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Doç. Dr. Semiyha DOLAŞIR TUNCEL

**Dear readers,**

The current issue of our journal consists of 6 articles. We would like to thank all the readers and the authors for providing us with invaluable studies. We would like to extend our sincere thanks to invaluable academicians, and members of board of referee, for their constant guidance and support. The journal has been publishing qualified articles. In each issue there has been an increase in the number of the submitted articles. We offer our deepest gratitude to invaluable academicians, members of board of referee and science and advisory board, who have contributed to the improvement of the journal since its publication of the first issue. We are greatly indebted to ASOS, Türk Eğitim Index, Araştırmaz, Ebsco, Proquest, Indeks Copernicus, Akademik Dizin, Aniji and İsam directors. From the 4th issue on, the cooperation with Doaj and Ulakbim index has been going on in the hope that the journal will also be indexed in these valuable indexes soon. In order to increase the quality of our journal, submitted articles are also evaluated by the language editors along with the field editors. For this reason, since the language of the Journal is English, the reports that are provided by the language editors are of prime importance for the publication. Having been approved by the field editors, the articles must also be approved by the language editors so that they can be published. Upon completing this process, the articles are accepted to be uploaded directly to the main page of the journal in the system without any delay. Prior to the publication process, the authors should check their articles so that they can inform of any change and correction to the editors before publication. Having completed the design and layout of the journal, demands will not be taken into consideration. We would like to wish success to Assoc. Prof. Dr. Fatma Nalan TÜRKMEN, one of our members of board of referee and science and advisory board, promoted to associate professor in the field of art history by the Interuniversity Council (UAK) recently. We also wish our invaluable colleagues, whose names could not be included here, further success in their academic studies. We also offer our deepest gratitude to Prof. Dr. Nezahat GÜÇÜLÜ, Prof. Dr. İmdat ELMAS, Prof. Dr. Osman İMAMOĞLU, Assoc. Prof. Dr. Semiyha DOLAŞIR TUNCEL, Assişt. Dr. Çetin YAMAN, Assişt. Prof. Dr. Yener ÖZEN, Assişt. Prof. Dr. Mehmet YORULMAZ, Assişt. Dr. Gülten HERGÜNER, Assişt. Prof. Dr. Ayhan AYTAÇ, Assişt. Prof. Dr. Şahika KARACA, Assişt. Prof. Dr. Gökşen ARAS, Dr. Assişt. Prof. Dr. Sinan AYAN, Dr. Aylin ZEKİOĞLU, Dr. Ali Serdar YÜCEL, Dr. Işık BAYRAKTAR, ve Dr. Nur DİLBAZ ALACAHAN for their invaluable support, guidance and constructive criticism.



## CONTENT ANALYSIS OF SOCIAL INVESTIGATION REPORTS SUBMITTED TO JUVENILE COURTS: A TURKISH SAMPLE

*Neylan ZİYALAR<sup>1</sup>, Lütfiye KAYA CİCERALİ, Oben SUTÜTEMİZ*

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**Abstract:** Social investigation reports prepared by the forensic social workers and submitted to the juvenile courts have a crucial role in the right functioning of the juvenile justice system, since they are used during the courts' disposal decisions and determination of interventions for the reintegration of juvenile delinquents into society. Within this frame, 100 randomly chosen social investigation reports submitted to Istanbul Juvenile Courts were content analyzed. Results indicated that reports were prepared based on a single interview with the child. Home visits were not made. Even main information was missing. Recommendations were made for alignment of report content with the international standards.

**Keywords:** *Juvenile Justice System, Social Investigation Reports, Beijing Rules, Content-analysis; Juvenile Delinquency*

### **Content Analysis of Social Investigation Reports Submitted to Juvenile Courts: A Turkish Sample**

#### **Introduction**

Since early 1920s, social investigation reports have been considered among the most critical documents in the juvenile justice area. They give information collected from multiple sources on the criminal deviancy and psychosocial situation in relation with criminal behaviour, thereby making individualized judgement possible. In Turkey the inquisitorial judicial system leading to judicial decision-making includes prosecutor report, police reports, as well as reports from psychiatrists and other experts, including the psychologists and social workers.

The United Nations established the principles of legal proceedings specific to young offenders in 1985. The document is called Beijing Rules (i.e. standard minimum rules for the administration of juvenile justice). These principles state the objectives of the juvenile justice system in its 6th item, and set forth the proper legal procedures and experts who deal with child offenders. According to Beijing Rules, while determining the reaction to the delinquent child, both the conditions under which the criminal act took place and the characteristics of the act should be jointly considered. The rehabilitation and social re-integration of the child is central to any decision regarding the child. The family background, personal constitution and characteristics, living conditions, social environment, school experi-

ences, work life, and all relevant circumstances in which the act of crime took place should be carefully investigated.

Beijing Rules emphasises the necessity of social investigation reports, except for petty crimes or minor offences. The reports are prepared after conviction, right before sentencing, and are essential for the functioning of judicial and correctional professionals (Norman and Wadman, 2000:47-51). In Turkey the child-specific justice system was built with the law on the Establishment, Duties, and Adjudicatory Procedures of Juvenile Courts (no. 2253, 1979), which came into effect in 1989. This law was abolished in the European Union adaptation process and adjustment of the new juvenile justice system was made in line with the Child Protection Law (CPL, no. 5395, 2005).

The CPL, describes children as *individuals under 18 years of age*. The child-specific courts in Turkey are branched into Juvenile Heavy Penal Courts and Juvenile Courts. Juvenile judicatures make all legal decisions about the child. The CPL decrees the appointment of forensic social workers to the juvenile courts. With respect to the CPL clause 3, psychologists, psychological counsellors or social services graduates can work as social workers in the juvenile courts (Nursal and Ataç, 2006& Tarimeri, 2007). The primary task of the social workers in the juvenile justice system is to make detailed inquiries about the child and to provide a guiding report to be submitted to the court (Barker, 1988). These reports are sociolegal documents, which depict the background and circumstances of the child, and the conditions under which the offence has been committed

with the aim to designate the needs of child for better re-integration into social life (Alarid and Montemayor,2010:119-133; Uluğtekin et al, 2004: 35- 45 & Mott, 1977: 421- 432). The question remains whether these reports are prepared at a high quality standard.

In some countries these reports have undergone changes in line with feedback from courts or accompanying the transformations of political landscape. For example Hannah-Moffat and Maurutto (2010:232- 286) report that in Canada, in the past two decades, policies controlling the structure and content of these reports have shifted to concentrate more on the precise identification of offender's criminogenic risk and needs. In the United Kingdom, social investigation reports were replaced with presentence reports, with The Criminal Justice Act in 1991, and the associated National Standards for the Supervision of Offenders in the Community in 1992. Cavadino (1997: 529- 548) reports significant differences between these two reports with the second one focusing more on criminal behaviour itself. On the other hand, Stinchcomb and Hippensteel (2001: 164-177) talk about the change of emphasis from the individual offender's potential for change, the nature, and role in crime, to policy-based sentencing practices that underline personal accountability and procedural uniformity. In Turkey, the system has not changed, yet.

According to the CPL, social inquiry is required depending on the age and legal standing of children. For children who completed 12 years but not completed 15 years at the time of crime, and for deaf and mute children who completed 15 years but not completed 18 years at the time of

crime, these reports are obligatory. The grounds for this requirement is to provide the court with expert evaluation regarding the cognitive capacity of the children to understand the legal meaning and results of the criminal acts they committed, as well as about their capability to steer their actions related with these crimes (Seliçi and Akço 2006 & Serozan, 2000).

Bottoms and Stelman (1988), stated that social inquisition reports should have three clusters of information. First of all, background information, comprising in particulars related with the social environment of the child, his/her relationships with parents, family, friends, his/her stand in work life, and hobbies should be included with reference to their possible effects on and connections with the criminal act. Secondly, the future stance of the offender in the society should be projected, and children's life plans for the short and long term should be provided. Lastly, recommendations to the court about various penal alternatives should be incorporated into the report. This section should be logically tied up with the information provided earlier and be in total agreement with the previous sections. Child-directed interventions should be explained comprehensively with respect to their objectives, methods and schedules. The social worker should seek for constructive alternatives favouring the child, touching on potential negative effects besides the positive ones, and finally giving expert view on the best alternative with ample justifications (Bottoms and Stelman, 1988).

In this study, the content analysis of a large sample of social investigation reports in Turkey

was made, pinning down their deviations from international standards.

## Methods

Social inquiry reports were subjected to content analysis. This method is a systematic and objective dissection of a text into semantic categories composed of words and phrases (Arseven, 1994). A hundred randomly selected social inquiry reports submitted to Istanbul Juvenile and Juvenile Heavy Penal Courts were analysed in terms of their content by two researchers separately.

Texts were analysed under several rubrics: (1) Headline, (2) Identification information, (3) Crime-related information, (4) Child-related information, (4) Information related with child's education, (5) Information related with work-life and free-time activities, (6) Child's circle of friends, (7) Child's family, (8) Researcher's information collection methods (9) Resources for data gathering, (10) Researcher's evaluation, and (11) Suggested intervention methods.

Findings were presented in graphic form. Crucial deficiencies were pinpointed for the improvement of future reports.

## Results

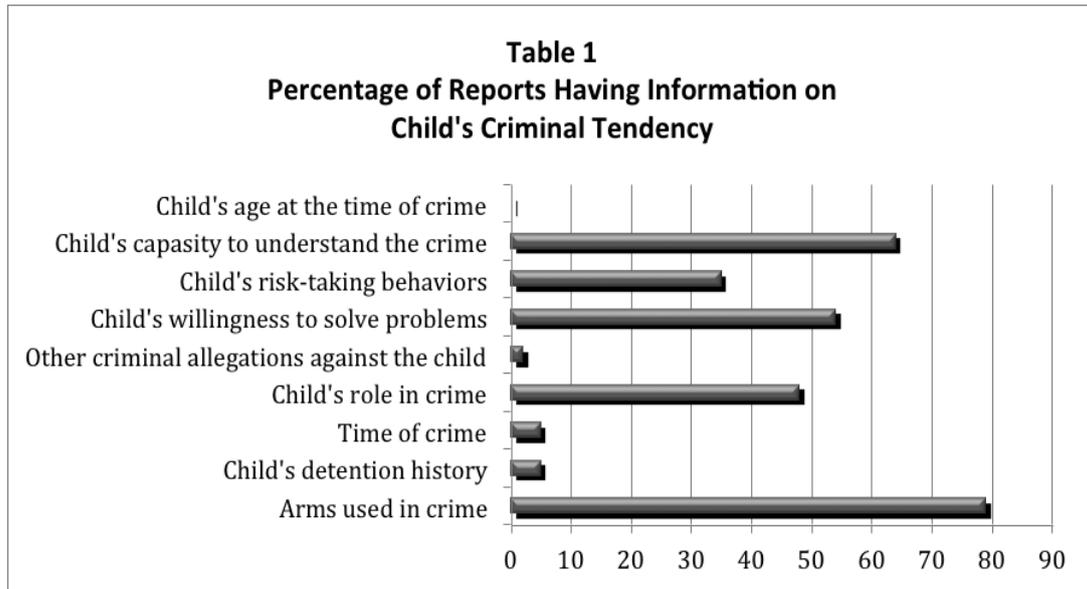
A hundred randomly selected social inquiry reports were analysed. Forty-two of them were prepared for 12-15 years age group while the remaining 58 reports were written on children within 16-18-age range.

In social inquiry reports, headlines were analysed according to seven distinct factors. Among them there was almost no missing information regarding the law under which social inquiry reports were

prepared, file number, commissioning authority, report date, and expertise of report writer. However, in none of the reports, *confidential* label was available in the headline. In 79% of the reports, information about the stage at which the child was sent to social worker was missing.

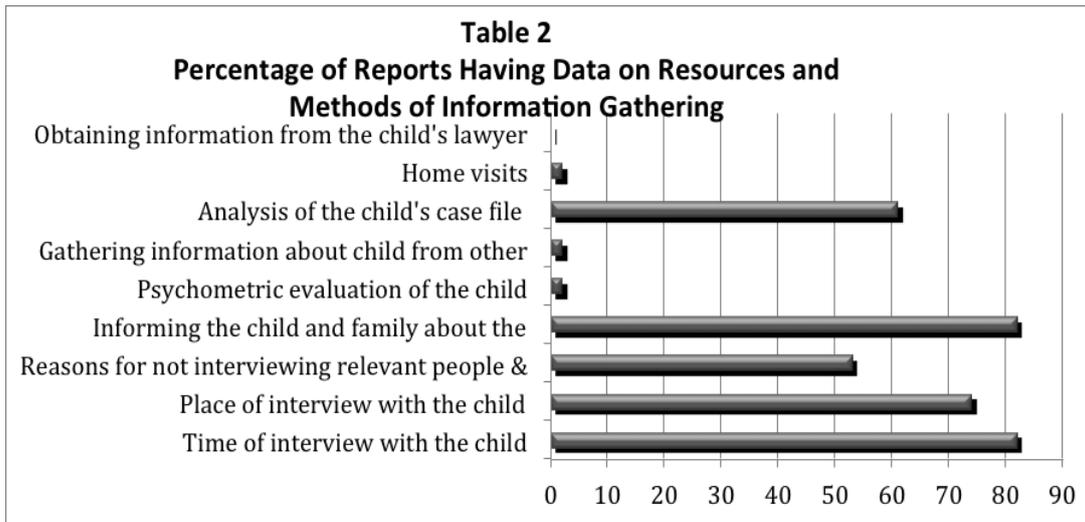
Child's identification information was analysed according to eight distinct factors. Name and surname, sex, full birthdate, birthplace, place of register, and address information were completed in all texts, while contact number of mother or father was a missing information, invariably.

Child's criminal tendency was analysed according to 15 distinct factors. Six of them were included in all of the reports. They were crime-type, crime-date, reactions of child to the questions, child's recognition of the negative effects of crime, child's motivation and attitude towards offending, and child's expression of compunction or remorse due to criminal act. Table 1 below shows the percentage of reports including information related to the remaining nine factors



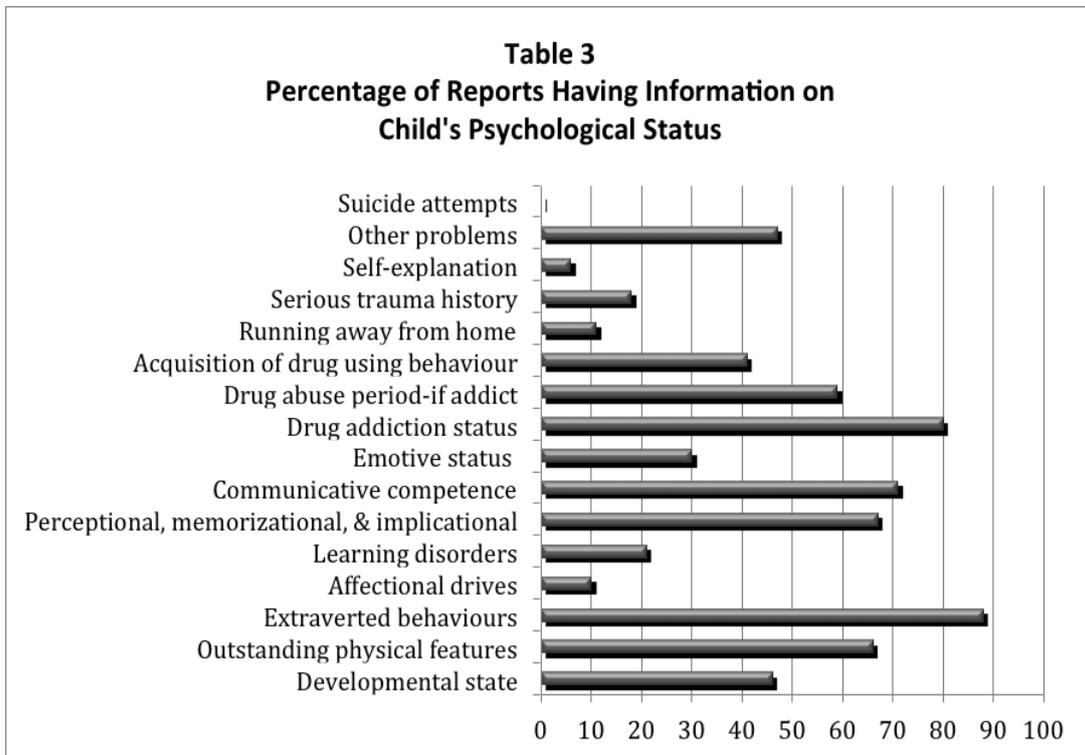
Resources and methods of information gathering were analysed in terms of 12 distinct factors. Three of them were present in all reports. These concerned whether interview with the child and

family were made, and the type of relationship built between the child and the social worker. Percentage of reports including information on other factors was shown in Table 2.



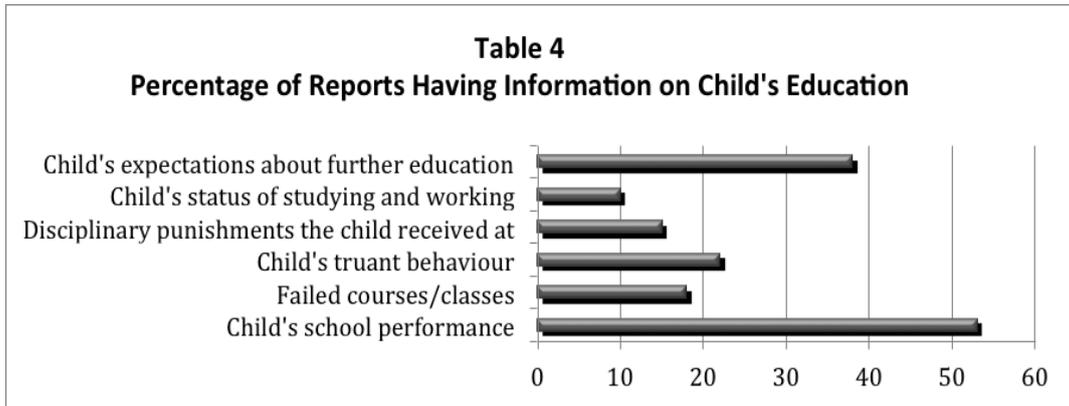
Child's psychological status was analysed in terms of 19 different factors. While all reports contained information on the general physical health of the child, the agreement of child's physical ap-

pearance, and personal care and cleanliness with his/her chronological age, the remaining factors partook only in some reports, the percentage of which is given in Table 3 below.

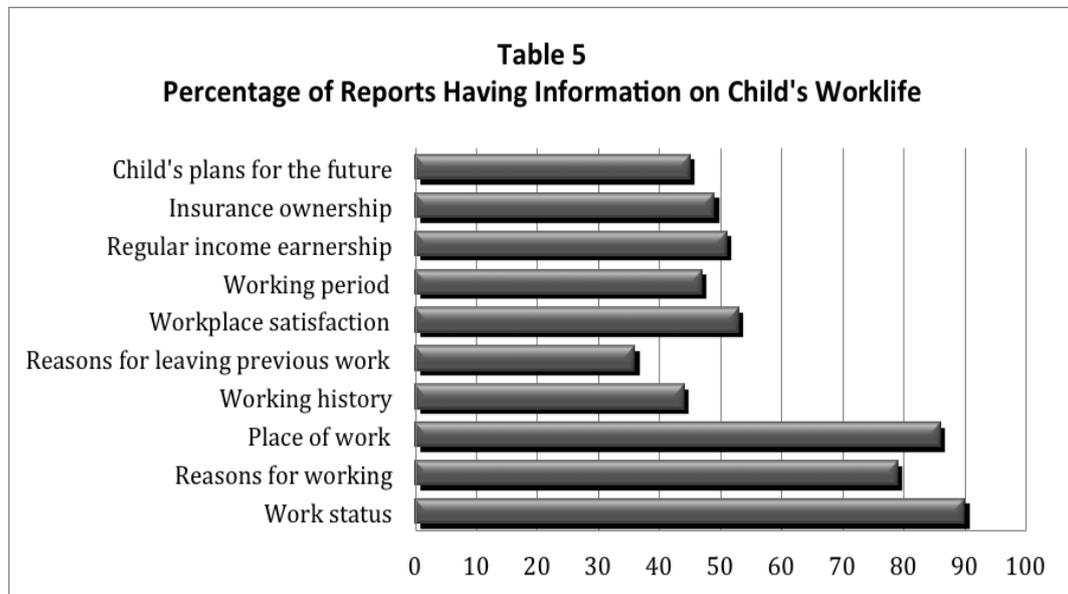


The child's education was analysed according to eight different factors. In general, two of these factors were always present in the reports. These related to the education level of the child, and

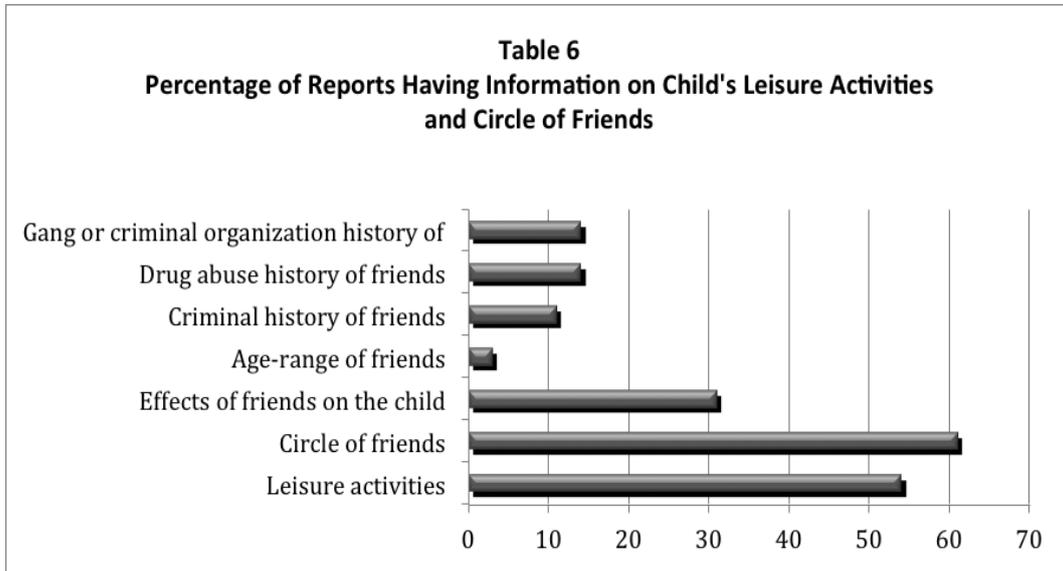
if the child hadn't attended the primary school, the reasons behind it. The percentage of reports having information on other six factors was given in Table 4.



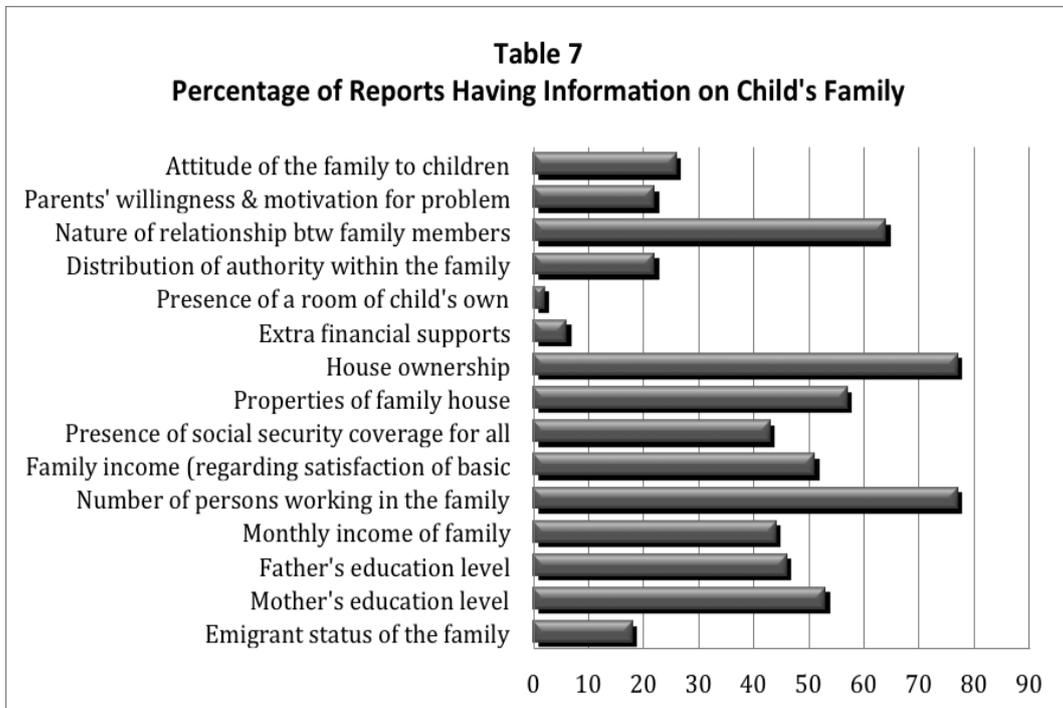
Child's worklife was analysed in terms of 10 separate factors as depicted in the Table 5.



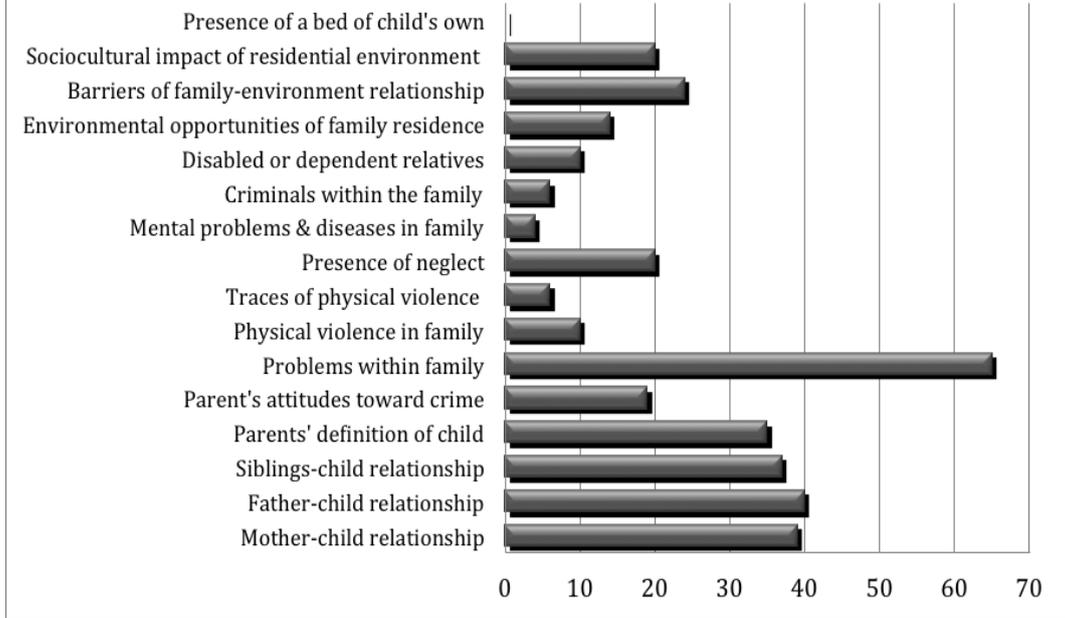
Child's free-time activities and circle of friends were analysed in terms of seven factors as shown in the Table 6.



The information related with the child's family was analysed in terms of 37 distinct factors. The place of child's residence, type of child's family, parental living status, mother's job, father's job, and the number of children in the family were available in the investigation reports. In Tables 7 and Table 8 below, the percentages of reports giving information on other factors were demonstrated:



**Table 8**  
**Percentage of Reports Having Other Information on Child's Family**

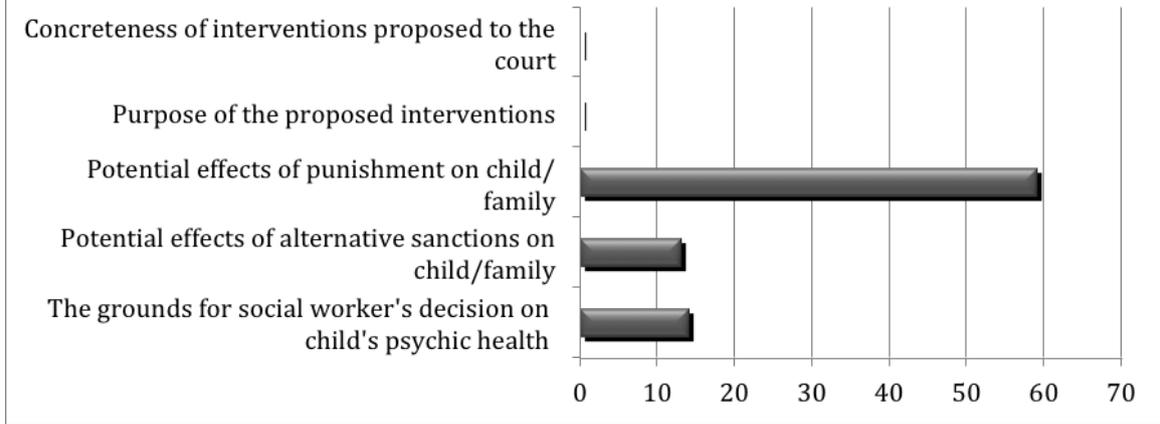


In the social inquiry reports, social worker's evaluation was analysed in terms of three separate factors. While the evaluation of the occurrence of crime was generally contained in all reports, it was detected that only 21% of them had information about evaluation of resources and risks to prevent recidivism. The third factor was the evaluation of child's criminal liability. It was found out that none of the 42 reports belonging to 12-15 age group children contained this information. Since in the Turkish Criminal Law, the concept of criminal liability for children within 16-18 age range is non-existent, the remaining 58 reports were excluded from the analysis.

In the social inquiry reports, intervention methods were analysed in terms of 12 diverse factors. In-

formation on intervention types recommended by the social worker, interventions in terms of child's developmental state, the institutions in which recommended interventions will take place, the resources of intervention, the recommendations for protective and supportive measures, proper arrangement method of child-family relationships, recommendations for protective and supportive measures, whether probation was also needed, the aim of probation if it was recommended, and the potential results of intervention were generally included in the reports. The percentages of reports containing information about the remaining six factors are depicted in Table 9 below:

**Table 9**  
**Percentage of Reports Having Information on Intervention Methods**



## Discussion

Findings indicate that social inquiry reports analysed during this study did not have a standard content. All reports in the sample had significant inspectional and exploratory deficits. The impact of missing information is to be underlined below and the ways to clear these deficiencies based on Beijing Rules will be elucidated.

In the reports the stage at which the child was referred to the social workers was not recounted, which makes it impossible to determine the time slot between the point the child entered the juvenile justice system and the point of referral. Similarly, the child's date of register was not available. The United Nations Convention on the Rights of the Child item 7 decrees that all children have the right to be registered with a name and citizenship right after their birth. The age of the child at the time of crime was not encountered in any of the social inquiry reports. This was critical information to be able to decide on the child's criminal liability, as well as to determine

the developmental level of the child with respect to the social and environmental conditions he/she experiences.

None of the reports contained contact information of the child's parents. However, this information should be there to facilitate reaching the parents if it is needed by an institution (Winter, 2006: 51-57). The time of the day during which the crime was committed was also absent from the reports. This information is important to give a clue about the protectiveness of the child's family towards the child, besides being a good manifestation of the place of child at the time of alleged crime. Even if the child really committed the alleged crime, if the crime time was midnight, it indicates that the child is out of protection, control and supervision of his/her family; thereby giving some hint about his/her family life, and pointing to the potential social dangers he/she might be in due to family non-protection.

In this research, it was also detected that the child's previous criminal record, including legal

decisions on security measures, punishment and probations were not taken into consideration while preparing these reports. In fact, this knowledge would be beneficial in designing interventions up to the needs of the child, thereby preventing recidivism. If previously the child had passed through the same interventions many times, it would be better to settle on new interventions.

Information on the child's willingness to solve problems, prior risk-taking behaviour, crime-related motivation, attitudes toward criminality, and comprehension of the meaning and results of a crime were not actually available, although they were sloppily and superficially touched upon in most reports. However, CPA and Beijing Rules require social workers to make an in-depth evaluation regarding these matters resting on the idea that the child taken into the juvenile justice system with a possibility of incrimination should be well analysed in terms of his/her destructive inclinations towards the self and others.

Information gathering method is a critical detail, which shows the reliability and validity of a report (NACRO, 2005). The ways of information collection employed by the social workers in preparing the reports were also analysed only to discover that the unique method employed was the single interview with the child. However the reports should include input from many resources such as family members, friends, peers, and teachers. This finding demonstrated that the reports were sloppily prepared for the satisfaction of some formal procedures only, and their value and objectivity were at stake.

Home visit, which enable the social workers to collect information about the family, environmental

conditions, and cultural life styles of children, was not conducted for the 12-15 age group, while it was conducted only for 2% of the reports prepared for the 16-18 age group. This was a barrier to get a complete picture of the child within his/her psychosocial context. With content analysis of the reports, it was certified that at the information gathering stage, environmental investigation was not made, although it was a well-known fact that exploration of the cultural, social and familial properties of a child's habitat is of critical importance for a social worker's evaluations regarding the emergence and prevention of crime (Uluğtekin et al., 2004:35-45).

Even though the investigation of child's home and surroundings was not conducted in the majority of social inquisitions, the court was not notified of its underlining causes. This would prevent the court from taking necessary steps for their solutions.

The information about the child acquired from other institutions, comprising in the psychological assessment report (if demanded), and the opinion written in general medical examination reports, will be determinative and facilitating in settling on an appropriate approach, and relevant protective and supportive measures for the child. Nonetheless, in hardly any of the reports within this research sample, the exploit of extra institutional information resources was encountered.

The core variables influencing the physical, psychic, and social development of a child should absolutely be known according to the CPL and Beijing Rules. However; in the reports, data on these variables could not be identified. It was reported that adolescent psychosocial develop-

ment is not as high as that of adults (Cauffman and Stenberg, 1995:1763-1789). Grisso et al. (2003:335-363) reported that a considerable proportion of 16-17 years old adolescents who were being judged in courts show substantial cognitive deficits compared with the adults. Therefore, a thorough evaluation of delinquency against the backdrop of psychosocial and cognitive development of the child requires collecting data on core variables influencing the child's physical, psychic and social development.

Information on the primary education status of the child; the reasons of non-attendance to school, school-success, failed classes/courses, truant behaviour, disciplinary punishments, simultaneous work-and-study, and expectations about further education were provided in only a small number of reports. Education has a tremendous effect in a child's acquisition of a future life perspective, as well as shaping his/her inclination towards criminal acts. Therefore, the delinquent children who failed to attend the compulsory primary education, or the attendees with lots of behavioural problems should have been detected and this information should have been put into the social inquiry reports. This application could prevent the children from further criminality through the implementation of proper educational and therapeutic interventions. Thus, even educating and rehabilitating only one child would make it possible to have a relatively crime-free society

Information on work-life and work-conditions should also be present in the reports if the child has already entered the workforce. Likewise, free-time activities, and information on close friends would help the social workers illuminate

the child's motivation to offend, and discover feasible drivers to the commitment of crime. In general, family-related factors were ignored in the reports, although the social environment is instrumental in shaping behaviour and personality (Yavuzer, 1993). Therefore, a detailed assessment of the psychosocial environment of the child will be effectual in the designation of the most appropriate rehabilitative and legal approaches.

In its current form, social investigation reports fail to provide the courts with sound information about children in the juvenile justice system in Turkey. Some investigation reports starts with comments on a particular child (name) and ends with another child (name). This shows that social workers copy-paste very critical information in an unethical manner. Therefore, it is concluded that they need to be better recruited and trained about the importance of these reports. Otherwise, these reports might produce more harm than use for the juvenile justice system.

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## MAHKEMELERE SUNULAN SOSYAL İNCELEME RAPORLARININ İÇERİK ANALİZİ YÖNTEMİ İLE İNCELENMESİ: TÜRKİYE ÖRNEĞİ

**Özet:** Çocuğun topluma yeniden entegrasyonu için atılabilecek adımları öngören sosyal inceleme raporlarının çocuk adalet sistemindeki rolü tartışılmazdır. Bu çalışma ile, Türkiye’de 2005 yılında geçerlik kazanan Çocuk Koruma Kanunu ile yaygın olarak uygulanmaya başlayan sosyal inceleme raporlarının işlev ve özelliklerini araştırmak, varsa eksikliklerini ve çözüm önerilerini ortaya koymak hedeflenmiştir. Bu doğrultuda, 2008 yılında İstanbul - Kartal Çocuk Ağır Ceza Mahkemesi, Kartal 1.Çocuk Mahkemesi ve Kartal 2. Çocuk Mahkemesi’ne sunulan 100 adet sosyal inceleme raporu rastgele seçilmiş ve Başlık, Kimlik Bilgileri, Suça Yönelik Bilgiler, Kullanılan Kaynaklar ve Bilgi Toplama Yöntemleri, Çocuk ile İlgili Bilgiler, Çocuğun Eğitim Durumuna İlişkin Bilgiler, Çocuğun Çalışma Yaşamına Yönelik Bilgiler, Çocuğun Boş Zaman Etkinliği ve Arkadaş Grubuna Yönelik Bilgiler, Aileye İlişkin Bilgiler, Değerlendirme ve Müdahale Bilgileri Bölümleri olmak üzere 11 başlık altında analiz edilmiştir. Raporlar içerik yönünden değerlendirildiğinde sosyal inceleme raporlarının taşıması gereken temel bilgi, değerlendirme ve önerilerin yeterli ölçüde yer almadığı fark edilmiştir. Çocuğun adalet sistemine girdiği tarih ile görüşmeye yönlendirildiği tarih arasındaki zamanlama kestirilememektedir. Bilgi toplama yöntemlerinin yetersiz olduğu ve çocuk hakkında kapsamlı bilgi verecek, çocuğun içinde yaşadığı aile ve çevre koşulları ile olanakları betimleyecek, kültürel yaşam biçimleri hakkında değerlendirmelere olanak sağlayacak ev ziyaretinin, 12-15 yaş grubu için hiç yapılmadığı, 16-18 yaş grubunda ise % 2 oranında yapıldığı görülmüştür. Raporların birçoğunda ilgili ve destekleyici diğer kaynaklardan bilgi toplanmadığı da göze çarpmıştır. Çocuğun fiziksel, psikolojik ve sosyal gelişimine ise gereken önem gösterilmemiştir. Raporların işlevini yerine getirebilmesi için, yasal gereklilikler de dikkate alınarak, tespit edilen eksikliklerden kurtarılması ve öneriler doğrultusunda standardize edilmesi gereklidir.

**Anahtar Kelimeler:** Çocuk Adalet Sistemi, Çocuk Suçluluğu, Sosyal İnceleme Raporları, İçerik Analizi

## ANALYSIS OF THE VARIABLES WHICH EFFECTS EMPLOYER'S PERFORMANCE WITH DECISION TREES AND COMPARISON OF DIFFERENT ALGORITHMS

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**Abstract:** This study aimed to determine the importance levels of several organizational and demographic variables influencing the perceived performances of the employees, using Classification Tree (CT) and Boosted decision Tree (BDT) methods, concerning data mining, as well as to present the usability of the tree-based algorithms in organizational studies. Decision Trees, can be evaluable as intelligent systems in data mining. When browsing the literature, it can be seen that different algorithms have been merged for decision trees. Decision Trees and tree-based algorithms are among the popular and effective methods of data mining. When looking into the literature, it may be stated that the algorithms intended for Decision Trees, generally employed in medical, engineering, and industrial researches, have recently been started to be used in social sciences, especially within the management and organization discipline. The sample of the study consisted of 10 private sector enterprises operating in Kırşehir city and having above 50 employees. According to the facts obtained from the study, Organizational Citizenship, Job Satisfaction, Life Satisfaction, and Work Environment were found to be the most important variables affecting the performances of the employees, and it was determined that the BDT algorithm presents more consistent and reliable conclusions. Thus, the study demonstrated that tree-based algorithms can be used in the correlations between the variables to form a basis for the decisions and applications of the managers.

**Key Words:** Data Mining, Decision Tree, Decision Making, Organizational Performance

### INTRODUCTION

The process of transition from a traditional management understanding to a modern management understanding leads those efficiency-focused management types to more realistic and scientific targets. For this reason, managers have to make efficient decisions on various activities of the organization in accordance with the specified goals, under ordinary or extraordinary circum-

stances and in line with many criteria (Tohidi & Jabbari, 2012, p. 826). Changes in technologies and the possibilities provided by such changes should not be omitted for the decisions made to help achieve the goals of the organization as well as make the best choice from among the decision alternatives. Within this scope, use of knowledge/technology-intensive decision support systems may be accepted as a practical solution to make correct,

quick, and efficient decisions (Leong, 1998, p. 210). However, organizations may have limited knowledge about certain variables or may have to consider questions and environmental effects in making decisions on the organization. Some social and organizational differences that occur in employees may affect the manner in which managers make decisions. Especially, in times of crises or under heavy organizational conditions, pressure from limited time and data processing capability of an organization makes it necessary to use more dynamic and result-oriented methods in decision-making processes (Malakooti, 2011, p. 627-628; Martinson & Davison, 2007, p. 284-285; Rowell, 2009, p. 168; Wu & Pagel, 2011, p. 578-579).

When considering today's competition conditions, many managerial problems become distinct, common, or separated with many variables in various organizations operating in different sectors. It may be said that classifying many variables based on their degrees of importance in changing, regulation, improvement, and organizational development covering the entire organization to solve such problems may facilitate solving various problems and increase managerial effectiveness (Ben-David & Sterling, 2006, p. 390). During such a process, determining decision problems or variables by means of auxiliary methods, and analyzing the importance levels of such variables through traditional and quantitative methods may minimize decision-making difficulties of the managers. In particular, to raise the performance, job satisfaction, efficiency, and loyalty of the employees to the desired levels, considering such similar variables as independent variables and classifying many different variables in a sim-

pler and plain manner based on their importance levels may assist the managers in making their managerial choices correctly (Aitkenhead, 2008, p. 18-20; Malakooti, 2010; Nielsen & Nielsen, 2011, p. 185-186)

Accordingly, the methods concerning data mining ensure that the managers classify the employees with various properties according to certain variable(s), and that the togetherness of the subject-matter variables in different employee groups is analyzed. Decision Trees and tree-based algorithms are among the popular and effective methods of data mining. When looking into the literature, it may be stated that the algorithms intended for Decision Trees, generally employed in medical, engineering, and industrial researches, have recently been started to be used in social sciences, especially within the management and organization discipline. Tree-based algorithms are capable of presenting the direction and level between organizational relations in a visual environment, when compared with the statistical methods. It may be said that using the Decision Trees technique within the scope of management and organization may result in making more concrete and simpler comments in organizational researches, and may support fast and correct decision-making process. Thus, it may be possible for the managers to develop rational criteria for the candidate employees from their recruitment and formulate organizational rational strategies, policies, and tactics suitable for different employee groups (Aitkenhead, 2008, p. 19; Üngüren & Doğan, 2010, p. 42).

This study aims to classify the performance levels of the employees based on different organizational

variables and arrange such variables based on their importance levels, using classification and Regression Tree (CART) and Boosted Decision Tree (BDT) algorithms concerning Decision Trees. This study attempts to set forth the decisions regarding the usability of tree-based methods in the field of management and organization, and their advantages in organizational studies.

## DATA MINING AND DECISION TREES

Data mining, which is used to solve many problems, is to select and use valuable and useful data accumulated in organizations (Özkan, 2008, p. 37). Data mining includes analyzing the data obtained from different sources using different dimensions, categorizing and summarizing such data, and determining different correlations. Such methods consist of many predictive and explanatory algorithms, such as smart system algorithms, pattern description and learning algorithms, etc. Artificial Neural Network, Genetic Algorithms, and Decision Trees are the primary methods that may be selected for data classification based on data structure and requirements (Çağiltay, 2010, p. 226-228)

Decision Trees, an effective type of data mining, is a method capable of analyzing complex and nonlinear data, and is commonly used by researchers recently (Osei-Bryson, 2007, p. 3331). With regard to enterprises, it could be noted that many studies of finance and risk management have mostly focused on uncertainty states, and those of marketing and production have been based on customer expectations (e.g., Breiman, Friedman, Olshen, & Stone, 1984; Carvalho & Freitas, 2004; Chang, Fan & Lin, 2011; Hullet,

2006; Lai, Fan, Huang & Chang, 2009; Sorensen, Miller & Oi, 2000).

One of the methods used to solve decision problems in different disciplines is Decision Trees, which are used as a problem-solving and decision-making technique, aiming to compare different alternatives based on figures and find the best method (Figure 1). Decision Trees have the ability to multi-reason, hard-to-solve, or not-fully-solved problems and determine all effective factors (İmrek, 2003, p. 323-329). When compared with other classification methods, Decision Trees have the following advantages: (a) Decision Trees produce understandable decision rules. (b) They classify without the need for extreme calculations. (c) They can be adapted to continuous and categorical variables. (d) They can be easily configured and interpreted than other similar methods (Nie et al., 2011, p. 15280). (e) There is no need to measure dependent and independent variables using the same type of criteria. The structure of a Decision Tree is similar to a flow diagram. Variables are represented by nodes. The last structures in the tree are leaves, the top structures are roots, and the branches are in between them. The basic factor determining the development of a Decision Tree is to find the variable of the root node (Lai et al., 2009, p. 3762). Decision Trees are created from top to bottom or from the general to the specific. If the data concerning the sample belong to several classes, testing is renewed at each node and division occurs. If the data belong to the same class, then the analysis terminates (Aitkenhead, 2008, p. 20; Leong, 1998, p. 213-218; Seol, Choi, Park & Park, 2007, p. 434; Yerge & Kara, 2009). Different algorithms can be cited as examples for this process. The most common Decision Tree

models are ID3 and C4.5, and the more advanced models are Classification and Regression Trees (CART) and CHAID (Chi-Square Automatic Interaction Detector) (Koyuncugil, 2007, p. 11; Seol et al., 2007, p. 434). In this study, CART has been used as a Decision Tree.

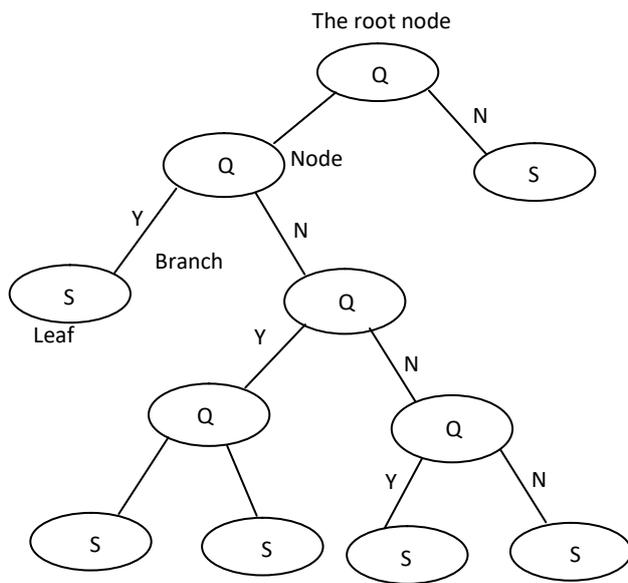


Figure 1. Representation of a Decision Tree (Aitkenhead, 2008.)

Figure 2 shows a decision-making model proposed within the scope of this study and formed by the method of Decision Trees as a basis for the strategies, plans, and applications of the managers (Can, 2005, p. 313; Chang, Fan & Lin, 2011, p. 6073; Koçel, 2007, p. 61). The manager defines the problem planned to be solved at the 1st, 2nd, and 3rd stages, and determines the target variable and other important variables over the target variable. The tree is modeled at the 4th stage by the analysis method used for a Decision Tree. The most effective variable (root node) is determined at the 5th stage. Other organizational or explanatory variables affecting the target variable in conjunction with the basic variable in the root node are arranged based on their importance levels at the 6th stage. The best decision is selected from among such formed alternatives and an application or action plan is determined at the 7th and 8th stages. If the manager fails to obtain the required results, he/she should resume the study from the 1st stage of the model.

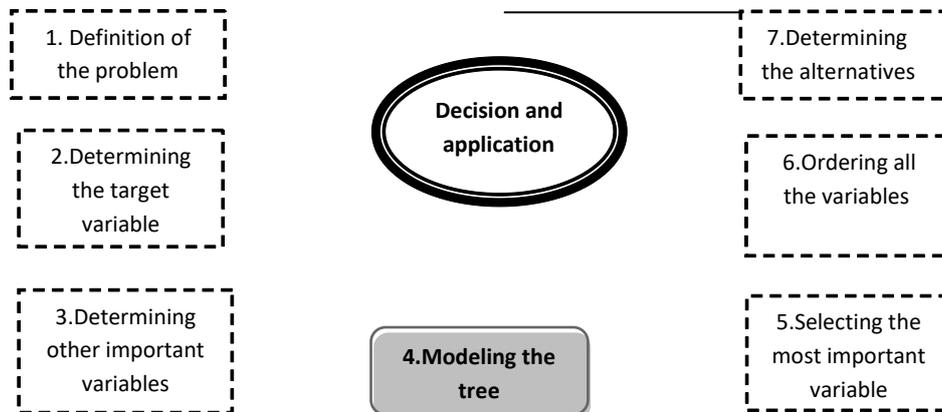


Figure 2. Decision-making process proposed for this study

## CLASSIFICATION AND REGRESSION TREE

The CART algorithm, as a nonparametric method, has been used many times in medical, biological, chemical, marketing, financial studies, risk analyses, quality control, and increasingly in studies in different fields (Li, 2006, p. 262). The CART algorithm, which was first developed by Breiman et al. (1984), is capable of producing effective and understandable conclusions, especially in complex problems, on a data set, and without the need for assumptions. CART has an advantage of presenting the variables affecting the dependent variables and providing the importance of such variables in the model more easily and visually, when compared with other Classification and Regression techniques.

The CART algorithm operates in a dual structure: CT and Regression Tree. Here, what is determinant is the state of the target variable or the dependent variable. A CT is used if the target variable is categorical, and a Regression Tree is used if the target variable is continuous (Mahjoobi & Etemad-Shahidi, 2008, p. 173; Razi & Athappilly, 2005, p. 65).

CART is based on the division of each tree into two branches and forming a homogeneous tree structure with two nodes consisting of a root node (Özkan, 2008, p. 89). The CART algorithm includes three basic stages. Maximum uniformity and the best division are available at the first stage where the tree is formed (Çamdeviren et al., 2007, p. 988). Here, two sub-logarithms named Gini and Twoing are used. Gini is more sensitive to changes and aims to eliminate the variable not contributing to the model by classifying the larg-

est data set (Kurt, Ture & Kurum, 2008, p. 368). The Twoing algorithm designed for multiclass problems divides the values in the qualities into two training sets and calculates the probabilities for each of the candidate divisions. This method operates relatively slowly. Pruning occurs at the second stage of CART. Classification errors are determined by cross-verification. (Moisen, 2008, p. 584; Özkan, 2008, p. 90; p. 101-103). In this study, the Gini algorithm employed for categorical variables has been used.

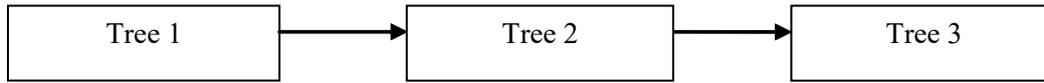
## TREE BOOST-BOOSTED DECISION TREES

Tree Boost is also known as “Stochastic Gradient Boosting” and “Multiple Additive Regression Trees” (MART). Mathematically, a TreeBoost model can be described as:

$$\text{PredictedTarget} = F0 + B1*T1(X) + B2*T2(X) + \dots + BM*TM(X)$$

Where  $F0$  is the starting value for the series (the median target value for a regression model),  $X$  is a vector of “pseudo-residual” values remaining at this point in the series,  $T1(X)$ ,  $T2(X)$  are trees fitted to the pseudo-residuals and  $B1$ ,  $B2$ , etc. are coefficients of the tree node predicted values that are computed by the TreeBoost algorithm (Sherrod, 2012:243).

In spite of the various advantages of Decision Trees, some algorithms known as “boosting” and combining many classifiers have been developed by Freund and Schapire to particularly increase the accuracy rate concerning the results of the study and add smart processes. Boosting is joining strong learning techniques to many numbers of simple tree models. This



**Figure 3 Tree Boosted Model (DTREG, 2012)**

algorithm may increase the accuracy rate and decrease the operation time (Lemercier, Lacoste, Loum & Walter, 2012, p. 76; Neuman, Holstein, Gall & Lepage, 2004, p. 98). The Tree Boosted (TB) method, one of the tree-based methods, produces thousands of trees and applies the boosting method to regression trees (Coşkun & Karaağaoğlu, 2011, p. 185). As shown in Figure 3, every tree eliminates the error margins of the preceding tree and leads the training data to the conclusion.

It is possible to observe in various studies that Boosting algorithms give stronger and more successful results, when compared with CART and other classification methods (Hancock et al., 2005; Shin, Kim, Cho & Kang, 2012).

### **PERCEIVED PERFORMANCE WITH A VARIABLE TARGET AND EXPLANATORY VARIABLES**

It has been observed that such methods including the opinions and comments of the persons concerning themselves, according to certain criteria, have been used more recently and named “perceived performance.” The fact that such a perception concept carries both positive and negative viewpoints together makes it possible for the employees to assess some events or variables in a different way (Carmeli, Gilat & Waldman, 2007, p. 975; Özdevicioğlu, 2003, p. 116).

Though the objectivity of the criteria developed by such studies is questionable under different

performance assessment methods, it may be accepted that they give basic clues with regard to the perfection and contribution to the job of the employees (Dewar & Kavussanu, 2011, p. 526).

In this study, performance-increasing efforts of the managers and several variables affecting performance perceptions of the employees have been arranged according to their importance levels, to contribute to their decisions. Such variables have been briefly described in the following paragraphs.

#### **(i) Job Satisfaction**

Job satisfaction is a concept implying the satisfaction and performance levels of the employees in a workplace within the frame of certain behavioral criteria, when compared with other employees (Babin & Boles, 1998, p. 82). There are many studies about the correlation between performance and job satisfaction. Most of those studies present a positive correlation between performance and job satisfaction (Arshadi, 2010; Blau, 1999; Judge, et al., 2001; Karatepe et al., 2006; Li, Nataraajan & Gong, 2011; Narciss, Koerndle & Drese, 2011; Tuten & Neidermeyer, 2004; Yazıcıoğlu, 2010).

#### **(ii) Life Satisfaction**

Life satisfaction is a concept that measures the general satisfaction of a person with his/her general life, and includes a person’s physical and material well-being, interpersonal relations,

social activities, and progress (Johansson & Bernspang, 2003; Zhao, Qu & Ghiselli, 2011, p. 23). It could be observed that there are only few studies on the correlation between life satisfaction and performance than those about the correlation between job satisfaction and performance. A study conducted by Harini and Rangaiah (2010) suggests that there is no significant correlation between life satisfaction and performance levels of employees.

### **(iii) Work Environment**

There are many studies in the literature about the effects of work environment on organizational variables and interpersonal relations. Such studies suggest that work environment affects job satisfaction, performance, absence, and similar organizational variables. It can be observed that ventilation, attention, esthetics, heat, acoustics, and lighting are mostly used with regard to work environment (Veitch vd., 2007, p. 177). This study has discussed Work Environment under two sub-variable groups: “attention and privacy area” and “esthetics and life quality,” considering the study by Veitch (2007).

### **(iv) Pay**

Awarding and motivation are among the effective tools for orienting behaviors and providing compliance between employees and organization. The fact that making payments to employees on a flexible and changeable basis, instead of fixed wages and benefits, to decrease costs and increase motivation, can be considered as a method adopted in recent years. (Chiang & Birtch, 2010, p. 632; Eriksson & Villeval, 2008, p. 412; Yeh, Cheng & Chen, 2009, p. 1407). Studies on the correlation

between payment and performance generally suggest that Payment System and Sufficiency, as variables, have effects on employee performance (Booth & Frank, 1999, p. 448; Greenberg, 2003, p. 42-43; Widener, 2006, p. 199-204).

### **(v) Coach Behavior**

There are only a few studies in the literature on the effect of coach behaviors on employee performance. A study conducted by Ellinger, Ellinger, and Keller (2003) suggests that positive coach behaviors have positive effects on employee performance.

### **(vi) Citizenship**

The fact that organizational citizenship is discussed widely as a variable in recent years shows parallelism with the fact that human resources applications need to comply with competition and changes in technology. It may be said that the basic importance of organizational citizenship behaviors is its effects on employee performance, forming a basis for performance assessment system (Zhang & Jia, 2008, p. 128-130). Many studies in the literature suggest a positive correlation between organizational citizenship and the perceived performance (Chiang & Hsieh, 2012; Coleman & Borman, 2000; Podsakoff & MacKenzie, 1997; Yoon & Suh, 2003).

### **(vii) Empowerment**

Empowerment can be considered as an effective motivation tool reflecting the level of initiative taken by the employees in an organization concerning their duties and giving behavioral results (Chow, Lo, Sha & Hong, 2006, p. 483). Empowerment not only affects the roles of employees in

an organization, but also the work environment. Trust in employees and their abilities, transfer of power, sufficient amount of flexibility, and initiative have been noted to have effects on employees' performances. Within this context, some studies suggest that there is a positive correlation between empowerment and employee performance (Chiang & Hsieh, 2012; Chow et al., 2006; Kirkman & Rosen, 1999; Linden, Wayne & Sparrowe, 2000; Niehoff, Moorman, Blakely & Fuller., 2001; Peccei & Rosenthal, 2001; Spreitzer et al., 1997).

#### (viii) Self-confidence

Self-confidence is a variable directing the perceptions and feelings of persons about their personalities and abilities, and having similar effects on different vocational groups (Hollenbeck & Hall, 2004, p. 257-258). There are studies suggesting that there is a positive correlation between self-confidence and performance of an employee (Bandura, 1997; Bandura & Locke, 2003; Martens, Vealey, & Burton, 1990; Vealey, 1986, 2001; Woodman & Hardy, 2003).

## RESEARCH METHODOLOGY

### PURPOSE AND SCOPE

This study aims to determine the demographic and organizational variables affecting employees' perceived performance levels and arrange them according to their importance, and form a basis for possible decisions of managers. The study suggests the use of CT and TB methods, which are included in tree-based algorithms, to determine the correlations between variables and utilize as a guiding analysis technique for

managers in solving various organizational/managerial problems.

### SAMPLE

The sample for the study consisted of 10 private sector companies having more than 50 employees each, operating in Kırşehir province. Four of them were joint stock companies and six of them were limited liability companies. According to the information obtained from the said companies, their total number of employees was 1480 in 2011. Within this context, 750 employees were given survey forms in different days during working hours. A total of 554 survey forms were returned, out of which 436 were usable, and the rest were eliminated owing to lost data.

### METHOD

The CART algorithm, which is one of the different algorithms of Decision Trees, and TB, which makes tree-based methods gain the learning ability, were employed as the analysis method in this study. The analysis was conducted using the package program DTREG 3.0, offering a fast and visual use, especially when classification and tree-based methods are preferred and developed by Sherrod.

It is possible to use all the ranges in the 5-point Likert scale to determine the effects on Performance, which was selected as the target variable in the study. However, such a case increases the number of branching in the tree more than required and causes unnecessary loss of time. Accordingly, as shown in Figure 4, the target variable value to be used in the analysis was divided into three main sections categorically. The values from 1 to 2 were determined to be "bad" performance, 2 to

4 were considered as “average” performance, and 4 to 5 were considered as “good” performance. Thus, the target variable must be categorical, for

the first time in the study, when using CT. If the target variable is continuous, instead of categorical, then Regression Tree is used.

1		2	3	4		5
	<b>Bad</b>		<b>Average</b>		<b>Good</b>	

**Figure 4 Scale used for perceived performance level in the analysis**

Within this context, GINI sub-logarithm was used, and Y represents the perceived performance and  $X_1, X_2, \dots, X_{N-1}, X_N$  represent the explanatory variables. DTREG allows the same data to be used in different tree-based methods. Second, categorical and continuous data were analyzed using the BDT method so as to allow comparison with CT. Importance levels of the variables and some performance criteria were used for comparison.

Accuracy, Precision, Recall, and F-measure values were considered as performance criteria. Accuracy is the difference between the number of incorrectly classified samples and total number of samples. Precision is the difference between the number of correctly classified positive samples and total positive samples. F-measure is the harmonic mean of accuracy and precision.

As BDT includes many trees, only a tree model of CT is given in Appendix B and Appendix C. Explanatory variables of the study were examined under two sections: demographic variables and behavioral variables. Behavioral variables included Job Satisfaction, Life Satisfaction, Organizational Citizenship, Coach Behavior, Self-confidence, Empowerment, Work Environment, and Pay. Demographic variables comprised Gender, Edu-

cation, Marital Status, Age, Position, Working Manner, Service Period, and Union Membership. As the CART logarithm allows the same target variable to direct different inputs, the effects of organizational and demographic variables on the target variable were examined in two inputs. It may be said that such a separation would allow managers to make more comprehensive and balanced decisions.

#### VARIABLE IMPORTANCE TABLE

In the study, tables which show the importance of organizational and demographic variables are calculated for two algorithms one by one. That sequence, which shows importance level, can be respected as an advantage in the concept of DTREG.

Importance scores are computed by using information about how variables were used as primary splitters and also as surrogate splitters. Obviously, a variable that is selected as a primary splitter early in the tree is important. What is less obvious is that surrogate splitters that closely mimic the primary splitter are also important because they may be nearly as good as the primary splitter in producing the tree. If a primary splitter is slightly better than a surrogate, then the primary splitter

may “mask” the significance of the other variable. By considering surrogate splits, the importance measure calculated by DTREG gives a more accurate measure of the actual and potential value of a predictor. The importance score for the most important predictor is scaled to a value of 100.00. Other predictors will have lower scores. Only predictors with scores greater than zero are shown in the table. DTREG, takes 100.00 value for the most important predictor. Other predictors’ scores might be lower from that ratio. Only, predictors which has ratios bigger than 0 has been showed in the tables (Sherrod, 2012: 206).

## SURVEY FORM AND CRITERIA

A survey was used in the study to obtain the data. Survey forms consisted of questions aiming to determine the demographic and organizational variables. Demographic variables were Gender, Education, Marital Status, Age, Position, Working Manner, Service Period, and Union Membership. When determining the organizational variables, the sources presented in Table 1 were utilized. In this study, the Likert scale consisting of 1. “I do not share at all”; 2. “I share a little”; 3. “I do not have opinion”; 4.”I share lot”; and 5.”I share completely” was employed preferred.

**Table 1 Studies from which the statements included in this survey were used.**

Variables	Researches
Perceived performance	Babin & Boles 1996; Karatepe et al.,2006
Organizational citizenship	Podsakoff et al.,1990
Coach behavior	Ellinger, Ellinger & Keller, 2003
Work environment	Veitch et al.,2007
Empowerment	Hartline & Ferrell 1996
Job satisfaction	Chiang & Birtch, 2010
Life satisfaction	Diener et al.,1985
Self-confidence	Beattie et al., 2011; Gabriel, Renaud & Tippin, 2007
Pay and promotion	Chiang & Birtch, 2010

## VALIDITY AND RELIABILITY

Factor analysis and Cronbach’s alpha ( $\alpha$ ) coefficients were determined to establish the validity and reliability of the survey form. A factor analysis was conducted and those factor statements with a factor load below 0.40 were removed from the analysis. Accordingly, the factor analysis results of the variables and statements in the survey and

Cronbach’s alpha values are given in Appendix A. Based on both factor loads and Cronbach’s alpha values, it can be considered that the survey form is acceptable.

## DEMOGRAPHIC PROPERTIES

Frequency distributions and percentage values were utilized to determine the demographic properties in this study. From Table 2, it can be observed

that 83% of the employees who participated in the survey are men with a concentrated age range of 28–37 years, 67.2% are married, 65.4% are high-school graduates, 67.8% have a service

period of less than 5 years, 45.3% are workers or office attendants, 55.5% are not members of any union, and 56.2% are full-time employees.

**Table 2 Demographic Properties Regarding Both the Samples.**

Factor	Frequency	%	Factor	Frequency	%
<b>Gender</b>			<b>Union membership</b>		
Male	361	83	Yes	195	44.5
Female	75	17	No	235	55.5
<b>Age (years)</b>			<b>Service period</b>		
18–27	158	36.2	Less than 1 year	97	22.3
28–37	196	45	Between 1 and 2 years	77	17.7
38–47	60	13.8	Between 2 and 5 years	121	27.8
48–57	21	4.5	Between 5 and 10 years	98	22.5
58–67	1	0.2	10 years and above	43	9.7
<b>Position</b>			<b>Education</b>		
Upper-level manager	16	3.6	Primary school	32	7.3
Middle manager	34	7.8	Middle school	72	16.5
Lower-level manager	33	7.6	High school	285	65.4
Workers or office attendants	202	45.3	Associate degree	36	8.3
Technical staff	123	28.3	Bachelor degree	8	1.8
Foreman	28	6.4	Postgraduate degree	3	1
<b>Marital status</b>			<b>Working manner</b>		
Married	293	67.2	Full-time	245	56.2
Single	128	29.4	Part-time	7	2
Widow	15	3.3	Shift	179	41
			Weekends	5	1
<b>Total</b>	<b>436</b>	<b>100</b>	<b>Total</b>	<b>436</b>	<b>100</b>

## RESULTS

### FINDINGS CONCERNING ORGANIZATIONAL VARIABLES

With regard to the importance levels of the organizational variables used in this study (Table 3), it

can be observed that Organizational Citizenship, Job Satisfaction, and Life Satisfaction are the most important variables in both the methods. In particular, Organizational Citizenship forms the root node for both the methods. Furthermore, in both the methods, according to the importance

level, Attention Secrecy and Pay variables are behind. However, some differences in classifying based on other variables could be noted. CT method found Empowerment to be unimportant, while BDT method observed it to be the fourth

important variable. It can be seen that Esthetics-life quality and Attention Secrecy are less important variables in both the methods. In addition, it can be noted that the weight values of the variables in the BDT method are relatively higher.

**Table 3 Overall Importance of Organizational Variables**

	<b>BDT</b>	<b>Importance</b>	<b>CT</b>	<b>Importance</b>
1	Citizenship	100.000	Citizenship	100.000
2	Job satisfaction	45.131	Job satisfaction	30.874
3	Life satisfaction	44.067	Life satisfaction	26.221
4	Empowerment	41.707	Esthetics-life	20.157
5	Esthetics-life	40.912	Coach behavior	20.121
6	Coach behavior	35.529	Self-confidence	18.802
7	Pay	34.513	Pay	6.792
8	Self-confidence	28.567	Attention secrecy	5.378
9	Attention secrecy	28.563	Empowerment	Unimportant

As shown in Table 4, with regard to the comparisons between the performance criteria of both the methods, it can be observed that Accuracy, Precision, Recall, and F-measure values of the findings of BDT method are higher in the three

performance classifications. Thus, it is possible to suggest that BDT analysis method is able to explain the target variable better in forms of all the criteria.

**Table 4 Comparison between the performances of BDT and CT methods in organizational variables group**

	<b>Accuracy</b>		<b>Precision</b>		<b>Recall</b>		<b>F-measure</b>	
	<i>BDT</i>	<i>CT</i>	<i>BDT</i>	<i>CT</i>	<i>BDT</i>	<i>CT</i>	<i>BDT</i>	<i>CT</i>
<b>Good level</b>	0.918	0.809	0.922	0.86	0.922	0.762	0.922	0.804
<b>Bad level</b>	0.985	0.949	1.00	0.68	0.713	0.502	0.829	0.577
<b>Mid-Level</b>	0.916	0.809	0.882	0.733	0.924	0.857	0.903	0.791

## FINDINGS OBTAINED FROM DEMOGRAPHICAL VARIABLES

The effect weights of the two algorithms were also found to be different in the findings concerning demographical variables. With regard to the target variable's explanation level of demographical variables (Table 5), it can be seen that the Position is the most important variable for both the methods, and

Gender variable is unimportant in both the methods. Education is the second important variable in the BDT method, while Marital Status is the second important variable in CT method. Arrangement of other variables based on their importance levels appears to be without change. Similarly, it can be noted that Union Membership is the second unimportant variable following Gender in both the methods.

**Table 5 Overall Importance of Demographic Variables**

	BDT	Importance	CT	Importance
1	Position	100.000	Position	100.000
2	Education	65.811	Marital status	96.517
3	Service period	58.142	Service period	71.980
4	Working manner	48.506	Working manner	38.984
5	Age	40.614	Age	34.563
6	Marital status	32.770	Education	33.275
7	Union membership	25.312	Union membership	11.783
8	Gender	Unimportant	Gender	Unimportant

Table 6 presents a comparison of the target variable explanation regarding the power and success of demographical variables. Accordingly, with regard to the success criteria of Accuracy,

Precision, Recall, and F-measure, it can be seen that the BDT algorithm is better in all the three classifications.

**Table 6 Comparison of performances of BDT and CT methods with respect to demographic variables.**

	Accuracy		Precision		Recall		F-measure	
	TB	CT	TB	CT	TB	CT	TB	CT
<b>Good level</b>	0.749	0.610	0.698	0.582	0.894	0.843	0.784	0.688
<b>Bad level</b>	0.934	0.931	1.00	0.680	4.17	0.706	0.080	0.508
<b>Mid-Level</b>	0.750	0.623	0.749	0.5841	0.610	0.360	0.671	0.445

## DISCUSSION

Actually, the algorithms which used in the study rose on three basic principles: (1) Decision tree

technique; can be used as an alternative way for specifying the relation between organizational variables and the importance level of variables.

(2) Therefore, single-tree and tree-boost algorithms would be chosen. (3) However, (in organizational studies, decision tree technique) in order to rise the safety level single tree technique and which enhances its validity, it should be used with tree-boost algorithms. Nonetheless, while single-tree can provide a visual tree; tree-boost, which is a high ratio safety level and consistent results, cannot provide a visual tree due to its over hundred operations and branches. Ultimately, tree boost algorithm, can be used in order to improve predictable accuracy like single-tree.

Citizenship, Job Satisfaction, Life Satisfaction, and Pay variables in the organizational variables group have the same order of importance as that of Position, Service Period, Work Manner, and Age in the demographical variables group. The most important organizational variables affecting the performances of the employees are Citizenship, Job Satisfaction, and Life Satisfaction. The fact that Pay variable is behind is an important finding. However, such a finding might be owing to the participants not being objective when responding to the survey. It could be noted that the occupied "Position" is the most important explanatory variable in the demographic variables group, while Gender and Union Membership are the most unimportant variables. Accordingly, it is possible to suggest that managers are required to make decisions and applications, which may increase Organizational Citizenship, Job Satisfaction, and Life Satisfaction to improve the performances of the employees, and while doing so, they should consider different positions, education levels, and service periods of the employees. In fact, it must be stated that less important variables observed in this study are capable of affecting those three

important variables, because, variables such as Pay, Coach Behavior, and Empowerment are the factors capable of affecting Job Satisfaction and Life Satisfaction variables of the employees.

## CONCLUSIONS

In this study, using CT and BDT methods, some organizational and demographic variables affecting the performance levels (perceived performance) of the employees were arranged based on their importance levels, and some algorithms used were compared based on several success criteria. It is possible to reach three important conclusions based on the findings of this study: (a) Managers can use CT and BDT algorithms in fields that include many data sets, such as production, finance, and marketing, as well as in managerial and organizational fields, and especially in analyzing data from surveys. Managers can form organizational and problem-related decision alternatives using tree-based methods, and can determine many action plans. Especially, it is possible to quickly present the effect or importance of many explanatory variables (independent variables) based on a target (dependent) variable. This method may bring to light many classifications and possible correlations that are difficult to determine. Besides, it can be asserted that tree-based algorithms provide an important support for statistical methods used frequently in organizational studies. (b) The fact that using multiple algorithms in organizational studies when employing tree-based methods may ensure that more reliable results are obtained.

Furthermore, the two algorithms used in this study are able to put certain variables in different orders, thus demonstrating the importance of

this approach. When considering that there are many algorithms in data mining, it will be more realistic for researchers to act based on research methods, participants' state, and data types when selecting the most optimum algorithms. (c) It is understood that there are some differences between the findings and accuracy levels presented by CT and BDT algorithms. Within this context, with regard to the order of importance levels of explanatory variables and success criteria used in the analyses, it can be suggested that BDT algorithm presents more reliable and consistent results in correlations. This finding is consistent with that reported by similar studies in the literature. However, it is very important for future studies

to employ different organizational variables and similar tree-based algorithms.

### LIMITATIONS

Use of tree-based methods in the field of management and organization is rather new. The fact that there are a very few similar studies in the literature can be accepted as a limitation. Another limitation is that the participants might have acted subjectively when responding to the survey.

### APPENDICES

#### Appendix A Factor Loadings Concerning and Cronbach's Alpha ( $\alpha$ ) Coefficients

<b><i>Perceived performance (<math>\alpha=0.934</math>) Loadings</i></b>
Managing your working time optimally 0.808
Your work discipline 0.864
Your decision-making speed on your work 0.895
Your problem-solving skill concerning your work 0.880
Your determining and achieving a target 0.774
Your continuous contribution to your enterprise for development 0.864
Your using resources cost-effectively 0.818
Your success in team work 0.814
Your success in determining your customers' expectations 0.659
<b><i>Job satisfaction (<math>\alpha=0.857</math>)</i></b>
I find my job pleasant 0.815
My job satisfies me 0.823
I like my job 0.829
<b><i>Life satisfaction (<math>\alpha=0.797</math>)</i></b>

I have an ideal life in many respects 0.643

My life conditions are pretty satisfactory 0.847

My life conditions satisfy me 0.869

I have obtained what I want from life recently 0.772

If I could make my life from the beginning, I would almost change nothing 0.665

### **Work environment**

#### **Attention and privacy zone ( $\alpha=0.817$ )**

Amount of noise arising from other peoples' dialogues when working at the desk. 0.681

Frequency of distraction by other people 0.774

Distance between me and people I work with 0.800

Privacy of talking in my work place 0.756

Capacity of my personal working area to accommodate tools-materials and guests etc. 0.653

#### **Esthetics and Life Quality ( $\alpha=0.882$ )**

Freedom to change physical conditions in my working area 0.615

Esthetic appearance of the work place 0.700

Air follow and its quality in my work area 0.847

Heat in my work area 0.794

Lighting quality in my work area 0.748

Access to outside view 0.770

#### **Pay ( $\alpha=0.892$ )**

My salary 0.769

Incentives and rewards 0.833

Bonus rate 0.854

Salary increase 0.851

Promotion possibilities 0.823

#### **Coach behavior ( $\alpha=0.851$ )**

My manager asks my expectations and communicates with me about the importance of such expectations for long-term targets of the company. 0.777

My manager helps me see the big picture concerning my job, and encourages me to develop my perspective. 0.872

My manager gives me feedback. 0.868

My manager provides me with resources to do my work in the best way. 0.799

**Organizational citizenship ( $\alpha=0.992$ )**

I try to do my job in the best way 0.815

I obey the rules and the applications of the company even though I don't think that nobody supervises me. 0.844

I keep the notices, information given by the company. 0.762

I am careful about how my behaviors affect other peoples' works. 0.829

I avoid having problems with my colleagues. 0.866

I always try to help my circle. 0.852

**Empowerment ( $\alpha=0.774$ )**

I don't have to deal with the problems of the management when I deal with the customer problems 0.729

I can use my own judgment when I deal with the customer problems. 0.829

I am encouraged here about using my own initiative 0.851

Here, creative thinking is encouraged about solving problems. 0.723

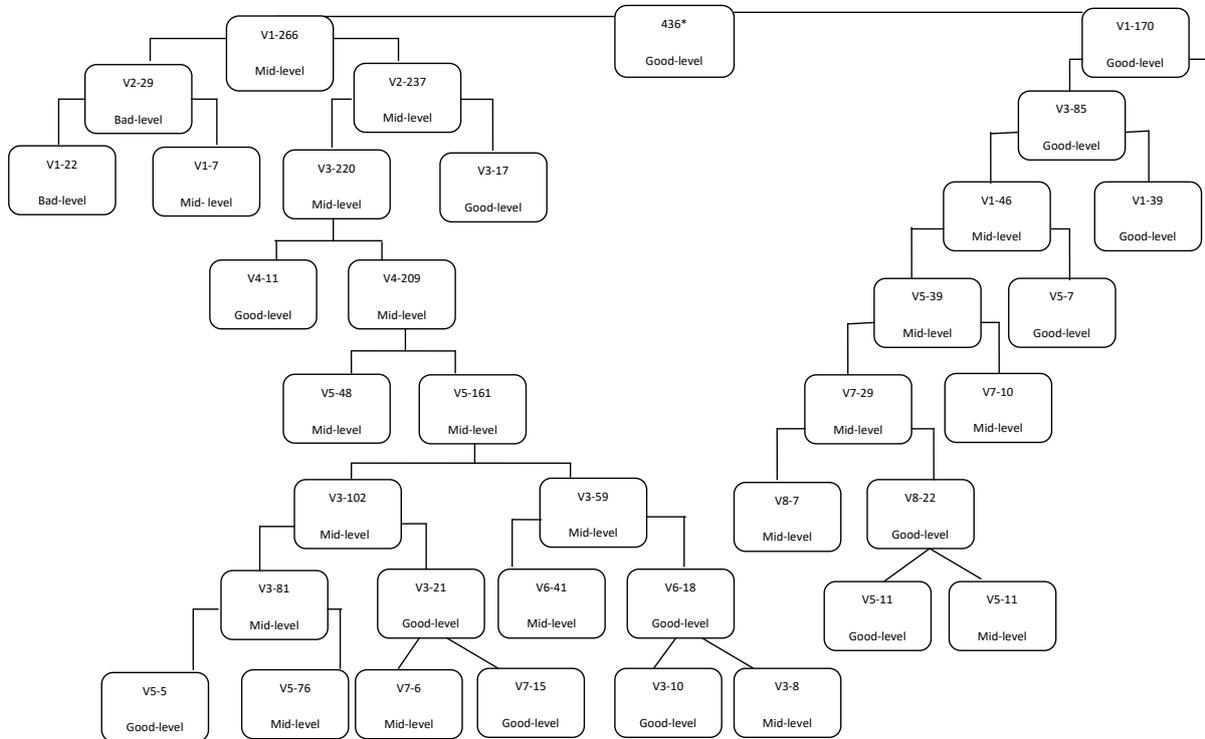
**Self-confidence ( $\alpha=0.662$ )**

My self-confidence does not change most, it generally remains same. 0.789

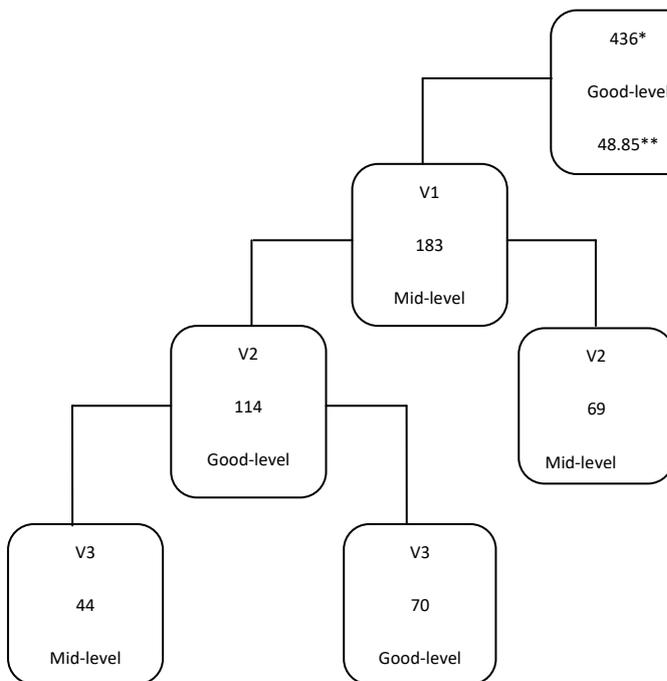
My self-confidence will not be affected by the results from competition. 0.849

I am sure about my self-confidence and skills. 0.701

### Appendix B. Tree Model of Organizational Variables



### Appendix C. Tree model of demographic variables



**Note: \*N \*\* Misclassification**

V1: Position

V2: Marital status

V3: Education

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## ÇALIŞANLARIN PERFORMANSINA ETKİ EDEN DEĞİŞKENLERİN KARAR AĞAÇLARI YOLUYLA ANALİZİ VE FARKLI ALGORİTMALARIN KARŞILAŞTIRILMASI

**Özet:** Günümüz rekabet koşulları göz önüne alındığında farklı sektörlerde faaliyet gösteren örgütlerde çok sayıda değişkenle belirginleşen, ortaklaşan ya da ayrışan yönetsel problemler meydana gelmektedir. Bu problemlerin çözümünde örgütün bütününe yönelik değişiklik yapma, düzenleme, iyileştirme ve örgütsel geliştirme çalışmalarında çok sayıda değişkenin önem derecesine göre sınıflandırılmasının çeşitli problemlerin çözümünü kolaylaştırarak yönetsel etkinliği artırabilmesi mümkündür. Bununla birlikte Yönetim ve Organizasyon alanındaki araştırmalar incelendiğinde veri toplama yöntemi olarak genellikle ankete başvurulduğu ve belirli hipotezler çerçevesinde ilişkisel ve/veya etkiel tespitlerin yapıldığı görülmektedir. Katılanların görüş, tutum ve değerlendirmelerini irdeleme fırsatı veren anketlerin muhtemel bir sübjektif temele sahip olması mümkündür. Bu yüzden alışlagelmiş analiz yöntemlerinin dışına çıkılması yönetim alanındaki araştırmacılara belirgin kolaylıklar sağlayabilir. Bu çalışmada veri madenciliğine ilişkin Regresyon Ağaçları (Classification Tree) ve Hızlandırılmış Ağaçlar (Boosted Decision Tree) yöntemleri kullanılarak, çalışanların algılanan performansına etki eden bazı örgütsel ve demografik değişkenlerin önem düzeyine göre sıralanması ve ağaç tabanlı algoritmaların örgütsel araştırmalarda kullanılabilirliğinin ortaya konulması amaçlanmaktadır. Karar Ağaçları ve ağaç tabanlı çeşitli algoritmalar veri madenciliğinin popüler ve etkili yöntemleri arasındadır. Literatüre bakıldığında daha çok tıp, mühendislik ve endüstriyel araştırmalarda kullanılan karar ağaçlarına yönelik algoritmaların sosyal bilimler ve özellikle yönetim ve organizasyon disiplini içerisinde kullanımının oldukça yeni olduğu söylenebilir. Ağaç tabanlı algoritmalar, istatistiksel yöntemlere göre örgütsel değişkenler arasındaki ilişkinin yönünü ve düzeyini görsel bir ortamda sunabilme özelliğine sahiptir. Karar ağaçları tekniğinin yönetim ve organizasyon kapsamında yaygınlaşması örgütsel araştırmalarda daha somut ve basit yorumların yapılarak hızlı ve doğru karar alabilme avantajını pekiştireceği söylenebilir. Böylelikle yöneticilerin işe alım sürecinden itibaren hangi adayların istenilen niteliklere uygun olduğuna yönelik rasyonel kriterler oluşturulabilmesi ve farklı çalışan gruplarına uygun örgütsel strateji, politika ve taktikler geliştirebilmesi mümkün hale gelmektedir. Araştırmanın örneklemini Kırşehir ilinde faaliyet gösteren ve çalışan sayısı 50'nin üzerinde olan 10 özel sektör işletmesinin çalışanlarından oluşmaktadır. Anket formuna ilişkin geçerlilik ve güvenilirlik testleri yapılmış olup, analizde DTREG paket programı kullanılmıştır. Araştırmadan elde edilen bulgulara göre örgütsel vatandaşlık, iş tatmini, yaşam tatmini ve çalışılan pozisyon çalışanların performansına etki eden en önemli değişkenler olarak belirlenirken, Hızlandırılmış Ağaçlar algoritmasının daha tutarlı ve güvenilir sonuçlar meydana getirdiği tespit edilmiştir. Karar Ağaçları tekniği örgütsel değişkenler arası ilişkiler ve değişkenlerin önem düzeylerinin belirlenmesinde alternatif bir yol olarak kullanılabilir. Ancak (örgütsel araştırmalarda karar ağaçları tekniğinin) güven düzeyinin yükseltilebilmesi için Regresyon Ağaçları yöntemi ile bu yöntemin geçerliliğini artırabilen Hızlandırılmış Ağaçlar algoritmasının birlikte kullanılması tavsiye edilebilir. Zira Regresyon Ağaçları görsel bir ağaç sunabilirken, Hızlandırılmış Ağaçlar daha yüksek güven ve tutarlı sonuçlarla birlikte 100'lerce işlev ve dallanma sebebiyle görsel sonuçlar sunamamaktadır. Nihai olarak Hızlandırılmış Ağaçlar algoritması, Regresyon Ağaçları gibi bazı algoritmalarda öngörüsül doğruluğu artırmak için rahatlıkla kullanılabilir.

**Anahtar Kelimeler:** Yönetim ve Organizasyon, Performans, Veri Madenciliği, Karar Ağaçları

## THE EFFECTS OF THE RELATION LEVEL OF RELATIONAL CAPITAL AND STRUCTURAL CAPITAL ON THE INTELLECTUAL CAPITAL LEVEL AND FIRM'S FINANCIAL AND NONFINANCIAL PERFORMANCE

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**Abstract:** Intellectual capital is a new and advanced management approach that defines the provisions of being ahead in competition and accommodating with advancing market conditions. It has been developed to make up the deficiencies of present management understanding and present capital approach of intellectual capital in business management. Various models related to intellectual capital have been put forward on the basis of elements of intellectual capital and business. Yet, methodologies for measuring intellectual capital on the basis of firm have been increased gradually. Although the importance of intellectual capital has been realised in historical evolution process, the concept has not gained a place in literature and there is not an adequate study in which the interaction between intellectual capital and its components has been propounded at all points. At least there is not a common expression about this subject in literature. For this reason, a well analysis of the interaction of intellectual capital with its subcomponents, structural capital and other business components will substantially contribute to the literature. In addition, it will also be a significant source for future researches. Therefore, the purpose in this study was examining the effects of relational and structural capital which are subcomponents of intellectual capital on the relationship with intellectual capital and on business firm's financial and nonfinancial performance. Structural equation modeling (SEM) and intellectual capital modeling have been tested. In the model that has been used, assessments for structural capital, relational capital and intellectual capital on the basis of its structural capital have been carried out and the effects of the intellectual capital on the financial and nonfinancial performance have been examined. Organization culture, corporate image and identity, trademark, information technologies, Research and Development and innovativeness, intellectual property, management philosophy and process factors have been discussed within the context of structural capital. In addition to this, customer relations, supplier relations, web associates relations, investor/associate relations and public relations have been considered within the context of relational capital. When the model fitting of structural capital example were examined, p- value related to  $X^2$  value is significant ( $p < 0,05$ ) but as it is  $X^2/sd < 5$ , model fitting is appropriate and it has been seen that other fit indices (RMSEA=0,05; SRMR=0,03; NNFI=0,96; CFI=0,96; GFI=0,93; AGFI=0,91) has supported model fitting.

**Key Words:** Intellectual Capital, Structural Capital, Relational Capital

## INTRODUCTION

Today, big chains of firms are taking the place of standard small firms. Beside this, we are going into a market in which collective intelligence is more important. Even though there are many reasons for this situation, the most important reasons are like that: chance of reaching raw materials easily, developments in production technologies, increase of the diversities in the design of production or service, increase of selectivity in institutional or personal base, reaching the market easily, having good relations with customers and logistic developments. Firms have the responsibility to keep up with all these changes. When we think about all these changes, it is clear that classical attitude or -with a different expression- human capital management cannot give enough support to keep up with the competition conditions in the market. Instead of this, we can see the necessity of having a human capital that is suitable for the concept of lifelong learning which is equipped with a more cognitive equipment, open to the changes and is used commonly today.

From the 'intellectual capital' concept; structural data in a firm, its relations with its environment and knowledge, experience and abilities that the workers of the firm can be understood. Although there are different categorizations of intellectual capital according to the models in literature, it is accepted that it is categorized under three sub-constituents; human capital, relational capital and structural capital. Therefore, as it is related to the study subject, the concepts of structural, relational and intellectual capital will be mentioned in the following parts.

## INTELLECTUAL CAPITAL AS A CONCEPT

Generally, the word 'intellectual' means the person who has the knowledge and experience deeply and can carry out the evaluation about the beyond of known things. The word 'capital' differs according to the discipline it has. Because, as a financial concept; it means the gap between the assets and debts of the firm. But, as an economy concept; it means production factors which contribute to the production. And intellectual capital which is the combination of these two concepts is the non-material assets of the firm. (Yılmaz, 2010).

First definition for intellectual capital related to these assets was made in 1991 in 'Brainpower' article by Stewart and in this definition; intellectual capital means all the datas or informations which provide the competition advantage for the firm. (Stewart, 1991).

Klein and Prusak defines intellectual capital as an intellectual material which is formalized, acquired and activated in order to produce a more valuable asset. (Klein and Prusak, 1994).

According to Roos and Roos; intellectual capital is a resource of firms for sustainable competition advantage and isn't seen in the balance-sheet of the firm. (Roos, Roos, 1997).

Leif Edvinsson, who is known as the first professional intellectual capital manager and another pioneer in the subject, defines intellectual capital as the knowledge which can be turned into asset. (Edvinsson, 1997).

According to Brooking, intellectual capital is the non-material things which make the firm functional and make sustainable. (Brooking, 1996). Brooking sees the firm as a combination of material things and intellectual capital. Brooking (1997) points at the whole process or intellectual capital considering the relation between the firm and the customer and cost, market and qualities that provide income. (Polo, 2007).

Bontis points at the dynamism of intellectual capital and defines it in this way; “ rather than a static means, intellectual capital is a dynamic concept which provides contribution and value socially and economically when it is applied according to the needs of firm”. (Bontis, 1998). In this frame, it is emphasized that non-material ‘invisible’ assets of the firm can create distinctive differentiations on organizational functions and results as much as material asset or sometimes even much more. (Bontis, 1999).

There have been international many studies and symposium for ‘intellectual capital’ concept to be clear. (Yıldız and Tenekecioğlu, 2004). As there isn’t a consensus about the definition of EU intellectual capital, it defined intellectual capital as ‘the combination of human, structural and relational capital’ in the MERITUM project which it organized for the consensus of intellectual capital. (MERITUM, 2001)

As a consequence of all these studies, different models and concepts related to intellectuall capital have come out. (Akmeşe, 2006) There has been consensus about the components of intellectual capital. These can be ranged like that; being non-material, providing positive financial results and being related to human. (Bontis, 2001).

## INTELLECTUAL CAPITAL COMPONENTS

For intellectual capital to be evaluated in the strict sense, it is necessary to know its components. (Huang Luther Tayles, 2007). Researchers have studied for these categorizations and definitions. (Edvinsson, 1997; Sveiby, 1997; Brooking, 1996 Edvinsson and Malone, 1997) In order to define and analyze this capital in a better way, researchers have formed different intellectual capital models. (Litschka vd, 2006).

The components of intellectual capital are related to organizational structure of the firm, workers and relations between them. (Şerbetçi 2003). These elements can create the result together. (Petty, Guthrie 2000). So, it is important to determine these elements correctly. (Oğuztürk and Alparslan 2011) There are many approaches in literature about the categorization of intellectual capital. (Bontis, 2000).

Intellectual capital manager of Swiss Skandia firm, which is the first to publish intellectual capital report in the world, has been recommended as a model. Edvinsson considered intellectual capital as the hidden values that form the difference between the market value and book value of a firm. He tried to solve the reasons of this difference. Therefore, when he started to determine the hidden values of intellectual capital, he formed a list which consisted of more than 50 valuable factors like trademark, customer databases, information technology systems, prerogatives or key servers. As these factors were perceived as very long and unmanageable, they were gathered in two groups.(Aydemir vd., 2008:51). With Skandia’s ‘Intellectual Capital Value Schema’ which was

the first intellectual capital report in the world, Edvinsson classified intellectual capital in two groups as “human capital” and “structural capital”. Structural capital is separated into two groups as customer capital and organizational capital in itself and organizational capital is separated into two groups as innovation and process capital. (Edvinsson and Malone (1997)

Annie Brooking defines intellectual capital with four factors in his categorization. His categorization is the categorization of intellectual assets. According to this categorization, intellectual capital is *human-centered assets*; manner of leadership, technical information, skills and abilities, ability of problem solving, *substructure assets*; technology, process and methods, *intellectual property assets*; know-how, trademarks, patents and licenses, *market assets*; brand, customer and distribution channels. (Brooking, 1997). That the intellectual capital consists of these three elements was first mentioned by Sveiby (1998) and most researchers adopted this concept. (Karacan, Ergin, 2011)

Sveiby approaches intellectual capital in three dimensions. Inner structure; they are non-material assets in organizational texture. These are such subjects as organizational structure, management, culture, research and development studies, working processes, patents and software. Outer structure; these are values in relations with firm environment. In outer structure, such subjects as corporation’s image and brand, customers and suppliers, in dimension of personal abilities; education level, experience, abilities and social relations are analyzed. (Sveiby, 1998; Cho, McLean, 2000; Bukh et al, 2001; Sveiby 2001). Sveiby (1997) suggested a three dimensional categorization like

human capital, structural capital and customer capital again. (Huang, Hsu, Cheng, 2010).

Hubert Saint-Onge; He was impressed by ‘Scandia index’ which was Leif Edvinsson’s model , he made such categorization as human capital, structural capital and customer capital and noticed that customer capital should be focused on for a long-term benefit. (Sullivan, 2000).

Kaplan and Norton’s (1992) Balanced Scorecard model; Although it was designed as a strategic management model which focused on customer, process, learning, growing and financial dimensions, it is accepted as an important categorization in the sense of intellectual capital literature. (Kaplan, Norton, 1992; Sağsan et al. 2010; Huang, Luther, Tayles, 2007 ).

Bontis is the first academician who gained academic degree by producing studies about intellectual capital. According to Bontis (Bontis, 2000)., who made a distinction between human capital, structural capital and customer capital in his first term studies; human capital is the knowledge of each worker in personal level, structural capital is organizational abilities that meets the needs of market except for human materials and relationship capital is the customer capital. (Ermem, 2004) Then, Bontis improved the customer capital concept and used ‘relation capital’. (Huang, Hsu, Cheng, 2010). According to him, customer capital is the sub-factor of relational capital. (Bontis, 2000).

Thus, in his last studies, Nick Bontis used relational capital instead of customer capital (Arikboğa, 2003) and separated intellectual capital into three

groups as human capital, structural capital and relational capital. (Aydemir v.d., 2008)

In this study, within the frame of, we define intellectual capital in three main dimensions like human capital, structural capital and relational capital as it was specified before and accepted generally.

### STRUCTURAL CAPITAL

Constitution is the skeleton of a firm and the most important factor which makes it stand. (Akpınar, 2003). For structural capital, there must be structures which overweight the firm. (Kurşunmaden, 2011). Structural capital should provide the ability of dealing with inner and outer difficulties. (Zhou, Fink, 2003).

Structural capital is related to mechanisms and structure which support the performance of organizations (Edvinsson, Malone, 1997). Edvinsson and Malone define it as a substructure which supports human capital (Akpınar, 1998). Structural capital provides the things that the workers need in order to work efficiently. Workers need a mechanism to gather, pack up, introduce and distribute their own opinions (Stewart). Main duty of structural capital is to make human capital in which there are managers and workers function for it to be able to achieve the firm's goals. It is a covering factor which is formed by firm and present in firm's structure and is the supporting factor that is skeleton for the workers to work (Bozdemir, 2009). Thanks to structural capital, workers have the best performance (Bontis, 1998).

Structural capital makes personal abilities institution's abilities with the help of firm's systems. It makes human capital permanent. (Álvarez, Perez,

Álvarez, 2011) Other intellectual capital factors can be made use of through the agency of structural capital. (Sheetharaman et al, 2004).

Equipping intellectual assets with information systems can turn individuality into group power. This is the structural capital concept which allows intellectual capital to be measurable and improvable in a firm (Akpınar, 2003). If the content of this concept (systems and processes) is weak, intellectual capital cannot reach the desired level (Bontis, 1998; Üç, 2005)

When it is considered generally, structural capital means the combination of all the factors from information technologies -which are institutionalized in the shape of methods and disciplines that a firm has as an organization- to documentations like databases and records in different forms, from philosophy of management to culture of organization, from financial relations to patents (Çıkrıkçı and Daştan, 2002: 22).

Firm have intellectual asset that are in different forms. However, these assets are generally under cover and have hidden potentials (Bozdemir, 2009). Structural capital makes knowledge open and keeps it in the firm and makes it firm's asset (Stewart). This knowledge can be hidden in humans and equipments at first. Then, they are made open and internal by constitution. Factors of this mechanism are information and communication systems, patents, present technology, working processes, management systems et cetera (Euroforum, 1998).

Structural capital is the systemized form of knowledge (Euroforum, 1998). It is the knowledge which forms the main substructure factors

and working systems that the institution has for an effective and efficient work performance. It can be defined as the knowledge that is present at the institution when the workers have gone home in the evening (Stewart, 1997). Structural knowledge in the firm should be preserved safely, found easily when needed to use again, improved and shouldn't be allowed to be changed and lost according as the personnel who leaves the firm (Öztürk, Demirgüneş, 2008).

### RELATIONAL CAPITAL

When we look at the definitions which are made about relational marketing, we can see that in the first appearance of the concept, only relations with customers were handled within relational market. For example, in the definitions made by Edvinsson, firm's relations with its environment as an intellectual capital component were defined as "customer capital" (Edvinsson). Akpınar considers relational capital over customer capital in his studies (Akpınar, 2002)

It is seen that, in order to have an advantage of competition against other firms, only the quality of customer relations outside of the firm aren't enough and along with the customers, relations with other members in the distribution channel are important (Kılıç, Kendirli, 2005).

When the relation between firm and environment is analyzed, it is seen that there are other factors apart from customers (Bozbura, Toraman, 2004). Akpınar counts suppliers in customer capital. According to him, customer capital is the value of the relationship between the person with whom the firm has relationship and institutions (Akpınar, 2002) .

In their study, Payne and Holt emphasize the importance of analyzing the value of the relationship according as other relational shareholders instead of considering it on account of buyer-seller and they have the prescience that there will be many studies about the importance of this subject in following years (Payne, Holt, 2001) The quality of this relationship creates customer value and makes it permanent (Saint-Onge,1998).

Önce (1999) counted networks in customer capital by considering network, brand and customers. These networks are shareholders and other commercial connections (Önce, 1999).

Relational capital includes public capital related to the social relations that are based on institutional ethic and common sense of fate (Kogut and Zander, 1996). Public capital means faith, cooperation and collective action in relationship with society (Nahapiet, Ghoshal, 1998; Moon, Kym, 2006).

Learning market channels, subjects about the relationship between suppliers, customers and industrial organizations are the subjects of relational capital (Ahmadi, Jalilian, Salamzadeh, Saeidpour, Daraei, 2012)

Relational capital also concerns about the relationships with shareholders (Yang, Wang, Wong, Lai, 2008). Relationship between relational capital and shareholders includes vocational knowledge, agreements, collaborations, co-operations and mutual enterprises which contributes to its permanence (Lev, 2001).

According to Büyüközkan, relational capital composes of four factors. These are suppliers,

collaborators, investors and customers (Büyü-  
közkan, 2002).

Relational capital represents shareholders, cus-  
tomers, suppliers, regulator public institutions  
and other relationships outside of the firm (Roos,  
Bainbridge, Jacobsen, 2001) and it is the value  
of these relationships (Bontis, 1999; Huu and  
Fang, 2008; Carell, 2010; Ahmadi, Jalilian,  
Salamzadeh, Saeidpour, Daraei, 2012; Akmeşe,  
2006).

Knowledge and value that improve owing to the  
relationship between firm and its environment  
form this firm's capital (Saint-Onge, 1998).  
Relational capital is the hidden knowledge in  
a firm's relation (Bontis, 1999; Bontis, Keow,  
Richardson 2000). In short, this knowledge and  
values grow out of long and important relations  
(Bontis, Keow, Richardson, 2000) Firms which  
have high relational capital attach importance to  
the permanence of relations (Yang, Wang, Wong,  
Lai, 2008) Relational capital is the intellectual  
capital factor that is formed by mutual faith and  
satisfaction in these relations. Relations that it co-  
vers are market, customers, suppliers, commercial  
collaboration, public, partnership and opponents  
(Bontis, Keow, and Richardson 2000)

The importance of relational capital in terms of  
advantage of long term competition for all sides  
has been recognized (Özata, 2008). Relational  
capital which covers all outer factors of firm is  
the elements like reliance, satisfaction, loyalty  
and prestige of the firm which create value for  
the firm (Bhartesh, Bandyopadhyay, 2005).

In his study, Guthrie (2001) determined relational  
capital (40%) as the most cared intellectual capital

factor when compared to human capital (30%)  
and structural capital (30%) (Guthrie, 2001).  
Even so, relational capital is generally the worst  
administered among all non-material assets. Its  
value is clear but how much its value is or how it  
can be administered cannot be understood clearly  
(Stewart, 1997). It has the most visible value in  
intellectual capital but it is the least reachable  
(Arikboğa, 2003).

The ability to subsist and improve of a firm is  
related to its ability to cope with its rivals -that  
is to its competition power. For the determina-  
tion of the rekabet gücü of a işletme correctly,  
financial performance of the firm at issue should  
be evaluated and analyzed. For firms and market  
participators, evaluation of the performance is an  
important subject.

Firms and investor take decisions according  
to the performance evaluation results. In this  
case, assessment and evaluation of performance  
should be reliable for shareholders inside and  
outside of the firm. As the result, along with  
financial performance evaluation, non-financial  
performance evaluation is also an important part  
of benchmarking, firm's goal and performance  
evaluation.

Non-financial performance evaluation has beco-  
me a remarkable area lately. The most important  
reasons of this situation are the deficiency of  
financial performance evaluations and that the  
increasing customer value isn't paid attention to  
in financial performance evaluations. Financial  
performance evaluation in which customer isn't  
taken into account can cause the firms to take  
wrong decisions.

It is commonly agreed that non-financial performance evaluations are the one of the important indicators of financial performance and studies in this area have become prevalent. There have been many researches which examine the relation between financial and non-financial performance evaluations. One of the important results of these studies is that as long as the relation between financial and non-financial evaluations isn't understood correctly, for firms, there cannot be possibility of knowing their competitive environment. It is claimed that non-financial performance evaluations are against sensitive competition level (Banker and Mashruwala, 2007: 763).

Reporting of non-financial performance evaluation results like customer satisfaction will be important for the managers to be able to take correct decisions. Managerial decisions in performance evaluation and future benefit can be foreseen and this makes the non-financial performance evaluations more important.

## MISSION

Mission of the study: By making evaluations according to viewpoints of this and other academicians; Conceptual model will clarify the definition of structural capital and how it includes invisible assets in the firm value owing to diverse approaches of managements in the improvement of intellectual capital. Then, how intellectual capital separates human factor from structural capital will be emphasized, which is the most important process of completion of deficiencies that is claimed by intellectual capital. Lastly, how the value outside of the firm has become the capital of the firm –that is, relational capital- will be analyzed. Target of this study is

to analyze the effects of relational and structural capital to the firm's financial and non-financial performance according to their relationship with intellectual capital.

## RESEARCH METHOD

After each component of intellectual capital was dealt as a whole, sub-factors were differentiated. Then, structural equality model (YEM – SEM) and intellectual capital model was tested by evaluating the reliability and validity of these sub-factors. In the last stage, relational capital's effect to the firm's performance over structural capital was analyzed with the help of the formation of the relationship between all the factors.

To discover the dependence of change-trigger factors on each other, model suggests an analysis method in which the effects of the factors on each other are pointed according to a scale between 0 (neutral) and 3 (very efficient) (FMEL, 2004).

In the model which is used in the study, intellectual capital has been evaluated through relational and structural capital and intellectual capital's effects to financial and non-financial performance have been analyzed. In the sense of structural capital, culture of organization, image and identity of the institution, brand, information technologies, research and development, innovation; intellectual property, philosophy of management and process factors have been analyzed. In the sense of relational capital, customer relations, supplier relations, partner relations; investor/collaborator relations and public relations have been analyzed. In this context, hypothesizes below have been developed:

H1: Structural capital and relational capital affect financial performance positively (Without human capital).

H2: Structural capital affects financial performance positively (Without relational capital).

H3: Relational capital affects financial performance positively (Without structural capital).

H4: Structural capital and relational capital affect non-financial performance positively.

H5: Structural capital affects non-financial performance positively.

H6: Relational capital affects non-financial performance positively (Without structural capital).

## DATA GATHERING METHODS AND MEANS

### Model Fit Criteria

Model fit can be summarized as determination of difference significance between observed data matrix and expected data matrix. In this case it means there is no difference between both of wanted matrixes or consisted difference isn't significant or, in other words, consisted difference is random. For this purpose several fit indexes have been developed and in statistic packet programs different fit indexes have been used. Explanations related to fit indexes used in this study in which Lirsel 8.51 packet program was used, are included below.

### Chi Square Goodness Fit (X2)

X2 test, in the simplest term, is obtained by multiplication of adaptive value between two covariance, with number of subjects -1 in used

sample. The result obtained is calculated as X2 distribution. If the fit between data and model is excellent, the value obtained must be near to 0 and significance value (p) can't be significant.

X2 test is a hypothesis testing. In this direction, hypothesis of "H1= There is no difference between variance-covariance matrixes observed and expected" is tested. Being significant of the result is ( $p < 0,01$ ) means that there is a difference and this is an unwanted situation (Çokluk, Şekercioğlu, Büyüköztürk, 2010:268).

According to Bentler (1998) in major samples ( $>200$ ), unimportant differences between expected covariance matrix and observed covariance matrix frequently causes X2 to be significant. Accordingly, when hypothesis in major samples is handled based on the X2, misinterpretations can be made.

### Chi Square/ Degrees of Freedom Rate(X2/df)

In major samples, the rate of degrees of freedom to X2 can be used as a criteria for sufficiency. For this it can be accepted that 3 and lower rates are good and rates up to 5 are sufficient fit. (Çokluk, Şekercioğlu, Büyüköztürk, 2010:268).

### Goodness Fit Index (GFI) And Arranged Goodness Fit (AGFI)

These indexes have been developed as an alternative to X2 for model fit to be evaluated independently from sample size. It shows how model measure covariance matrix in the sample and it is accepted as sample variance that model is clarified. GFI resembles to R2 in multiple regression. (Çokluk, Şekercioğlu, Büyüköztürk,

2010:269). It is rated between 0 and 1 and its being near to 1 is good.

### **Root-Mean-Square-Error**

It articulates that there is no difference between universe and sample co-variances. It is rated between 0 and 1 and its being near to 0 is good.

### **Standardized Root Mean Square Residual**

These are residual covariance mean between predictive covariance matrix belonging to the universe and covariance matrix belonging to sample. They change between 0 and 1 and being near to 0 is good.

### **Comparative Fit Index (CFI)**

It gives the fit or sufficiency of the model by comparing with a basic model which is generally called independence model or default model and which hypothesizes that there is no relation between variables. It is rated between 0 and 1 and closing to 1 is good.

### **Non Normalized Fit Index (NNFI)**

It compares X2 value of independence model with X2 value of model also regarding degree of freedom. It is rated between 0 and 1 and being near to 1 is good.

### **Structural Equation Modeling Administration**

#### **Route Coefficient ( $\beta$ )**

In structural equation modeling direct causal effects are called as route coefficient or structural coefficient.

#### **Standard Error (S.E.)**

It is the standardized case of measurement error or error variance. Measurement error or error variance articulates all other sources of variance that can't be clarified. They can be seen as unmeasured exogenous variables. (Çokluk, Şekercioglu, Büyüköztürk, 2010:280).

### **FINDINGS AND DISCUSSION**

When the model fit of structural capital scale is viewed it is seen that p value relative to X2 is significant ( $p < 0,05$ ) but because  $X2/sd < 5$  model, fit is proper; and other fit indexes (RMSEA=0,05; SRMR=0,03; NNFI=0,96; CFI=0,96; GFI=0,93; AGFI=0,91) support model fit.

In the structural capital scale, there are 7 suppressive variables and 25 observed variables belonging to these signs. Reliability coefficients of suppressive variables ( $\alpha$ ) rank between 0,76-0,90. Process variable ( $\rho=0,92$ ) has the highest composite reliability coefficient and the highest announced variance equated (AVE=0,78). The composite reliability coefficient of all suppressive variables occurred  $>0,70$ ; AVE values occurred  $>0,50$ .

When the structural coefficients (factor burdens), which are between observed variables and suppressive variables which observed variables belong to are viewed, it is seen that structural coefficients for all observed variables are ( $\lambda > 0,60$ ); Cii2 sign ( $\lambda=0,66$ ) ranking in suppressive variable of Corporate Image and Identity has the lowest structural coefficient while Prc2 sign ( $\lambda=0,93$ ) ranking in Process suppressive variable has the highest structural coefficient.

When the model fit of relational capital scale is viewed it is seen that p value relative to X2 is

significant ( $p < 0,05$ ) but because  $X^2/sd < 5$  model, fit is proper; and other fit indexes (RMSEA=0,06; SRMR=0,04; NNFI=0,95; CFI=0,96; GFI=0,94; AGFI=0,91) support model fit.

In the relational capital scale, there are 5 suppressive variables and 19 observed variables belonging to these signs. Reliability coefficients of suppressive variables ( $\alpha$ ) rank between 0,78-0,94. Customer relations and investor/partner relations variables ( $\rho=0,90$ ) have the highest composite reliability coefficient and investor/partner relations and public relations variables have the highest announced variance equated (AVE=0,70). The composite reliability coefficient of all suppressive variables occurred  $>0,70$ ; AVE values occurred  $>0,50$ .

When the structural coefficients (factor burdens), which are between observed variables and suppressive variables which observed variables belong to are viewed, it is seen that structural coefficients for all observed variables are ( $\lambda > 0,70$ ); Ntwr4 sign ( $\lambda=0,72$ ) ranking in Network Partners (Network Relations) suppressive variable has the lowest structural coefficient while Ntwr5 sign ( $\lambda=0,93$ ) ranking in Network Partners (Network Relations) suppressive variable has the highest structural coefficient.

When the structural coefficients (factor burdens), which are between observed variables and suppressive variables which observed variables belong to are viewed, it is seen that structural coefficients for all observed variables are ( $\lambda > 0,60$ ); Prct4 sign ( $\lambda=0,66$ ) ranking in Proactivity and Adaptation suppressive variable has the lowest structural coefficient while Tch3 sign ( $\lambda=0,85$ ) ranking in suppressive variable of Technical Data

and Skill Coefficient has the highest structural coefficient.

When the model fit of Financial Performance scale is viewed it is seen that that p value relative to  $X^2$  is significant ( $p < 0,05$ ) but because  $X^2/sd < 5$ , model fit is proper; and other fit indexes (RMSEA=0,06, SRMR=0,03, NNFI=0,96, CFI=0,97, GFI=0,95, AGFI=0,93) support model fit.

In the Financial Performance scale, there are 4 suppressive variables and 17 observed variables belonging to these signs. Reliability coefficients of suppressive variables ( $\alpha$ ) rank between 0,75-0,94. Financial Performance1 variable ( $\rho=0,93$ ) has the highest composite reliability coefficient and Financial Performance2 variable has the highest announced variance equated (AVE=0,70). The composite reliability coefficient of all suppressive variables occurred  $>0,70$ ; AVE values occurred  $>0,50$ .

When the structural coefficients (factor burdens), which are between observed variables and suppressive variables which observed variables belong to are viewed, it is seen that structural coefficients for all observed variables are ( $\lambda > 0,70$ ); fprf2 sign ( $\lambda=0,72$ ) ranking in Financial Performance1 suppressive variable has the lowest structural coefficient while fprf23 sign ( $\lambda=0,94$ ) ranking in Financial Performance4 suppressive variable has the highest structural coefficient.

When the model fit of Nonfinancial Performance scale is viewed it is seen that p value relative to  $X^2$  is not significant ( $p > 0,05$ ) and because  $X^2/sd < 3$ , model fit is perfect and other fit indexes (RMSEA=0,03, SRMR=0,01, NNFI=1,00, CFI=1,00, GFI=1,00, AGFI=0,99) support perfect model fit.

In the Nonfinancial Performance scale, there is 1 suppressive variable and there are 4 observed variables belonging to this variable. Reliability coefficients of suppressive variable ( $\alpha$ ) is quite high (0,95). The composite reliability coefficient of scale ( $\rho$ ) occurred 0,88 and announced variance of scale occurred 0,64.

When the structural coefficients (factor burdens), which are between observed variables and suppressive variables which observed variables belong to are viewed, it is seen that structural coefficients for all observed variables are ( $\lambda > 0,70$ ); Fprf28 sign ( $\lambda = 0,75$ ) has the lowest structural coefficient while Fprf27 sign ( $\lambda = 0,86$ ) has the highest structural coefficient.

**H1: Structural Capital and Relational Capital affect Financial Performance positively (without Human Capital).**

Results of Structural Equation Model belonging to Table 1. Model I

Hypothesis	Link			Estimate/ Std.Estimate	S.E.	t	p	Result
H1	Structural Capital	à	Financial Performance	0,48 (0,48)	0,11	4,07	0,00*	Supported
	Relational Capital	à	Financial Performance	0,48 (0,48)		4,06	0,00*	Supported
$X^2=359,47$ ; $sd=95$ ; $X^2/sd=3,78$ ; $p=0,00$ ; $RMSEA=0,05$ ; $SRMR=0,02$ ; $NNFI=0,97$ ; $CFI=0,97$ ; $GFI=0,94$ ; $AGFI=0,92$ ; $R^2=0,89$								

\* $p < 0,01$       \*\* $p < 0,05$

When the model fit indices are analysed, the value of p related to value of  $X^2$  is meaningful ( $p < 0,05$ ) but the inequality  $X^2/sd < 5$  makes the model fit appropriate. Moreover we can see that the other fit indices ( $RMSEA=0,05$ ;  $SRMR=0,02$ ;  $NNFI=0,97$ ;  $CFI=0,97$ ;  $GFI=0,94$ ;  $AGFI=0,92$ ) supported this model fit.

When the effect of Structural Capital over Financial Capital is analysed we can see that path coefficient (standardize  $\beta=0,48$ ) and the relation are meaningful ( $t=4,07$ ;  $p < 0,01$ ). Structural Capital affects Financial Performance positively.

When the effect of Relational Capital over Financial Performance is analysed we can see that path coefficient (standardize  $\beta=0,48$ ) and the relation are meaningful ( $t=4,06$ ;  $p < 0,01$ ). Relational Capital affects Financial Performance positively.

The variables of Structural and Relational Capital affect financial performance positively and the effects of both variables over financial capital is equal. The variables of Structural and Relational Capital explain %89 of variance of financial performance. In other words, the variables of

Structural and Relational Capital explain %89 of change in financial performance  $FPERF = 0.48*SCAPT + 0.48*RCAPT + \varepsilon:0.11$

Equation of H1 Hypothesis is confirmed like this:

## H2: Structural Capital affects Financial Performance positively (without Relational Capital)

Results of Structural Equation Model belonging to Table 2.Model 2

Hypothesis	Link			Estimate/ Std.Estimate	S.E.	t	p	Result
H2	Structural Capital	à	Financial Performance	0,96 (0,90)	0,18	32,61	0,00*	Supported

$X^2=151,68$ ;  $sd=37$ ;  $X^2/sd=4,09$ ;  $p=0,00$ ;  $RMSEA=0,06$ ;  $SRMR=0,02$ ;  $NNFI=0,98$ ;  $CFI=0,98$ ;  $GFI=0,97$ ;  $AGFI=0,97$ ;  $R^2=0,82$

\* $p<0,01$       \*\* $p<0,05$

When the model fit indices are analysed, the value of p related to value of  $X^2$  is meaningful ( $p<0,05$ ) but the inequation  $X^2/sd<5$  makes the model fit appropriate. We can also see that the other fit indices ( $RMSEA=0,06$ ;  $SRMR=0,02$ ;  $NNFI=0,98$ ;  $CFI=0,98$ ;  $GFI=0,97$ ;  $AGFI=0,97$ ) supported this model fit.

When the effect of Structural Capital over Financial Performance is analysed we can see that path coefficient (standardize  $\beta=0,90$ ) and the relation are meaningful ( $t=32,61$ ;  $p<0,01$ ).

Structural Capital affects Financial Performance positively.

The variable of Structural Capital explain %82 of variance in financial performance. In other words, Structural Capital explains %82 of change in financial performance of firm.

Equation of H2 Hypothesis is confirmed like this:

$$FPERF = 0.96*SCAPT + \varepsilon:0.18$$

### H3: Relational Capital affects Financial Performance positively.(without Structural Capital)

Results of Structural Equation Model belonging to table 3. model 3

Hypothesis	Link			Estimate/ Std.Estimate	S.E.	t	p	Result
H3	Relational Capital	à	Financial Performance	0,94 (0,92)	0,14	29,37	0,00*	Supported
$X^2=55,40$ ; $sd=22$ ; $X^2/sd=2,51$ ; $p=0,00$ ; $RMSEA=0,04$ ; $SRMR=0,02$ ; $NNFI=0,99$ ; $CFI=0,99$ ; $GFI=0,98$ ; $AGFI=0,97$ ; $R^2=0,86$								

\* $p<0,01$       \*\* $p<0,05$

When the model fit indices are analysed, the value of  $p$  related to value of  $X^2$  is meaningful ( $p<0,05$ ) but the inequation  $X^2/sd<3$  makes the model fit appropriate. We can also see that the other fit indices ( $RMSEA=0,04$ ;  $SRMR=0,02$ ;  $NNFI=0,99$ ;  $CFI=0,99$ ;  $GFI=0,98$ ;  $AGFI=0,97$ ) supported this model fit.

When the effect of Relational Capital over Financial Performance is analysed we can see that path coefficient (standardize  $\beta=0,92$ ) and

the relation are meaningful ( $t=29,37$ ;  $p<0,01$ ). Relational Capital affects Financial Performance positively.

The variable of Relational Capital explain %86 of variance in financial performance. In other words, Relational Capital explains %82 of change in financial performance of firm.

Equation of H3 Hypothesis is confirmed like this:

$$FPERF = 0.94*RCAPT + \varepsilon:0.14$$

### H4: Structural Capital and Relational Capital affects the non-financial performance positively.

Results of Structural Equation Model belonging to table 4. model 4

Hypothesis	Link			Estimate/ Std.Estimate	S.E.	t	p	Result
H4	Structural Capital	à	Non-financial performance	-0,33 (-0,33)	0,55	-1,52	0,22	Not Supported
	Relational Capital	à	Non-financial performance	0,98 (0,97)		4,45	0,00*	Supported
$X^2=304,61$ ; $sd=87$ ; $X^2/sd=3,50$ ; $p=0,00$ ; $RMSEA=0,05$ ; $SRMR=0,04$ ; $NNFI=0,97$ ; $CFI=0,98$ ; $GFI=0,95$ ; $AGFI=0,92$ ; $R^2=0,45$								

\* $p<0,01$       \*\* $p<0,05$

When the model fit indices are analysed, the value of  $\chi^2$  related to value of  $\chi^2/df$  is meaningful ( $p < 0,05$ ) but the inequation  $\chi^2/df < 5$  makes the model fit appropriate. We can also see that the other fit indices (RMSEA=0,05; SRMR=0,04; NNFI=0,97; CFI=0,98; GFI=0,95; AGFI=0,92) supported this model fit.

When the effect of Structural Capital over Non-Financial Performance is analysed we can see that path coefficient (standardize  $\beta = -0,33$ ) is meaningful but the relation is not ( $t = -1,52$ ;  $p > 0,01$ ). Structural

Capital does not have any kind of effect over Non-Financial Performance positively.

When the effect of Relational Capital over Non-Financial Performance is analysed we can see that path coefficient (standardize  $\beta = 0,97$ ) and the relation is ( $t = 1,52$ ;  $p > 0,01$ ) meaningful. Relational Capital affects Non-Financial Performance positively.

Equation of H4 Hypothesis is confirmed like this:

$$FOPERF = - 0.33*SCAPT + 0.98*RCAPT + \varepsilon:0.55$$

### H5: Structural Capital affects Non-Financial Performance positively.

Results of Structural Equation Model belonging to table 5. model 5

Hypothesis	Link			Estimate/ Std.Estimate	S.E.	t	p	Result
H5	Structural Capital	à	Non-financial performance	0,53 (0,53)	0,72	15,68	0,00*	Supported
$\chi^2=31,31$ ; $sd=37$ ; $\chi^2/df=1,66$ ; $p=0,01$ ; RMSEA=0,03; SRMR=0,02; NNFI=0,99; CFI=1,00; GFI=0,99; AGFI=0,98; $R^2=0,28$								

\* $p < 0,01$

\*\* $p < 0,05$

When the model fit indices are analysed, the value of  $\chi^2$  related to value of  $\chi^2/df$  is meaningful ( $p < 0,05$ ) but the inequation  $\chi^2/df < 3$  makes the model fit appropriate. We can also see that the other fit indices (RMSEA=0,03; SRMR=0,02; NNFI=0,99; CFI=1,00; GFI=0,99; AGFI=0,98) supported this model fit.

When the effect of Structural Capital over Non-Financial Performance is analysed we can see that path coefficient (standardize  $\beta = 0,53$ ) and the relation is ( $t = 1,52$ ;  $p > 0,01$ ) meaningful.

Structural Capital affects Non-Financial Performance positively.

The variable of Structural Capital explain %28 of variance in non-financial performance. In other words, Structural Capital explains %28 of change in non-financial performance of firm.

Equation of H5 Hypothesis is confirmed like this:

$$FOPERF = 0.53*SCAPT + \varepsilon:0.72$$

**H6: Relational Capital affects Non-Financial Performance positively (without Structural Capital).**

Results of Structural Equation Model belonging to table 6. model 6

Hypothesis	Link			Estimate/ Std.Estimate	S.E.	t	p	Result
H6	Relational Capital	à	Non-financial performance	0,60 (0,60)	0,64	17,92	0,00*	Supported
$X^2=48,56$ ; $sd=21$ ; $X^2/sd=2,31$ ; $p=0,00$ ; $RMSEA=0,03$ ; $SRMR=0,02$ ; $NNFI=0,99$ ; $CFI=0,99$ ; $GFI=0,99$ ; $AGFI=0,97$ ; $R^2=0,36$								

\* $p<0,01$

\*\* $p<0,05$

When the model fit indices are analysed, the value of p related to value of  $X^2$  is meaningful ( $p<0,05$ ) but the inequation  $X^2/sd<3$  makes the model fit appropriate. We can also see that the other fit indices (( $RMSEA=0,03$ ;  $SRMR=0,02$ ;  $NNFI=0,99$ ;  $CFI=0,99$ ;  $GFI=0,99$ ;  $AGFI=0,97$ ) supported this model fit.

When the effect of Relational Capital over Non-Financial Performance is analysed we can see that path coefficient (standardize  $\beta=0,60$ ) and the relation is ( $t=17,92$ ;  $p<0,01$ ) meaningful. Structural Capital affects Non-Financial Performance positively.

The variable of Relational Capital explain %36 of variance in non-financial performance. In other words, Relational Capital explains %36 of change in non-financial performance of firm.

Equation of H6 Hypothesis is confirmed like this:

$$FOPERF = 0.60*RCAPT + \epsilon:0.64$$

**CONCLUSION**

As of the beginnings of 1990s, beside tangible assets, intellectual capital has been accepted as main strategic element in gaining the advantage of competition with rival companies, the growth of the firm, making innovations and creating shareholder value.

Every business firm has intellectual capital which is a treasure for its future. Therefore, it has the potential of intellectual capital. What is to be done is discovering this potential, increasing its value and capitalizing. Knowledge can be used more efficiently with intellectual capital and become more valuable. Thus, the cost need to be reduced by using present knowledge and income should be increased by creating new knowledge. The main purpose of intellectual capital management is defining and improving the process related to the management of intangible assets. Within this framework, determination of intellectual assets and turning them into a value for business firms is possible with intellectual capital management.

Within this context, results of the hypothesis in the research that investigates the effects on the financial and nonfinancial performance of the firm and examines the effects of the subcomponents of intellectual capital, the relational and structural capital on the relationship with the intellectual capital is below:

“H1: Structural Capital and Relational Capital together have effect on Financial Performance” hypothesis is supported.

“H2: Structural Capital has effect on Financial Performance” hypothesis is supported.

“H3: Relational Capital has effect on Financial Performance” hypothesis is supported.

“H4: Structural Capital and Relational Capital together have partially effect on Nonfinancial Performance” hypothesis is partially supported.

“H5: Structural Capital has effect on Nonfinancial Capital” hypothesis is supported.

“H6: Relational Capital has effect on Nonfinancial Performance” hypothesis is supported.

In consequence, the real value of business firms is determined according to the potential of gaining income in the future. The most important assets determining the market value of firms are human capital, structural capital and relational capital that are components of intellectual capital. Intellectual capital is in the interaction with its components and capital management rise in value as long as this interaction continues. Briefly, intellectual capital has a considerable importance for the firms to gain competitive advantage. This situation is possible with the efficient management of intellectual capital.

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## İLİŞKİSEL SERMAYE İLE YAPISAL SERMAYENİN İLİŞKİ DÜZEYİNİN ENTELEKTÜEL SERMAYE DÜZEYİNE VE İŞLETMENİN FİNANSAL VE FİNANSAL OLMAYAN PERFORMANSINA ETKİSİ

**Özet:** Entelektüel sermaye, gelişen piyasa koşullarına uyum sağlamanın ve rekabette öne geçmenin koşullarını tanımlayan yeni ve ileri yönetim yaklaşımıdır. Entelektüel sermayenin işletme yönetiminde mevcut sermaye yaklaşımının ve mevcut yönetimi anlayışının eksiklerini tamamlamak üzere geliştirilmiştir. Entelektüel sermayeyle ilgili işletme bazında ve entelektüel sermayenin unsurları bazında çeşitli modeller ortaya konmuştur ancak entelektüel sermayenin firma bazında ölçülmesine yönelik metodolojiler giderek artmaktadır. Her ne kadar tarihsel evrim sürecinde entelektüel sermayenin önemi fark edilmiş olsa da, kavram literatürde yerini tam olarak almamış olup, entelektüel sermayenin alt bileşenleri ile arasındaki etkileşimin tüm yönleri ile ortaya konduğu yeterli çalışma mevcut değildir. En azından bu konuda literatürde bir söylem birlikteliği yoktur. Bu nedenle entelektüel sermayenin gerek alt bileşenleri ile, gerekse yapısal sermaye ve diğer işletme bileşenleri ile arasındaki etkileşimin iyi bir şekilde analiz edilmesi literatüre ciddi katkılar sağlayacak, bunun yanında ileriki araştırmalara da ciddi kaynak teşkil edecektir. Bu nedenle çalışmada, entelektüel sermayenin alt bileşenlerinden ilişkisel ve yapısal sermayenin entelektüel sermaye ile ilişkisine ve işletmenin finansal ve finansal olmayan performansına etkilerinin incelenmesi amaçlanmıştır. Çalışmada yapısal eşitlik modeli (YEM – SEM) ile entelektüel sermaye modeli test edilmiştir. Kullanılan modelde yapısal sermaye, ilişkisel sermaye ve yapısal sermayesi üzerinden entelektüel sermaye değerlendirmeleri yapılarak, entelektüel sermayenin finansal ve finansal olmayan performans üzerindeki etkileri incelenmiştir. Yapısal sermaye bağlamında örgüt kültürü; kurum imajı ve kimliği; marka; bilgi teknolojileri; Ar-Ge ve yenilikçilik; entelektüel mülkiyet; yönetim felsefesi ve süreç (proses) faktörleri ele alınmıştır. İlişkisel sermaye bağlamında ise müşteri ilişkileri; tedarikçi ilişkileri; ağ ortakları ilişkileri; yatırımcı/ortak ilişkileri ve kamu ilişkileri değerlendirilmiştir. Yapısal Sermaye ölçeğinin model uyumu incelendiğinde  $X^2$  değerine ilişkin p değerinin anlamlı olduğu ( $p<0,05$ ) ancak  $X^2/sd<5$  olduğundan model uyumunun uygun olduğu, diğer uyum indekslerinin de (RMSEA=0,05; SRMR=0,03; NNFI=0,96; CFI=0,96; GFI=0,93; AGFI=0,91) model uyumunu desteklediği görülmüştür.

**Anahtar Kelimeler:** Entelektüel Sermaye, Yapısal Sermaye, İlişkisel Sermaye

## EVALUATION OF TRAIT ANXIETY AND EMOTIONAL INTELLIGENCE LEVELS OF PHYSICAL EDUCATION AND SPORT SCHOOL SPECIAL ABILITY TEST PARTICIPANTS ACCORDING TO DIFFERENT VARIABLES

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**ABSTRACT:** The aim of this study is to evaluate the trait anxiety and emotional intelligence levels of Ege University, Physical Education and Sport School Special Ability Test participants according to certain variables. The study administered Spielberger's (1964) State-Trait Anxiety Inventory (STAI) and Schutte Emotional Intelligence Scale (SEIS) to 255 males and 111 females, a total of 366 objects who voluntarily participated in the special ability test to attend the School of Physical Education and Sport. In the study, SPSS 18 software was used for statistical analysis. The results indicate that there is a significant correlation between the trait anxiety levels and total emotional intelligence. However, correlation coefficient of anxiety and subscales of emotional intelligence is low. In addition, there are significant differences between trait anxiety and optimism subscale ( $r=.205$   $p<0,05$ ); trait anxiety and total emotional intelligence ( $r=.248$   $p<0,05$ ). Also, It was determined that in objects who passed the test, the emotional intelligence average scores of man is higher than women ( $p<0,05$ ).

**Key Words:** Physical Education, Trait Anxiety, Emotional Intelligence

### INTRODUCTION

Anxiety is a feeling experienced emotionally and physically and its consequences can be observed on behaviors. Among many of its definitions, anxiety can be seen as an overwhelming standby period, a state of stimulation that is indicated through physical, emotional and mental changes whenever coincided with a stimulant. Spielberger generally categorizes anxiety as trait anxiety and

state anxiety (Tekindal, 2010:79-93). State anxiety arises from an uncontrolled and sudden fear caused by the situation that an individual experiences, as it is a demonstration of tension and discomfort. Trait anxiety, on the other hand is one's dependency on living by anxiety. This can be defined as one's interpretation of the conditions he lives in as constant anxiety (Aral, 1997). Individuals who experience this type of anxiety can get anxious at any time and any situation and suffer from

various anxieties. Emotional intelligence helps us recognize, learn and evaluate our emotions as well as other people's emotions. Thanks to emotional intelligence human beings reflect their emotions to their daily and professional lives efficiently and react in convenient ways. (Kılıçarslan, 2010). At the Shuttle Emotional Intelligence Scale, where we examine emotional intelligence, emotional intelligence is discussed in three terms. These are evaluation and expression of emotions, organization/optimism (mental situation) of emotions and the use/utilization of emotions. The dimension of Evaluation and expression of emotions are the understanding, expressing and being capable of emphasizing one's own and others emotions. The dimension of organization or so called optimism dimension specifies one's organization or changes of his own or others reactions. It can also be defined as status quo of the mental situation. Last but not least, utilization dimension is the adequacy to solve upcoming problems and to use necessary emotions throughout the process. Recent studies demonstrate that the contribution of IQ is no more than 10% to people's success in life. Even though high IQ is not a guarantee for success, prestige or a happy life, It preserves its priority in our schools while social and emotional skills are neglected (Becerem et al, 2004). Besides, the level of anxiety plays an important role in the level of success of psychological skills where sportsmen prove themselves during the competitions. Therefore, it is vital for sportsmen and their trainers to learn more on this subject (Başaran et al, 2009: 21). At a study of Çoban and his friends (2010), self-respect and emotional intelligence were scaled, and some common variables such as age, social and sportive partici-

pation, type of family, self-respect, and emotional intelligence...were discovered (Çoban et al, 2010: 653-674). Similarly, Lök and his friends (2008) examined students who would participate in the special ability test in terms of anxiety situations and some variables. And they found the riser of anxiety levels in some situations (Lök et al, 2008: 2). Even though many researches have been conducted regarding emotional intelligence and anxiety, none of them comprises these to variables at the same time. In this research, trait anxiety and emotional intelligence levels of students who participate in special ability test to attend The School of Physical Education and Sport are evaluated according to certain variables.

## METHOD OF RESEARCH

The sample group is composed of; 657 volunteers (255 male and 111 female) who applied to The School of Physical Education And Sport department of Ege University. During the research, both scales were given to the candidates, throughout the courses while no time restrictions were applied.

## DATA COLLECTION METHOD AND TOOLS

**1. Socio-demographic data gathering form:** This individually filled-form contains questions from 10 different variables. (age, gender, branches, type of graduated high school, graduated department, age of sport, age of exam, educational level of the family, income level of the family, attitude and behavior pattern of the family)

**2. State Trait Anxiety Inventory.** Trait Anxiety part of; State Trait Anxiety Inventory (STAI), which was developed by Spielberger and his

friends and then modified into Turkish by Öner N. and Le Compte, has been used.

**3. Schutte Emotional Intelligence Scale (SEIS):**

that was developed by; Schutte, Malouff, Hall, Haggerty, Cooper, Golden ve Dornheim (1998) and rearranged in 41 points by had been modified into Turkish by Tatar and his friends (2011).

**ASSESSMENT OF DATA**

Data gathered by in total of 366 candidates, who took the Special Ability test, in order to subscribe in the department of Physical Education and Sport evaluated according to different categories and below mentioned statistical analysis made by the use of SPSS [18, 0] package program:

1. Frequency and Percentage calculations in order to display demographic variables of the sample.

2. Acquired data were analyzed through, t-test which depends on average differences, and Pearson correlation. Analysis were implemented as significance value considered  $p < 0.05$  as criteria.

**FINDINGS AND DISCUSSION**

**GENERAL INFORMATION INTRODUCING INDIVIDUALS**

Diagnoses of the research have been stated in this section.

**Table 1: T- Test Results of Trait Anxiety Based On Some Demographic Features**

Variables :	Variant group:	N	Mean	Std. Deviation	t	p
<b>Gender</b>	Male	255	47,92	4,54	-1,999	0,64
	Female	111	49,02	5,42	-1,87	
<b>Age group</b>	18 and below	154	48,54	4,80	,981	,326
	19 and above	212	48,04	4,88	,983	
<b>Branches</b>	Team sport	286	48,35	5,01	,739	,415
	Individual sport	80	47,90	4,20	,817	
<b>Year of exam</b>	1	306	48,32	4,86	,590	,553
	2 and above	60	47,91	4,80	,595	
<b>Year of sport</b>	7 and below	197	48,27	4,56	,085	,933
	8 and above	169	48,23	5,16	,084	
<b>Educational level of mother</b>	Primary & below	177	48,38	5,15	,497	,621
	High school & above	189	48,13	4,54	,495	

<b>Educational level of father</b>	Primary & below	141	48,34	5,35	,270	,796
	High school & above	225	48,20	4,51	,259	
<b>Sportsman</b>	Sportsman	345	48,21	4,85	-,904	,278
	Not sportsman	17	49,30	3,84	-1,11	

It is seen in Table 1 that, there is no significant relation between trait anxiety of those who took the exam, and those who did not, based on variables such as; gender, age, branches, age of sport, educational level of parents and/ or whether being a sportsmen or not.

**Table 2: Trait Anxiety T- Test Results of Those Who Ailed and Those Who Succeeded**

	Results:	N	Mean	Std. Deviation	t	p
<b>Trait Anxiety</b>	Succeeded	119	47,44	4,25	-2,23	,02
	Failed	247	48,64	5,07	-2,37	

It has discovered in Table 2 that, when regarded trait anxiety level, winners' average of trait anxiety level is more low than those of loser ( $p=.02$   $p<0.05$ ).

**Table 3: T- Test Results of General EQ Based On Some Demographic Features**

Variables :	Variable group:	N	Mean	Std. Deviation	t	p
<b>Gender</b>	Male	255	3,24	,30	-,621	,522
	Female	111	3,26	,28	-,641	
<b>Age group</b>	18 and below	154	3,27	,23	,736	,445
	19 and above	212	3,24	,32	,765	
<b>Branche</b>	Team sport	286	3,26	,28	1,304	,248
	Individual sport	80	3,21	,34	1,162	
<b>Year of the exam</b>	1	306	3,25	,28	,218	,855
	2 and above	60	3,24	,36	,184	
<b>Year of sport</b>	7 and below	197	3,27	,26	1,405	,169
	8 and above	169	3,22	,33	1,328	

<b>Educational level of mother</b>	Primary and below	177	3,24	,31	-,675	,501
	High-school and above	189	3,26	,29	-,674	
<b>Educational level of father</b>	Primary and below	141	3,24	,30	-,656	,511
	High-school and above	225	3,26	,30	-,658	
<b>Sportsman</b>	Sportsman	345	3,25	,30	-1,127	,328
	Not a sportsman	17	3,33	,32	-1,050	

Similarly, when emotional intelligence is considered, no significant differences have been found when above mentioned variables compared with the number of people taking the exam. (Table 2)

**Table 4: T- Test Results of Candidates Who Failed, and Succeeded, Based On General EQ and Its Sub-Dimensions**

	<b>Variable group:</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>t</b>	<b>p</b>
<b>İntelligence</b>	Succeeded	119	3,21	,26	-1,37	,145
	Failed	247	3,27	,31	-1,46	
<b>Optimism</b>	Succeeded	119	3,84	,46	-,986	,310
	Failed	247	3,90	,51	-1,01	
<b>Utilization</b>	Succeeded	119	3,05	,53	-1,60	,110
	Failed	247	3,14	,54	-1,60	
<b>Expression</b>	Succeeded	119	2,54	,47	-,008	,994
	Failed	247	2,54	,43	-,007	

When table 4 is examined, no difference is caught in between those who succeeded and failed in the exam and total emotional intelligence and its sub-dimensions. ( $p>0.05$ )

**Table 5: T- Test Results of First Born and Secondary or Later Born, Based On The Sub-Dimensions of Optimism and Expression**

	<b>Birth sequence group</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>t</b>	<b>p</b>
<b>Optimism</b>	First born	161	3,93	,44	1,998	,046
	2ndary or later born	201	3,83	,53		
<b>Expression</b>	First born	161	2,49	,42	-2,453	,015
	2ndary or later born	201	2,60	,46		

In table 5; while in the dimension of optimism, the average point of first born (n=161) is higher than second or later born. (n=201) ( $p=0.046$   $p<0.05$ ), in the expression dimension, average point of second and later born is higher than the first born ( $p=,015$   $p<0.05$ ).

**Table 6: T- Test Results of Individuals with and Without Siblings, Based On the Sub-Dimension of Expression**

	Siblings Group	N	Mean	Std. Deviation	t	p
Expression	With Siblings	41	2,37	,38	2,683	,004
	Without Siblings	325	2,57	,45	3,037	

In the expression dimension, it is discovered that the average point of those who have siblings is higher than those who do not have siblings. ( $p=,004$   $p<0,05$ )(Table 6).

**Table 7: Analysis Results of Correlation between EQ and Trait Anxiety:**

		Anxiety	Optimism	Utilization	Expression	Intelligence
Anxiety	Pearson Correlation	1	,244(**)	-,008	,245(**)	,330(**)
	Sig. (2-tailed)		,000	,881	,000	,000
	N	366	366	366	366	366
Optimism	Pearson Correlation	,244(**)	1	,282(**)	-,149(**)	,760(**)
	Sig. (2-tailed)	,000		,000	,004	,000
	N	366	366	366	366	366
Utilization	Pearson Correlation	-,008	,282(**)	1	,050	,547(**)
	Sig. (2-tailed)	,881	,000		,344	,000
	N	366	366	366	366	366
Expression	Pearson Correlation	,245(**)	-,149(**)	,050	1	,430(**)
	Sig. (2-tailed)	,000	,004	,344		,000
	N	366	366	366	366	366
Intelligence	Pearson Correlation	,330(**)	,760(**)	,547(**)	,430(**)	1
	Sig. (2-tailed)	,000	,000	,000	,000	
	N	366	366	366	366	366

Table 7 demonstrates emotional intelligence and trait anxiety level correlation of the candidates who took the exam. A meaningful relation has been found between; trait anxiety and optimism

dimension ( $r = ,244$   $p < 0.05$ ), trait anxiety and expression dimension ( $r = ,245$   $p < 0.05$ ) and trait anxiety and total emotional intelligence dimension. However no relation has been found between utilization sub-dimension and trait anxiety.

## DISCUSSION AND CONCLUSION

Trait anxiety and emotional intelligence levels of students who participate in special ability test in order to attend The School of Physical Education And Sport has been evaluated according to some variables. Differences in trait anxiety and emotional intelligence levels have been considered and some differences have been found. Similarly, some positive relations have been found between trait anxiety and some levels of emotional intelligence.

No differences have been found in the age of sport and the level of trait anxiety for students who participated in special ability test. (Table 1) Similarly, no differences had been found in Ögüt's work of 2000 when trait anxiety and age of sport were compared (Ögüt, 2000). In 2009, at the study of Başaran and his friends, it is found that the level of anxiety is considerable higher in those with lower age of sport than those with higher age of sport (Başaran et al, 2009: 21). This study totally overlaps with our research. No differences have been found between the age of sport and emotional intelligence level in students who took the special ability test. (Table 1) Besides, no researches or studies have been found regarding the age of sport.

When we analyze candidates who engage in individual sports, and those who engage in team sports, no significant difference is found between their trait anxiety levels (Table 1). In Ögüt's study,

(2000) considerable differences have been found at the trait anxiety level, only between basketball players and swimmers. Other branches have not showed any differences (Ögüt, 2000). Indeed, Başaran's study demonstrates that trait anxiety point of taekwondo players are considerable higher than basketball players. As for the comparison of other branches, no clear differences have been diagnosed statistically (Başaran et al, 2009: 21). In our study no differences have been found between the candidates who are engaged with individual sports and team sports. (Table 1) Besides, no researches or studies have been found regarding the branches of sport and/or emotional intelligence.

No clear differences have been found regarding the emotional intelligence and; educational level of the parents, age of sport, branches and the year of the exam. Similarly, Malak's study (2011) on student shows that there is no relation between the emotional intelligence sub-dimension level points and variables such as; age, educational level of parents, or income levels (Malak, 2011). Moreover, Yücel's studies of taekwondo players supports the claim as sportsmen biological age, training age, gender, educational level of their parents, level of participation in competitions and their raising environment had no relation with their level of trait anxiety (Yücel, 2003). These results are also overlapping with, and supporting our study.

As for the variable of age, no meaningful differences have been found in this variable. (Table3). No considerable differences regarding emotional intelligence and gender have been observed in Çoban and his friends work (2010). Similarly, no significant differences had been displayed

in Harrod and Scheer's work (2005) when they evaluated the relation between emotional intelligence and demographic features for 200 teenagers at the age of 16 to 19 (Harrod N.S. et al, 2005). However, based on the study conducted by Multi Health System Inc. in Toronto, Buffalo and New York, it is found that emotional intelligence increases with aging. Based on Bar-On's emotional intelligence scale of emotional intelligence, emotional intelligence increases with age and reaches its top by the age of 50 (Güler, 2006). The reason that our study was not able to depict a difference at the emotional intelligence in students who took the special ability test may arise from the fact that the age gap was too low. No significant differences had been found in trait anxiety based on the age variable (Table 1). At the study of Lök and his friends (2008), state anxiety average point had been found quite high between the individuals at the age of 19 or below. If it is thought that the state anxiety situation can affect trait anxiety, it can be assumed that these individuals' trait anxiety levels would be high as, it can be observed in our study.

Based on the gender variable, no considerable difference had been found (Table 1). In Ögüt's study (2000) no difference had been found between trait anxiety total point and gender. In Başaran and his friends study (2009), no statistical differences had been observed between male and female trait anxiety points (Başaran et al, 2009: 21). These results support our study. No differences had been found in emotional intelligence and gender in our study (Table 3). Baltaş (1999) also, stressed that no differences had been found regarding the emotional intelligence and gender. And that both genders have approximately the same level of emotional

intelligence level (Baltaş, 1999). However, Köksal (2003) had found that emotional intelligence is higher in female student when compared with male students (Köksal, 2003). Besides, Halıçınarlı and Bender's study had stated that the total emotional intelligence point of female students is higher than the point of male students. In 2005, the study made by Austin and his friends demonstrated that first grade female medical student's emotional intelligence level was significantly higher when compared with male students (Austin, et al, 2005: 39/1395-1405). Last but not least, when Harrod and Scheer (2005) examined the relation between teenagers and demographic features, they found that female emotional intelligence was higher than male emotional intelligence.

When the variable of; result of the exam is considered, the average trait anxiety level of the successors is lower than those who failed ( $p=.02$   $p<0.05$ ) (Table 2). It can be said that individuals with lower level of trait anxiety can better evaluate the situation, and therefore can better cope with difficulties. It is seen that no difference exist in total emotional intelligence and its sub- dimensions (Table 4). Besides, no researches or studies have been found regarding the result of the exam and emotional intelligence.

According to the sibling variable, it is found that in the dimension of emotional intelligence, the average point of those who have siblings is higher than those who do not have any. ( $p<0,05$ ) (Table 6). The reason behind this may occur because of the fact that having a sibling may end up with more communication. Because, at this level where emotions are evaluated and expressed, people may perceive, interpret and emphasize verbal and non-verbal emotions.

When birth row is considered, at the optimism dimension, the average point of the first born is found significantly higher than second or later born. ( $p=0.046$   $p<0.05$ ) (Table5). Based on this, it can be said that first born are more optimistic and that they can better control their own and others feelings. At the expression level, on the other hand, the average point of second or later born is higher than the first born ( $p=.015$   $p<0.05$ ) (Table 5). Second or later born are better in expressing their feelings.

A low-leveled positive relation had been found between trait anxiety and general emotional intelligence ( $r=.330$   $p<0,05$ ). Same results had been found in those who succeeded the exam ( $r=.248$   $p<0.05$ ). Similarly, a low leveled relation had been found between trait anxiety and expression level  $r=.245$   $p<0,05$  as well as optimism level  $r=.244$   $p<0,05$ . The cause can be based on the fact that people with high trait anxiety level increase their emotional intelligence in order to cope with the situation. As their trait anxiety level is low, they can better cope with difficult situations. It can be thought that evaluation of people with trait anxiety as stressful may cause their failure. These individuals may become more anxious at the competitions. No relations have been found between emotional intelligence and utilization dimension ( $r=-.008$   $p>0,05$ ) (Table 7).

If the possibility of success in the exam is higher in students who have less trait anxieties, those with high trait anxieties will need to be trained to cope with such anxiety. At the fourth grade, level of trait anxieties can be reexamined and differences can be put clear. These differences can be researched at different universities. Some trainings can be recommended regarding the development of emotional intelligence.

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## BEDEN EĞİTİMİ VE SPOR YÜKSEKOKULU ÖZEL YETENEK SINAVINA GİREN ADAYLARIN SÜREKLİ KAYGI DÜZEYLERİ İLE DUYGUSAL ZEKA DÜZEYLERİNİN BAZI DEĞİŞKENLERE GÖRE İNCELENMESİ

**Özet:** Günümüzde bireylerin ortaya koyacağı psikolojik becerilere, elde edeceği başarı ve performans değerlerine etki eden birçok kavram bulunmaktadır. Kaygı düzeyi, bu kavramların arasında önemli bir yer almaktadır. Özellikle yarışma öncesi ve sonrası, sporcuların kaygı düzeylerinin ve kaygı nedenlerinin bilinmesi bununla başa çıkacak olan sporcu ve eğitmenler açısından oldukça önemlidir. Duygusal zeka, gerek kendi duygularımızı gerekse başkalarının duygularını tanımayı ve değerlendirmeyi öğrenmemizde etkili olan bir kavram olarak bilinmektedir. Daha önce duygusal zeka ve kaygı ile ilgili birçok çalışma yapılmasına rağmen, bu iki değişkenin bir arada bulunduğu bir çalışma literatürde bulunmamaktadır. Bu araştırmanın amacı, Ege Üniversitesi Beden Eğitimi ve Spor Yüksekokulu özel yetenek sınavına giren adayların sürekli kaygı düzeyleri ile duygusal zeka düzeylerinin bazı değişkenlere göre incelenmesidir. Araştırmaya  $19.33 \pm 2.31$  yaş ortalamasına sahip 255 erkek ve 111 kadın toplam 366 gönüllü kişi katılmıştır. Kişilere Shutte ve arkadaşları tarafından (1998) yapılan duygusal zeka ölçeği (Schutte Emotional Intelligence Scale (SEIS)) ve Spielberger ve arkadaşları tarafından (1964) yapılan sürekli kaygı ölçeği (State Trait Anxiety Inventory) uygulanmıştır. Verilerin İstatistiksel analizinde SPSS 18 paket programından yararlanılmıştır ( $p < 0,05$ ). Araştırma sonucunda bu örnekte; sürekli kaygı ile toplam duygusal zeka, iyimserlik alt boyutu ve ifade alt boyutu arasında anlamlı bir ilişki olduğu bulunmuştur (sürekli kaygı ile iyimserlik alt boyutu arasında ( $r = ,244$   $p < 0,05$ ); sürekli kaygı ile ifade alt boyutu arasında ( $r = ,245$   $p < 0,05$ ); sürekli kaygı ile toplam duygusal zeka arasında ( $r = ,330$   $p < 0,05$ ). Ancak kaygı ile duygusal zeka alt boyutları arasında korelasyon katsayısı düşüktür. Sınavı kazanan adaylarda sürekli kaygı ile iyimserlik alt boyutu ve sürekli kaygı ile toplam duygusal zeka arasında anlamlı ilişki olduğu bulunmuştur. Sürekli kaygı ile iyimserlik alt boyutu arasında ( $r = ,205$   $p < 0,05$ ); sürekli kaygı ile toplam duygusal zeka arasında ( $r = ,248$   $p < 0,05$ ). Ayrıca sınavı kazanan erkeklerin duygusal zeka ortalama puanlarının kadınlardan daha yüksek olduğu belirlenmiştir ( $p < 0,05$ ). Sınav sonucu değişkeninde sürekli kaygı düzeyine bakıldığında kazananların sürekli kaygı düzeyi ortalamaları kazanamayanlara göre daha düşük bulunmuştur ( $p = ,02$   $p < 0,05$ ) (Tablo 2). Sürekli kaygı durumları düşük olan kişilerin durumları daha iyi değerlendirip, zorluklarla daha iyi başa çıkabildiklerini söyleyebiliriz. Sürekli kaygıları daha düşük olan bireylerin sınavı kazanma olasılıkları daha yüksekse, sürekli kaygısı yüksek olan bireylere bu kaygıyla baş edebilmeleri için eğitim verilmesi önemli gözükülebilir. Sınavı kazanan öğrencilerin, 4. sınıftayken tekrar sürekli kaygı ve duygusal zeka düzeyleri incelenip aradaki fark bir kez daha gözden geçirilebilir. Farklı üniversitelerde bu farklılıklar ve ilişkiler araştırılabilir. Duygusal zekanın gelişimine ilişkin eğitimler önerilebilir.

**Anahtar kelimeler:** Beden Eğitimi, Duygusal Zeka, Sürekli Kaygı

## HOW COMPETENT ARE WE AS ENGLISH TEACHERS? ENGLISH TEACHERS' PERCEPTION AS TO THEIR PROFESSIONAL COMPETENCIES<sup>(1)</sup>

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**Abstract:** The primary medium of today's communication and digital world is the English language, which makes the teaching of it an important matter. For the pupils to develop their language skills, teacher support is essential. A great deal of research has emphasized the key role of the teacher in student learning, and this is also valid for English language teachers and learners. In line with this emphasis, this study aims to find out the level of perception of the English language teachers working in high schools in Ankara as to their professional competencies. The main question the study answers is how competent the teachers perceive themselves to be in terms of their professional competencies. The data were collected through English Teachers' Professional Competencies Scale. A 5-point Likert type scale of 40 items, the scale has two factors, namely "English Language Proficiency" and "English Teaching Competencies." Validity and reliability of the scale were evaluated positively, and reliability coefficients for each factor were calculated to be 0.93 and 0.95 respectively. The findings are analyzed according to gender, department of graduation, length of service, and participation in in-service training activities. As a result of the study, it is identified that the teachers have a "high" level of perception as to their professional competencies, and that the level of perception concerning professional competencies did not vary according to gender, department of graduation, length of service, and participation in in-service training activities, while it varied according to education level.

**Key Words:** Teacher Competencies, English Teachers, Language Teaching Competencies

### INTRODUCTION

Research has shown that the principal agent in educational activity is the teacher (Bell and Gilbert, 1996; Dunkin, 1997; James, 2001; Klaassen, 2002). Students, curriculum, and teachers are regarded as the basic components of the school system, and it is emphasized that education and

school would not exist without the presence of any of them (Sönmez, 2003). Similarly, the facilities, class materials and equipment designed to meet the basic needs of the students are the fundamentals of instructional programs. However, effective teacher is of vital importance for the success of dynamic instructional programs. It is

1 This paper was presented at The 4th Language in the Realm of Social Dynamics International Conference titled "The Multi-dimensions in an Era of Language and Teaching", May 3-4, 2012

the teacher that is the most important variable for the effective educational programs at all levels and in all settings (Miller and Miller, 2002).

Concerning the effective variables on student success, which is the main goal of instruction, teacher and the quality of instruction delivered by the teacher are the central issues for exploration. The significance of the teacher as an influential factor on student success in the context of education requires the fulfillment of certain fundamental tasks on the part of the teacher as expected by students and the school as organization. The sources of such expectations are school administration, colleagues, parents, students, and all the other agents surrounding the school. Consequently, teachers are thought to have certain basic competencies so as to meet the expectations coming from these sources (Acar, 2005; Altan, 2006; Richards, 2002).

Teachers could be seen as the main actors in the teaching-and-learning processes and in in-class activities. Previous research found positive relationship between such teacher characteristics as intelligence and academic skills and student success, and recent research has produced certain findings concerning the positive relationship between teacher's verbal skills, experience, and knowledge of subject matter and student success (Şişman, 2002), which is thought to have highlighted teacher competencies and fuelled related discussions and research.

It is evident that educational programs will not be able to work effectively toward their goals without teachers competent in their subject matter and in the delivery of instruction (Miller and Miller, 2002). On the other hand, the teacher's

effectiveness in the basic areas of competence has the potential to enhance school culture and effectiveness, school-parents relationship, contribute to student success and thus improving the quality of instruction in general. Such growing importance has been attached to teacher competency that it is accentuated in teacher education, selection, and supervision practices in many countries, indicating that teachers need to have certain basic competencies so as to accomplish what is required by the teaching profession itself (The Texas Essential Knowledge and Skills for Languages other than English [TEKS for LOTE], 1997; Adult Basic and Literacy Education [ABLE], 2001; Peacock and Rowson 2001; Scottish Executive, 2002; The National Board of Professional Teaching Standards [NBPTS], 2003; Milli Eğitim Bakanlığı [MEB], 2007).

In terms of language teaching, it is necessary for language teachers to have certain professional competencies to meet the demands of the teaching profession (Brown, 2001; Kalebic, 2005). This has stimulated new research into the identification of the English teachers' professional competencies along with the teaching standards for English Language Teaching [ELT] (MEB, 2008). On the other hand, it is seen in such documents as Common European Framework of Reference for Languages, European Language Portfolio, and European Language Passport, that the language skills students are expected to master are considered within a single framework (Demirel, 2004:198). Consequently, it is thought that improving the quality of language instruction and facilitating students mastering the language skills stated in the abovementioned documents are

closely related to the professional competencies of English teachers.

In such a context for the teaching of English language, this study aims to identify the level of perception of the English teachers working in general high schools concerning their professional competencies and explore their perceptions by certain demographic variables. The second section of the study presents literature review on teacher competencies. The third section covers the methodology, and the fourth findings and results. The final section includes the discussion of the results, comparing them with other research results and suggestions.

## COMPETENCIES FOR ELT

Competency is defined as “the combination of knowledge, skills, and attitudes to do a job properly” (Gündüz, 2003:43). Korthagen (2004:80) considers teacher competencies as “a consistent whole composed of knowledge, skills, and attitudes” and reckons that teacher competencies serve as the foundation upon which teachers behaviors are built.

Successful language teaching depends largely on teachers having a high level of skills and expertise. Language teachers are expected to have the knowledge of the subject matter, of students, and of instructional methodology. They are thought to be able to adapt the theories to their practices, and develop proper tools for instruction and evaluation, if they have such knowledge (Richards, 2002: 216). The characteristics of a good language teacher are considered as technical knowledge, pedagogical skills, interpersonal skills, and personal qualities (Brown, 2001: 430). Technical knowledge covers

understanding the linguistic systems of English phonology, grammar and discourse, comprehensively grasping basic principles of language learning and teaching, having fluent competence in speaking, writing, listening to, and reading English, knowing through experience what it is like to learn a foreign language, understanding the close connection between language and culture, and keeping up with the field through regular reading and conference / workshop attendance. Pedagogical skills basically include having a well-thought-out, informed approach to language teaching, understanding and using a wide variety of techniques, efficiently designing and executing lesson plans, effectively perceiving students’ linguistic needs, using appropriate principles of classroom management, and using effective, clear presentation skills.

Professional competencies for Turkish and English language teachers working primary and secondary schools have been identified by the Ministry of National Education. According to the report, the competencies are listed as (MEB, 2009:1-11):

- 1. Knowledge of language components and language acquisition:** This area covers using the language accurately and appropriately by attending to phonological, morphological, syntactic, and semantic components of knowing a language and the knowledge of language acquisition.
- 2. Knowledge of English Language Teaching:** This area covers the practices for planning language learning-teaching process, organizing settings supportive of language learning, fostering language skills, developing strategies for learning and using a language, considering the students who need special education, using appropriate methods

and techniques, materials and resources as well as technological tools, monitoring, assessing and evaluating students' development.

**3. Attitudes and Values:** This area covers promoting awareness of the importance of speaking a foreign language through social and cultural interaction, and teachers' having positive attitudes and values to their professional development.

To sum up, English language teachers are expected to have awareness of using English accurately and fluently, advanced level of listening, speaking, reading, and writing skills, and advanced level of grammar and vocabulary. This constitutes the subject matter and language proficiency of the English teachers (knowledge of the language). On the other hand, in terms of their pedagogical competency, English language teachers are expected to be able to plan the English lessons according to the curriculum, to know and implement the methods and techniques of English language teaching, to have effective classroom management skills, to be able to monitor and evaluate students' language development, to be able to give feedback to the students about their development, motivate students to learn English, to promote language skills development, and to be able to select and use appropriate class and lesson materials (Barnes, 1996; Briguglio and Kirkpatrick, 1996; Brown, 2001; Celce-Murcia, 2001; Chastain, 1989; Demirel, 2004).

## METHOD OF RESEARCH

This descriptive study has surveyed the level of perception of the English teachers working in general high schools concerning their professional competencies and investigated their perceptions

by such variables as gender, department of graduation, education level, length of service, and participation in in-service training activities.

The population of the study consisted of the English teachers working in the general high schools in the provincial districts of Ankara (Altındağ, Çankaya, Etimesgut, Gölbaşı, Keçiören, Mamak, Sincan and Yenimahalle). The total number of the English teachers working in the general high schools in provincial Ankara in the educational year 2007-2008 (404 teachers) was received from Ankara Directorate of National Education. Sample size for the study was calculated to be 163, using simple random sampling.

The instrument of the study has two sections. The first section presents demographic information of the participants. The distribution of the participants according to the variables of gender, department of graduation, education level, length of service, and participation in in-service training activities is illustrated in Table 1. The second section has the scale developed by Cantekin (2009), namely "the Scale of English Teachers' Perception of their Professional Competencies." It is a 5-point Likert type scale where 1 refers to the lowest, while 5 the highest.

**Table 1 Participants' demographic data**

Variable	Categories	f	%
Gender	Female	104	63.8
	Male	59	36.2
Department of graduation	English Language Education	97	59.5
	English Language and Literature	47	28.8
	Others	19	11.7
Level of education	Institute for Education	13	8.0
	Undergraduate	140	85.9
	Graduate (Masters)	10	6.1
Length of service	Less than 10 years	50	30.7
	10-20 years	82	50.3
	Over 20 years	31	19.0
Participation in in-service training activities	Yes	100	61.3
	No	63	38.7

104 (63.8 %) of the participants were female; more than half of the participants (59.5) graduated from the Department of English Language Education; the majority of the participants (85.9 %) were university graduates; almost half of the participants had 10-20 years of length of service, and 100 of the participants (61.3 %) participated in an in-service training activity.

#### **(i) Validity and Reliability**

Construct validity of “the Scale of English Teachers' Perception of their Professional Competencies” was assessed through factor analysis. The factor analysis yielded the result that the scale was of two sub-dimensions called English Proficiency and

Competencies of English Instruction (Cantekin, 2009). The KMO measure was 0.901. The fact that the value was more than 0.60 showed that the data suitability for factor analysis was high. Varimax rotation was used in factor rotations and the items having a factor load of 0.40 were excluded from the scale. Cronbach alpha values for each dimension were calculated for reliability (See Table 2 for the summary of the results of factor and reliability analyses).

As is seen in Table 2, the factor loadings of the items in the scale ranged from 0.444 to 0.745. The total variance explained in the scale with a two factor structure was 46.17 % (23.44+22.73). It is suggested that the percentage of variance explained in social studies should be at least 40 (Tavşancıl, 2002:48; Scherer, 1988).

**Table 2 Results of Factor and Reliability Analyses**

English Proficiency			Competencies of English Instruction		
Item	Factor Loadings	Corrected Item-Total Correlation	Item	Factor Loadings	Corrected Item-Total Correlation
1	.695	.694	21	.524	.558
2	.642	.592	22	.453	.601
3	.575	.567	23	.517	.624
4	.649	.623	24	.444	.513
5	.617	.591	25	.517	.631
6	.611	.614	26	.541	.641
7	.535	.564	27	.708	.711
8	.586	.587	28	.705	.683
9	.629	.589	29	.709	.652
10	.485	.529	30	.652	.623
11	.613	.650	31	.656	.642
12	.604	.597	32	.649	.626
13	.700	.668	33	.684	.649
14	.735	.665	34	.729	.696
15	.580	.582	35	.740	.694
16	.610	.591	36	.745	.680
17	.534	.511	37	.681	.656
18	.643	.634	38	.680	.657
19	.547	.593	39	.702	.700
20	.613	.589	40	.671	.697
Variance explained = %23.44			Variance explained = %22.73		
Cronbach Alpha = 0.93			Cronbach Alpha = 0.94		

**(ii) Data Analyses**

Assumptions of normality were evaluated through Kolmogorov-Smirnov tests. Under normality,

independent samples t test was used for the comparison of the two groups; one-way analysis of variance (ANOVA) was used for the comparison of more than two groups involved. When the

variance analysis produced a result that at least one group was different, Tukey test, one of the multiple comparison tests, was used to find which group was significantly different from the others. Levene's test was used to assess the equality of variances in the comparison of the groups and thus it was decided which test statistic should be considered. The significance level was chosen as 0.05 and the results of the analyses were interpreted accordingly.

### FINDINGS AND RESULTS

The first finding is that the participants' level of perception concerning their professional competencies was found to be "high" in both dimensions of English Proficiency and Competencies of English Instruction. As seen in Table 3, the standard deviation values are close to one another, which shows that homogeneity is the same in both dimensions. Further, considering

the bounds of the confidence intervals, 95 % of the participants had means between 3.93 and 4.08 in terms of English Proficiency. Likewise, it is also seen that 95 % of the participants had means between 3.84 and 4.02 in terms of Competencies of English Instruction.

Consequently, the participants considered themselves to have a "high" level of perception concerning their professional competencies, but not "the highest." This is an implicit acceptance on the part of the participants that they still need further development in their profession.

The second finding is that the participants' level of perception did not vary significantly according to gender in both dimensions of English Proficiency [ $t(161)=-.22$ ;  $p>0.05$ ] and Competencies of English Instruction [ $t(161)=.16$ ;  $p>0.05$ ] (see Table 4).

**Table 3 Participants' level of perception concerning their professional competencies**

	M	SD	95% Confidence Interval of the Mean	
			Lower Bound	Upper Bound
English Proficiency	4.00	.49	3.93	4.08
Competencies of English Instruction	3.93	.56	3.84	4.02
General	3.97	.48	3.89	4.04

**Table 4 Professional competencies and gender**

Dimensions	Gender	n	M	SD	t	p
English Proficiency	Female	104	4.00	.49	-.22	.83
	Male	59	4.01	.48		
Competencies of English Instruction	Female	104	3.93	.60	.16	.88
	Male	59	3.92	.47		

The third finding is that the participants' level of perception did not vary significantly according to department in both dimensions of English Proficiency [ $F(2,160)=2.41$ ;  $p>0.05$ ] and Competencies of English Instruction [ $F(2,160)=2.73$ ;  $p>0.05$ ] (see Table 5).

The fourth finding is that the participants' level of perception varied significantly according to education

level in both dimensions of English Proficiency [ $F(2,160)=11.24$ ;  $p<0.05$ ] and Competencies of English Instruction [ $F(2,160)=3.30$ ;  $p<0.05$ ] (See Table 6). According to the results of the multiple comparison tests, the level of perception of those graduating from Education Institutes was found to be lower than those of both university graduates and those with a graduate degree.

**Table 5 Professional competencies and department of graduation**

Dimensions	Departments	n	M	SD	F	p
English Proficiency	English Language Education	97	3.94	.51	2.41	.09
	English Language and Literature	47	4.12	.39		
	Others	19	4.05	.54		
Competencies of English Instruction	English Language Education	97	3.85	.51	2.73	.07
	English Language and Literature	47	4.08	.44		
	Others	19	3.98	.90		

**Table 6 Professional competencies and education level**

Dimensions	Education Level	n	M	SD	F	p	Diff.
English Proficiency	(1) Education Institute	13	3.43	.73	11.24	.00	1-2
	(2) Undergraduate	140	4.04	.42			1-3
	(3) Graduate	10	4.15	.53			
Competencies of English Instruction	(1) Education Institute	13	3.58	.71	3.30	.04	1-2
	(2) Undergraduate	140	3.97	.49			1-3
	(3) Graduate	10	3.82	1.01			

**Table 7 Professional competencies and length of service**

Dimensions	Length of Service	n	M	SD	F	p
English Proficiency	Less than 10 years	50	4.06	.46	1.31	.27
	10-20 years	82	4.01	.50		
	Over 20 years	31	3.88	.48		
Competencies of English Instruction	Less than 10 years	50	3.94	.65	.47	.62
	10-20 years	82	3.95	.49		
	Over 20 years	31	3.84	.57		

As seen in Table 7, the fifth finding is that the participants' level of perception did not vary significantly according to length of service in both dimensions of English Proficiency [ $F(2,160)=1.31$ ;  $p>0.05$ ] and Competencies of English Instruction [ $F(2,160)=.47$ ;  $p>0.05$ ].

The final finding is that the participants' level of perception did not vary significantly according to participation in in-service training activities in both dimensions of English Proficiency [ $t(161)=1.19$ ;  $p>0.05$ ] and Competencies of English Instruction [ $t(161)=1.47$ ;  $p>0.05$ ] (see Table 8).

**Table 8 Professional competencies and participation in in-service training activities**

Dimensions	Participation	n	M	SD	t	p
English Proficiency	Yes	100	4.04	.50	1.19	.23
	No	63	3.94	.45		
Competencies of English Instruction	Yes	100	3.98	.53	1.47	.14
	No	63	3.85	.60		

## DISCUSSION AND CONCLUSION

This study demonstrates that the English teachers working in the general high schools in provincial Ankara had a "high" level of perception concerning their professional competencies in the dimensions of English Proficiency and Competencies of English Instruction. Likewise, Kavak (1986) studied teacher competencies within five dimensions (knowledge of subject matter, methods of instruction, assessment and evaluation, research, human relations) with a sample of teachers and students and concluded that the participants saw themselves as "fairly competent." However, the students' opinions were not in the same direction; the students thought the teachers were "only partially competent." Evaluating the teacher education program for primary school teachers, Taşdemir (1995) found that the student teachers acquired the basic competencies at a level of partial adequacy with the program followed. In addition, investigating how important competen-

cies were in the eyes of teachers and the extent of acquisition of the competencies, Acar (2005) found that the teachers considered the acquisition of the competencies very important.

It is evident that the teachers' "high" perception of professional competency does not necessarily indicate that they have these competencies and display them in practice. This is one of the limitations of perception studies. Therefore, the findings need to be analyzed with this in mind. In conclusion, teachers' level of competency should be evaluated by using different tools like formal tests of knowledge and sources such as students, parents, school administrators.

It has also been found that the participants' level of perception did not vary significantly according to gender. Similar studies have been conducted with the same conclusion (Çelenk, 1988; Çakır, Erkuş and Kılıç, 2004; Oral, 2004; Çakır 2005). However, other studies have shown that gender could be a significant factor affecting profes-

sional competencies. For example, İzci (1999) found that female teachers had higher scores in terms of the knowledge of their subject matter. Still other studies indicate that gender could be an important factor (Sünbül and Arslan, 2007; Çapri and Çelikkaleli, 2008). Therefore, it is suggested that the relationship between gender and perception of professional competency should be evaluated by using varied samples at different levels of education.

It is interesting to note that the present study found the participants' level of perception did not vary significantly according to department of graduation. Studies into teachers of other branches found variation according to department of graduation. For example, Şahin (1995) worked with classroom teachers and found significant differences between the teachers graduating from faculty of education and the teachers graduating from other faculties in terms of their knowledge of the subject matter. On the other hand, investigating the principals' perception as to teacher competencies in primary schools, Dağlı (1999) concluded that the principals regarded those graduating from faculty of education as "fairly competent" while they saw the teachers graduating from other faculties as "partially competent" in terms of their knowledge of the subject matter. Consequently, it is clear that further study is needed to identify the underlying causes of why there are no significant differences between ELT graduates and other teachers. Prospective research could look into the issue considering the content and quality of English teacher education, working conditions and the qualifications demanded.

Numerous studies have established that in-service training contributes positively to the professional development of teachers (Özdemir and Yalın, 1998; Akçamete, 2005; Baykal, 2005; Güven, 2005; Özdemir, 2005). However, Özdemir (2005) found in his study that the in-service training for the teachers new in profession did not live up to the expectations in terms of quantity and quality and thus did not produce a positive effect on teachers' perception as to their professional competencies. This study has the same finding that the participants' level of perception did not vary significantly according to participation in in-service training activities. It is possible that this finding is related to the content, timing, attractiveness, being to the point, and the delivery of the in-service training. Further research will clarify these points. Still, school administrators should take these into consideration before taking any steps for teacher development.

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## İNGİLİZCE ÖĞRETMENLERİ OLARAK NE DÜZEYDE YETERLİĞE SAHİBİZ? İNGİLİZCE ÖĞRETMENLERİNİN MESLEKİ YETERLİKLERİNE İLİŞKİN ALGILARI

**Özet:** Bu çalışmanın amacı, genel liselerde görev yapan İngilizce öğretmenlerinin mesleki yeterlik algı düzeyinin belirlenmesi ve bu algılama düzeylerine demografik değişkenlerinin etkilerinin incelenmesidir. Tarama modeline göre yürütülen bu çalışmanın evrenini, Ankara ili merkez ilçelerinden Altındağ, Çankaya, Etimesgut, Gölbaşı, Keçiören, Mamak, Sincan ve Yenimahalle’de bulunan genel liselerde görev yapan İngilizce öğretmenleri oluşturmaktadır. Örneklem seçiminde, seçilen Ankara ili merkez ilçelerindeki genel liselerde görev yapan İngilizce öğretmenlerinin toplam sayısı MEB Ankara İl Millî Eğitim Müdürlüğü’nden elde edilmiştir. Elde edilen verilere göre, 2007-2008 öğretim yılında seçilen Ankara ili merkez ilçelerindeki genel liselerde görev yapan İngilizce öğretmenlerinin toplam sayısı 404’dür. Araştırma için örneklem büyüklüğü basit seçkisiz örnekleme göre 163 olarak belirlenmiştir. Araştırmada kullanılan veriler, araştırmacı tarafından geliştirilen “İngilizce Mesleki Yeterlikler Ölçeği” aracılığıyla toplanmıştır. Ölçek, “İngilizce Alan Yeterlikleri” ve “İngilizce Öğretimi Yeterlikleri” olmak üzere iki faktörlü yapıya sahiptir. Güvenirlik analizi sonucunda bu iki faktöre ait güvenirlilik katsayıları sırasıyla .93 ve .95 olarak hesaplanmıştır. Ölçek, üç bölümden oluşmaktadır. Birinci bölümde, araştırmaya katılan öğretmenlerin çeşitli değişkenlere ilişkin kişisel bilgilerine yer verilmiştir. Buna göre, araştırmaya katılan öğretmenlerin 104’ü (%63.8) kadındır. Eğitim düzeylerine bakıldığında ise öğretmenlerin 140’ının (%85.9) lisans mezunu olduğu görülmektedir. İngilizce öğretmenlerinin yarıdan fazlası (%59.5) İngiliz Dili Eğitimi bölümünden mezundur. İngilizce öğretmenlerinin büyük çoğunluğu (%85.9) lisans mezunudur. İngilizce öğretmenlerinin yaklaşık yarısı 10-20 yıl arasında mesleki tecrübeye sahiptir. 100 öğretmen (%61.3) hizmet içi eğitim programına katılmıştır. İkinci bölümde, öğretmenlerin mesleki yeterliklerine ilişkin ifadeler yer almıştır. Araştırma sonucunda, genel liselerde çalışan İngilizce öğretmenlerinin genel olarak mesleki yeterliklerinin kazanımına ve kullanabilmelerine ilişkin algılama düzeylerinin “üst” düzeyinde olduğu bulunmuştur. Öğretmenlerin mesleki yeterlik algılama düzeylerinin cinsiyet, mezun oldukları bölüm, hizmet yılı ve hizmet içi eğitim etkinliklerine katılma durumuna göre farklılık göstermediği ancak eğitim düzeyine göre farklılık gösterdiği sonucuna ulaşılmıştır.

**Anahtar Kelimeler:** Öğretmen Yeterlikleri, Mesleki Yeterlik, İngilizce Öğretimi Yeterlikleri

## LEVELS OF ORGANIZATIONAL SOCIALIZATION IN SPORTS COMPANIES (SPOR J. S. C. AN EXAMPLE OF ISTANBUL METROPOLITAN MUNICIPALITY)<sup>1</sup>

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**Abstract:** The purpose of this study is to analyze Directorate General Sport Inc. personnel in the staff with respect to motivational power, organizational commitment, job satisfaction and acceptance in the institutions, and examine to determine how they perceive the sense of organizational socialization. This research is a descriptive case study modeled according to the model. Population of the study of the Istanbul Metropolitan Municipality Sports Inc. composed of employees. Relevant information was obtained from the application of resources, screening and data collection tool. The population of this study was to I.B.B. Sports Inc General Directorate is 200 employees. The study sample was selected on a voluntary basis through the universe of Istanbul Metropolitan Municipality Sports Inc. a total of 112 employees who work in the consist. Employees that make up the sample of the study, 58 male and 54 female. In this research, Kartal (2003) used the scale developed by the Organizational Socialization. There weren't any significant differences found between the levels of organizational socialization concerning motivation, acceptance and commitment between the staff surveyed in terms of sex and duty. Acceptance by seniority of staff, their perceptions of organizational dependence on motivation and commitment are not different, significant differences is found in terms of job satisfaction. The proposal, related to the hypothesis found significant variations can be done in a comprehensive study.

**Keywords:** Organizational Socialization, Job Satisfaction, Motivation, Acceptance, Commitment

<sup>1</sup> This study was presented as a poster 2<sup>nd</sup> International Congress Of Ports For All And Sport Tourism (8-11 N - vember / Kemer – ANTALYA)

## INTRODUCTION

### Organizational Socialization

The socialization is a complex concept with its social, cultural, political, economic anthropological, psychological, supervisory and philosophical aspects and involving many sciences (Balci, 2003). Educational sociologists indicated that socialization is a harmony of the person according to his role in the structure and position. (Kartal, 2003). Porter and his friends (1981) determined that socialization is a harmony of the person to standards. (Porter et al., and others., 1981).

Socialization is a process to instruct “the roles” in social life particularly by transferring to person. Social pattern is protected in this way, the person learns group norms by socializing.

Socialization is “Learning Process” sociologically and psychologically in brief.

(Memduhoğlu, 2008).

One of the important concepts for organizational socialization is organizational socialization.

Organizational socialization is defined as a process that they obtained data concerned the affairs done or to be performed and they are conform with these new circumstances.

(Ashfort and all., 2007).

### Results of Organizational Socialization

There are personal or organizational results to become socialized. These results conform to general situation in variable social system and dynamics.

Scientists guessed possible adaptable results of the features of socialization and tactics.

The results of estimations occur in personal and organizational level. The results are reactions arising from the past and satisfaction novelty and role novelty.

(Hart, 1991).

### PURPOSE

Organizational Socialization is the process

Organizational socialization is the process whereby an organization teaches an individual the knowledge and skills necessary to assume his or her organizational role in the organizational activities. According to Schein, it involves teaching newcomers the values, behaviours, social knowledge, and necessary work place skills needed to successfully assume an organizational role and participate as an organizational member, to learn tips, to doctrine, to educate and it is required all duties and norms to specify. Otherwise, it causes inter organizational studies. (Van Manen, Schein, 1979).

If Individual values of the employees working in Istanbul Metropolitan Municipality Sport JSC and corporate values of the company are not match up with each other the conflict take place. This conflict prevents vitally to execute the aims of the company and in progress.

For to prevent this situation, the values existing in the Istanbul Metropolitan Municipality Sport. Inc. and the

functions in the objectives of the organization should be established and analyzed and solved.

In the study it is reviewed with regard to relation of organizational culture existing in Istanbul Metropolitan Municipality Sport Inc. and organizational socialization

In the research it was tried to determine organizational socialization process of the employees who are working in SportJSC.

Consequently, this research is aimed at to determine in what level the employees to realize organizational socialization. Sport is one of the most important factors in order to live a healthy life. There are positive participations mentally as well as physical on human health.

#### - **Restrictions**

This research is restricted with comments concerning organizational socialization of 112 employees who are working in Istanbul Metropolitan Municipality Sport JSC in Istanbul province.

- **Definitions Socialization:** Process of the individual to accept the norms constituted by a specific social group or society and learning the ways or accept them generally. (Parlak, 2005).

**Organizational Socialization:** Learning

process of the norm, rule, value and attitudes of wage earner that the organization has been waiting from himself.(Kartal, 2003).

**Organizational Socialization Level:**At the end of organizational socialization process it expresses the level of wage earner's at job satisfaction, motivation, organizational commitment and acceptance scales. (Kartal, 2003). The permanency is very important for the process of organizational socialization. When considered from this point

of view, it depends on whether wage earner to have satisfaction of business did or realization of the aims of the organization, the efficiency of socialization period. (Kartal, 2008).

#### **METHOD**

In this section, research model and hypotheses, population and sample,data collection tool, data and statistical analysis used for analysis of data are presented.

Population consists of the employees of Istanbul Metropolitan Municipality Sport Inc.

Data regarding the subject are obtained from review of literature and data collection tool.

#### - **SearchModel**

This study has been modelled according to descriptive survey model. It was tried to receive opinions of experimental subjects about existing status by collecting data without amendments. Representation method is research approaches which aim at describe the past or substancial case in the form of it exists. The research subject is defined according to its conditions and as is. It is not endeavored for change and effect the event. The foremost is to search the thing wanted to know and determine. (Karasar, 2006)

#### - **Population and Sample**

The Population of this study was to

I.B.B. Sports Inc. General Directorate is 200 employees.

The study sample was selected on a voluntary basis through the universe of Istanbul Metropolitan Municipality Sports Inc. a total of 112

employees who work in the consist. Employees that make up the sample of the study, 58 male and 54 female

#### - Data Collection Tools

Before starting the study and on the way continuing all relevant thesis, books,

Research continues on before and all theses, books, theses and other relevant professional fields has been reached the previous research libraries and the internet network has been scanned in detail.

In this research, a questionnaire and a scale was used for data collection purposes. The poll surveyed individuals' personal information and the classification features are included that will help you. In this research, Kartal (2003) used the scale developed by the Organizational Socialization.

The Organizational Socialization Scale is consisted of four subscales independent of each other. The validity

and reliability analysis of subscales was performed by Kartal (2003). In Kartal (2003) research,

Subscales have been examined whether these are one dimensional or not, factor removed the items which loading values are below 0.30 and factor analysis was applied and finalized.

At final stage, 58 items in total was involved as follows, 13 in job satisfaction scale, 16 in motivation scale, 18 in commitment scale and 11 in acceptance.

5 fold Likert type rating scale was used.

Kartal (2003) watched the reliability of each subscale by Cronbach Alpha coefficient and calculated as 0.76, 0.87, 0.80, 0.76 respectively.

In this research, the reliability of the Organizational Socialization scale was examined.

According to this, results of reliability analysis used in the study are given at Chart 1.

**Chart 1. Results of Reliability Analysis Belonging to Comments Regarding Organizational Socialization**

	N	Cronbach's Alfa Value
Organizational Socialization (General)	112	0,915
Job Satisfaction	13	0,807
Motivation	16	0,833
Commitment	18	0,674
Acceptance	11	0,633

According to 0,915 Cronbach Alpha value used in the study calculated in Chart 1, it was observed that scale factor used in the study is safe highly. On the basis of subscale commitment and acceptance scales are safe notably. Job satisfaction and motivation scales are safe highly.

These values are attained based on SPSS Applied Multivariate Statistical Techniques

Arranged by Kalaycı (2008).

#### - Resolution of Data and Comment

Data required for research was obtained through survey applied to experimental subject. Raw data obtained by survey was transferred to computer. During process of finding answer it was imposed on SPSS

17.0 (Statistical Package for The Social Science) programme. For the purpose of

Research the relation of demographic features of the organizational socialization dimensions in order to solve problems of the study the Independent Sample T Test and One Way Analysis of Variance

(ANOVA) has been used. Furthermore for answers of the individuals were interpreted by frequency analysis and it was showed by graphics.

During study importance levels of 0,05 has been considered.

## IMPLEMENTATION

### - - Frequency Analysis Regarding Demographic Features

At the end of frequency analysis the findings obtained regarding the subject are as follows;

#### Chart 2. Frequency Distributions Regarding Gender Variable

Gender	N	(%)
Male	58	51,8
Female	54	48,2
<b>Total</b>	<b>112</b>	<b>100</b>

Frequency distributions of the employees regarding genders are given in the Chart 2.

According to this, 51,8% of the employees who participated in the study is male and 48,2% is female, it was observed.

#### Chart 3. Frequency Distributions Regarding Age Variable

Age	N	%
Aged 30 and below	58	51,8
Between 31- 40	43	38,4
Aged 41 and above	11	9,8
<b>Total</b>	<b>112</b>	<b>100,0</b>

Frequency distributions of the employees regarding age variable are given in the Chart 3. According to this, 51,8% the employees who participated in the study are at the age of 30 and below, and 38,4% of them is in the range of 31-40 and 9,8% aged 41 and older, it was observed.

#### Chart 4. Frequency Distributions Regarding Professional Seniority Variable

Service year	N	(%)
Between 1-5years	59	52,7
Between 6-10years	22	19,6
Between 11-15years	31	27,7
<b>Total</b>	<b>112</b>	<b>100,0</b>

The frequency distributions of the employees regarding professional seniority variable are given in Chart 4. According to this, it was observed that the employees who participated of 52,7% in this study have professional seniority between the range of 1-5years, 19,6% between 6-10 years and 22,7% between 11-15 years.

### - Statistical Test

In this section the findings are included concerning hypotheticalo statistical tests of research.

### 1. T Test Results Belonging to Organizational Socialization According to Gender Variable

Statistical discrepancies concerning the comments of participants about organizational socialization according to their genders was tested by T Test and the results obtained are given at Chart 5.

**Chart 5. T Test Results belonging to Organizational Socialization According to Gender Variable**

		N	Average	Standard Deviation	T Value	Sig.
<b>Job Satisfaction</b>	Male	58	48,0690	6,39315	1,085	0,280
	Famela	54	46,5185	8,63897		
<b>Motivation</b>	Male	58	56,9483	8,73674	1,050	0,317
	Female	54	55,0926	10,76554		
<b>Commitment</b>	Male	58	65,5345	7,27701	1,118	0,249
	Female	54	63,9259	7,42218		
<b>Acceptance</b>	Male	58	39,2241	5,73400	1,765	0,800
	Female	54	37,3148	5,70278		

Findings obtained from Chart 5 are indicated below.

It has been observed that the comments of the employees concerning job satisfaction of organizational socialization dimensions are not different statistically at importance level of 0,05 according to their genders.

(Sig.=0,280>0,05). In other words, the comments of the male, female participants is similar concerning job satisfaction. In this stage, alternative hypothesis of  $H_{1a}$  has been **rejected**.

It has been observed that the comments of the employees concerning motivation of organizational socialization dimensions are not different statistically at importance level of 0,05 according to their genders.

(Sig.=0,317>0,05). In other words, the comments of the male, female participants is similar concerning motivation dimension. In this stage, alternative hypothesis of  $H_{1b}$  has been **rejected**.

It has been observed that the comments of the employees concerning commitment of organizational socialization dimensions are not different statistically at importance level of 0,05 according to their genders.

(Sig.=0,249>0,05). In other words, the comments of the male, female employees is similar concerning commitment dimension. In this stage, alternative hypothesis of  $H_{1c}$  has been **rejected**

It has been observed that the comments of the employees concerning acceptance of organizational socialization dimensions are not different

statistically at importance level of 0,05 according to their genders.

(Sig.=0,280>0,05).In other words, the comments of the male, female employees is similar concerning acceptance. In this stage, alternative hypothesis of  $H_{1d}$  has been **rejected**.

In this stage alternative the hypothesis of  $H_{1d}$  has been **rejected**.

## 2.Variance Analysis Results Belonging to Organizational Socialization According to Age Variable

Statistical discrepancies regarding comments about organizational socialization according to their ages are tested and with One way Analysis of Variance and the results obtained are indicated in Chart 6.

**Chart 6. Variance Analysis Results Belonging to Organizational Socialization According to Age Variable**

	Age	N	Average	Standard Deviation	F	p
<b>Job Satisfaction</b>	At the age of 30 and below	58	47,2414	7,46762	,013	,987
	Between 31-40	43	47,3488	8,13249		
	Aged and above	11	47,6364	6,28129		
	Total	112	47,3214	7,56499		
<b>Motivation</b>	Aged 30 and below	58	56,0517	9,59609	,276	,759
	Between 31-40	43	56,5581	9,93383		
	Aged 41 and above	11	54,0909	10,69069		
	Total	112	56,0536	9,76742		
<b>Commitment</b>	Aged 30 and below	58	64,6379	6,93756	,713	,492
	Between 31-40	43	65,4884	8,08694		
	Aged and above	11	62,5455	6,65378		
	Total	112	64,7589	7,35857		
<b>Acceptance</b>	Aged 30 and below	58	38,0690	5,86055	,539	,585
	Between 31-40	43	38,9302	5,77925		
	Aged and above	11	37,0909	5,50372		
	Total	112	38,3036	5,77325		

Findings presented from Chart 6 are indicated below.

It has been observed that the comments of the employees concerning job satisfaction of organizational socialization dimensions are not different statistically at importance level of 0,05 according to their professional seniority. (p=0,987>0,05). In

other words, the comments of the participants who have different age groups is similar concerning job satisfaction. In this stage, alternative hypothesis  $H_{2a}$  has been **rejected**.

It has been observed that the comments of the employees concerning motivation organizational socialization dimensions are not different statistically at importance level of 0,05 according to their ages. ( $p=0,759>0,05$ ). In other words, the comments of the participants who have different age groups is similar concerning motivation. In this stage, alternative hypothesis  $H_{2b}$  has been rejected.

It has been observed that the comments of the employees concerning commitment of organizational socialization dimensions are not different statistically at importance level of 0,05 according to their ages. ( $p=0,492>0,05$ ). In other words, the comments of the participants who have different age groups is similar concerning commitment dimension. In this stage, alternative hypothesis  $H_{2c}$  has been rejected.

It has been observed that the comments of the employees concerning acceptance of organizational socialization dimensions are not different statistically at importance level of 0,05 according to their ages. ( $p=0,492>0,05$ ). In other words, the comments of the participants who have different age groups is similar concerning acceptance dimension. In this stage, 7 alternative hypothesis  $H_{2d}$  has been rejected.

#### 4. Variance Analysis Results belonging to Organizational Socialization According to Professional Seniority

Statistical discrepancies regarding comments about organizational socialization according to professional seniority are tested and with One way Analysis of Variance and the results obtained are indicated in Chart 7.

**Chart 7. Variance Analysis Results Belonging to Organizational Socialization According to Professional Seniority**

	Seniority	N	Average	Standard Deviation	F	P
<b>Job Satisfaction</b>	Between 1-5years	59	46,9831	8,36967	,332	,718
	Between 6-10years	22	48,5000	5,88582		
	Between 11-15 years	31	47,1290	7,12620		
	Total	112	47,3214	7,56499		
<b>Motivation</b>	Between 1-5years	59	55,4746	10,93453	1,401	,251
	Between 6-10year	22	59,1364	6,98499		
	Between 11-15years	31	54,9677	8,87875		
	Total	112	56,0536	9,76742		
<b>Commitment</b>	Between 1-5	59	64,7288	8,32907	,053	,949
	Between 6-10years	22	65,1818	5,72078		
	Between 11-15years	31	64,5161	6,56694		
	Total	112	64,7589	7,35857		

<b>Acceptance</b>	Between 1-5years	59	38,6780	6,39892	,324	,724
	Between 6-10years	22	38,2273	4,30870		
	Between 11-15years	31	37,6452	5,51693		
	Total	112	38,3036	5,77325		

Findings obtained from Chart 7 are indicated below. It has been observed that

the comments of the employees concerning job satisfaction of socialization dimensions are not different statistically at importance level of 0,05 according to their professional seniority. ( $p=0,718>0,05$ ).

In other words, the comments of the participants who have different Professional seniority is similar concerning job satisfaction. In this stage, alternative hypothesis  $H_{3a}$  has been rejected.

It has been observed that the employees the comments of the employees concerning motivation of organizational socialization are not different statistically at importance level of 0,05 according to their professional seniority ( $p=0,251>0,05$ ).

In other words, the comments of the participants who have different Professional seniority is similar concerning motivaton dimension. In this stage, alternative hypothesis  $H_{3ab}$  has been rejected.It has been observed that the employeesthe comments of the employees concerningcommitment of organizational socialization dimensions are not different statistically at importance level of 0,05 according to their professional seniority ( $p=0,492>0,05$ ).

In other words, the comments of the participants who have different professional seniority is similar concerning commitment dimension. In this stage,alternative hypothesis  $H_{3c}$  has been **rejected**.

It has been observed that the employees the comments of the employees concerning acceptance of organizational socialization dimensions are not different statistically at importance level of 0,05 according to their professional seniority ( $p=0,585>0,05$ ).

In other words, the comments of the participants who have professional seniority is similar concerning commitment dimension. In this stage, alternative hypothesis  $H_{3c}$  has been **rejected**. In this stage, alternative hypothesis  $H_{3c}$  has been **rejected**.

Professional seniority is similar concerning acceptance dimension. In this stage,

Alternative seniority is similar concerning acceptance dimension. In this stage, alternative hypothesis  $H_{3d}$  has been **rejected**.

## RESULT

‘ Organizational Socialization’ has been one of the most conspicuous important concepts that draws attention in the scientific studies on the organizational socialization process recently, As Ergün and Taşgıt (2011) stated in their study on

Organizational Socialization Output; Organizational socialization strategies are consist of efforts and programs which are done in an organizational manner, for the creation of goal congruence on an individual and organizational basis and for employees to internalize the organizational values. The main aim of organizational socialization is making the employees and organizations share the same norms and values and keep them going. Within the scope of this study, socialization of the institutions that run sport activities in organizational manner was searched. Employees' individual opinions about organizational socialization magnitude were referred by survey method in İstanbul Metropolitan Municipality Sports Inc. which is determined as the sample. In the study where 5 point likert scales were used, according to the demographical features of the employees, the statistically significant differences of organizational socialization levels were tested. While independent sampled T test and one way variance analysis were being used in the examination of these differentiations, decisions were made on 0.05 significance level.

**The statements that employees most positively respond were;**

- I am satisfied with the success of the organization.
- I feel secure as long as I am at my work.
- I make an effort to increase the success of the organization.
- I like to take responsibilities in my organization.

- I act in compliance with the Laws, regulations and notices.
- I am in the struggle of giving more than what is expected from me to my organization.
- As an individual, I accept the importance of my organization.
- I am proud of my organization.

**Moreover, the statements that employees most negatively respond were ;**

- I think the working conditions in my organization are not adequate.
- My job makes no sense to me.
- I feel like my job does not meet my expectations.
- I think my job does not secure enough.

**These results were gained from the applied tests ;**

- According to the gender :

- Male and female employees' opinions about the job satisfaction extent are similar.
- Male and female employees' opinions about the motivation extent are similar.
- Male and female employees' opinions about the commitment extent are similar.
- Male and female employees' opinions about the adoption extent are similar.

- According to the age groups :

- The opinions about job satisfaction extent of the employees that belong to different age groups are similar.
  - The opinions about motivation extent of the employees that belong to different age groups are similar.
  - The opinions about commitment extent of the employees that belong to different age groups are similar.
  - The opinions about the adoption extent of the employees that belong to different age groups are similar.
- According to the Occupational seniority:
- The opinions about job satisfaction of the employees that belong to different occupational levels are similar.
  - The opinions about the motivation extent of the employees that belong to different occupational level are similar.
  - The opinions about commitment extent employees that belong to different occupational level are similar.
  - The opinions about the adoption extent of the employees that belong to different occupational levels are similar.

#### - Discussion

Findings that are gained from statistical tests according to the genders show that the opinions of the male and female employees about commitment extent are similar. Turan (2007), found that gender is not a predictive factor on the job satisfaction of the personnel as a result of his/

her study on the employees work for Provincial Directorate of Youth Sports.

Bilgiç (1998), indicates this variable does not cause any differentiation on general job satisfaction level as a result of his study that he has done with employees that work in different organizations, where he analyzed the relation between individual traits and job satisfaction. Result of that study has parallels with our study.

On the contrary of the results of that study in the research which was conducted by Dodd-McCue and Wright(1996, 1072), it was found out that there is a difference between male and female on the commitment point and this difference militates in favor of males is found as a result of t- test. Özden (1997) found out that the commitment level of the females is higher than the commitment level of males as a result of her research. As regards to the age groups, no significant difference on the job satisfaction levels could be found. Turan (2007), could not found any significant difference on job satisfaction levels in terms of age variable. That result has parallels with our study.

According to the results in the study, the job satisfactions opinions of employees that belong to different occupational level are similar. But, Feldman ve Arnold (1983) showed that novices have lower commitment to their jobs, these cause problems in organization and they have lower optimistic opinions about their success on their jobs as a result of his research. This result is contrary to our research. Ronen (1978), in his study where he searched the relation between general job satisfaction and occupational level or working time, indicates that the shaped relation which is

assumed to be between age and occupational level with job satisfaction, is in fact between the occupational level and job satisfaction.

Ronen states that the term of seniority has to be divided as the seniority in organization and the level that is gained in occupation or job. Because, the promotion possibilities of employees are increasing with the seniority they gain, the job satisfaction of employees can be affected by the caption more than age or level in an organization. However, he indicates that because the occupational level difference can be gained by working in different organizations with doing the same job, this variable can increase the job satisfaction without being affected by the caption. In the same research, it is found out that the relative job satisfaction that novices have at the beginning starts to decrease by doing the same job for 2 or 5 years; it is also found out that in case of 6 years or more the job satisfaction would increase again. In the before mentioned research, it is assumed that the fluctuation and increase of individuals' job satisfaction levels can be caused by the differences that occur in the career field as a result of the releases, or because people start to be more realistic about their reward expectancies. According to the Ronen's findings, the inner factors (the work itself) are the most important factors and this situation explains the increase in the job satisfaction levels of the individuals that have high occupational levels... The findings of Brush, Moch and Pooyan's (1987) study show that the occupational level has an increasing or limiting effect on the job satisfaction in relation to the organizational structure. In the research that was done by Blau (1988), it is stated that the quality of the relations between the novices and

the old employees are important for the success of the organizational socialization strategies of the novices, and the significance of novice managers' job relations and success is related with the control mechanisms that are provided to them.

#### - **Suggestions**

In order to determine the Organizational Socialization Level, according to the results that came out by the questions of the questionnaires used in this study (Gender, Age, Occupational Level), it is found out that there is not any significant difference. In the related extents that are made in this field, more detailed studies can be made about the issues where a significant difference was found.

For example; although the opinions of the employees with different genders, different occupational levels and with different ages are similar in this research sample, different findings are observed in the researches that are done with a different research sample. In order to find the reasons which cause these results, comparative studies can be done.

The causes of similarities and differences between the individuals with different age and gender and occupational level can be researched in terms of organizational socialization. Various studies can be done for increasing the employee's Organizational commitment and organizational socialization levels by the results of this study. As a result of these studies, because of the reasons like high motivation levels, high job satisfaction, high adoption and high commitment levels of employees their job performance would increase and they help the organization with providing

qualified services to the area that the organization belongs. Another suggestion can be finding new results and significant differences by means of searching similar organizational structures and making comparisons of them, if necessary. The structures that have similar services in different countries and the organizations that have the same structure in different two cities and the same two organizations can be searched and compared. With these results, by presenting cultural, territorial and regional differences of organizational socialization, detailed studies can be done.

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## SPOR ŞİRKETLERİNDEKİ ÖRGÜTSEL SOSYALLEŞME DÜZEYLERİ (İSTANBUL BÜYÜKŞEHİR BELEDİYESİ SPOR A.Ş. ÖRNEĞİ)

**Özet:** Örgütsel sosyalleşme; örgüt çalışanlarının yeni gelen personele örgütün araç gereçlerinin kullanımını, ne zaman ve hangi örgütsel olaylarda ve faaliyetlerde nasıl davranması gerektiğini öğretme sürecidir. Toplumsal değişim ise; bilim ve teknolojinin egemen olduğu, yaşadığımız bu çağda, gelişim gösteren her ülkenin, sahip olduğu en önemli ve en kapsamlı unsurdur. Türkiye’de bu süreçte, içinde bulunduğumuz çağa uygun olarak bilim, teknik ve teknolojik boyutlarla ilgili hizmet alanları, illerdeki belediyelere bağlı olarak güçlenmekte, çoğalmakta ve büyümektedir. Türkiye’de bu alandaki en büyük yapının İstanbul Büyükşehir Belediyesi (İBB) Spor A.Ş. olduğu tespit edilmiştir. Araştırma, İstanbul Büyükşehir Belediyesi Spor A.Ş.’de var olan örgüt kültürü ve örgütsel sosyalleşme ile olan ilişkisi bakımından incelenmektedir. Araştırmada Spor A.Ş.’de görevli çalışanların örgütsel sosyalleşme süreçlerini tespit etmeye çalışılmıştır. Dolayısıyla bu araştırma, İstanbul Büyükşehir Belediyesi Spor A.Ş.’de görevli çalışanların örgütsel sosyalleşmeyi ne düzeyde gerçekleştirdiklerini saptamaya yöneliktir. Bu çalışmadaki amaç, Spor A.Ş. Genel Müdürlüğünde çalışan personelin, görev aldığı kurumda; motivasyon gücü, örgütsel bağlılığı, iş doyumunu ve kabullenme gibi boyutlarda kurumu, örgütsel sosyalleşme anlamında nasıl algıladıklarını saptamak ve incelemektir. Bu araştırma betimsel tarama modeline göre modellenmiştir. Araştırmanın evreni ise İstanbul Büyükşehir Belediyesi Spor A.Ş. çalışanlarından oluşmaktadır. Konu ile ilgili bilgiler, kaynakların taranması ve veri toplama aracının uygulanmasından elde edilmiştir. Bu çalışmanın evrenini İ.B.B. Spor A.Ş. Genel Müdürlüğü’ndeki 200 çalışan oluşturmaktadır. Çalışmanın örneklemini ise evren üzerinden gönüllü olarak seçilen İstanbul Büyükşehir Belediyesi Spor A.Ş.’de görev yapan toplam 112 çalışan oluşturmaktadır. Çalışmanın örneklemini oluşturan çalışanların 58’i erkek, 54’ü bayandır. Araştırma başlamadan önce ve devam ederken ilgili tezler, kitaplar, meslek alanlarında yapılmış önceki araştırmalar ve konuyla ilgili diğer tezlerle ulaşılmış kütüphaneler ve internet ağı ayrıntılı olarak taranmıştır. Bu araştırmada, veri toplama amacı ile bir anket ve bir ölçek kullanılmıştır. Ankette kişisel bilgiler ve ankete katılan bireylerin sınıflandırılmasına yardımcı olacak özellikler yer almaktadır. Araştırmada, Kartal (2003) tarafından geliştirilen Örgütsel Sosyalleşme ölçeği kullanılmıştır. Çalışmada araştırmaya katılan personelin cinsiyetlerine göre, bağlılık, motivasyon, kabullenme ve iş doyumunu boyutlarında örgütsel sosyalleşme düzeyleri arasında istatistiksel olarak anlamlı bir fark bulunamamıştır. Personelin kıdem düzeylerine göre iş doyumunu, motivasyonu, bağlılık ve kabullenme boyutlarında örgütsel algılarında istatistiksel olarak anlamlı farklılık bulunamamıştır. Çalışmadaki verilere göre öneri olarak anlamlı farklılık bulunan hipotezlerle ilgili daha kapsamlı bir araştırma yapılabilir. Benzer kurumlarla karşılaştırma yapıp sonuçlarının nedenleri ortaya konabilir. Çalışma sonucunda anlamlı farklılığın bulunmadığı konularla ilgili yapılan çalışmalar karşılaştırılıp bunların nedenlerinin örgütsel sosyalleşmeyle ilgisi araştırılabilir. Çalışmanın ilgili kuruma, örgütsel sosyalleşme kavramına katkıları bu karşılaştırmalardan sonra arttırılabilir. Bu araştırma, bu alanda yapılan diğer bilimsel çalışmalara dayalı olarak, İstanbul Büyükşehir Belediyesi Spor A.Ş.’de görev yapan çalışanların örgütsel sosyalleşme düzeyleri ile sosyalleşme çalışmalarında faydalı olabilecek bulgular sağlama, gelecekte yapılacak olan örgütsel sosyalleşme çalışmalarına kaynaklık etmek açısından önem taşımaktadır.

**Anahtar Kelimeler:** Örgütsel Sosyalleşme, İş doyumunu, Motivasyon, Kabullenme, Bağlılık.

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DR.	Hatice YALÇIN	KAMANANOĞLU MEHMETBEY UNIVERSITY
DR.	Havva YAMAN	SAKARYA UNIVERSITY
DR.	Hülya GÜLAY	PAMUKKALE UNIVERSITY
DR.	Hüseyin AKTAŞ	CELAL BAYAR UNIVERSITY
DR.	Işık BAYRAKTAR	GENÇLİK VE SPOR BAKANLIĞI
DR.	Kadim ÖZTÜRK	DOKUZ EYLÜL UNIVERSITY
DR.	Kerim TÜRKMEN	ERCİYES UNIVERSITY
DR.	Kurtuluş Yılmaz GENÇ	GİRESUN UNIVERSITY
DR.	Kürşad SERTBAŞ	SAKARYA UNIVERSITY
DR.	Levent BAYRAKTAR	ATAKENT VETERINARY MEDICINE
DR.	Lütfiye OKTAR	İZMİR EKONOMİ UNIVERSITY
DR.	Macide ŞOĞUR	İSTANBUL UNIVERSITY
DR.	Mahmut HIZIROĞLU	SAKARYA UNIVERSITY
DR.	Mehmet ANIK	BARTIN UNIVERSITY
DR.	Mehmet BULUT	GAZİ UNIVERSITY
DR.	Mehmet GÜNAY	GAZİ UNIVERSITY
DR.	Mehmet Hayrullah AKYILDIZ	SAKARYA UNIVERSITY
DR.	Mehmet Metin HÜLAGÜ	ERCİYES UNIVERSITY
DR.	Mehmet Yalçın TAŞMEKTEPLİGİL	19 MAYIS UNIVERSITY
DR.	Mehmet İNBAŞI	ERCİYES UNIVERSITY
DR.	Mehmet YORULMAZ	MARMARA UNIVERSITY
DR.	Mehmet ÖZDEMİR	SAKARYA UNIVERSITY

DR.	Melike Lale GÜLER	MARMARA UNIVERSITY
DR.	Menderes KABADAYI	19 MAYIS UNIVERSITY
DR.	Mesut İDRİZ	GAZİKENT UNIVERSITY
DR.	Metin AYCIL	GAZİKENT UNIVERSITY
DR.	Metin AYCIL	GAZİKENT UNIVERSITY
DR.	Metin SAYIN	CELAL BAYAR UNIVERSITY
DR.	Metin YILMAZ	AFYON KOCATEPE UNIVERSITY
DR.	Muřafa ARGUNŐAH	ERCİYES UNIVERSITY
DR.	Muřafa OLAK	ONDOKUZ MAYIS UNIVERSITY
DR.	Muřafa KESKİN	ERCİYES UNIVERSITY
DR.	Muřafa UĐURLU	MUĐLA UNIVERSITY
DR.	Muřafa ÖNER UZUN	AFYON KOCATEPE UNIVERSITY
DR.	Muřafa ŐANAL	ERCİYES UNIVERSITY
DR.	Mutlu TÜRKMEN	BARTIN UNIVERSITY
DR.	Mümtaz SARIÇİÇEK	ERCİYES UNIVERSITY
DR.	Naim DENİZ	ÜSKÜDAR UNIVERSITY
DR.	Nalan TÜRKMEN	MARMARA UNIVERSITY
DR.	Natık RZAZADE	AFYON KOCATEPE UNIVERSITY
DR.	Necdet AYSAL	ANKARA UNIVERSITY
DR.	Nejla GÜNAY	GAZİ UNIVERSITY
DR.	Neylan ZİYALAR	İSTANBUL UNIVERSITY
DR.	Nilah YETKİN	İZMİR EKONOMİ UNIVERSITY
DR.	Nilay KARAKAYA	ERCİYES UNIVERSITY
DR.	Nur DİLBAZ ALACAHAN	ANAKKALE 18 MART UNIVERSITY
DR.	Nuray EKŐİ	İSTANBUL KÜLTÜR UNIVERSITY
DR.	Nurgül ÖZDEMİR	ADNAN MENDERES UNIVERSITY
DR.	Nurhan TEKEREK	ULUDAĐ UNIVERSITY
DR.	Nusret RAMAZANOĐLU	MARMARA UNIVERSITY
DR.	Okan TUNA	DOKUZ EYLÜL UNIVERSITY
DR.	Osman KABAKÇILI	MİLLİ EĐİTİM BAKANLIĐI
DR.	Osman TİTREK	SAKARYA UNIVERSITY
DR.	Osman YILDIZ	SÜLEYMAN DEMİREL UNIVERSITY
DR.	Osman İMAMOĐLU	ON DOKUZ MAYIS UNIVERSITY
DR.	Pelin AVŐAR	DUMLUPINAR UNIVERSITY

DR.	Ramazan ERDEM	SÜLEYMAN DEMİREL UNIVERSITY
DR.	Ramazan GÖKBUNAR	CELAL BAYAR UNIVERSITY
ÖĞR. GÖRV.	Ranamarcella ÖZENÇ	HALIÇ UNIVERSITY
DR.	Recai COŞKUN	SAKARYA UNIVERSITY
DR.	Recep KAYMAKCAN	SAKARYA UNIVERSITY
DR.	Recep TARI	KOCAELİ UNIVERSITY
DR.	Sacit ADALI	TURGUT ÖZEL UNIVERSITY
DR.	Salih Zeki İMAMOĞLU	GEBZE YÜKSEK TEKNOLOJİ UNIVERSITY
DR.	Salih ÖZTÜRK	GAZİKENT UNIVERSITY
DR.	Sami MENGÜTAY	HALIÇ UNIVERSITY
DR.	Selahattin KARABINAR	SAKARYA UNIVERSITY
DR.	Selami GÜNEY	ERZİNCAN UNIVERSITY
DR.	Selçuk Bora ÇAVUŞOĞLU	İSTANBUL UNIVERSITY
DR.	Semih YILMAZ	MARMARA UNIVERSITY
DR.	Semih YILMAZ	MARMARA UNIVERSITY
DR.	Serap MUNGAN AY	MARMARA UNIVERSITY
DR.	Serdar AYAN	DOKUZ EYLÜL UNIVERSITY
DR.	Serdar ERDURMAZ	GAZİKENT UNIVERSITY
DR.	Serdar TOK	EGE UNIVERSITY
DR.	Servet YAŞAR	AFYON KOCATEPE UNIVERSITY
DR.	Seviç KÖSE	CELAL BAYAR UNIVERSITY
DR.	Sevinç GÜNEL	HACETTEPE UNIVERSITY
DR.	Sibel ARSLAN	KIRIKKALE UNIVERSITY
DR.	Sibel KARGIN	CELAL BAYAR UNIVERSITY
DR.	Sinan AYAN	KIRIKKALE UNIVERSITY
DR.	Sinan BOZKURT	MARMARA UNIVERSITY
DR.	Sinem TUNA	İSTANBUL UNIVERSITY
DR.	Soner ESMER	DOKUZ EYLÜL UNIVERSITY
DR.	Suat CANOĞLU	MARMARA UNIVERSITY
DR.	Sultan Bilge KESKİNKILIÇ KARA	MİLLİ EĞİTİM BAKANLIĞI
DR.	Suzan Suzi TOKATLI	ERCİYES UNIVERSITY
DR.	Süleyman DEMİRCİ	ERCİYES UNIVERSITY

DR.	Süleyman ÖZDEMİR	İSTANBUL UNIVERSITY
DR.	Süphan NASIR	İSTANBUL UNIVERSITY
DR.	Süreyya SAKINÇ	CELAL BAYAR UNIVERSITY
DR.	Tarkan KAÇMAZ	DOKUZ EYLÜL UNIVERSITY
DR.	Tunç ÖZBEN	BOĞAZİÇİ UNIVERSITY
DR.	Turgay BİÇER	MARMARA UNIVERSITY
DR.	Türkey BULUT	HALİÇ UNIVERSITY
DR.	Uğur TÜRKMEN	AYFON KOCATEPE UNIVERSITY
DR.	Ufuk ALPKAYA	MARMARA UNIVERSITY
DR.	Vahit CELAL	AĞRI İBRAHİM ÇEÇEN UNIVERSITY
DR.	Vedat BAL	GAZİKENT UNIVERSITY
DR.	Veysel KÜÇÜK	MARMARA UNIVERSITY
DR.	Yalçın TAŞMEKTEPLİGİL	ON DOKUZ MAYIS UNIVERSITY
DR.	Yavuz YILDIZ	CELAL BAYAR UNIVERSITY
DR.	Yaşar TATAR	MARMARA UNIVERSITY
DR.	İbrahim ÇAM	CELAL BAYAR UNIVERSITY
DR.	İbrahim EROL	CELAL BAYAR UNIVERSITY
DR.	Yener ÖZEN	ERZİNCAN UNIVERSITY
DR.	Yeşim Bektaş ÇETİNKAYA	DOKUZ EYLÜL UNIVERSITY
DR.	İlhami YÜCEL	ERZİNCAN UNIVERSITY
DR.	İlknur TÜTÜNCÜ	KASTAMONU UNIVERSITY
DR.	İmdat ELMAS	İSTANBUL UNIVERSITY ADLİ BİLİMLER ENSTİTÜSÜ
DR.	İrfan GÜLMEZ	MARMARA UNIVERSITY
DR.	İrfan GÜNSEL	YAKIN DOĞU UNIVERSITY
DR.	İsmail AYDOĞAN	ERCİYES UNIVERSITY
DR.	İsmail GÜLEÇ	SAKARYA UNIVERSITY
DR.	İsmet EMRE	BARTIN UNIVERSITY
DR.	Yusuf MİRİŞLİ	AFYON KOCATEPE UNIVERSITY
DR.	Yılmaz KARADENİZ	MUŞ ALPARSLAN UNIVERSITY
DR.	Zahit SERARSLAN	MARMARA UNIVERSITY
DR.	Zeynep Çiğdem UYSAL ÜREY	ÇANKAYA UNIVERSTY
DR.	Özay ÖZPENÇE	PAMUKKALE UNIVERSITY
DR.	Özbay GÜVEN	GAZİ UNIVERSITY

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DR.	Özgür Kasım AYDEMİR	PAMUKKALE UNIVERSITY
DR.	Özlem GÖRÜMLÜ	DOKUZ EYLÜL UNIVERSITY
DR.	Şaban KAYIHAN	SAKARYA UNIVERSITY
DR.	Şahika KARACA	ERCİYES UNIVERSITY
DR.	Şakir BATMAZ	ERCİYES UNIVERSITY
DR.	Şebnem ARIKBOĞA	İSTANBUL UNIVERSITY
DR.	Şerif Ali BOZKAPLAN	DOKUZ EYLÜL UNIVERSITY
DR.	Şükran Güzin ILICAK AYDINALP	KÜLTÜR UNIVERSITY
DR.	A. Gamze Yücel İŞILDAR	GAZİ UNIVERSITY
DR.	A.Evren ERGİNAL	ÇANAKKALE 18 MART UNIVERSITY
DR.	Adem ÇABUK	ULUDAĞ UNIVERSITY
DR.	Ahmet AKIN	SAKARYA UNIVERSITY
DR.	Ahmet AKŞİT	NİĞDE UNIVERSITY
DR.	Ahmet ERGÜLEN	NİĞDE UNIVERSITY
DR.	Ahmet İMANÇER	EGE UNIVERSITY
DR.	Ahmet İNAM	ORTA DOĞU TEKNİK UNIVERSITY
DR.	Ahmet Burçin YERELİ	HACETTEPE UNIVERSITY
DR.	Ahmet Ercan GEGEZ	MARMARA UNIVERSITY
DR.	Ahmet Faruk AYSAN	BOĞAZİÇİ UNIVERSITY
DR.	Ahmet Faruk DOĞAN	BEYKENT UNIVERSITY
DR.	Ahmet GÜNAY	BALIKESİR UNIVERSITY
DR.	Alev FATOŞ FARSA	EGE UNIVERSITY
DR.	Alev Fatoş PARSA	EGE UNIVERSITY
DR.	Ali HALICI	BAŞKENT UNIVERSITY
DR.	Ali Osman UYSAL	ÇANAKKALE 18 MART UNIVERSITY
DR.	Ali PULAT	UŞAK UNIVERSITY
DR.	Alptekin YAVAŞ	ÇANAKKALE 18 MART UNIVERSITY
DR.	Arif TUNÇEZ	SELÇUK UNIVERSITY
DR.	Aslı ERİM ÖZDOĞAN	ÇANAKKALE 18 MART UNIVERSITY
DR.	Atik KULAKLI	BEYKENT UNIVERSITY
DR.	Ayda ÇELEBİOĞLU	ATATÜRK UNIVERSITY
DR.	Ayfer BUDAK	ERZİNCAN UNIVERSITY
DR.	Ayfer TANRIVERDİ	GAZİ UNIVERSITY

DR.	Ayhan AYTAÇ	TRAKYA UNIVERSITY
DR.	Ayhan ÖZŞAHİN	MARMARA UNIVERSITY
DR.	Aykut LENGER	EGE UNIVERSITY
DR.	Aykut GÜL	OSMANİYE UNIVERSITY
DR.	Ayla ALTINTEN	GAZİ UNIVERSITY
DR.	Aylin NAZLI	EGE UNIVERSITY
DR.	Ayşe Sezen BAYOĞLU	ANKARA UNIVERSITY
DR.	Aytekin ALBUZ	GAZİ UNIVERSITY
DR.	Ayten AKATAY	ÇANAKKALE 18 MART UNIVERSITY
DR.	Ayşe ÇAYLAK TÜRKER	ÇANAKKALE 18 MART UNIVERSITY
DR.	Ayşe OKANLI	ATATÜRK UNIVERSITY
DR.	Ayşe Meral TÖREYİN	GAZİ UNIVERSITY
DR.	Ayşe MURATHAN	GAZİ UNIVERSITY
DR.	Ayşen HİÇ GENÇER	BOSTON UNIVERSITY
DR.	Ayşen KORUKOĞLU	EGE UNIVERSITY
DR.	Ayşen TEMEL EĞİNLİ	EGE UNIVERSITY
DR.	Ayşen TOKOL	ULUDAĞ UNIVERSITY
DR.	Ayşen Altun ADA	DUMLUPINAR UNIVERSITY
DR.	Banu KEMALOĞLU	ÇANAKKALE 18 MART UNIVERSITY
DR.	Barış KARAEMLA	GAZİ UNIVERSITY
DR.	Barış KAYA	ZONGULDAK KARAEMLAS UNIVERSITY
DR.	Belgin AYDINTAN	GAZİ UNIVERSITY
DR.	Belgin GÖKYÜREK	GAZİ UNIVERSITY
DR.	Belma FİRLAR	EGE UNIVERSITY
DR.	Besim AKIN	MARMARA UNIVERSITY
DR.	Beyhan ÖZTÜRK	ÇANAKKALE 18 MART UNIVERSITY
DR.	Bilgehan GÜVEN	ÇANAKKALE 18 MART UNIVERSITY
DR.	Birol DOĞAN	EGE UNIVERSITY
DR.	Burcu ARACIOĞLU	EGE UNIVERSITY
DR.	Burhanettin FARİZOĞLU	BALIKESİR UNIVERSITY
DR.	Bülent GÜLÇUBUK	ANKARA UNIVERSITY
DR.	Cahit AYDEMİR	DİCLE UNIVERSITY
DR.	Cahit GÜNGÖR	ÇUKUROVA UNIVERSITY

DR.	Cemal ZEHİR	GEBZE YÜKSEK TEKNOLOJİ ENSTİTÜSÜ
DR.	Cengiz AKBULAK	ÇANAKKALE 18 MART UNIVERSITY
DR.	Cengiz ÖZMETİN	BALIKESİR UNIVERSITY
DR.	Cevat BİLGİN	ÇUKUROVA UNIVERSITY
DR.	Cumhur ASLAN	ÇANAKKALE 18 MART UNIVERSITY
DR.	Çağlan Karasu BENLİ	GAZİ UNIVERSITY
DR.	Çetin BEKTAŞ	ERZİNCAN UNIVERSITY
DR.	Çetin YAMAN	SAKARYA UNIVERSITY
DR.	Çiler HATİPOĞLU	ORTA DOĞU TEKNİK UNIVERSITY
DR.	Dilek DEMİRHAN	EGE UNIVERSITY
DR.	Dizar ERCİVAN ZENCİRCİ	EGE UNIVERSITY
DR.	Doğan BIÇKI	ÇANAKKALE 18 MART UNIVERSITY
DR.	Durmuş Ali BAL	ERZİNCAN UNIVERSITY
DR.	Ebru Özgül ÇETİN	EGE UNIVERSITY
DR.	Ebru Özgül GÜREL	ÇUKUROVA UNIVERSITY
DR.	Eda PURUTÇUOĞLU	ANKARA UNIVERSITY
DR.	Efsun Ezel ESATOĞLU	ANKARA UNIVERSITY
DR.	Ela Ayşe KÖKSAL	NİĞDE UNIVERSITY
DR.	Elçin MACAR	YILDIZ TEKNİK UNIVERSITY
DR.	Elif ÇEKİCİ	MARMARA UNIVERSITY
DR.	Elif ÖZMETİN	BALIKESİR UNIVERSITY
DR.	Emine ÖZMETE	ANKARA UNIVERSITY
DR.	Erdal EKİCİ	ÇANAKKALE 18 MART UNIVERSITY
DR.	Erdal ZORBA	GAZİ UNIVERSITY
DR.	Erdemir GÜNDOĞMUŞ	ANKARA UNIVERSITY
DR.	Erdiñç KARADENİZ	MERSİN UNIVERSITY
DR.	Erdoğan GÜNEŞ	ANKARA UNIVERSITY
DR.	Erhan IŞIKLAR	EGE UNIVERSITY
DR.	Ertuğrul GELEN	SAKARYA UNIVERSITY
DR.	Esin ÖZKAN	EGE UNIVERSITY
DR.	Esmâ Görkem KAYAALP ERSOY	BEYKENT UNIVERSITY
DR.	Eva ŞARLAK	IŞIK UNIVERSITY
DR.	Faruk KARACA	ATATÜRK UNIVERSITY

DR.	Fatih KILIÇ	SÜLEYMAN DEMİREL UNIVERSITY
DR.	Fatma ALİSİNANOĞLU	GAZİ UNIVERSITY
DR.	Fatma PAKDİL	BAŞKEN UNIVERSITY
DR.	Fatoş GERMİRLİ BABUNA	İSTANBUL TEKNİK UNIVERSITY
DR.	Fehmi TUNCEL	ANKARA UNIVERSITY
DR.	Feriha YILDIRIM	GAZİ UNIVERSITY
DR.	Figen GÜRSOY	ANKARA UNIVERSITY
DR.	Fikret GÜLAÇTI	ERZİNCAN UNIVERSITY
DR.	Filiz GİRAY	ULUDAĞ UNIVERSITY
DR.	Fusun TOPSÜMER	EGE UNIVERSITY
DR.	Gaye ÖZDEMİR	EGE UNIVERSITY
DR.	Göğçe UYSAL	BAHÇEŞEHİR UNIVERSITY
DR.	Görkem Mergen	ANKARA UNIVERSITY
DR.	Gülcan ERAKTAN	ANKARA UNIVERSITY
DR.	Güldeniz EKMEK	MALTEPE UNIVERSITY
DR.	Gülşen KIRLA	ÇUKUROVA UNIVERSITY
DR.	Gülten BULDUKER	ANKARA UNIVERSITY
DR.	Gülten HERGÜNER	SAKARYA UNIVERSITY
DR.	Gülşen ERYILMAZ	ATATÜRK UNIVERSITY
DR.	Güran YAHYAOĞLU	ÇANAKKALE 18 MART UNIVERSITY
DR.	Gürbüz GÖKÇEN	MARMARA UNIVERSITY
DR.	Hacer ÖZGEN	HACETTEPE UNIVERSITY
DR.	Hadiye ÖZER	ATATÜRK UNIVERSITY
DR.	Hakan SARIBAŞ	ZONGULDAK KARAEMLAS UNIVERSITY
DR.	Hakan YILDIRIM	MARMARA UNIVERSITY
DR.	Halil TANIL	EGE UNIVERSITY
DR.	Halil FİDAN	ANKARA UNIVERSITY
DR.	Halil İbrahim SAĞLAM	SAKARYA UNIVERSITY
DR.	Halil İbrahim TANÇ	ATATÜRK UNIVERSITY
DR.	Hamdi GÜLEÇ	ÇANAKKALE 18 MART UNIVERSITY
DR.	Hanifi KURT	EGE UNIVERSITY
DR.	Harun ÜRER	EGE UNIVERSITY
DR.	Hasan TATLI	ÇANAKKALE 18 MART UNIVERSITY

DR.	Hasan İlhan TUTALAR	DİCLE UNIVERSITY
DR.	Havva ÖZKAN	ATATÜRK UNIVERSITY
DR.	Hidaye Aydan SİLKÜ	EGE UNIVERSITY
DR.	Hilmi SÜNGÜ	BOZOK UNIVERSITY
DR.	Hülya İz BÖLÜKOĞLU	GAZİ UNIVERSITY
DR.	Hüseyin AĞIR	KAHRAMAN MARAŞ SÜTÇÜ İMAM UNIVERSITY
DR.	Hüsnü ERKAN	DOKUZ EYLÜL UNIVERSITY
DR.	Işıl AKGÜL	MARMARA UNIVERSITY
DR.	İbrahim BUDAK	ERZİNCAN UNIVERSITY
DR.	İbrahim YILMAZ	ATATÜRK UNIVERSITY
DR.	İlyas KARABIYIK	ERZİNCAN UNIVERSITY
DR.	İlyas SÖZEN	BEYKENT UNIVERSITY
DR.	İnci KAYHAN KUZGUN	HACETTEPE UNIVERSITY
DR.	İnci Kuyulu ERSOY	EGE UNIVERSITY
DR.	İsa ÇELİK	ATATÜRK UNIVERSITY
DR.	Kağan ÖĞÜT	BAHÇEŞEHİR UNIVERSITY
DR.	Kazım GÜNER	ÇANAKKALE 18 MART UNIVERSITY
DR.	Kerime ÜSTÜNOVA	ULUDAĞ UNIVERSITY
DR.	Kürşat YILMAZ	DUMLUPINAR UNIVERSITY
DR.	Lale GÜREMEN	AMASYA UNIVERSITY
DR.	Lale ORTA	OKAN UNIVERSITY
DR.	Lokman Hakan TECER	BALIKESİR UNIVERSITY
DR.	Mahir GÜMÜŞ	ÇANAKKALE 18 MART UNIVERSITY
DR.	Mahmut AKBOLAT	SAKARYA UNIVERSITY
DR.	Mehmet KAYA	SAKARYA UNIVERSITY
DR.	Mehmet METE	DİCLE UNIVERSITY
DR.	Mehmet ÖZBAŞ	ERZİNCAN UNIVERSITY
DR.	Mehmet TANYAŞ	MALTEPE UNIVERSITY
DR.	Mehmet YÜCE	ULUDAĞ UNIVERSITY
DR.	Mehmet Ali HAMATOĞLU	SAKARYA UNIVERSITY
DR.	Mehmet Barış HORZUM	SAKARYA UNIVERSITY
DR.	Mehmet Devrim TOPSES	ÇANAKKALE 18 MART UNIVERSITY
DR.	Mehmet TOP	HACETTEPE UNIVERSITY

DR.	Meltem GÜRÜNLÜ	MALTEPE UNIVERSITY
DR.	Meltem DOĞAN	GAZİ UNIVERSITY
DR.	Meltem Kutlu GÜRSEL	DOKUZ EYLÜL UNIVERSITY
DR.	Meltem YILMAZ	GAZİ UNIVERSITY
DR.	Meneviş Uzbay PİRİLİ	EGE UNIVERSITY
DR.	Merih Tekin BENDER	EGE UNIVERSITY
DR.	Mesut TEKSAN	ÇANAKKALE 18 MART UNIVERSITY
DR.	Mehmet GÜÇLÜ	GAZİ UNIVERSITY
DR.	Metin KAYA	GAZİ UNIVERSITY
DR.	Metin SABAN	ZONGULDAK KARAEMLAS UNIVERSITY
DR.	Metin UYAR	BEYKENT UNIVERSITY
DR.	Metin YAMAN	GAZİ UNIVERSITY
DR.	Mevhibe ALBAYRAK	ANKARA UNIVERSITY
DR.	Mine SARAN	EGE UNIVERSITY
DR.	Mirza TOKPUNAR	ÇANAKKALE 18 MART UNIVERSITY
DR.	Muhammet Fatih KESLER	ÇANAKKALE 18 MART UNIVERSITY
DR.	Muhammet Hanefi PALABIYIK	ATATÜRK UNIVERSITY
DR.	Murat AYDOĞDU	DOKUZ EYLÜL UNIVERSITY
DR.	Murat ERCAN	BİLECİK UNIVERSITY
DR.	Murat KUL	BARTIN UNIVERSITY
DR.	Murat NİŞANCI	ERZİNCAN UNIVERSITY
DR.	Murat ÜNAL	EGE UNIVERSITY
DR.	Musa BİLGİZ	ATATÜRK UNIVERSITY
DR.	Muştafa AKSOY	ÇANAKKALE 18 MART UNIVERSITY
DR.	Muştafa BAYRAKÇI	SAKARYA UNIVERSITY
DR.	Muştafa KAYA	ATATÜRK UNIVERSITY
DR.	Muştafa KOÇ	SAKARYA UNIVERSITY
DR.	Muzaffer ERCAN YILMAZ	BALIKESİR UNIVERSITY
DR.	Müjde KER DİNÇER	EGE UNIVERSITY
DR.	Mümin KARABULUT	BEYKENT UNIVERSITY
DR.	Münevver YALÇINKAYA	EGE UNIVERSITY
DR.	Münir ÖZTÜRK	EGE UNIVERSITY
DR.	Münir ŞAKRAK	MARMARA UNIVERSITY

DR.	N.Oğuzhan ALTAY	EGE UNIVERSITY
DR.	Nalan AKDOĞAN	BAŞKENT UNIVERSITY
DR.	Nazan GÜNAY	EGE UNIVERSITY
DR.	Nergiz ÖZKURAL	BEYKENT UNIVERSITY
DR.	Nesrin ADA	EGE UNIVERSITY
DR.	Nesrin BAYRAKTAR ERTEN	ÇANAKKALE 18 MART UNIVERSITY
DR.	Nevin YILDIRIM KOYUNCU	EGE UNIVERSITY
DR.	Nezahat GÜÇLÜ	GAZİ UNIVERSITY
DR.	Nezihe ŞENTÜRK	GAZİ UNIVERSITY
DR.	Neşet AYDIN	ÇANAKKALE 18 MART UNIVERSITY
DR.	Nihal ARIOĞLU	İSTANBUL TEKNİK UNIVERSITY
DR.	Nilgün AÇIK ÖNKAŞ	MUĞLA UNIVERSITY
DR.	Nilgün TOKER KILINÇ	EGE UNIVERSITY
DR.	Nilgün TUTAL CHEVİRON	GALATASARAY UNIVERSITY
DR.	Nilüfer DALKILIÇ	DUMLUPINAR UNIVERSITY
DR.	Nimet ÖNÜR	EGE UNIVERSITY
DR.	Niyazi KURNAZ	DUMLUPINAR UNIVERSITY
DR.	Nuray ALTUĞ	MARMARA UNIVERSITY
DR.	Nurdan KALAYCI	GAZİ UNIVERSITY
DR.	Nurdan SARAÇOĞLU	GAZİ UNIVERSITY
DR.	Nurettin ARSLAN	ÇANAKKALE 18 MART UNIVERSITY
DR.	Nurettin BİROL	ERZİNCAN UNIVERSITY
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