



## A Descriptive Study on Sustainability Perception: Turkish Logistics Industry

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### Abstract

*Today customers are more conscious about sustainability thus companies have to take sustainability into consideration in order to meet the expectations of their customers. In this longitudinal and descriptive research the concept of sustainability in the logistics industry is emphasized. This study attempts to measure the sustainability perceptions of top managers in logistics industry with regard to two topics; performance and expectations. Survey method used for data collection and sample of this research is based on the members of UTIKAD (Association of International Forwarding and Logistics Service Providers) which is a non-governmental organization in the field of transportation in Turkey. In the first part, the study discusses the concept of sustainability and profitability as one of the performance measures. Then, last quarter of 2013's performance and expectations of industry is shown. With the results of this study the recognition of Turkish logistics industry is expected to be increased, and meanwhile managers can identify opportunities and provide recommendations in order to have sustainable operations in the industry.*

**Keywords:** Logistics, Performance, Profit, Sustainability

### Introduction

It was the traditional view that the main goal of all firms is only to maximize their profits by using their resources efficiently (Jensen and Meckling 1976). However, this view is challenged in last years by expanding the responsibilities of firms beyond profit maximization. The corporate responsibility is built on three basic principles: environmental responsibility, economics responsibility and social responsibility which also become the pillars of the concept of sustainability (Barbier 1987; Elliott 2005). Even it has been still discussing that sustainability increases the costs of firms, many research proposes a positive relationship between sustainability and profitability (Lo, 2010).

Sustainability in logistics industry is one of the hot topics in today's business world. The understanding of sustainable supply chains have become established, and stakeholders' preferences are formed around sustainability when generating profitability across the chain. Profitability bring expectations toward growth of the firm and investments. Also, competitiveness and cooperation levels of the firms increase the profitability so that supports the sustainability.

In order to discover the situation of logistics industry, this study aims to measure the perceptions of top logistics managers of Turkey regarding the performance and expectations about logistics industry in sustainability framework.

This longitudinal study is based on a research conducted in every three months. This part is based on a research conducted between the dates of 16 June – 30 June 2014 by Beykoz Vocational School of Logistics, Center of Logistics Applications and Research. The research samples of this study are taken from the

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members of UTIKAD (Association of International Forwarding and Logistics Service Providers). The sample size judgmentally derived from the total population surveyed consists of 400 firms. The survey is delivered to all of the 400 companies in the sample by mail and Internet until a representative response rate (16.5% in the Second Quarter of 2014) is reached.

In the first part of the study, the literature review is provided about the concept of sustainability and the relationship between sustainability and performance. In the second part, research methodology is explained. In the last part the findings are given and the dashboard of the logistics industry of Turkey is established.

## Literature Review

### Concept of Sustainability in Logistics Industry

In order to clarify what logistics companies do to be more sustainable, the definition of sustainability is needed. With the rise of today's "conscious consumer", sustainability is meeting the expectations of investors while taking into account the long-term impact that operations have on the community and environment (Prokesch, 2010).

One of the most frequently quoted definition is from Our Common Future, also known as the Brundtland Report (1987, 43): "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". According to this definition the world is seen as a system. Thus, one event connects another and acts like a total link. Specifically, logistics is also a system and the components of a typical logistics system are: customer service, demand forecasting, distribution, inventory control, material handling, order processing, parts and service support, plant and warehouse site selection, purchasing, packaging, return handling, salvage and scrap disposal, traffic and transportation, and warehousing and storage. For logistics companies that imply sustainability in their processes have to make integration throughout the system surrounding the workforce, suppliers, shippers, distributors and retailers.

When all partners in the logistics system have different concerns about sustainability, there has to be a common ground in order to achieve an agreement on this issue. Thus, the concept of People, Planet and Profit (PPP) concept is used. PPP wants to consider all aspects which could influence a decision on sustainability. According to Stonebraker et. al. (2009), pre-calculations of both market costs and external costs (people, profit, and planet) in many cases are necessary as a support to new sustainable supply chains and networks that are started up by companies. Unsustainable practices hidden in the supply chain has the potential to become public information extremely quickly, leaving a company's brand value damaged and shareholders displeased (Dey, LaGuardia and Srinivasan, 2011). Though adding sustainability throughout the logistics company takes creativity, many firms have learned how to use it to differentiate themselves from their competitors, reduce costs, and improve services to their customers (Gold and Seuring, 2011; Pedersen, 2009).

### Relationship Between Sustainability and Performance

In the past, the concept of sustainability was associated only with environmental issues, but later it is understood that it is also a base for good business management with the economics and social aspects as well as the environmental aspects (Funk, 2003). Lo (2010) defined the corporate sustainability as it is built on complementary issues of financial benefit, environmental protection and social responsibility. Linnanen and Panapanaan (2002) built a model for corporate sustainability with three dimensions attached to corporate social responsibility of a firm: economic responsibility – profit, social responsibility- people, and environmental responsibility – planet. Lo (2010) proposed a model which explains the performance of a firm



from profitability and marketing frameworks. According to Lo's (2010) findings, there is some evidence that corporate sustainability helps a firm for profit generation, and also he offered that sustainable firms generally perform better than other firms, and ensure competitiveness. Profitability also drives the growth of the industry, and call for more foreign investments from outside of the country. Besides profitability, the interest for cooperation between firms has increased in order to achieve and ensure the competitive advantage in logistics industry. So, expectations for growth and investments related with profitability, and cooperation and competitiveness levels are indicated as the performance tools for this study.

## **Performance Indicators For Sustainability**

### **Growth and investment expectations related with profitability**

The concept of sustainability of the firms are considered as one of the valuable intangibles that helps to generate profit by interacting with stakeholders' preferences. According to Bagozzi and Phillips (1982) and Chakravarthy (1986), performance of firms is a complex issue that requires multifactor performance measurement methods. Profitability is one of the performance methods which is desired by all firms in the business world (Rothschild, 2006). As it is known by everyone, a performance of a firm is highly related with its success of generating profit in its business sector. Nowadays, there is another issue about performance of firms. Even some of the studies found a negative impact of sustainability on profitability, still many empirical studies proposed a positive relationship between sustainability and profitability of the firms (King and Lenox, 2002; Schnietz and Epstein, 2005; Lo and Sheu, 2007).

Besides achieving profitability, firms also desire to sustain this profitability by growing. According to Jang and Park (2011) growth is highly related with profitability. In his study, Gupta (1969) tried to explain the effects of growth by using some profitability ratios. Geroski et al. (1997) found a positive relationship between growth and profitability. Growth of firms' is an important tool of economic development, especially for a country like Turkey which is one of the mid-level developed countries in the world (Sanghamitra, 1995). When the profitability of the firms has increased in a specific industry, the attractiveness for investments to this industry will also be increased. This is called as the sustainable development as one of the measurements of economic development.

### **Competitiveness and cooperation levels of firms**

Sustainability has become one of the tool for improving the productivity of firms, and new way of achieving competitiveness (Keindorfer, Singhal, & van Wassenhove, 2005; Lee & Kim, 2011). In the past, business competitiveness focused on internal factors such as achieving economies of scale in the production. However, some other factors have started to be the sources of competitive advantage, such as cooperation and information sharing (Prezioso, 2007). Especially, the idea of working as partners instead of rivals improved the cooperation level between parties of a chain which drives the level of competitiveness as well.

In today's business world, instead of transactional relationships, there are more cooperative relationships between producers and their suppliers in supply chains in order to perform better (Dyer 1997; Bensaou 1999; Carr and Pearson, 1999). Especially, international trade and outsourcing of logistics activities push the firms to create more reliable relationships with their suppliers, distributors and logistics service providers. In order to achieve sustainable competitive advantage, firms should cooperate with the all the partners in their supply chain. Hollos, Blome and Foerstl (2012) also underlined the importance of cooperation between suppliers, and its positive effect on sustainable performance in their study.

## **Methodology Of The Research**

### **General Description of the Research**

This study is based on a research conducted between the dates of 16 June – 30 June 2014 by Beykoz Vocational School of Logistics, Center of Logistics Applications and Research. The research sample of this



study is derived from the members of UTIKAD (Association of International Forwarding and Logistics Service Providers). UTIKAD is also a partner and supporter of this longitudinal study. UTIKAD is an active member of the International Federation of Freight Forwarders Association (FIATA) which is the largest non-governmental organization in the field of transportation in the world. The sample size judgementally derived from the total population surveyed consists of 400 firms. These firms are primarily members of UTIKAD, and the response rate to the survey reaches the sample level at 16.5% by both mail and web-based inquiry forms. When compared with last year's 16 % sample rate, it can be said that the attention of the logistics industry to this research is slightly increased. However, there were important constraints during data collection. The theme of "Trends in the Turkish Logistics Industry," "performances" and "expectations," is derived from the evaluation of senior managers. All the senior managers of the surveyed companies/institutions were asked a control question in order to confirm that the survey is actually replied to by the intended person.

### The Method of Data Collection and Description of Sample

Research is comprised of investigating performance and experience within the logistics industry. The research method is to prepare 15 different questions and present them for response to the senior managers of the logistics industry. The entire set of 15 questions is closed-ended.

The 400 companies, members of UTIKAD (Association of International Forwarding and Logistics Service Providers), which serve as the sample population for the continuing study, are given a survey in every three month (quarterly) period by Beykoz Vocational School of Logistics. The evaluation of survey responses is made in the last month and made public by publishing the results. The table below includes the published results for quarterly periods in 2014.

**Table 1.** Results Identification of Publishing Periods (2014)

| Year of 2014 Results | Release Date      | Reference Period: Performances | Reference Period: Expectations |
|----------------------|-------------------|--------------------------------|--------------------------------|
| Quarter 1            | 31 March 2014     | (January-March 2014)           | (April-June 2014)              |
| Quarter 2            | 30 June 2014      | (April-June 2014)              | (July-September 2014)          |
| Quarter 3            | 30 September 2014 | (July-September 2014)          | (October-December 2014)        |
| Quarter 4            | 31 December 2014  | (October-December 2014)        | (January-March 2015)           |

The survey is delivered to all of the 400 companies in the sample by mail and Internet until a representative response rate (16.5% in the Second Quarter of 2014) is reached. The current and the previous survey response rates are listed in the table below.

**Table 2.** Survey Response Rates

| Research Period                    | N  | Population Representation Ratio |
|------------------------------------|----|---------------------------------|
| Quarter 4 (October-December, 2013) | 40 | 10%                             |
| Quarter 1 (January-March, 2014)    | 64 | 16%                             |
| Quarter 2 (April-June, 2014)       | 66 | 16.50%                          |



## Results Of The Research

Performance of the logistics industry during the April-May-June period of 2014 are described below.

### Competition Levels in the Logistics Industry

Of the managers surveyed in the research, 68.1% of them evaluated price competition as “high” in the logistics industry. Moreover, service quality (63.6%) and service speed (71.2%) competition were considered as “middle”. When compared with the first quarter results for 2014, the level of price competition and service speed competition which is defined as “high” is decreased; however the level of “service quality” competition defined as “middle” is significantly increased, (see Table 3 and Figure 1).

**Table 3:** Competition Levels in Logistics Industry: Comparative Table

| Evaluation | Price Competition (%) |                  |                  | Quality Competition (%) |                  |                  | Service Speed Competition (%) |                  |                  |
|------------|-----------------------|------------------|------------------|-------------------------|------------------|------------------|-------------------------------|------------------|------------------|
|            | 2013: 4. Quarter      | 2014: 1. Quarter | 2014: 2. Quarter | 2013: 4. Quarter        | 2014: 1. Quarter | 2014: 2. Quarter | 2013: 4. Quarter              | 2014: 1. Quarter | 2014: 2. Quarter |
| High       | 82,5                  | 73,0             | 68,1             | 25,0                    | 11,1             | 13,6             | 37,5                          | 27,0             | 19,6             |
| Middle     | 10,0                  | 12,7             | 19,6             | 47,5                    | 49,2             | 63,6             | 57,5                          | 57,1             | 71,2             |
| Low        | 7,5                   | 14,3             | 12,1             | 27,5                    | 31,7             | 22,7             | 5,0                           | 15,9             | 9,0              |

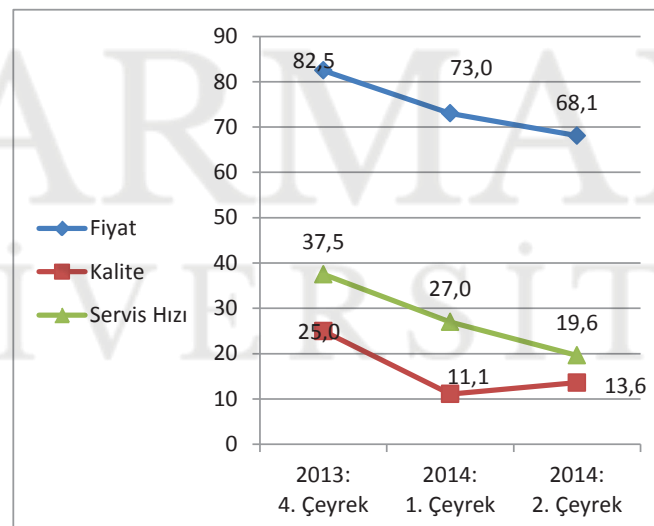


**Figure 1.** Competition Levels in Logistics Industry (%)

“high” responses were evaluated.



## Cooperation Level In Logistics Industry

The 87,6 % of the managers who participated to the research mentioned that there is a high level of information sharing in logistics industry. Also, 77,2 % of the participants point out a high level cooperation between companies in the industry.

When the results are compared with the first quarter of year 2014, a significant increase can be observed both in information sharing and cooperation levels (See Table 4 and Figure 2).

**Table 4.** Cooperation Level in Logistics Industry: Comparative Table

| Evaluation | Information sharing between companies (%) |                 |                 | Cooperation between companies (%) |                 |                 |
|------------|-------------------------------------------|-----------------|-----------------|-----------------------------------|-----------------|-----------------|
|            | 2013: Quarter 4                           | 2014: Quarter 1 | 2014: Quarter 2 | 2013: Quarter 4                   | 2014: Quarter 1 | 2014: Quarter 2 |
| Yes        | 82,5                                      | 82,5            | 87,6            | 87,5                              | 69,8            | 77,2            |
| No         | 17,5                                      | 17,5            | 12,4            | 12,5                              | 30,2            | 22,8            |

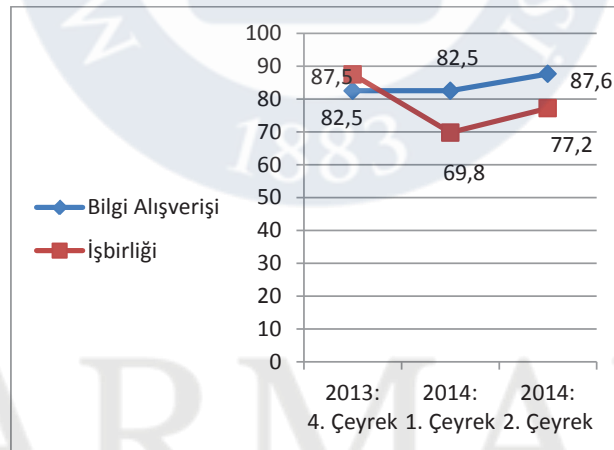


**Figure 2.** Cooperation Level in Logistics Industry (%)

## Expectation of Foreign Capital Investment in Logistics Industry

The 1,5 % of the managers that participated to the research think that the foreign capital investments will increase significantly, while % 28,7 of them mentioned that there will be an increase. % 9 of the managers said foreign capital investments will decrease.

**Table 5.** Expectation For Foreign Capital Investment: Comparative Table

| Evaluation                  | 2013: Quarter 4 (%) | 2014: Quarter 1 (%) | 2014: Quarter 2 (%) |
|-----------------------------|---------------------|---------------------|---------------------|
| will increase significantly | 22,5                | 3,2                 | 1,5                 |
| will increase               | 65,0                | 19,0                | 28,7                |
| will remain same            | 7,5                 | 61,9                | 60,6                |
| will decrease               | 5,0                 | 15,9                | 9,2                 |

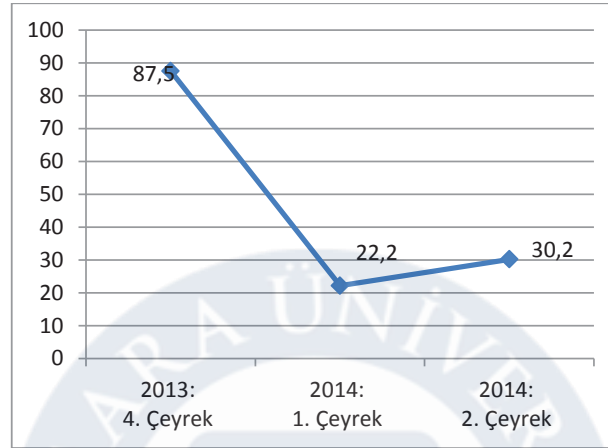


**Figure 3.** Expectation for Foreign Capital Investment

\* The sum of responses of “increase significantly” and “will increase” were evaluated.

### Growth Expectation in Logistics Industry

The % 16,6 of the managers that participated to the research express their opinions toward the growth expectation of the industry in three months, and they mention that logistics industry will shrink. On the other hand, % 54,5 of the participants mention that the industry will remain same, and the rest express their opinions as the industry will grow.

When these results are compared with the first quarter of the year 2014, a decrease is observed in growth expectation of the logistics industry (See Table 6). The rate of those who expressed their opinions toward a increase in logistics industry decreased from % 39,7 to % 28,7. This continuous decrease since fourth quarter of year 2013 should be followed up seriously.

**Table 6.** Growth Expectation in Logistics Industry: Comparative Table

| Evaluation  | 2013: Quarter 4 (%) | 2014: Quarter 1 (%) | 2014: Quarter 2 (%) |
|-------------|---------------------|---------------------|---------------------|
| will grow   | 57,5                | 39,7                | 28,7                |
| stay same   | 35,0                | 44,4                | 54,5                |
| Will shrink | 2,5                 | 12,7                | 16,8                |

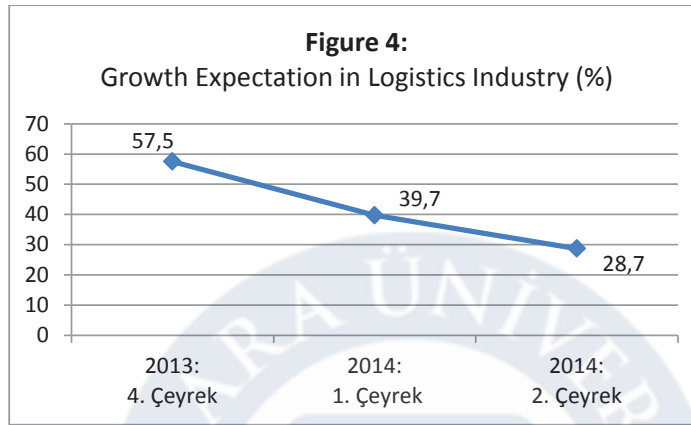


**Figure 4.** Growth Expectation in Logistics Industry

## Sustainability Dashboard Of Turkish Logistics Industry

As a summary, findings of the study are brought together in Table 9 under two main titles of “performances” and “expectations”. A comparison can be seen between the last quarter of the year 2013 and first two quarters of the year 2014.

**Table 7.** Sustainability Dashboard Of Turkish Logistics Industry

| PERFORMANCES                        |                                        |                   |                   |                   | EXPECTATIONS                     |                             |                   |                   |                   |
|-------------------------------------|----------------------------------------|-------------------|-------------------|-------------------|----------------------------------|-----------------------------|-------------------|-------------------|-------------------|
|                                     |                                        | 2013<br>4.Quarter | 2014<br>1.Quarter | 2014<br>2.Quarter |                                  | 2013<br>4.Quarter           | 2014<br>1.Quarter | 2014<br>2.Quarter |                   |
| HIGH                                | Price Competition                      | —                 | ↓                 | ↓                 | FOREIGN<br>CAPITAL<br>INVESTMENT | Will increase significantly | —                 | ↓                 | ↓                 |
|                                     | Quality Competition                    | —                 | ↓                 | ↑                 |                                  | Will increase               | —                 | ↓                 | ↑                 |
|                                     | Service Speed Competition              | —                 | ↓                 | ↓                 |                                  | Will remail same            | —                 | ↑                 | ↓                 |
|                                     | Price Competition                      | —                 | ↑                 | ↑                 |                                  | Will Decrease               | —                 | ↑                 | ↓                 |
|                                     | Quality Competition                    | —                 | ↑                 | ↑                 |                                  |                             | 2013<br>4.Quarter | 2014<br>1.Quarter | 2014<br>2.Quarter |
| MIDDLE                              | Service Speed Competition              | —                 | ↓                 | ↑                 | GROWTH                           | Will Grow                   | —                 | ↓                 | ↓                 |
|                                     | Price Competition                      | —                 | ↑                 | ↓                 |                                  | Stay Same                   | —                 | ↑                 | ↑                 |
|                                     | Quality Competition                    | —                 | ↑                 | ↓                 |                                  | Will Shrink                 | —                 | ↑                 | ↑                 |
| LOW                                 | Service Speed Competition              | —                 | ↑                 | ↓                 | INVESTMENT<br>PLANNING           |                             |                   | 2014<br>1.Quarter | 2014<br>2.Quarter |
|                                     | COOPERATION/<br>INFORMATION<br>SHARING |                   |                   |                   |                                  | Yes                         |                   | —                 | ↓                 |
|                                     | YES                                    | —                 | —                 | ↑                 |                                  | No                          |                   | —                 | ↑                 |
| COOPERATION<br>BETWEEN<br>COMPANIES | NO                                     | —                 | —                 | ↓                 |                                  |                             |                   |                   |                   |
|                                     | YES                                    | —                 | ↓                 | ↓                 |                                  |                             |                   |                   |                   |
|                                     | NO                                     | —                 | ↑                 | ↓                 |                                  |                             |                   |                   |                   |
|                                     | YES                                    | —                 | ↑                 | ↓                 |                                  |                             |                   |                   |                   |



As it is observed in the findings and seen in the dashboard, price competition is found to be high in Turkey, but decreased in the last quarter. Also, an increase is observed in service quality. Besides competition level, in the cooperation level there is a significant positive trend.

For expectations of the foreign investment, participants expect an increase in the last quarter, but they think there will be no growth, and the sector will stay same.

## Conclusion

“Trends in Turkish Logistics Industry” is a longitudinal study reported quarterly since the last quarter of 2013. This study attempts to measure the perceptions of top managers in logistics industry with regard to two topics; performance and expectations. It is a unique study in terms of its scope in the Turkish logistics market and well regarded among the parties in the industry.

Sustainability has become one of the emerging concepts in logistics industry. It is complementing the aim of profit maximization by increasing the cooperation between parties in the supply chain, ensuring the competitive advantage, and increasing the expectations toward growth of the logistics industry and foreign capital investment. Hence, according to findings it is better to say that logistics companies have to take into consideration not only environmental sustainability but also economical sustainability.

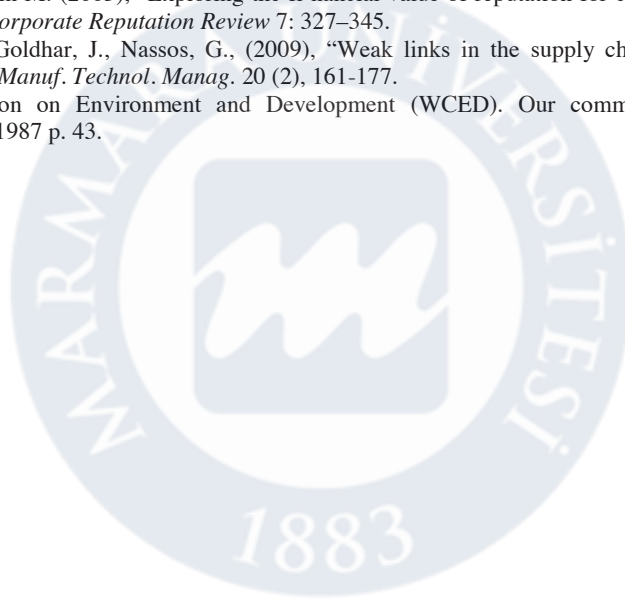
This study tried to summarize the major trends by using dashboard in logistics sector of Turkey in order to contribute to sustainable operations in the industry. By using this economical indicators the logistics managers can turn their operations into more sustainable processes.

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