

THE RELATIONSHIPS AMONG UNETHICAL COMPUTER USAGE BEHAVIOR AND SOME PERSONALITY CHARACTERISTICS OF TURKISH UNIVERSITY STUDENTS

A. Aykut Ceyhan, Esra Ceyhan
Anadolu University, Turkey

aceyhan@anadolu.edu.tr , eceyhan@anadolu.edu.tr

ABSTRACT

This research aims at examining the relationships among unethical computer usage behavior and the personality characteristics of locus of control, adjustment to social norms, antisocial tendency, and aggression on Turkish university students. The research was applied to 217 university students. Data were collected through Unethical Computer Using Behavior Scale, Hacettepe Personality Inventory, Rotter's Internal-External Locus of Scale, and Aggression Scale. Data analysis was carried out by path analysis of structural equation models. The findings indicate that locus of control and antisocial tendencies had significant direct and indirect effects on unethical computer usage behavior, and social norms have significant indirect effects on it. The mediation variable determining all the indirect effects on unethical computer usage behavior was aggression. The aggression had direct effect and partial mediating effects on unethical computer usage behavior. The model containing these paths had acceptable and adequate fit values.

Keywords: aggression, antisocial tendency, ethics, locus of control, social norm, unethical computer use.

INTRODUCTION

Computer is very indispensable instrument in today's world and has quite important contributions to improvement in the quality of human life. Although this technology has facilitated individuals' lives to a great extent, it has also brought about various problems. Unethical computer usages in some situations have affected social life negatively. For example, due to mailing various software or viruses, or making software piracy, a person's studies and various services can be damaged. Ethical problems towards computer use rise because of the ubiquity of computer and communications technologies (Loch & Conger, 1996). These unethical behaviors may be caused by different reasons such as, economic, social, moral and personal reasons. Therefore, unethical computer behavior should be investigated in terms of factors such as society, personality, culture, gender, computer skills and self efficacy (Gürcan Namlu & Odabasi, 2007). Within framework, it can be considered that individual's some personal characteristics such as locus of control, behaving in compliance with social norms, having antisocial tendencies and aggression may be observed as significant factors on their unethical computer usage behaviors.

In developmental process from beginning of childhood, individuals develop expectations or beliefs relating that their behaviors' outcomes result from themselves or external forces (Yeşilyaprak, 1990). If the individuals consider themselves as responsible for the events they experience, and perceive the outcomes they face with as depending on their own behaviors or as under personal control mostly, then they are seen to have internal locus of control. If the individuals perceive the outcomes they meet with or the responsible for the events they experience as under the control of external forces such as god, luck, fate or powerful others mostly, then they are seen to have external locus of control (Yeşilyaprak, 1990).

The researches have demonstrated that locus of control was related with majority of personality disorders (Watson, 1998) and exhibiting psychological symptoms (Dağ, 1990). It was also found that there was a relationship between external locus of control and neuroticism, low subjective well being, low conscientiousness, and low agreeableness (Morrison, 1997). Çakıl (1992) reported that the researches demonstrated the relationship of internal locus of control with achievement, social adjustment and higher self-esteem and the relationship of external locus of control with low achievement, social adjustment problems and low self-esteem in general. At the same time, it was reported that delinquent juveniles had more external locus of control. In addition, the researches have pointed out that individuals with external locus of control were more anxious, aggressive, dogmatic, and suspicious towards others, being deprived of self-confidence and insight compared to internal locus of control (Çakıl, 1992). For example, Köksal (1991) found that individuals with external locus of control exhibited more aggressive tendencies than those with internal locus of control. The researches have also revealed that internal locus of control was a positive personality characteristic and external locus of control was an obstacle to individual (Yeşilyaprak, 1990).

Locus of control has also been associated with antisocial personality disorder (Watson, 1998). The findings have demonstrated the relationship between external locus of control and antisocial personality disorder (Helode & Kapai, 1986 as cited in Watson, 1998). Thereby, it may be stated that individuals with external locus of control would have more antisocial tendencies or behaviors, adjustment problems and aggression. As a result, internal locus of control has affected adjustment positively whereas external locus of control has affected it negatively (Kıran, 1993) and the relationship of external locus of control with maladjustment and psychopathology has been seen. Moreover, locus of control, as one of personality characteristics, may explain the difference between surfers and be a relevant factor in internet addiction (Amichai-Hamburger, 2002).

Adjustment, described by various approaches in different ways, may be defined as the degree of establishing and maintaining good relations with both self and environment in general (Özgülven, 1992). It is necessary for the individuals to be aware of their own emotions and experiences to undertake their own responsibilities. Özgülven (1992) reported that social adjustment comprised family relationships, social relationships, social norms, and antisocial tendencies. Thus, the individuals' adjustment with their environments depends on their antisocial tendencies and their behaviors towards social norms too.

Antisocial tendencies generally imply behaving violently, angrily, injuriously, disrespectful, brawling, tendency to use force and desire to take revenge. In addition, it also includes being pleased with damaging objects and especially doing someone else harm, behaving in contrast with social norms consciously, and getting personal satisfaction in this way (Özgülven, 1992). Adjustment to social norms points out behaviors such as respecting for mandatory legal status, social rules and social values that need to be taken into consideration and others' rights, accommodating one's own desires and needs with the society, and meeting these needs and desires independently to a certain extent (Özgülven, 1992). In the light of these explanations, it may be considered that individuals with antisocial tendencies and maladjusted behaviors towards social norms would demonstrate more aggressive behavior. In addition, it may also be proposed that antisocial tendencies and maladjusted behaviors towards social norms would mediate the relationship of external locus of control with aggression. Consistent with these ideas, Nauth (1995 as cited in Watson, 1998) hypothesizes that individuals with antisocial personality disorder are more likely to be aggressive and oppositional when they have an external locus of control.

In various studies, aggression has usually been defined as behavior with the intention of doing someone else harm (Huesmann, Eron & Dubow, 2002). These socially disapproved behaviors refer to acting verbally or physically aggressive and being harmful, unkind, damaging, and destructive to other people. Therefore, aggressive behaviors affect individuals' lives negatively. The various studies point out that earlier aggressive behavior predicts later aggressive, antisocial and criminal behavior (Huesmann, Eron & Dubow, 2002). In addition, it has been reported that aggressive children tend to become antisocial and early aggression mediates the effects of early childhood impacts on adult criminality (Huesmann, Eron & Dubow, 2002). Aggressive behavior may lead individuals to have adjustment problems and adjustment difficulties, and further increase their proneness to delinquent behavior (Kurtyılmaz, 2005). In the light of these explanations, it may be stated that individuals' aggressive behaviors would also reflect to the others, agencies, society by means of unethical computer use.

Individuals utilize computer technologies by means of software and internet activities such as searching, having fun, gaming, chatting, communicating, and shopping and so on. One of the most important issues related to computer technology is computer ethics (Gürcan Namlu & Odabasi, 2007). Ethical computer use implies behaving in compliance with moral principles and legal rules required for using computer technology. Computer ethics refer to privacy, access, intellectual property and integrity (Mason, 1986 as cited in Uysal, 2006). Unethical computer use behaviors include improper acts demonstrated under the headings of intellectual property, social impact, safety and quality, net integrity and information integrity (Gürcan Namlu & Odabasi, 2007).

Unethical computer use behavior (UECUB) may be an expression of aggressive behaviors directed to satisfy individuals' personal needs or to harm someone else with a particular goal. Consequently, it may be proposed that locus of control, antisocial norms, adjustment to social norms and aggression are connected with the UECUB. Further studies may reveal the relations between UECUB and locus of control, antisocial tendencies, adjustment to social norms and aggression, and provide better understanding of UECUB. The researches indicated that there is a link between personality and computer use, especially internet. For example, Hamburger & Ben-Artzi, (2000) found that personality characteristics of extraversion and neuroticism were related to various Internet services differently and different people tended to use different Internet services. These results are important because they indicate that personality is a relevant factor in determining behaviors on the Internet (Amichai-Hamburger, 2002).

University students use computers very frequently and prevalently. They make use of computers particularly for preparing assignments, searching information, connecting with others, and having fun. However, some students display unethical and undesirable computer usage behaviors. For better understanding of these negative behaviors, various researches about these issues should be carried out especially on university students because demonstration of ethical behaviors is a rather important subject when they use computer and they, as an emerging adult, prepare for professional life.

Based on all these explanations and the results of the researches in the literature, this research aims to investigate the relations between UECUB and some personality characteristics such as locus of control, adjustment to social norms, antisocial tendencies, and aggressiveness levels of university students. The study may help the researcher better understand how locus of control, social norms, antisocial tendencies and aggression relate with UECUB. No research has inquired into the simultaneous relationships among these variables. Therefore, a hypothetical model is proposed in this study. This proposed model is illustrated in Figure 1, as follows.

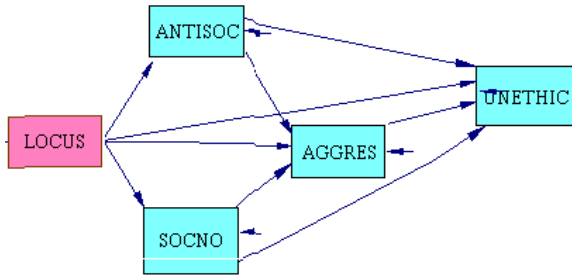


Figure 1: The proposed hypothetical model in the research. In figure, LOCUS, ANTISOC, SOCNO, AGGRES and UNETHIC refer to locus of control, antisocial tendencies, social norms, aggression and unethical computer usage behavior (UECUB), respectively.

As shown in Figure 1, the hypothetical model has submitted nine hypotheses proposing that locus of control, antisocial tendencies, social norms and aggression would have direct and indirect effect on UECUB. Thus, this study has been examined by path model demonstrating the interrelationships among these five variables and the effects of these variables on unethical computer usage behavior. Based on the proposed model, this study has aimed at determining the best path model explaining the effects of these variables on the UECUB.

METHOD

Participants

This research was applied to 217 students attending all grades of the Department of Computer Education and Instructional Technology at Education Faculty of Anadolu University, Turkey in 2006. The sample comprised 99 female (45.60%) and 118 male (54.40%) students. Participants' ages ranged from 17 to 25, with the mean age of 20.44 ± 1.74 ; 52 of the participants were the first grade (24%), 48 of them were the second grade (22.10%), 53 of them were the third grade (24.40%), and 64 of them were the last grade (29.50%) university students.

Instruments

Unethical Computer Using Behavior Scale (UECUBS): The UECUBS was developed by Gurcan Namlu and Odabasi (2007) on undergraduate students of computer technology program. UECUBS is a measure to determine an individual's level of unethical computer usage behavior. The UECUBS consists of 60 items rated on a five-point scale ranging from "not appropriate at all" to "very appropriate". The score range of UECUBS varies in score from 60 to 300. The higher the score, the more unethical computer using behavior is indicated. The UECUBS consists of five sub-scales: intellectual property, social impact, safety and quality, net integrity, and information integrity (Gurcan Namlu and Odabasi, 2007).

Hacettepe Personality Inventory (HPI): HPI was developed by Özgüven (1992) to determine adjustment levels of university students. The HPI consists of two main sections: personal adjustment (PA) and social adjustment (SA). The PA comprises four subscales: self-realization, emotional stability, neurotic tendencies, and psychotic symptoms. The SA also comprises four subscales: family relationships, social relationships, social norms, and antisocial tendencies. Each subscale of PA and SA includes 20 items. The HPI consists of 168 items rated on two alternatives as "yes" and "no". The highest scores indicate being healthier and well-adjusted, and lower scores indicate more maladjustment. Based on all the results of validity and reliability studies of the HPI, each main section and subscale of HPI can be used as a measure, independently (Özgüven, 1992).

In this study, the subscales of social norms (SN) and antisocial tendencies (AT), located in the SA section of the HPI, were employed. The highest scores of SN indicate that individual respects others' rights insightfully, can delay or change his/her own personal desires according to the needs of groups, and is conscious of what is accepted as normal (right) or abnormal (wrong). The lowest scores of SN imply that individuals are not conscious of these behaviors (Özgüven, 1992). The highest scores of AT indicate that individuals do not have antisocial tendencies such as behaving violently, angrily, injuriously, disrespectfully, brawling, tendency to use force and desire to take revenge, and damaging objects and especially doing someone else harm, behaving in contrast with social norms consciously and getting personal satisfaction in this way in particular extents, and the lowest scores imply that individuals have these behaviors of antisocial tendencies (Özgüven, 1992).

Rotter's Internal-External Locus of Control Scale (LOC): LOC was developed by Rotter (1966) to evaluate individual's belief or generalized expectancy about outcomes of their behaviors more under self personal control or more under the control of external forces. Therefore, it measures the individual's state with regard to dimension of internal-external locus of control. In this research, LOC, which was adapted to Turkish population by Dağ (1991), was employed. LOC consists of 23 forced-choice pair items. The higher scores are indicators of externality and the lower scores are indicators of internality on internal-

external scale. Adaptation studies revealed that original and Turkish form of this scale were significantly similar (Savaşır & Şahin, 1997).

Aggressiveness Scale (AS): AS was developed by Tuzgöl (1988) and adapted to university students by Tok (2001) to determine individuals' aggressiveness levels. AS with a five-point Likert scale comprise of 45 items, 30 of which are aggressive and 15 of which are not aggressive. The higher score obtained from the AS indicates higher aggression levels.

Procedure

Data collection instruments were applied to the students in April 2006. In data analysis, LISREL was used. To determine the impact of the students' some personality variables on their UECUB levels, path analysis with observed variables of structural equation models was applied. $p=.05$ was adopted as a reference point to accept results as statistically significant.

RESULTS

Firstly, the model proposed in Figure 1 was tested by path analysis. The analysis showed that all the paths illustrated in Figure, except the finding that the social norms did not have significant effects on UECUBs (t value=1.57, insignificant at $p=.05$), are statistically significant (t values ranging between 2.38 to 5.24, significant at $p=.05$). The model was retested after this insignificant path was eliminated from the proposed model. As a consequence of the analysis, although all the paths demonstrated statistically significant relationships, the goodness of fit statistics related to the model did not occur in acceptable ranges mostly ($\chi^2=27.90$, $df=2$, $p=0.00$; $RMSEA=0.245$, $SRMR=0.095$, $NFI=0.89$, $NNFI=0.48$, $CFI=0.90$, $GFI=0.95$, $AGFI=0.63$). For any model to be able to be accepted as a whole, the values of some goodness of fit statistics predicting consistency degrees of the relationships in model with data must come out in admissible limits (Şimşek, 2007). Hence there was a need for some alterations in the existing model.

In following analyses, the contributions to goodness of fit statistics of each path in the existing model were tested respectively. As a result of analyses practiced by means of eliminating each path in the model individually, it was seen that deleting the path between the locus of control and antisocial norms, and path between the locus of control and social norms provided a noteworthy contribution to goodness of fit statistics of the model. These paths were eliminated from the existing model and this model was retested ultimately. Thus, the last model is illustrated in Figure 2.

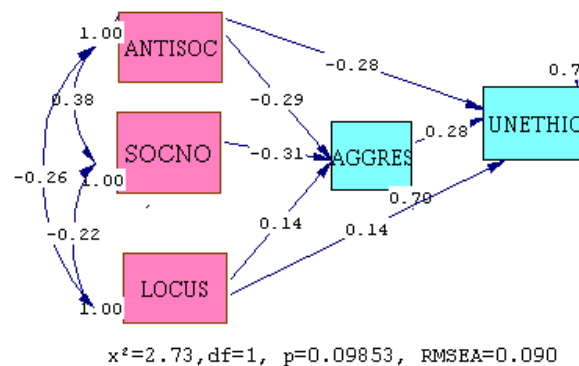


Figure 2: The final version of the structural model discovered through analyses. Standardized coefficients are reported, and structural coefficients are significant at the .05 level, with t values ranging between 2.36 to 4.89.

All the relationships in the model in Figure 2 were statistically significant and the model came up to goodness of fit statistics adequately. Most of the goodness of fit statistics of this model included considerably high values and are well within acceptable ranges ($\chi^2=2.73$, $df=1$, $p=0.098$; $RMSEA=0.09$, $SRMR=0.024$, $NFI=0.99$, $NNFI=0.93$, $CFI=0.99$, $GFI=0.99$, $AGFI=0.92$). As a result, the final path model illustrated in Figure 2 was the best model displaying effects on the unethical computer usage behavior.

DISCUSSION

In this study, the findings demonstrated that the proposed model in Figure 1 confirmed among locus of control, antisocial tendencies, social norms and aggression, and their relations with UECUB partially. In sum, the findings indicate that locus of control and antisocial tendencies have significant direct effects and indirect effects on UECUB, and social norms have only significant indirect effects on it. The only mediation variable determining all the indirect effects on UECUB was aggression. The aggression had direct effects and partial mediating effects on UECUB. The model containing these paths was confirmed with acceptable and adequate fit values.

In this study, locus of control was related positively with UECUB while antisocial tendencies were related negatively with UECUB. These findings indicate that individuals with external locus of control and some antisocial tendencies might

demonstrate more UECUBs. Individual with internal locus of control but not having antisocial tendencies would feel more responsible and behave more moral and ethical when he/she uses computer. The findings are in congruence with other findings that external locus of control was related with some personality disorder (Morrison, 1997, Watson, 1998), antisocial personality disorder (Watson, 1998), psychological symptoms (Dağ, 1990), social adjustment problems and low self-esteem (as cited in Çakıl, 1992), aggressiveness tendencies (Köksal, 1991), and adjustment negatively (Kıran, 1993).

Contrast with the expectancies, adjustment to social norms did not have a significant direct effect on UECUB. However, it was related to aggression negatively and had a significant indirect effect with mediating aggression on UECUB. Consistent with this finding, Seale, Polakowski, Schneider (1998) found that strongest predictors of software piracy were social norms and one's perception of proportional value was indirectly related to software piracy. In addition, Seale, Polakowski & Schneider (1998) found that all of the social norms, expertise required, gender, and computer usage had direct effects on self-reported piracy. Moreover, the findings of the research have revealed that attitudes and social norms had a significant role in identification of persons' intentions to carry out computing acts relating to privacy and ownership (Loch & Conger, 1996).

Social norms imply individuals' perceptions of what important referent groups think he or she should do (Seale, Polakowski & Schneider, 1998). Therefore; individual with maladaptive behavior would take into consideration only his own needs, break the rules and violate others' rights instead of exhibiting moral behaviors. In addition, the morality and ethics are related. (Seale, Polakowski & Schneider, 1998). Thus, the present finding indicates that individual with maladjustment to social norms could exhibit more aggressive behaviors and thus demonstrate UECUBs as an expression of aggressive behaviors.

In the study, aggression had significant direct effects and indirect effects on UECUB. In other words, aggression was related with UECUB positively, and accounted for the effects of locus of control, antisocial tendencies, and social norms on UECUB significantly. Therefore, aggression had a partial mediating effect on UECUB. The finding is consistent with the other finding revealing that delinquent juveniles had more external locus of control (as cited in Çakıl, 1992), external locus of control was related with aggression (Köksal, 1991, Çakıl, 1992), antisocial personality disorder (Watson, 1998), maladjustment (Kıran, 1993), and computer hackers were generally intelligent, aggressive and highly verbal employees (Franklin, 1976 as cited in Seale, Polakowski & Schneider, 1998). Thus, individual with aggressive behaviors could inhibit more UECUBs such as violating confidentiality, sending viral email, performing software piracy and so on. Their aggressive behaviors could be expressed by means of unethical computer usage. For example, an aggressive individual could demonstrate easily these aggressive behaviors when he/she is online, rather than face to face communication.

An important aim of this study is to develop a model that both predicts and explains UECUB. This study also point out that adjustment to social norms and having antisocial tendencies were taken into consideration as exogenous variables, instead of endogenous variables, together with locus of control in the model. In addition, as seen in Figure 2, relationship coefficients between antisocial tendencies and aggression with UECUB are equal. This situation indicates that they are more important predictors and has medium effects on UECUB, compared to locus of control. These three variables containing locus of control, social norms and antisocial tendencies in the model account for 29% of the total variance.

Computer technologies have become a rather important communication medium of daily life because they facilitate of human life. But, it brings along a great deal issues affecting human life negatively day by day. At the present time, there is much more necessity to research the psychological impact of internet use. The results of this study make rather remarkable contributions to the understanding of UECUB because they reveal that some personality characteristics are significant factors on unethical computer use behavior. The study proposes a model of UECUB and the model also has good fit.

Determining whether UECUB is associated with particular personality characteristics is rather significant to find out individuals' UECUB, to prevent their unethical behaviors and to train individuals for making them hard comply with ethic behaviors. If individuals confront with a moral situation such as whether demonstrating UECUBs or not, they would decide depending on their personality characteristics such as locus of control, antisocial tendencies, adjustment to social norms, aggression.

This study is valuable because little research has been done on the relationships UECUB and personality characteristics in Turkey. Therefore, this research is a pioneering study which is intended to increase understanding of the interaction between personality characteristics and UECUB. The findings must be taken as a guide to future research that will examine the interactions between UECUB and personality characteristics. Such studies may help us prevent the unethical computer use behavior better. For example, understanding several personality profiles may help us to implement necessary preventions and therefore make individuals demonstrate healthier and ethical behaviors on computer and internet. All computer users should adopt the computer ethics as a fundamental value. Individuals should be given sufficient information about computer ethics, especially internet use, and provided to be sensitive to computer ethics (Uysal, 2006). University students, especially computer technology students and teacher trainees, should take the courses related to computer ethics because they may be aware of importance of the ethical matters (Gürcan Namlu & Odabasi, 2007, Uysal, 2006). Various seminars, training programs and courses related to ethical computer use should be held to stimulate desired ethical behaviors.

There are several limitations that must be addressed before generalizing these results to other samples. The major limitation to this study is that it used only participants attending computer technology program. Therefore, the model obtained in this study must be considered to be indefinite because the results need to be tested with other populations. Moreover it is

necessary to replicate this study with various samples having different computer use behaviors, especially internet. Another limitation is that all instruments used were self-report and the model includes only structural equation modeling with observed variables. Therefore, this study should be repeated with other measures and various methods. Despite these weaknesses, the findings may provide noteworthy contributions theoretically to prevent unethical computer use behaviors and reduce these behaviors by means of developing insight in terms of ethics in individuals. Consequently, the present study must be taken into consideration as a starting point for further studies investigating relationships of personality characteristics with ethical usage of computer technologies.

REFERENCES

- Amichai-Hamburger, Y. (2002). Internet and personality. *Computers in Human Behavior*, 18 (1), 1-10.
- Çakıl, N. (1992). Some variables affecting locus of control on juvenile and juvenile delinquents. Unpublished Master's Thesis, Malatya: İnönü University, 1992.
- Dağ, İ. (1991). The validity and reliability of Rotter's locus of internal-external control scale on university students. *Journal of Turkish Psychology*, 7 (26), 10-16.
- Gurcan Namlu, A. & Odabasi, F. (2007). Unethical computer using behavior scale: A study of reliability and validity on turkish university students. *Computers & Education*, 48 (2), 205-215.
- Hamburger, Y. A. & Ben-Artzi, E. (2000). The relationship between extraversion and neuroticism and the different uses of the Internet. *Computers in Human Behavior*, 16 (4), 441-449.
- Huesmann, L.R., Eron, L.D. & Dubow, E.F. (2002). Childhood predictors of adult criminality: are all risk factors reflected in childhood aggressiveness?. *Criminal Behaviour and Mental Health*, 12, 185-208.
- Kıran, B. (1993). The investigation of adjustment domains and methods of high school students with different gender and locus of control . Unpublished master's thesis, Ankara: Hacettepe University.
- Köksal, F. (1991). The relationships between locus of control and aggressive behavior. Unpublished Doctoral Thesis. Erzurum: Atatürk University.
- Kurtyılmaz, Y. (2005). Relationships between teacher trainees' aggression levels and academic achievement, communication skills, problem solving skills. Unpublished Master's Thesis. Eskişehir: Anadolu University.
- Loch, K.D. & Conger, S. (1996). Evaluating ethical making and computer use. *Association for Computing Machinery. Communications of the ACM*, 39 (7), 74-84
- Morrison, K. (1997). Personality correlates of the Five-Factor Model for a sample of business owners/managers: Associations with scores on self-monitoring, type A behavior, locus of control and subjective well-being. *Psychological Reports*, 80 (1), 255-272.
- Özgül, İ. E. (1992). *The manual of HKE Hacettepe Personality Inventory*. Ankara: Odak Offset Press.
- Savaşır, I., & Şahin, N. H. (1997). *The evaluation in the Cognitive-behavioral therapy: the scales used frequently*, Ankara: Turkish Psychological Association Press.
- Seale, D. A., Polakowski, M., Schneider, S. (1998). It's not really theft!: personal and workplace ethics that enable software piracy. *Behaviour & Information Technology*, 17 (1), 27-40.
- Şimşek, Ö.F. (2007). *The introduction to structural equation modeling, basic principles and LISREL applications*. Ankara: Ekinoks Publishing.
- Tok, Y. (2001). The aggressiveness levels of university students with different judgements about gender roles. Unpublished master's thesis, Ankara: Hacettepe University.
- Tuzgöl, M.(1998). Investigation of aggressiveness levels according to some variables on high-schoolers with different parent attitudes. Unpublished master's thesis, Ankara: Hacettepe University.
- Uysal, Ö. (2006). Views of teacher trainees on computer ethics. Unpublished Master's Thesis. Eskişehir: Anadolu University.
- Watson, David C. (1998). The relationship of self-esteem, locus of control, and dimensional models to personality disorders. *Journal of Social Behavior & Personality*, 13 (3), 399-420.
- Yeşilyaprak, Binnur (1990). Gençlerde denetim odağı ve ön koşulları, *V.Ulusal Psikoloji Kongresi Psikoloji-Seminer Dergisi Özel Sayısı*, 8, 209-219.