

## RELATIONSHIPS BETWEEN KNOWLEDGE SHARING AND REWARD SYSTEMS IN ORGANIZATIONS: THE CASE OF ERENCO

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### Abstract

In different structure from traditional resources investment on knowledge and using it requires a deal number of activities holistically. These investments and activities may be from internal or external perspectives. Investing on knowledge from the points of internal perspective, it is clear that providing knowledge sharing is critical. At this point, reward systems have an important function in sharing knowledge with co-workers and organization itself. In this study, it is aimed to investigate the roles and impacts of reward systems in upgrading knowledge sharing. In the scope of the aim, a case study has been designed and ERDEMİR Engineering Management and Consulting Services Inc has been determined as the case. In the study, survey technique is used for collecting research data. The findings of the research have demonstrated that reward systems have increased the knowledge sharing in the organization. Descriptive statistics have proved that demographics of participants effect in the relationships between knowledge sharing and reward systems.

**Keywords:** Knowledge Sharing, Reward Systems, Erenco.

### Bilgi Paylaşımı ve Ödüllendirme Sistemleri Arasındaki İlişki: Erenco Örneği

Bilgiye yatırım geleneksel kaynaklara yatırımdan farklı olduğundan bilginin kullanımı da bütüncül birçok aktiviteyi gerektirmektedir. Bu yatırım ve aktiviteler de içsel ve dışsal perspektiflerle olabilmektedir. İçsel bakış açısıyla bilgiye yatırım yapmada bilgi paylaşımının önemi açıktır. Bu noktada ödüllendirme sistemleri, aynı işte çalışanlarla ve organizasyonla bilgi paylaşmak adına önemli bir işlevi görmektedir. Bu çalışmada bilgi paylaşımını arttırmada ödüllendirme sistemlerinin bilgi paylaşımı üzerindeki rolü ve etkilerinin araştırılması amaçlanmıştır. Bu amaç kapsamında bir örnek olay analizi yapılmış ve ERDEMİR Mühendislik Yönetim ve Danışmanlık Hizmetleri AŞ. örnek olarak belirlenmiştir. Araştırmanın verileri anket tekniği aracılığıyla elde edilmiştir. Araştırmanın bulguları, ödüllendirme sistem ve anlayışının organizasyon içindeki bilgi paylaşımını arttırdığını ortaya koymuştur. Tanımlayıcı istatistikler, katılımcıların demografik özelliklerinin bilgi paylaşımı ve ödüllendirme sistemleri ilişkisinde etkili olduğunu göstermiştir.

**Anahtar Kelimeler:** Bilgi Paylaşımı, Ödüllendirme Sistemleri, Erenco

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## INTRODUCTION

Knowledge sharing has become the core of management practice since knowledge management became a tool of managers in 1990's. Furthermore, the notion of knowledge sharing attracts attentions in the knowledge management literature. Themes, such as attitudes to knowledge sharing, actual knowledge sharing behavior, media and means for knowledge sharing, barriers to knowledge sharing are amongst the topics discussed both in the published literature and at academic and practitioner-oriented conferences (Husted et al. 2005;3, Hung and Chuang, 2009).

Knowledge sharing has been examined in both theoretical and empirical studies. It is seen as an activity that creates the opportunities to maximize organization ability to meet the needs of an organization and generates solutions and efficiencies that provide a business with a competitive advantage (Lin, 2007). However, the main focus point of the knowledge sharing studies is tried to answer the question of "What drives knowledge sharing intention of employees?"

Knowledge sharing has been attributed to causal factors ranging from individual dispositions to wider phenomena such as organizational culture (Bartol and Srivastava, 2002). It is seen that there is a lack of studies that investigate the impacts of organizational reward systems on knowledge sharing. Although it has been asserted that there are positive relationships between knowledge sharing and reward systems, it is needed to investigate these relations statistically by using primary data. At this point, the aim of this study is to develop arguments how reward systems effect knowledge sharing activities and to contribute to the discussions in the literature.

In the scope of the study, a case study analysis has been designed. The study mainly consists three parts. Firstly, a literature review has been introduced to express the concept of knowledge sharing and its relation with rewards. Secondly, findings and analyses have been put into study from a corporation that has the business in the field of engineering and consulting. Finally conclusions and suggestions are put forth in the context of upgrading knowledge sharing through reward systems.

## I.LITERATURE REVIEW

Knowledge sharing is the core and the most difficult activity of knowledge management in practice. Kharabsheh (2008) stated that knowledge sharing hasn't been well defined and explored in the literature. However, many authors tried to define the concept of knowledge sharing. The concept has been defined by Xiong and Deng (2008:1090) as the process of disseminating knowledge from individuals or groups to others within an organization. In this definition knowledge sharing has seen as a process. Similarly, Lin (2007; 315) sees the concept as a social interaction

culture involving the exchange of employee knowledge, experiences, and skills through the whole department or organization. The author stated that knowledge sharing comprises a set of shared understandings related with providing, building and using knowledge within an organization. In the view of Bartol and Srivastava (2002) knowledge sharing is sharing organizational relevant information, ideas, suggestions, and expertise amongst employees.

Knowledge sharing practices in organizations have been studied related with different theories and implementations by different researchers and theorists. Adolsek (2009;2-3), discussed the sharing knowledge in the context of social exchange theory. The author emphasized that knowledge sharing process is related with the levels of social exchange conditions that effect sources, expectations, structures and etc. Social exchange takes place in an organizational context, which is actually a highly competitive environment. Although employees as individuals or as groups and teams or departments are competing over resources, they have to cooperate in order to reach common goals. In such situation knowledge sharing is a part of the exchange process and knowledge is a very important source of exchange. On the other hand, theoretical background of knowledge sharing is related with social capital theory. Social capital theory is often used to explain knowledge sharing behavior in the organization. Social capital refers to the resources rooted within the networks of human relationships. Social capital theory posits that social capital provides a necessary condition for the occurrence of knowledge exchange (Hung and Chuang, 2009; 2). Cohen and Prusak (2001) also suggest that social capital is the most important value of the organizations. Since social capital requires high level trust relationships among the members of an organization, knowledge sharing can be maximized through strong trustworthy relationships.

However, knowledge sharing in organization has been studied through many empirical studies. In one of these studies, Xiong and Deng (2008) investigated the role of culture in sharing knowledge. The authors have examined the impacts of culture on knowledge sharing as a critical factor in joint ventures in China. The focus their study is to determine how national culture facilitates knowledge dissemination and exchange between individuals or from individual knowledge into organizational knowledge.

Demirel and Seçkin (2008) have investigated the relationships between knowledge sharing and innovation. They have found out the significance of sharing knowledge for open and competitive innovation. This view is supported by Lin (2007) as knowledge sharing leads to superior firm innovation capability. These studies demonstrated that knowledge sharing is an activity that is affected from different factors whereas it affects the different areas such as competition and innovation.

Husted *et al.* (2005) also have analyzed the role of extrinsic and intrinsic motivation for knowledge sharing on organizational performance. They have found that extrinsic motivators are related to knowledge exploitation whereas intrinsic motivators are associated with knowledge exploration within organizations. They have also revealed that the simultaneous application of extrinsic and intrinsic motivators for knowledge sharing is negatively related to both knowledge exploitation and knowledge exploration within organizations. However, their findings can be interpreted that there is a strong relationship between motivation and knowledge sharing. The motivator either intrinsic or extrinsic can be different from one organization to another.

In another study Cabrera and Cabrera (2004) have examined the role of human resource management practices in fostering knowledge sharing. The authors have examined knowledge sharing on the basis of social exchange and social capital and social dilemma theory and found out that each of these theories and their basic premises are related with human resource management practices. The authors have revealed different practices that affect and foster knowledge sharing in organizations. The examples of those practices are as in the following;

- Trust
- Perceived rewards
- Self-efficacy
- Group identification
- Social ties
- Shared language

As seen from the studies, knowledge sharing is interconnected with many areas, subjects and practices. However, in a comprehensive study Hung and Chuang (2009) have tried to combine the various results of the studies on knowledge sharing to find out factors affecting it. The authors have aligned the factors that effective in knowledge sharing as in the following;

- Trust
- Reciprocity
- Pro-sharing norms
- Identification
- Image
- Organizational rewards
- Knowledge self-efficacy
- Codification effort and
- Loss of knowledge power.

Even these factors are aligned in detail context, some studies such as in Reige (2005) and Wangpipatwong (2009) have evaluated the factors affecting

knowledge sharing in general categorization. According to these studies, factors associated to knowledge sharing have been categorized into three groups as in the following;

- Individual factors
- Organizational factors and
- Technological factors

It could be understood from the theoretical background and practical implications knowledge sharing is a complex issue and there are many factors effecting it. However, numerous studies have argued that the presence of a reward system is critical for the success of knowledge sharing in an organization. The aim of this study is to examine the relationships and correlations between reward systems and knowledge sharing, in the next section it will be introduced the theoretical roots of reward system and knowledge sharing in organizations.

There are many discussions related with knowledge sharing and reward systems in organizations. "Reward" is a concept that is used to explain all benefits and pleasures which are given to acquisition value that is the result of person's efforts. Although it is a term that uses for psychological pleasures, a reward explains concrete benefits and services which an employee won in an organization. Rewards should be given in organizations in a systematic and deliberate logic to achieve desired results. Reward system is a basic factor of organizational structure and related with many organizational practices such as organizational change. Knowledge sharing is one of these practices.

There are a number of perspectives in the literature on the relationships between reward systems and knowledge sharing in organizations. In these perspectives reward systems have been seen as one part of the organizational structure that is considered influential on knowledge sharing. Andolšek (2009) stated that many researches have emphasized the role of rewards in sharing knowledge. For instance, Purwanti *et al.* (2007;500) stated that oriented reward system can determine the flow of knowledge and access knowledge in the organization. The use of an incentive system will motivate employees to create new knowledge, sharing existing knowledge and willingness to assist other employees in the division or a different department.

According to Lin (2007; 316) the existence of organizational rewards can be considered as an important factor in encouraging knowledge sharing activities. The author stated that an organization can successfully promote a knowledge sharing culture not only by directly incorporating knowledge in its business strategy, but also by changing employee attitudes and behaviors to promote willing and consistent knowledge sharing. In his study, it has been stated that several organizations as Buckman Laboratorie and IBM have introduced reward systems to encourage employees to share their knowledge.

On the other hand, the types of rewards are more effective in knowledge sharing is an important point in reward systems. Davenport and Prusak (2001) stated that organizational rewards can range from monetary incentives such as increased salary and bonuses to non-monetary rewards such as promotions and job security. There are several studies related to this point that have argued the presence of reward system in conjunction with concrete or discrete rewards. For instance, Bartol and Srivastava (2002) examined the role of monetary rewards in encouraging knowledge sharing in organizations. They examined four mechanisms of knowledge sharing and found a positive relationship between monetary rewards and knowledge sharing. In the study of Bartol and Srivastava, (2002) it is investigated the relationship between knowledge sharing and reward systems in the context of four reward mechanisms. These mechanisms are as like this;

- Rewards on knowledge contributions to databases
- Rewards on formal interactions between individuals and groups
- Rewards on informal interactions between individuals and groups
- Reward on the emerging role of communities of practice

Briefly, they have examined the effects of two broad categories of rewards, those which are contingent on knowledge sharing behavior and the others are contingent on factors such as performance. From the views and researches in the literature the types of rewards could be arranged as in the following;

- Advancements
- Admirations
- Privileges
- Incentives
- Financial (such as bonuses, pay increase)
- Social acceptations
- Psychological supports

Application of reward systems to upgrade knowledge sharing is mainly based on the approaches of top managers. They may arrange meetings to benefit from ideas and knowledge of employers periodically or extraordinary times. At the end of a certain time employees could be rewarded or given bonuses them as a result of sharing their knowledge (Bartol and Srivastava, 2002; Özler and *et al.* 2006). This would result in maximizing sharing their knowledge with organization and others. However, it should be stressed that some peoples like tangible rewards such as monetary whereas the others like intangible rewards such as admiration or recognition.

One of the other important points in the relationships between reward systems and knowledge sharing is whether the individual rewards or group rewards are more effective in upgrading knowledge sharing. Özler and *et al.* (2006; 146)

have emphasized that there are both in individual and collective rewards have either advantages or disadvantages. They have determined that if rewards are based on individual performance the performance of a group will decreased because of individuals wouldn't share their knowledge's with the members. On the other hand, if rewards are based on group performance there will be some tendencies in the performance of individuals because of their shuffles and unwillingness to work. From these points it is understood that it should be found out that whether individual or collective rewards are effective in knowledge sharing.

The main tendency in the relationships between the two construct is reward systems are effective in sharing knowledge. But, there are still few studies that examine the quality of contribution of reward systems to knowledge sharing in organizations. It can be said that there is a lack of researches at this field of study. This study aims to examine and evaluate the relationships between the two construct in the axle of upgrading the level of knowledge sharing through reward systems. The detail aims of this study are expressed in section research methodology.

## **A. RESEARCH METHODOLOGY**

This section consists basically the aims of the research, research method, information about the case unit, data collection and analysis technique. These section are being expressed as below.

### **1. The Aim of the Research**

The first aim of this research is determined as the examination of relationships between reward systems and knowledge sharing in organizations. In the scope of this aim it is try to find out that whether there are relations of reward systems on knowledge sharing or not by taking the perception of employers into consideration. The secondary aims of the research are as in the following;

- Finding out that whether knowledge sharing is being overrated and rewarded or not,
- Finding out that whether tangible reward or intangible rewards are more effective in sharing knowledge,
- Finding out that whether individual rewards or collective rewards are more effective in sharing knowledge,
- Finding out that which of the phrasal, psychological, social and financial rewards are more effective in upgrading knowledge sharing and
- Finally, finding out that whether there are differences in the perception of employers related with rewards and knowledge sharing according to demographics.

## 2. Method

The research method is based on case study analysis method. Case study analyze method is used to evaluate the construct and phenomena in detailed in a certain case unit. By taking basic principles that explained by Yıldırım and Şimşek (2005) into consideration in designing of the case study analysis, *Holistic Single Case Design* is preferred because of confirming a view and there are peculiar conditions in the research.

Single analyze unit has been determined in adequate with the holistic single case. The analyze unit is *ERDEMİR Engineering Management and Consulting Services Inc.(ERENCO)* that is a subsidiary company of Ereğli Iron and Steel Works Co. ERENCO established in August 2001 and started its activities in April 2002. Its catch phrase is “The Power Comes from Knowledge”.

ERENCO operates with the aim of utilizing its experience, expertise and knowledge obtained during continuous investment operations in iron and steel industry as well as other sectors at maximum level. The corporation provides Engineering Project Management and Construction Services on a wide spectrum from planning to implementation, which can be summarized as follows;

- Engineering services (Such as general engineering and feasibility studies, project management and supervision, equipment design engineering and civil engineering),
- Project management services (such as setting up technical and administrative specifications, projects cost analysis on controls, tendering and procurement activities).

Beside these services ERENCO provides its other services (such as selection of technology, prequalification of firms, and control of the supplier's activities in the warranty period) in fields of activity in coordination with the related parties.

## 3. Data Collection and Analyze Techniques

In the scope of research method, survey technique is used for collecting research data. The survey, which is designed, has the function of demonstrating the relations between knowledge sharing and reward systems. The survey design is based on the studies in the literature related with knowledge sharing and reward systems such as Bartol and Srivastava (2002), Özler and *et al.* (2006) and Purwanti and *et al.* (2007). The scale of the survey has been developed based on these studies to provide validity of the scale. It has been presented to the care of two academicians who are the specialist in quantitative research methods. After their reviewing and controlling the items in the scale, the survey form has been applied to the employees in the case unit.



The survey mainly consists of two parts. In the first part there are 28 statements on the relations between knowledge sharing and reward systems. At this part, 5 scale of Likert is used to determine the participation levels of the relations between the two concepts. Reliability test is applied to 50 survey form to find out the reliability degree of the survey statements. The results of the analysis has shown that the value of *Cronbach Alpha* is % 94,5. This means that these statements have the function of measuring the relations between knowledge sharing and reward systems.

The second part of the survey related with the demographics is to measure the differences. It is assumed that there will be different participation levels according to demographics. The survey has been conducted by face to face interactions and e-mails. Although survey has been conducted to all employers of ERENCO especially employers who work in Istanbul, only 50 employers have replied it. So the research analysis has been conducted to 50 surveys.

## **B. FINDINGS**

To analyze the research data, descriptive analysis techniques are preferred and in the process SPSS program is used. To find out the participation levels to the statements frequency, percentage standard deviation and mean analysis are used. However ANOVA and T Test are used for determining if there are some differences or not up to demographics.

The findings of the study will be presented in three parts. Demographic findings, findings related participation levels on the statements and findings on differences according to demographics. Demographic findings of the research participants are exhibited in Table 1.

**Table 1.** Demographic Findings of the Research Participants (n=50)

	Variable	F	%		Variable	F	%
Gender	Woman	6	12	Employment Title	Engineer	26	52
	Man	44	88		Technician	9	18
	<b>Total</b>	<b>50</b>	<b>100</b>		Secretary	3	6
Education	Secondary Education	4	8	Others	6	12	
	Associate Degree	8	16	<b>Total</b>	<b>50</b>	<b>100</b>	
	License	15	30	Employment Period	1-5	13	26
	Master's Degree	29	46		6-10	24	48
	<b>Total</b>	<b>50</b>	<b>100</b>		11-15	4	8
Age	25-34	22	44		16-20	6	12
	35-44	23	46		21-25	2	4
	45-54	4	8	26 and over	1	2	
	55 and over	1	2	<b>Total</b>	<b>50</b>	<b>100</b>	
	<b>Total</b>	<b>50</b>	<b>100</b>				

Employee's data about demographic questions has been analyzed by using frequency and percentage analysis. When looked at the table 1 it is understood that %88 of employees taking part in the research are male while the others percentage 12 are female.

On the other hand when participant's education level is evaluated it is found out that % 8 of them are Secondary Education, %16 of them are associate degree , %30 of them are license and %46 of them are master's degree. Findings related with another demographic factor demonstrate that the participants titles are changes in the percentages as %52 of them are engineer, %18 of them are Technician, %6 of them are Secretary and %65 of them are the others such as human resource.

When looked at the ages of the employees it is seen that %44 of them are in the blank age of 25-24, %46 of them are in the 35-44, %8 of them are in the 45-54 and the remain are in the 55 and over. Finally employment period findings show that %26 of the participants work in the blank year of 1-5, %48 of them are in the 6-10, %8 of them are in the 11-15, %12 of them are in the 16-20, %4 of them are in the 21-25 and the remain are in the 26 and over.

Another analysis point is related with the participation level to the statements on the relationships between reward systems and knowledge sharing. To find out these findings, arithmetic mean and standard deviation analysis are used. The findings are exhibited in the Table 2.

According to the data that exhibited in Table 2 the statements that employees care on the relationships between reward systems and knowledge sharing at highest level are as follows;

1. Just behaviors in giving rewards affect my sharing knowledge. (Arithmetic mean: 4,18),
2. Overrating of my works is effective in my sharing knowledge. (Arithmetic mean: 4,12),
3. Admiration of my success is an effective factor in my sharing knowledge. (Arithmetic mean: 4,02),
4. Knowledge sharing is being encouraged by means of rewards (Arithmetic mean: 3,92) and
5. Knowledge sharing is being considered important in the working place (Arithmetic mean: 3,82).

These five statements have been taken the highest scores in the perceptions of employees. By taking these scores into consideration, it is seen that knowledge sharing is being overrated and rewarded in ERENCO and employees have a high opinion of rewarding, especially in just behaviors and admiration of top management on their knowledge sharing.

On the other hand from the findings (1, 3 and 5 statements) above, it is seen that employees pay attention to intangible rewards such as admiration rather than tangibles such as financial rewards.

These two points is expressed the secondary aims of the research as;

- Finding out that whether knowledge sharing is being overrated and rewarded or not,
- Finding out that whether tangible reward or intangible rewards are more effective in sharing knowledge,

However, in Table 2, Participation Level of the Employees to the Statements on Reward System and Knowledge Sharing has been shown. These findings are related with the last secondary aim of the research.

**Table 2.** Participation Level of the Employees to the Statements on Reward System and Knowledge Sharing

Statements on Reward System and Knowledge Sharing	Strongly Agree (5)		Much Agree (4)		Medium Agree (3)		Less Agree (2)		Strongly Disagree (1)		Mean	Std. Dev.
	F	%	F	%	F	%	F	%	F	%		
Just behaviors in giving rewards affect my sharing knowledge.	24	48.0	15	30.0	9	18,0	0	0	2	4.0	4.18	1.00
Overrating of my works is effective in my sharing knowledge.	28	56.0	11	22.0	3	6.0	5	10.0	3	6.0	4.12	1.25
Admiration of my success is an effective factor in my sharing knowledge.	25	50.0	9	18.0	10	20.0	4	8.0	2	4.0	4.02	1.18
Knowledge sharing is being encouraging by means of rewards	22	44.0	12	24.0	10	22.0	2	4.0	4	8.0	3.92	1.24
Knowledge sharing is being considered important in the working place.	21	42.0	12	24.0	6	12.0	9	18.0	2	4.0	3.82	1.27
Social rewards (as consulting me in important works) are rather effective in my sharing knowledge.	22	44.0	13	26.0	6	12.0	2	4.0	7	14.0	3.82	1.30
Rewards motivate knowledge sharing.	18	36.0	12	24.0	13	26.0	5	10.0	2	4.0	3.78	1.16
Being an accepted as person in the working place is effective in my sharing knowledge	14	28.0	9	18.0	13	26.0	9	18.0	5	10.0	3.74	1.17
Tangible rewards are rather effective in my sharing knowledge.	17	34.0	15	30.0	8	16.0	6	12.0	4	8.0	3.70	1.91
Giving privileges to me as a result of my success affects my sharing knowledge.	17	34.0	14	28.0	8	16.0	7	14.0	4	8.0	3.66	1.28

**Table 2.** Participation Level of the Employees to the Statements on Reward System and Knowledge Sharing (*continues*)

Collective rewards are more effective in my sharing knowledge.	9	18.0	16	32.0	13	26.0	8	16.0	4	8.0	3.66	1.36
Fair behaviors in giving rewards affect my sharing knowledge.	19	38.0	11	22.0	9	18.0	6	12.0	5	10.0	3.66	1.36
Rewards that are being used for knowledge sharing seems attractive	17	37.0	11	22.0	12	24.0	6	12.0	4	8.0	3.62	1.29
Facilities are being provided for my sharing knowledge in the working place.	14	28.0	16	32.0	10	20.0	5	10.0	5	10.0	3.58	1.27
Rewarding my suggestions that i share with the organizational database affects my sharing knowledge.	14	28.0	16	32.0	9	18.0	7	14.0	4	8.0	3.58	1.26
Psychological rewards (as helping with my personal problems) are rather effective in my sharing	14	28.0	16	32.0	5	10.0	7	14.0	8	16.0	3.42	1.44
Rewarding my suggestions that i share with top managers affects my sharing knowledge.	12	24.0	15	30.0	8	16.0	10	20.0	5	10.0	3.38	1.32
Rewards upgrade my sharing knowledge.	9	18.0	16	32.0	14	28.0	7	14.0	4	8.0	3.38	1.17
Tangible rewards (as bonuses) are effective in my sharing knowledge when i achieve an unexpected	16	32.0	15	30.0	12	24.0	4	8.0	3	6.0	3.36	1.33
Fair behaviors in giving rewards affect my sharing knowledge.	19	38.0	11	22.0	9	18.0	6	12.0	5	10.0	3.66	1.36

**Table 2.** Participation Level of the Employees to the Statements on Reward System and Knowledge Sharing  
(*continues*)

Statements on Reward System and Knowledge Sharing	Strongly Agree (5)		Much Agree (4)		Medium Agree (3)		Less agree (2)		Strongly Disagree (1)		Mean	Str. Dev.
	F	%	F	%	F	%	F	%	F	%		
Top managers are supporting knowledge sharing in the working place.	9	18.0	13	26.0	12	24.0	8	16.0	8	16.0	3.14	1.34
Being taken knowledge sharing in advancements into consideration affects my sharing knowledge.	5	10.0	14	28.0	19	38.0	6	12.0	6	12.0	3.12	1.13
Doing advancements according to performance affects my sharing knowledge.	10	20.0	5	10.0	18	36.0	11	22.0	6	12.0	3.04	1.27
My knowledge sharing turns back me as an advantage.	6	12.0	10	20.0	19	38.0	7	14.0	8	16.0	2.98	1.22
Admiring individual contribution in the group upgrade my sharing knowledge.	5	10.0	13	26.0	9	18.0	17	46.0	6	12.0	2.88	1.22
Knowledge sharing is being rewarded in the working place.	3	6.0	10	20.0	11	22.0	10	20.0	16	32.0	2.48	1.29
Encouraging me with verbal statements is an effective factor in my sharing knowledge.	2	4.0	7	14.0	10	20.0	19	38.0	12	24.0	2.36	1.12
Individual rewards are more effective in my sharing knowledge.	2	4.0	3	6.0	6	12.0	20	40.0	19	38.0	1.98	1.05

On the other hand the statements that the employees give the least attention are ranged below:

1. My knowledge sharing turns back to me as an advantage (Arithmetic mean: 2,98),
2. Admiring individual contribution in the group upgrade my sharing knowledge (Arithmetic mean: 2,88),
3. Knowledge sharing is being rewarded in the working place. (Arithmetic mean: 2,48)
4. Encouraging me with verbal statements is an effective factor in my sharing knowledge. (Arithmetic mean: 2,36) and
5. Individual rewards are more effective in my sharing knowledge. (Arithmetic mean: 1,98)

It is seen from these scores above (especially from the 2 and 5 statements) individual rewards are more important from the perspectives of employees. This is related with the third secondary aim of the research. From all statements that have taken the highest and the least scores it is seen that employees have the opinions as in the following;

- Knowledge sharing is being encouraged but is not being rewarded as expected,
- Rewarding individually is more effective than collectively,
- Intangible rewards are being desired rather than tangible,
- There are differences between perception levels on relations between rewards and knowledge sharing.

The last analyze as stated above is related with the demographic traits and participation levels to the statements. To find out whether there are differences or not in participations according to demographics ANOVA and T-test are used. It is determined that there are differences in 14 statements. The findings are exhibited in the tables 3, 4, 5 6, 7.

**Table 3.** T-Test for Determining Differences According to Genders

Statement	Meaningful Level 0,05
Knowledge sharing is being encouraging by means of rewards	,037

Because sign value is less than 0, 05 it can be stated that there are different participations to this statement according to gender. Women and men have different conviction that knowledge sharing is being encouraged by means of rewards. Another different participation level related with the demographics is exhibited in table 4.

**Table 4.** ANOVA Analyze Related With Differences between Age and Participation Level

Statements	Meaningful Level 0,05	Median
Knowledge sharing is being rewarded in the working place.	,018	3
Top managers are supporting knowledge sharing in the working place.	,047	3

Because sign value is less than 0,05 it can be stated that there are different participations to this statement according to age. It is determined that there are different participations according to age especially in the age blank of 35-44. Another ANOVA analyze is related with the education and participation level to the statements.

**Table 5.** ANOVA Analyze Related with Differences between Education and Participation Level

Statements	Meaningful Level 0,05	Median
Knowledge sharing is being rewarded in the working place.	,010	3
Rewards motivate knowledge sharing.	,006	3
Tangible rewards (as bonuses) are effective in my sharing knowledge when i achieve an unexpected	,036	3
Fair behaviors in giving rewards affect my sharing knowledge.	,044	3

Because sign value is less than 0, 05 it can be stated that there are different participations to this statement according to employee's education levels. There are differences in participation level especially in the opinions of employees who have master's degree because of median value is 3. Another ANOVA analyze is applied to the data to find out whether there are differences in participation level and employees titles. In table 5 these are exhibited.



**Table 6.** ANOVA Test Related with Differences between Employees Titles and Participation Level

Statements	Meaningful level 0,05	Median
Knowledge sharing is being rewarded in the working place.	,044	3
Knowledge sharing is being encouraging by means of rewards	,005	3
Rewards that are being used for knowledge sharing seems attractive	,015	3
Rewards motivate knowledge sharing.	,002	3
Being taken knowledge sharing in advancements into consideration affects my sharing.	,044	3
Tangible rewards are rather effective in my sharing knowledge	,008	3
Rewarding my suggestions that i share with top managers affects my sharing knowledge	,020	3
Just behaviors in giving rewards affect my sharing knowledge.	,006	3

Because sign value is less than 0, 05 it can be stated that there are different participations to this statement according to employee's titles. In other words according to employee's titles there are differences in participation level to the statements exhibited above.

Finally, the last ANOVA analyze is based on the differences between employment period and participation level to the statements. The findings related these dimension exhibited in table 7.

**Table 7.** ANOVA Test Related with Differences between Employment Period and Participation

Statement	Meaningful level 0,05	Median
Knowledge sharing is being encouraging by means of rewards	,017	5

Because sign value is less than 0, 05, it can be stated that there are different participations to this statement according to employment period. The findings demonstrate that because median value is 5, there are differences in the participation levels especially in the blank of 26 year and over.

## CONCLUSION

In the knowledge-based era, how to motivate employees to share their knowledge is the most difficult activity of knowledge management. Therefore, factors affecting knowledge sharing are exclusively significant. Reward systems are one of the important factors that are effective in knowledge sharing. In this

study, the roles and importance of rewards has been investigated in sharing knowledge in an engineering and consulting corporation (ERENCO). The findings have demonstrated that reward systems are critical for knowledge sharing, but at the same time which one of them is more effective than others is a changeable situation. The case of ERENCO signified that intangible rewards are more significant than those of tangibles. The conclusions of this study can be summarized as follows:

- Employees give the most attention to just behaviors in giving rewards. To upgrade knowledge sharing through rewards there should be just behaviors.
- However findings of the study have showed that the type of reward, which is desired, is overrating of employees works.
- Another and second reward type that is being overrating for knowledge sharing is the admiration of employee's successes,
- Findings of the case analyze have demonstrated that knowledge sharing is being encouraged by means of rewards in moderate level.

A large number of employees have stated that knowledge sharing is considered as an important issue in the working place. These five points can be interpreted that knowledge sharing is being considered important and the most desired type of reward is overrating their works basically.

Employees have stated that knowledge sharing does not turn back to them as an advantage. Furthermore they state that knowledge sharing isn't rewarded in the working place sufficiently, which is actually possible, as the existence reward approach isn't sufficient for the case unit. They also pay less attention to admiring individual contribution in the group that will upgrade their sharing knowledge. And also they aren't in the thought of individual rewards are more effective in sharing knowledge. It can be said that collective reward systems are more effective in upgrading knowledge sharing.

Another conclusion is that employees have participated in lowest level to the statement of "encouraging me with verbal statements is an effective factor in my sharing knowledge". This can be interpreted that financial rewards are being considered as important manners in upgrading knowledge sharing.

One of the important points of this study is that there are different participation levels to the statements of the research according to demographic traits. As conclusion, in this study it has been found out that the roles and impacts of reward systems are being considered as important issues in upgrading knowledge sharing in organizations. This result supports the existent discussions in the literature.

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