fresh vegetable and fruits sector are discussed. Firms evaluations about the logistics outsourcing process and the service providers they work with have been tried to be revealed through the survey data. Analytical Hierarchy Process (AHP) method was used to determine the criteria that are effective in the selection of service providers, which are considered to be directly effective in the logistics outsourcing process and emphasized in a significant part of the studies in the relevant literature.

## **THE CONCEPT AND DEVELOPMENT OF OUTSOURCING**

Outsourcing is defined as the transfer of management and executive responsibility for certain routine business activities to an independent company under a written contract [Greaver 1999, Varadarajan 2009]. According to Zhu et al. [2001], outsourcing is the responsibility of the execution and management of a business is taken from the employees of the company and given to the employees outside the company.

According to Bajec and Jacomin [2010], outsourcing is a strategic “build or buy” decision based on the choice of one of the alternatives to produce or outsource a particular product or service. According to Bolumole [2001], outsourcing is a necessity rather than a matter of choice for firms, resulting from lack of capacity and skills within the firm. As a matter of fact, at the present stage, companies have long gone through the process of whether or not to outsource, and which business processes or activities will be outsourced while keeping the activities inside [Jennings 1996].

Özbay [2004] and Güngör [2007] define outsourcing as the process of transferring some or all of the supporting or complementary business activities outside the core competence area of the company to a specialist independent company in this area. There are also broader and more comprehensive definitions that address the concept in the form of a managerial transformation process. In these definitions, it is emphasized that outsourcing is essentially a managerial argument developed by companies in dealing with the devastating effects of the global crises that became more apparent after 1980, especially with the rigid competitive environment and intense changes brought about by globalization [Gül 2005]. When the definitions in the literature are examined, it is possible to list the prominent features of outsourcing as follows: to be directed towards supportive or complementary processes or activities that do not fall within the core competence area of the company, the existence of a written agreement between the parties, it is a necessity or management strategy due to inadequacies or inefficiencies in the internal resources of the company.

Outsourcing is a highly popular concept in recent years, especially in business and management literature. There is also a growing interest in the outsourcing strategy in terms of implementation in the post-globalization period. However, the outsourcing is not a new concept but has a very long history dating back to before the Industrial Revolution. Before the Industrial Revolution and during this period, it assumed a function of guiding economic decision units in contract-based business relations [Zelenika et al. 2008]. With the rapid increase of successful implementation examples and becoming more known, a large number of companies from almost every field are turning to this strategy and making significant gains through strategic partnership relationships.

Outsourcing was initially seen as an alternative to overcoming the financial constraints of firms. In the following period, with the recognition of significant cost savings of outsourcing by firm managers, it has had a wide range of practices from supporting business activities to basic business functions such as accounting, finance, marketing and even management [Orhan 2003].

The first example of outsourcing practices is recognized as the decision of Kodak to outsource its information technology activities for 10 years in 1989 [Linder et al. 2002]. In Turkey, the first examples of the outsourcing practice have been seen in the military. The process that started with the external provision of food and transportation services of the military quickly spread among numerous public and private institutions and organizations [Keskin 2009]. At the present stage, it is observed that outsourcing is heavily applied in the main business functions such as management, marketing, accounting and production as well as supporting business activities such as security, cleaning and food.

Zelenika et al. [2008] examined the historical development process of outsourcing practices in three periods from the 1980s, 1990s and 2000s to the present. According to the authors, outsourcing practices were more tactically handled in the 1980s. During this period, companies turned to this alternative for mainly supportive business activities such as cleaning, security and accounting. By the 1990s, outsourcing had begun to be considered strategically, and it was observed that outsourcing had been heavily consulted for its core business functions as well as supporting business activities. In the 1980s, the main motivational sources for companies to turn to outsourcing practices were shaped more around the idea of providing cost savings; by the 1990s, the other gains of the process

were taken into account by the firm managers. With the 2000s, companies have started to develop relations based on mutual win-win approach on the basis of strategic partnership by leaving traditional supplier customer firm relations. In the period from past to the present, outsourcing practices have developed mainly as a management strategy that is at the center of the restructuring processes of the firms.

## **FACTORS LEADING COMPANIES TO OUTSOURCING**

The essence of outsourcing practices is the idea of focusing on core competencies. The core competencies were first defined by Prahalad and Hamel in 1990. In this definition, basic competencies are expressed as knowledge that enables companies to coordinate various production skills and technologies.

Alexander and Young [1996] listed the characteristics of the key competences as follows:

- being realized with company resources for a long time,
- being directly effective and critical on company performance,
- to provide competitive advantage to the company and to make it possible to continue these advantages in the future,
- to support the growth, innovation and restructuring processes of the firm.

The core competencies consist of a limited number of strategic business processes or activities that provide value to the firm. Because of their direct impact on company success and competitive superiority, there is a general prerequisite for carrying out business processes or activities within the core competencies [Bailey et al. 2002]. However, the prevailing opinion in the literature on the same reason is that the supporting and complementary business processes or activities constitute the ideal business area for outsourcing applications. With the adoption of the outsourcing strategy in these areas outside the core competency areas of the company, the cost burden and the risk of failure are eliminated due to the investment in a different and unfamiliar area [Quinn and Hilmer 1994].

Another of the main motivational sources that leads companies to outsourcing is the idea of providing cost savings [Bolumole 2001]. As a matter of fact, the idea of providing cost savings constitutes the main outlet of outsourcing applications [Orhan 2003] on the one hand, companies from the 1990s to the present have adopted this strategy intensively and are the main factors in the rapid spread of outsourcing among both private and public sectors [Zelenika et al. 2008]. That being said; managing the outsourcing process through a limited cost-oriented perspective is a serious obstacle to the realization of firm expectations for the process. Because outsourcing is an important management strategy for companies that cannot be handled with a cost-oriented perspective or at a tactical level [Yirik et al. 2014].

It is very likely that firms will encounter a general cost increase in the early stages of the outsourcing process [Wilding and Juriado 2004]. Due to the transfer of various business functions within the firm to external sources and some organizational changes in this process, some firms may encounter significant cost increases especially during the transition period [Barthelemy 2003]. This situation constitutes a serious obstacle for the companies to realize their expectations and targets regarding the outsourcing process and

may cause the companies with cost-oriented control and evaluation systems to terminate the outsourcing process while they are still in transition.

According to Zhu et al. [2001], outsourcing is essentially the responsibility of fulfilling certain business processes and activities from the company's employees and giving them to non-company employees. Acting in this way, the company provides significant cost savings due to the decrease in the number of employees, but it can also open doors to a number of important problems such as reduced employee motivation, loss of loyalty and confidence in the company.

Another factor that has influenced firms to move towards outsourcing strategy is their desire to increase their financial and operational flexibility. Outsourcing becomes an important business strategy for companies who want to adapt rapidly to changes in the business environment and to change their products or services, production processes and organizational structures in line with the developments observed in the market and demand structure. At the same time, outsourcing makes it possible for firms to achieve more flexible working conditions by reducing their investment burden significantly [Görçün 2013].

Rapid and continuous changes in global markets can become an important obstacle for firms to establish and sustain their competitive advantage. Lee and Çavuşgil [2006] state that only in-company resources cannot be sufficient for the maintenance of competitive advantages and draw attention to the importance of strategic partnership relations. At the present stage, the success of the company is not only related to the internal resources, skills and competencies, but rather parallel to the power of the inter-firm relations network.

Hancox and Hackney [2000] state that the most important factors that influence the outsourcing strategy of the firms are the synergy effect that will be formed through the opportunity to work with the best suppliers in the field both nationally and internationally. Turan [2011], on the other hand, associates outsourcing with firms' search for new markets. As the markets of developed countries are getting closer to saturation and it is becoming increasingly difficult to operate in these markets, companies focus on alternative market searches and many companies turn to outsourcing strategy in this search.

When the production processes of the firms are examined, it is seen that some parts and subsystems, which constitute an important part of the final product and which have a direct effect on the customer satisfaction and quality perception of the product, are provided from external sources while some parts and systems which are not directly related to the competitive advantages of the company are persistently produced in the company.

In this case, the decisions of the middle and upper management which do not show consistency with the company's mission, vision and targets are effective. In part, it is possible to say that the traditional management approach and the desire to maintain control are decisive. Essentially, the effort to keep certain processes or business activities within the firm that are not directly related to the core competence area of the firm leads the firm to use its limited resources in areas where it is less efficient. This leads to low quality production at a higher cost level and may have negative repercussions on the firm's market performance over time. However, it should not be underestimated that outsourcing also involves certain risks, such as over-reliance on the supplier or service provider. Because, a possible strike, financial problem or decision to stop production in service provider companies may lead to serious problems of the customer company, which may lead to disruptions and long-term interruptions in the production process [Eğin 2009].

Other factors that are effective in applying the outsourcing of the company managers are predominantly the lack of internal resources. Nevertheless, the aim of effectively coping with the continuous and rapid changes occurring in the business environment has an important role in the companies choosing the outsourcing strategy. Qureshi et al. [2007] list these factors as follows: increase in the need for information technologies, continuous changes in the market and business environment, globalization, increase in production based on mass privatization, monitoring of product expansion strategy and efforts to provide control over operating costs.

## **RISKS FACED BY FIRMS IN OUTSOURCING PROCESS**

When the relevant literature is examined, it is seen that the numerous benefits provided by outsourcing to companies are mentioned. With outsourcing, companies focus on their core competencies and can achieve significant cost savings. At the same time, financial and operational flexibility, increases in quality and performance, organizational restructuring and access to new markets constitute other significant gains in the process [Gül 2005]. However, due to insufficient effectiveness in process management, the mentioned benefits can become an important risk factor and this can lead to customer losses, damage to the company's reputation, and even the risk of the firm's existence [Kliem 1999, Barthelemy 2003, Tafti 2005, Jiang and Qureshi 2006]. For all these reasons, it is vital that the company managers plan the whole process in detail from the decision of outsourcing to strategic partner selection and exit strategies, and act within this plan as much as possible.

Throughout the process, it is possible to divide the risks faced by the firms into two groups, basically open and implicit risks. Some risk elements can be easily foreseen by company managers and simple risks can be prevented. Risk elements in this group, which can also be called open risks, generally arise before the contract or in the early stages of the outsourcing process. Concealed or hidden risks generally arise later in the outsourcing process after the contractual relationship between the parties has been established. While it is not possible to identify these risks easily by the company managers, the effects of the risks in this group on the outsourcing process are more destructive compared to the first group [Barthelemy 2003, Ölçer 2006].

Dolgui and Proth [2013] state that these risk factors, which lead to the failure of the outsourcing process, are usually caused by incompatibilities between theory and practice. According to the authors, the numerous benefits of the outsourcing process mentioned in the literature do not find much provision in practice and lead to the involvement of firms with very unrealistic expectations. The main factors that play a role in the failure of the outsourcing process are the unrealistic expectations and the lack of attention to process management.

Eğin [2009] points out the importance of a holistic approach adopted throughout the firm in the successful continuation of the outsourcing process. If the different departments and departments within the company have different perspectives on outsourcing or if there are some inconsistencies in the application, it will not be possible to fully meet the expectations of the company for the process. Such practices, which do not comply with

company goals and visions, constitute a serious obstacle to the success of the outsourcing process. According to Barthelemy [2003], strategic partner selection is vital to process success. Because, if the necessary attention is not paid to the selection of the service provider, it is inevitable that the customer company will encounter some problems which are difficult to recover in the future. Once a strategic partnership relationship has been established, one of the parties' attitudes and approaches that are incompatible with business ethics or ethical principles can have devastating effects on other company reputation.

Although, outsourcing poses significant difficulties for firms due to the numerous risks and high levels of uncertainty, more and more companies are turning to this strategy. Increasing competition pressures and intense changes in the business environment make this strategy a necessity for companies. Firms take different approaches to combating these risks and uncertainties. While some firms adopt more sophisticated and complex approaches, some companies propose more detailed contract conditions [Saunders et al. 1997], while others focus on efforts to improve audit and customer relations [Wang and Regan 2003].

## **LOGISTICS OUTSOURCING**

In recent years, companies have focused heavily on outsourcing strategy in logistics activities. The increasing need for companies for logistics activities and the goal of optimizing the quality-cost mix play a particularly important role in this case. Logistics sector has been one of the sectors where companies have applied heavily to outsourcing in recent years. In this case, the increase in the logistics requirements of the companies and the willingness to provide these activities with appropriate cost and quality conditions are effective [Srabotic and Ruzzier 2012]. The observed increase in logistics outsourcing demands of companies has led to a large number of companies from different sectors entering the sector under the name of third party logistics. Some of the new companies entering the sector are individual initiatives, while some have gone to the path of partnership with existing transport, storage and information technologies companies. All these developments have expanded logistics outsourcing in scope and volume, making it one of the most important sectors [Sink et al. 1996].

Although, logistics activities do not fall within the core competence of most companies, they are among the most important cost items and therefore have an important position in the business activities. On the other hand, the high initial investment and infrastructure costs of logistics activities and the insufficiency of internal resources and capacity make the transfer of these activities to external resources more attractive for the managers of the company [Batarliene and Jarasuniene 2017]. For these reasons, company managers prefer to use limited internal resources in their core competency areas and provide logistics activities through outsourcing. Increasing demands of firms for logistics outsourcing often lead to hasty decision-making, resulting in a lack of due diligence. However, logistics outsourcing is a complex process involving numerous risk factors as well as various returns, and it is essential that decision makers allocate sufficient time and resources. Because logistics outsourcing decision is a managerial decision that necessitates firm managers to evaluate internal and external factors together [Selviaridis and Spring 2007].

It is possible to say that the increasing interest in logistics outsourcing started in the 90s. Up to the present time, logistics outsourcing has made significant progress in both volume and scope [Srobotic and Ruzzier 2012]. These developments have made the service provider companies to provide more comprehensive and integrated services and become part of the structural transformation process observed with the outsourcing of customer firms [Eğin 2009]. On the basis of the intense increase observed in the use of logistics outsourcing is the rapid technological changes and intense competition pressures that enterprises are exposed to [Lee and Çavuşgil 2006]. In addition, the need for strategic partnerships in the conduct of supply chain activities has increased as the reduction of order cycle times and inventory levels is a difficult and specific task that the company cannot perform alone [Bolumole 2001]. Another important factor is that firms prefer to stay within the defined operational boundaries within certain criteria where they have a higher chance of success than investing heavily in different fields that require specific experience and skills [Sevim et al. 2008].

## RESEARCH AND RESULTS

About 16% of the fresh vegetable and fruits trade in Turkey is carried out through Antalya fresh vegetable and fruit wholesale market. Due to its position and importance in the fresh fruit and vegetable sector, the research universe consists of brokerage and merchant enterprises operating in the Antalya Fresh Vegetable and Fruits Wholesaler Market. The sample was selected by random sampling. 400 companies that were found to be active in the research period were determined as samples. In the face-to-face surveys conducted with the owners or managers of the firms, only 270 firms were able to conduct surveys due to the intensity of their work and their reluctance to participate in the survey. 51 of the completed questionnaires were not included in the analysis due to inconsistencies and deficiencies in the answers given to the questions. Therefore, analyzes were conducted on a total of 219 questionnaires.

Demographic information about the firms and their opinions about the logistics outsourcing process were collected by questionnaire method and descriptive statistics were made with the obtained data. In the second part of the study, the importance levels of the criteria that are effective in the selection of logistic service provider firms of the companies operating in fresh vegetables and fruits sector were tried to be determined by Analytical Hierarchy Process (AHP) Method. Necessary data were collected through a survey conducted with 9 company managers. The selection criteria in the questionnaire were determined based on the survey data and related literature.

The first part of the survey is aimed at revealing the general profile of the company through the demographic information of the company. This section includes questions about the demographic information of the companies surveyed, such as employee numbers, sectoral experience and the number of logistics service provider companies they work with.

In the second part of the survey, logistics outsourcing process and firms expectations and evaluations regarding service provider companies and the criteria that they attach more importance to when choosing a logistics service provider company are determined.



The firm sizes were classified into micro (1–9 employees) and small enterprises (10–49 employees) based on the definition of SME's (Small and Medium Size Enterprises). While 53.4% (102) of the companies participating in the research consisted of micro enterprises; 46.6% (117) of them are small enterprises (Table 1).

It is considered that the number of employees (together with the uninsured employees) of the companies in the sample is higher as the number of the employees or managers who say about the number of employees only tells the number of insured employees and does not want to give detailed information about the number of employees. These attitudes of the firms about the number of employees are among the important limitations of the study and it is thought that they affect the data quality. However, this constraint can be observed in other studies conducted in the field of social sciences due to various reasons such as not wanting to share informal economy and firm information.

A significant portion (23.3%) of the surveyed firms had sectoral experience of 11–15 years, while only 11.9% of them stated that they had 1–5 years of experience. In general, it is seen that the companies included in the research are experienced firms with a sectoral background of more than 10 years (71.2%). The sectoral experience of firms and logistics outsourcing periods have a similar distribution. The logistic outsourcing periods of the majority of the companies in the sector (58.4%) are over 10 years. From this point of view, it is possible to say that logistics outsourcing in the fresh vegetables and fruits sector is not a new strategy but a strategy that has been used for a long time. This may be due to the insufficiency of internal resources and capacity of the firms or the lack of logistics activities within the main competence areas.

A significant portion of the surveyed firms (70.8%) stated that they are conducting their relations with the logistics service provider on a contract basis; 29.2% (64 firms)

TABLE 1. Demographic Information of the Firms

Firm Size [number of employees]											
Micro						Small					
102			53.4%			117			46.6%		
Field of Activity											
National				International				National and International			
171		78.1%		17		7.7%		31		14.2%	
Sectoral Experience [years]											
1–5		6–10		11–15		16–20		21–25		26+	
26	11.9%	37	16.9%	51	23.3%	45	20.5%	18	8.2%	42	19.2%
Logistics Outsourcing Periods [years]											
1–5		6–10		11–15		16–20		21–25		26+	
41	18.7%	50	22.9%	55	25.1%	34	15.5%	17	7.8%	22	10%
Number of Logistics Service Provider Companies											
1			2–5			6–9			10+		
21	9.6%	14	68%	36	16.5%	13	5.4%				
Logistics Outsourcing Contract											
Written contract						No written contract					
155			70.8%			64			29.2%		

Source: the Authors.

TABLE 2. Benefits of Logistics Outsourcing Process

	Mean	Standard Deviation
Focus on core competencies	3.74	0.99467
Shortening the order cycle process	3.74	1.21566
Increase in competitiveness	3.73	1.09536
Entering new markets	3.54	1.26770
Reduction of product loss	3.42	1.31942
Increase in customer satisfaction	3.25	1.25743
Ease of working conditions	3.23	1.32914
Cost savings	2.86	1.37456

\* 1 – absolutely disagree, 2 – disagree, 3 – undecided, 4 – agree, 5 – strictly agree.

\*\* $n = 219$

Source: the Authors.

stated that they carried out in the framework of mutual trust and bilateral relations without a written contract. From this point of view, it is possible to comment that a significant part of the companies in the sector maintain business relations with a traditional understanding and carry out a partnership agreement with an oral agreement instead of a written contract text.

TABLE 3. Problems Faced in Logistics Outsourcing Process

	Mean	Standard Deviation
Cost increase	3.18	1.27914
Unskilled labor	2.94	1.12337
Delay in distribution and delivery	2.93	1.02901
Disruption in supply	2.89	1.06092
Low quality	2.73	1.08599
Increased customer complaints	2.56	0.97660
Failure to comply with the terms of the contract	2.43	1.06614

\* 1 – absolutely disagree, 2 – disagree, 3 – undecided, 4 – agree, 5 – strictly agree.

\*\* $n = 219$

Source: the Authors.

According to Table 2, the most important benefits of firms from the logistics outsourcing process are focused on core competencies and increased competitiveness, while order conversion processes are also shortened. Cost savings have the lowest average. From this point of view, it is possible to comment that logistics outsourcing in the fresh vegetable and fruits sector can lead to cost increases. Zelenika et al. [2008], some operational costs can be reduced with the logistics outsourcing, but when the overall cost levels are considered, there may be some increase.

The increase in costs may be due to a temporary transition-related situation, as well as to increase the prices of service providers after the agreement. However, price increases may also arise from unexpected costs that are caused by some issues that are ignored in the decision-making process [Barthelemy 2003]. On the other hand, these cost increases

may result from various issues such as insufficient sectoral expertise levels of service provider companies or inefficient process management.

When the answers of the companies participating in the research regarding the problems they face during the logistics outsourcing process are examined, it is seen that the most common problem is “cost increase. This situation is parallel to the value in Table 2 and the results are consistent. The other problems that firms face most often are seen as “unskilled labor” and “delay in distribution and delivery”. These problems lead to an increase in product quality and quantity losses. According to Table 3, the frequency with which firms encounter problems of “failure to comply with the terms of the contract” and “increase in customer complaints” is relatively lower.

TABLE 4. Logistics Service Provider Company Evaluations

	Mean	Standard Deviation
We have been working with the same companies for a long time	3.52	1.28273
We find that the performance of the service provider company we work with is sufficient	3.53	1.24261
We intend to work with the same companies in the future	4.21	0.58165

\* 1 – absolutely disagree, 2 – disagree, 3 – undecided, 4 – agree, 5 – strictly agree.

\*\* $n = 219$

Source: the Authors.

According to Table 4, it is observed that the answers given to the judgments “we have been working with the same firms for a long time” and “we find the firms we work with are sufficient” have taken a close value to the expression 4 – agree. “We intend to work with the same company in the future”, on average, the responses to the judgment received a higher value (4.21) than the other two judgments. This may be due to the fact that company managers priorities bilateral relations more than professional business relations and the desire to maintain traditional business relations even if the service provider company does not have sufficient performance levels.

According to Table 5, it is observed that the criteria that firms give the most importance in selecting service provider firms are “quality”, “sectoral expertise” and “relief of payment”, while the criteria that have the lowest level of importance is “company reputa-

TABLE 5. Logistics Service Provider Firms Selection Criteria

	Mean	Standard Deviation
Quality	4.55	0.71081
Sectoral expertise	4.43	0.75314
Relief of payment	4.40	1.08923
Order cycle rate	4.32	1.05714
Bilateral relations	4.30	0.94749
Cost	4.11	1.24256
Firm reputation	3.76	1.14170

\* 1 – absolutely disagree, 2 – disagree, 3 – undecided, 4 – agree, 5 – strictly agree.

\*\* $n = 219$

Source: the Authors.

tion". The answers given by the company managers regarding the "quality" criteria are worth close to the expression 5 – absolutely agree while the answers related to the other criteria are worth close to the expression 4 – agree.

## ANALYTICAL HIERARCHY PROCESS

AHP method, developed by Thomas L. Saaty in 1977 is a method for solving multi-criteria decision problems [Triantaphyllou and Mann 1995, Dağdeviren and Eren 2004, Yilmaz 2005]. This method allows decision-makers to model multi-criteria problems in the form of related criteria, sub-criteria and alternatives in a hierarchical structure [Chin et al. 1999]. The hierarchical structure used in formulating the AHP model makes the relevant criteria and sub-criteria more visible for all units involved in the decision-making process because it poses the problem systematically and thus improves the decision-making process [Tam and Tummala 2001].

In this method, a series of alternatives for solving a particular problem are often compared with a set of contradictory decision criteria [Triantaphyllou and Mann 1995]. It is also possible to include the experiences and opinions of more than one decision-maker in the decision-making process [Ecer and Küçük 2008]. One of the most important characteristics of AHP is the inclusion of both objective and subjective views and thoughts in the decision-making process. In other words, it is possible to include subjective judgment, intuition and experiences in the decision process as well as objective thoughts and opinions in this method [Kuruüzüm and Atsan 2001].

It is possible to list the basic steps used in AHP method as follows [Vaidya and Kumar 2006, Saaty 2008]:

1. Identification of the problem.
2. Determining the target in this direction by considering all the factors affecting the decision process.
3. Determination of criteria.
4. Establishing a hierarchical model from the top to the lowest level with the target, related criteria, sub-criteria and alternatives, respectively.
5. Comparisons of each item (criterion, sub-criterion and alternative) at the relevant level and calibrating these values using numerical scale. In order to do this, each item must be compared with each other item in the related column.
6. To make the necessary calculations for determination of maximum Eigen value, consistency index (CI), consistency ratio (CR) and normalized values for each criterion and alternative.
7. If the eigenvalue, internal consistency index and internal consistency ratio values are acceptable, the decision is made considering normalized values; if these values are not output as desired, the process is continued until the desired values are obtained.

When the priority values ( $D$ ) are examined, it is seen that the criteria of bilateral relations (7.646), cost (7.631) and quality (7.502) have a relatively higher importance level. However, the criteria of sectoral expertise (7.150), ease of payment (7.132) and firm reputation (7.125) have a lower level of importance in the selection of logistic service providers for companies operating in the fresh vegetables and fruits sector (Table 6).

TABLE 6. Service Provider Selection Criterias

	Cost	Quality	Sectoral expertise	Ease of payment	Bilateral relations	Speed	Firm reputation	$W$	$A \times W$	$D$
Cost	0.074	0.105	0.049	0.055	0.079	0.064	0.067	0.071	0.539	7.631
Quality	0.100	0.142	0.314	0.331	0.105	0.153	0.2977	0.206	1.547	7.502
Sectoral expertise	0.095	0.028	0.063	0.068	0.074	0.075	0.107	0.073	0.522	7.150
Ease of payment	0.104	0.033	0.072	0.078	0.120	0.087	0.065	0.080	0.571	7.132
Bilateral relations	0.335	0.481	0.302	0.230	0.355	0.365	0.237	0.329	2.519	7.646
Speed	0.237	0.188	0.171	0.183	0.198	0.204	0.180	0.194	1.442	7.419
Firm reputation	0.051	0.022	0.027	0.055	0.069	0.052	0.046	0.046	0.329	7.125
		$\lambda_{\max}$	7.372		TI	0.062		TO	0.046	

Source: the Authors.

## CONCLUSIONS

Logistics outsourcing practices in the fresh vegetable and fruits sector have a long history. However, it is seen that logistics outsourcing is handled mostly at tactical level and is limited to operational processes and activities. Also, it is noteworthy that firms are far from a holistic view of logistics outsourcing and a general unity of practice. In the sector, a random structure is seen as an alternative to internal resource and capacity deficiencies that arises from seasonal supply and demand fluctuations rather than a planned logistics outsourcing process.

With the use of logistics outsourcing, the order cycle process is shortened and product quality and quantity losses can be controlled. At the same time, the limited resources of the companies are directed to the core competence where they are more efficient and effective, thus eliminating the many uncertainty and risk factors that may arise due to investment in an unknown area. However, due to the limited level of sectoral expertise of the logistics service providers customer firm expectations cannot be fully met.

The traditional management approach of the firm managers is also important in ensuring that the firm's expectations for the logistics outsourcing process are not fully met and that the gains from the process are achieved at relatively lower levels. In the traditional management approach, bilateral relations between firms are more prominent than business interests. The concept of self-sufficiency, another characteristic of this approach, significantly limits the potential benefits that firms can provide from the process. It will be possible for the firm managers to benefit from the logistics outsourcing process if they develop a more professional and holistic perspective by leaving aside the traditional management approach in process management and service provider selection.

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**Summary.** In this study, logistics outsourcing practices in fresh vegetables and fruits sector are discussed with the customer firm perspective. The benefits of the companies from the logistics outsourcing process, the problems they face in the process management and the expectations and evaluations for the process are tried to be put forward with an exploratory approach. The required data were collected through surveys carried out with companies operating in the fresh vegetable and fruits sector. The Analytical Hierarchy Process (AHP) method has also been used to determine the criteria that are effective in selecting the service provider company, which is considered to be directly effective on the success of the outsourcing process. The research findings show that the most important obstacles to maximizing the benefits of the companies from the process are the lack of a planned structure for logistics outsourcing and the traditional management understanding of the company managers. This situation makes the logistics outsourcing process of the companies in the sector not an effective competitive strategy but rather an alternative to deal with cyclical fluctuations. For all these reasons, the expectations of the companies for the process are not fully met and the benefits from the process are realized at more limited levels.

**Key words:** outsourcing, logistics outsourcing, third party logistics, analytical hierarchy process

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