BARÜ Bartın University Journal of Faculty of Education BUEFAD

2023, Volume 12, Issue 1, 190-199
dergipark.org.tr/buefad
DOI: 10.14686/buefad.1040614

The Effect of Emotional Intelligence on Cyber Security: The Mediator Role of Mindfulness

Tolga SEKİ[a]*, Fatmanur ÇİMEN*[b] *& Bülent DİLMAÇ*[c]

Research Article
Received: 23.10.2021
Revised: 26.01.2022
Accepted: 26.01.2022

a* Dr., Necmettin Erbakan University, https://orcid.org/0000-0001-5594-0786 *tlg.seki@gmail.com
b Fatmanur ÇİMEN, Atatürk University, https://orcid.org/0000-0001-6068-430X
c Prof. Dr., Necmettin Erbakan University, https://orcid.org/0000-0001-5753-9355

ABSTRACT

The aim of the study was to examine the effect of emotional intelligence on cyber security and the role of mindfulness in this effect. The sample of the study is consisted of 342 (66.5%) females and 172 (33.5%) males. According to their ages, there are 243 (47.3%) people between the ages of 18-24, 166 (32.3%) between the ages of 25-34, 68 (13.2%) people between the ages of 35-44, 37 (7.2%) people aged 45 and over. In this study, it was used "Emotional Intelligence Scale", "Mindfulness Scale" and "Personal Cyber Security Provision Scale". The study was conducted with the relational survey model. Unstandardized beta values that obtained from the study will be seen as follows: β=0.15 [0.08, 0.23] the direct effect of emotional intelligence on mindfulness, β=0.15 [0.08, 0.23] the direct impact of Mindfulness on Cyber Security, β=0.07 [0.03, 0.10] the indirect effect of Emotional Intelligence on Cyber Security. All effects obtained were found to be significant ($p<0.001$). As a result of the analyzes, it was found that emotional intelligence affected mindfulness positively and cyber security. Furthermore, it was revealed that emotional intelligence directly and indirectly affected cyber security positively, and mindfulness played a partial mediator role in this effect.

Keywords: Cyber security, emotional intelligence, internet technology, mediation effect, mindfulness

The Effect of Emotional Intelligence on Cyber Security: The Mediator Role of Mindfulness

ÖZ

Bu araştırmanın amacı duygusal zekânın siber güvenlik üzerine etkisini ve bu etkide bilinçli farkındalığın aracı rolünü incelemektir. Araştırma Türkiye'nin çeşitli illerinde yaşayan yetişkinler üzerinde gerçekleştirilmiştir. Araştırmaya 342 (%66.5) kadın, 172 (%33.5) erkek olmak üzere 514 kişi katılmıştır. Yaşlarına göre katılımcılardan 243 (%47.3) kişi 18-24 yaş aralığında, 166 (%32.3) kişi 25-34 yaş aralığında, 68 (%13.2) kişi 35-44 yaş aralığında, 37 (%7.2) kişi 45 yaş ve üzerindedir. Araştırmada "Duygusal Zekâ Ölçeği", "Bilinçli Farkındalık Ölçeği" ve "Kişisel Siber Güvenliği Sağlama Ölçeği" kullanılmıştır. Araştırma ilişkisel tarama modeli ile gerçekleştirilmiştir. Araştırmadan elde edilen standardize edilmemiş beta değerleri: Duygusal zekânın bilinçli farkındalık üzerine doğrudan etkisi β=0.42, bilinçli farkındalığın siber güvenlik üzerine doğrudan etkisi β=0.15, duygusal zekânın siber güvenlik üzerine dolaylı etkisi β=0.07 [0.03, 0.10] olarak elde edilmiştir. Elde edilen tüm etki büyüklükleri anlamlı bulunmuştur ($p<0.001$). Sonuç olarak; duygusal zekânın bilinçli farkındalığı pozitif, bilinçli farkındalığın siber güvenliği pozitif yönlü etkilediği bulunmuştur. Ayrıca duygusal zekânın siber güvenliği doğrudan ve dolaylı olarak pozitif yönlü etkilediği ve bu etkide bilinçli farkındalığın kısmi aracı rol üstlendiği ortaya konmuştur.

Anahtar kelimeler: Siber güvenlik, duygusal zekâ, internet teknolojisi, aracı etki, bilinçli farkındalık

To cite this article in APA Style:
Seki, T., Çimen, T., & Dilmaç, B. (2023). The effect of emotional intelligence on cyber security: The mediator role of mindfulness. *Bartın University Journal of Faculty of Education, 12*(1), 190-199. https://doi.org/10.14686/buefad.1040614

INTRODUCTION

Internet technology and its foundations of which were laid in the 1950s has gradually become widespread and it has become one of the main factors affecting the 21st century. Today, internet technology has eliminated the distance between continents and has enabled the world to be called as "global village". The use of Internet has become very common in our country in accordance to the world. As much as the rate of internet access of residences in our country was 30% in 2009, this rate reached 90.7% in 2020 (TUIK, 2020). Internet technology provides many facilities in our lives. In addition to the opportunities offered by the internet, it also brings various security risks for users. The risks of using the Internet are created by the abuse of the possibilities of this area by many malicious people. In order to prevent it, there are various control mechanisms including both technology-oriented and non-technology-oriented. There are various technological software and programs, non-technology-oriented interventions, legal enforcement, legislation, civil actions, education, individual awareness, and attention (Kim et al., 2011). However, despite all these security measures, studies have shown that 86.3% of children use the internet unsafely (Valcke et al., 2010). Adults' protective behaviors are insufficient and their awareness is low (Öğütçü, 2010). In addition, many people are not aware of the risks of sharing their personal information on the internet with people who do not know (Young, 2008).

The public services are accessible with internet technology, and the role of public and private institutions in information technologies are increasing gradually and increasing security risks are too (Bıçakcı et al., 2015). The measures of security that the state, institutions, and individuals should take to ensure information security brought the concept of cyber security to the agenda (Choucri, 2012; cited in Tarhan, 2017). The concept of cyber security covers all communication providers and means ensuring the confidentiality, accuracy, and usability of information as well as an internet-oriented security provider (Hekim & Başıbüyük, 2013). It requires the use of opportunities besides maintaining existing systems. It also encompasses various tasks such as internet administration, trade policy, counter-terrorism, and security intelligence. In this respect, the concept of cyber security is a very important national security mechanism (Klimburg, 2012).

Along with the technical measures to be taken to prevent cyber security threats, ignoring the human factor in providing cyber security will render the measures taken ineffective. For this reason, the awareness of individuals plays an important role in ensuring their safety (Yılmaz et al., 2016). At that point, awareness is a radar that constantly scans the inner and outer environment working in the background of consciousness. Mindfulness includes both awareness and attention. Attention takes images from the ground of awareness and keeps them in focus for a while. Thus, attention and awareness are intertwined (Brown & Ryan, 2003). In this context, mindfulness is the state of being fully awake and active in the moment. In other words, it is to live in the present by directing attention in another direction (Özyeşil et al., 2011). It is a person's awareness of the information coming from the environment and paying attention to the situation that needs to be interpreted (İlhan & Esentürk, 2015). It can be said that awareness plays an important role in behavior and attitude by directing the person to the right behavior and attitude over time (Demir & Cicioğlu, 2020; Hutton & Baumeister, 1992).

Most of the security breaches, which cost companies an average of $6.75 million in the USA, was reported as employees' lack of mindfulness of security policies (Parrish & Nicolas-Rocca, 2012). Accordingly, it was reported that there is a positive relationship between low mindfulness and the dissemination of private data and personal information without a bad intention. Mindfulness, which is defined as an increasing attention to the events around us, is effective in preventing security violations (Landress, 2018). In addition, eliminating the lack of infrastructure in the prevention of cybercrime, which increases with the spread of the use of wireless technologies and increasing the bandwidth, and effective policy implementation and measures by the states will also be effective in ensuring cyber security (Von Solms & Kritzinger, 2012).

By means of mindfulness, individuals can perceive their own and others' emotions correctly and regulate them effectively. Mindfulness brings clarity and vitality to everyday experiences and encourages momentary emotional contact with life. In this way, the basic aspects of mindfulness can make the development of competencies involving emotional intelligence (Schutte & Malouff, 2011). The components of mindfulness allow individuals to effectively perceive, regulate, and ultimately understand emotions in themselves and others. Emotional intelligence is conceptualized as the ability to perceive, use, understand and manage emotions (Mayer et al., 2008). It is related to the emotion management component of emotional intelligence and the self-regulating function inherent in mindfulness (Brown et al., 2007). Therefore, awareness plays an important role in facilitating interpersonal awareness and using emotions, which are the basic components of emotional intelligence (Schutte

& Malouff, 2011). Moreover, it was reported in literature that people with high emotional intelligence have a high level of mindfulness (Baer et al., 2004; Brown & Ryan, 2003; Sinclair & Feigenbaum, 2012).

Recent studies have shown that individuals with high emotional intelligence have a decreased use of problematic internet (Reisoğlu et al., 2013) and an increased level of coping with cyberbullying (Eliçora, 2020). In addition, it was revealed that mindfulness plays a fully mediating role in the relationship between emotional intelligence and internet addiction (Cankurtaran & Şakiroğlu, 2020). It was also reported in literature having high awareness has an impact on cyber security behaviors in individuals (Kritzinger & Solms, 2010). In the globalizing and digital transformation world, internet-based applications such as information technologies, online services and social networks have gained importance and developed very rapidly in recent years (Öztabak, 2018). As mentioned above, it is seen that the awareness and emotional intelligence levels of the users are effective in the conscious use of online applications. With the effect of globalization the security of users in the virtual world gains importance. It is thought that the conscious awareness and emotional intelligence of users are effective in cyber security behaviors, but no study has been found in literature. Therefore, considering these relationships, the hypotheses of this research can be expressed as follows:

1. Emotional intelligence is a predictor of cyber security behaviors.
2. Mindfulness is a predictor of cyber security behaviors.
3. Mindfulness has a mediator role in the relationship of cyber security with emotional intelligence and mindfulness.

METHOD

This section may include research design, the study group, data collection tools and data analysis.

Research Design

The purpose of this study was to examine the effect of emotional intelligence on cyber security and the mediating role of mindfulness in this effect. For this purpose, a correlational survey model was used in the research. Relational screening model; It is a research model that aims to determine the presence and/or degree of co-variance between two or more variables (Büyüköztürk et all., 2009).

Study Group

514 people from different regions of Turkey participated in the research. 342 of the participants (66.5%) were women and 172 of them (33.5%) were men. When the ages of the participants are examined, there are 243 (47.3%) people between the ages of 18-24, 166 (32.3%) between the ages of 25-34, 68 (13.2%) people between the ages of 35-44, 37 (7.2%) people aged 45 and over. Finally, when the educational status of the participants are examined, there are 45 (8.8%) graduated, 335 (65.2%) graduated from the university, 97 (18.9%) graduated from the high school, 33 (6.4%) graudated from the primary school, and 4 (.8%) literated.

Data Collection Tools

Emotional Intelligence Scale-Short Form, Mindful Attention Awareness Scale, Personal Cyber Security Provision Scale and Personal Information Form were used in this study.

Personal Information Form: This form was prepared by the researchers to determine the characteristics of the participants such asgender, age and educational status.

Emotional Intelligence Scale-Short Form: The scale was translated into Turkish by Deniz et al., (2013) to determine the level of perception of the individual's emotional competencies. The scale consists of 16 items and 4 sub-dimensions. The total variance explanation rate of the scale is 60.8%. The Cronbach's alpha coefficients of this scale were found to be .72 for the well-being factor, .70 for self-control, .66 for emotionality, .70 for sociability, and .81 for the whole scale. In addition, as a result of the test-retest reliability studies, the correlation level was found to be .86. In the study, the Cronbach's alpha value of the scale was obtained as .73.

Mindful Attention Awareness Scale: The scale was adapted into Turkish by Özyeni et al. (2011). The scale consists of 15 items and one dimension. The item factor loads of the scale ranged from .48 to .81. The Cronbach alpha internal consistency coefficient of the scale was calculated as .80 and the test-retest correlation was calculated as .86. In the study, the Cronbach's alpha value of the scale was .89.

Personal Cyber Security Provision Scale: The scale was developed by Erol et al., (2015) to determine the cybersecurity-related behaviors of internet users. The scale consists of 25 items and 5 sub-dimensions. The total variance explanation rate of the scale is 48%. The Cronbach alpha coefficient of the scale was found as .76 for protection of personal privacy, .77 for avoiding untrusted, .70 for taking precaution, .82 for protection of payment

information, .56 for not leaving a trace, and 0.73 for the overall scale. In the study, the Cronbach's alpha value of the scale was obtained as .77.

Data Collection

Before starting the research, ethical approval was obtained from the Social and Human Sciences Ethics Committee of Necmettin Erbakan University (19/03/2021, No:2021/159). The data were collected online such asFacebook, WhatsApp and Instagram because of the pandemic. The informed consent form was given on the first page of the study, and electronic consent of the participants was obtained. Demographic information form and scales were applied electronically. The research was carried out on volunteer participants over the age of 18.

Data Analysis

In the study, firstly missing data analysis was performed. SPSS package program was used to calculate frequency, percentage, standard deviation, mean, correlation, and Cronbach's alpha values. In order to test the normal distribution of the data, the skewness and kurtosis values of the variables were calculated first. Direct and indirect effects between the variables were realized with SPSS PROCESS (Hayes, 2018). Bootstrapping was performed with 5,000 samples and a 95% confidence interval (Montoya & Hayes, 2017). In this study, we followed these recommendations for mediation analysis: (i) emotional intelligence must be connected to cyber security, (ii) mindfulness must be connected to cyber security (iii) emotional intelligence must be connected to mindfulness, (iv) there must be a statistically significant decrease in the impact of emotional intelligence on cyber security when mindfulness is controlled.

FINDINGS

In this part of the research, first of all, descriptive statistics and correlation results of emotional intelligence, mindfulness, and cyber security variables were given. Then, the model of the direct and indirect effects between these variables was tested.

Descriptive Statistics and Correlation Results

The mean, standard deviation, skewness and kurtosis values, and Cronbach's alpha coefficients and correlation values were given in Table 1. It was observed that the skewness and kurtosis values were in the range of ±1.96 and it showed a normal distribution (Karagöz, 2016). All Cronbach's alpha coefficients were found to be sufficient because they were 0.70 and above (Pallant, 2016). A moderate positive correlation was found between emotional intelligence and mindfulness ($r = 0.50$, $p<.001$), between emotional intelligence and cyber security ($r = 0.36$, $p<.001$), and mindfulness and cyber security ($r = 0.33$, $p<.001$).

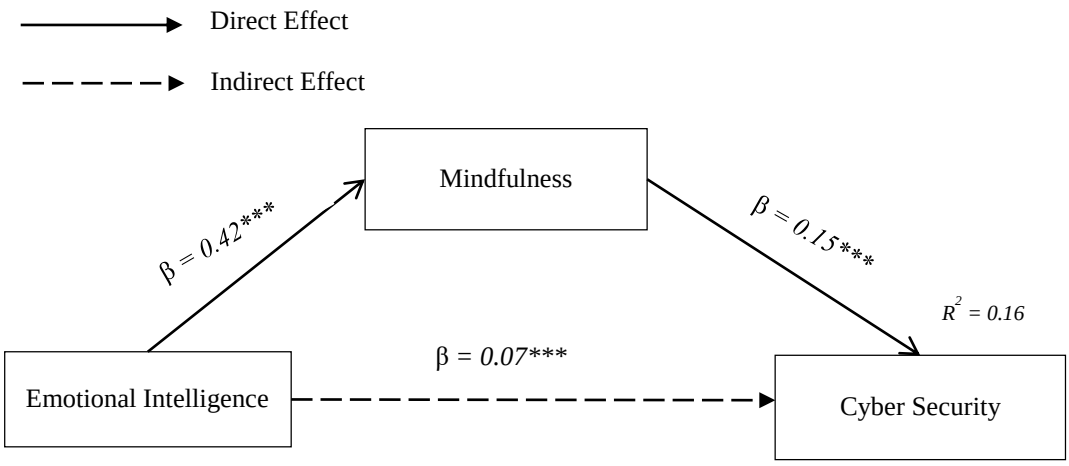
Table 1. Descriptive statistics, Reliability values, Correlation results

	α	M	SS	Skew.	Kurt.	1	2	3
1. Emotional Intelligence	.73	93.37	17.36	.12	-.35	-		
2. Mindfulness	.89	57.72	14.91	-.28	-.35	.50**	-	
3. Cyber Security	.77	92.85	11.81	-.18	-.42	.36**	.33**	-

**$p< .001$

Testing the Mediator Effect Model

The model regarding the mediating role of mindfulness in the effect of emotional intelligence on cyber security is shown in Figure 1. The Cronbach Alpha value of the scales used in the research was found 0.73 for emotional intelligence scale, 0.89 for mindfulness scale and 0.77 for cyber security scale. This study obtained correlations that are r=0.50 between emotional intelligence and mindfulness, r= 0.36 between emotional intelligence and cyber security, r=0.33 between mindfulness and cyber security. As a result of bootstrapping, it was observed that emotional intelligence had a significant effect on mindfulness ($\beta = 0.42$, $t = 13.06$, $p < .001$). Similarly, mindfulness was found to have a positive effect on cybersecurity ($\beta = 0.15$, $t = 4.12$, $p < .001$). In addition, an indirect effect of emotional intelligence on cybersecurity was found ($\beta = 0.07$, CI = 0.03, 0.10). In the research, it was seen that mindfulness plays a mediating role in the effect of emotional intelligence on cyber security. In addition, it was determined in the study that emotional intelligence and mindfulness explained 16% of the variance (R^2) regarding cyber security (Figure 1).



***p < .001
β = non-standardized coefficient of influence

Figure 1. *Structural Model*

DISCUSSION & CONCLUSION

Nowadays with the transfer of transactions such as banking and public services to an interactive environment the widespread use of information technologies, which are at the center of our lives, has made these transactions open targets for attack (Doherty et al., 2009). The fact that the information circulation network, which is very important in general and, is moved to an interactive environment with this prevalence for the elimination of cyber security threats and the safe use of this network (Vural & Sağıroğlu, 2008). In this sense, cyber security covers comprehensive security that covers not only the internet but also all communication infrastructures (Hekim & Başıbüyük, 2013). The human factor is the weakest link among the factors to ensure this security. In general, even if all security measures are taken, human-induced vulnerabilities can also invalidate these measures. For this reason, it is considered to raise awareness of people about this issue and to determine their awareness (Vural & Sağıroğlu, 2008).

Education and awareness are fundamental parts of all information security cultures (Glaspie & Karwowski, 2017). Accordingly, regardless of hardware and software, an uneducated and low-aware user becomes the carrier of a cyber-attack (Badie & Lashkari, 2012). Öğütçü et al., (2016) revealed that when more technology users perceive threats,more their awareness of the world of technology increases and more efficient their security behaviors become. Chen & Zahedi (2016) revealed that users tend to take security measures when they perceive or experience cyber threats. Jensen et al., (2017) highlighted that users who received mindfulness training were better protected from attacks they were exposed from the internet. Accordingly, the fact that individuals have high mindfulness provides the opportunity to get rid of mental confusion by being aware of the events around them and to use the internet better by focusing attention on positive areas (Peker et al., 2019).

Mindfulness is the state of focusing on the events happening around us in an accepting way without judgment (Brown & Ryan, 2003) and the opportunity to be fully alive and awake (Germer et al., 2005). Thus, it enables the individual to perceive the emotions of himself and those around him, and thus to regulate the individual's emotion (Koole, 2009). In this respect, mindfulness, perceiving, regulating, and managing emotions are highly related to emotional intelligence (Petrides & Furnham, 2000). Since individuals with low emotional intelligence are more likely to experience both social and psychological problems (Mavroveli et al., 2007), it was revealed that they have a high tendency to escape from real life and be more active in the virtual environment ,and emotional intelligence is a protective factor against problematic use of internet (Beranuy et al., 2009).

A low level of emotional intelligence facilitates online use of individuals, and they are more likely to experience high psychological and interpersonal problems (Petrides at all., 2016). Having a socio-emotional system that reduces the tendency of individuals to risky activities such as problematic technology use individuals to control their emotions and to have cognitive control over these emotions. Thus, it is an important preventive factor against exhibiting problematic behaviors (Shulman, et al., 2016). Moreover, it has been reported that

mindfulness has a mediating role because individuals with high awareness have the capacity to manage and regulate their emotions by being more aware of their emotional states (Kircaburun , Griffiths & Billieux, 2019). Individuals with a high level of awareness along with emotional intelligence have more sufficient resources to cope with their problems (Petrides, Gomez & Perez-Gonzalez, 2017). In literature, it has been revealed that emotional intelligence and mindfulness are positively related (Baer et al., 2004; Bao et al., 2015; Deniz et al., 2017; Griebel, 2015; Schutte & Malouff, 2011; Sinclair & Feigenbaum, 2012; Teal et al. , 2018; Wang and Kong, 2013).

In this study it was revealed that mindfulness plays a mediating role between cyber security behaviors and emotional intelligence. In this respect, it contributes to the literature by considering the cyber security behaviors of the participants in terms of emotional intelligence and mindfulness. However, these results have some limitations that should be considered while interpreting. These are the limited generalizations of the study sample with only the inclusion of various provinces of Turkey. Another limitation is that the study has a cross-sectional structure. Therefore, in future studies it is recommended that researchers reach a larger sample by considering these issues and test results of the research with longitudinal studies. Considering the results of the study, it is recommended for practitioners to carry out studies to increase the conscious awareness of users and to detect and develop their emotional intelligence in ensuring cyber security of users in the virtual environment.:

Statements of Publication Ethics

The research was conducted in accordance with the 1964 Declaration of Helsinki and ethical standards. Informed consent was obtained from all participants participating in the study. Before starting the research, ethical approval was obtained from the Social and Human Sciences Ethics Committee of Necmettin Erbakan University (19/03/2021, No:2021/159). This study was not funded by any organization or institution.

Researchers' Contribution Rate

The first author contributed to the method, data analysis, reporting, summary, and general arrangement. The second author contributed to the design of the research, introduction, data collection, discussion, and bibliography. The third author contributed to the design and discussion of the data and provided review and feedback to the research.

Conflict of Interest

The authors declare that there are no conflicts of interest associated with this paper.

Acknowledgement

This research was presented as an oral presentation at the 22nd International Psychological Counseling and Guidance Congress (2021).

REFERENCES

Badie, N., & Lashkari, A. H. (2012). A new evaluation criteria for effective security awareness in computer risk management based on AHP. *J. Basic. Appl. Sci. Res*, *2*(9), 9331-9347. https://www.academia.edu/6947482/A_new_Evaluation_Criteria_for_Effective_Security_Awareness_in_Computer_Risk_Management_based_on_AHP.

Baer, R. A., Smith, G. T., & Allen, K. B. (2004). Assessment of mindfulness by self-report. *Assessment*, *11*(3), 191-206. doi: 10.1177/1073191104268029.

Bao, X., Xue, S., & Kong, F. (2015). Dispositional mindfulness and perceived stress: The role of emotional intelligence. *Personality and Individual Differences*, *78*, 48-52. doi: 10.1016/j.paid.2015.01.007.

Beranuy, M., Oberst, U., Carbonell, X., & Chamarro, A. (2009). Problematic Internet and mobile phone use and clinical symptoms in college students: The role of emotional intelligence. *Computers in Human Behavior*, *25*(5), 1182-1187. doi: 10.1016/j.chb.2009.03.001.

Bıçakcı, S., Ergun, D., & Çelikpala , M. (2015). Türkiye'de siber güvenlik [Cyber security in Turkey]. *Ekonomi ve Dış Politika Araştırma Merkezi (EDAM) Siber Politika Kağıtları Serisi*, (1), 1-35. https://www.edam.org.tr/document/CyberNuclear/SiberKitapTR/edam_siber_guvenlik_b2.pdf

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822-848. doi: 10.1037/0022-3514.84.4.822.

Brown, K. W., Ryan , R. J., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18*(4), 211-237. doi: 10.1080/10478400701598298.

Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz , Ş., & Demirel , F. (2009). *Bilimsel araştırma yöntemleri (21. baskı).* Ankara: Pegem Yayıncılık.

Cankurtaran, Ş., & Şakiroğlu , M. (2020). Üniversite öğrencilerinde duygusal zeka ile internet bağımlılığı ilişkisinde bilinçli farkındalığın rolü [The mediator role of mindfulness in the relationship between internet addiction and emotional intelligence in university students]. *Atatürk University Journal of Faculty of Letters, 64*, 49-67. https://dergipark.org.tr/tr/pub/atauniefd/issue/55274/592497

Chamizo-Nieto, M. T., Rey, L., & Pellitteri, J. (2022). Gratitude and emotional intelligence as protective factors against cyber-aggression: Analysis of a mediation model. *Int. J. Environ. Res. Public Health*, 19(3), 1219. doi: 10.3390/ijerph19031219.

Chen, Y., & Zahedi, F. M. (2016). Individuals'internet security perceptions and behaviors: polycontextual contrasts between The United States and China. *MIS Quarterly, 40*(1), 205-222. doi: 10.25300 / MISQ / 2016 / 40.1.09.

Choi, M. S., Levy, Y., & Hovav, A. (2013). *The role of user computer self-efficacy, cybersecurity countermeasures awareness, and cybersecurity skills influence on computer misuse*. Milan, İtalya: Proceedings of the Pre-International Conference of Information Systems (ICIS) SIGSEC– Workshop on Information Security and Privacy (WISP).

Demir, G. T., & Cicioğlu, H. İ. (2020). Awareness of digital game addiction scale (ADGAS): Validity and reliability study. *Eurasian Journal of Sport Sciences and Education, 2*(1), 1-17. https://dergipark.org.tr/tr/download/article-file/1107651.

Deniz, M. E., Erus, S. M., & Büyükcebeci , A. (2017). Relationship between mindfulness and psychological well-being: The mediating role of emotional intelligence. *Turkish Psychological Counseling and Guidance Association, 7*(47), 17-31. https://dergipark.org.tr/tr/pub/tpdrd/issue/42743/515880.

Deniz, M. E., Özer, E., & Işık, E. (2013). Trait emotional intelligence questionnaire–short form: Validity and reliability studies. *Education and Science, 38*(169), 407-419. https://toad.halileksi.net/olcek/duygusal-zeka-ozelligi-olcegi-kisa-formu-dzoo-kf.

Doherty, N. F., Anastasakis, L., & Fulford, H. (2009). The information security policy unpacked: A critical study of the content of university policies. *International Journal of Information Management, 29*(6), 449-457. doi: 10.1016/j.ijinfomgt.2009.05.003.

Eliçora, R. (2020). *Investigation of the relationship between adolescents' cyber victimization and coping with cyberbullying skills and emotional intelligence* (Dissertation No. 652304) (Doctorate Dissertation). Karabük University, Karabük. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Erol, O., Şahin, Y. L., Yılmaz, E. & Haseski, H. İ. (2015). Kişisel Siber Güvenliği Sağlama Ölçeği geliştirme çalışması [Personal Cyber Security Provision Scale development study]. *International Journal of Human Sciences, 12*(2), 75-91. https://toad.halileksi.net/olcek/kisisel-siber-guvenligi-saglama-olcegi

Galaiya , R., Kinross, J., & Arulampalam, T. (2020). Factors associated with burnout syndrome in surgeons: A systematic review. *Annals of the Royal College of Surgeons of England* , 102(6), 401-407. doi: 10.1308/rcsann.20200.0040

Glaspie, H. W., & Karwowski, W. (2017). Human factors in information security culture: A literature review. International Conference on Applied Human Factors and Ergonomics. Orlando, USA. doi:10.1007/978-3-319-60585-2_25

Griebel, C. (2015). *Emotional ıntelligence as a mediator in the relationship between mindfulness and subjective well-being*. (Master's Thesis). Eastern Illınoıs University, Illinois. https://thekeep.eiu.edu/theses/2338.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. (6th Ed.), Guilford publications.

Hekim, H., & Başıbüyük, O. (2013). Siber suçlar ve Türkiye'nin siber güvenlik politikaları [Cyber crimes and Turkey's cyber security policies]. *Uluslararası Güvenlik ve Terörizm Dergisi, 4*(2), 135-158. https://www.acarindex.com/dosyalar/makale/acarindex-1423936102.pdf

Hutton, D. G., & Baumeister, R. F. (1992). Self-awareness and attitude change: seeing oneself on the central route to persuasion. *Personality and Social Psychology Bulletin, 18,* 68-75. doi: 10.1177/0146167292181010.

İlhan, E. L., & Esentürk, O. K. (2015). Zihinsel engelli bireylerde sporun etkilerine yönelik farkındalık ölçeği (ZEBSEYFÖ) geliştirme çalışması [An effort to develop an awareness scale regarding effects of sport on persons with intellectual disabilities]. *CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi, 9*(1), 19-36. https://dergipark.org.tr/tr/pub/cbubesbd/issue/32239/357828.

Jensen, M. L., Dinger, M., Wright , R. T., & Tratcher, J. B. (2017). Training to mitigate phishing attacks using mindfulness techniques. *Journal of Management Information Systems, 34*(2), 597-626. doi: 10.1080/07421222.2017.1334499.

Karagöz, Y. (2016). *SPSS 23 ve AMOS 23 uygulamalı istatistiksel analizler* [*SPSS 23 and AMOS 23 applied statistical analysis*]. Nobel Yayınevi: Ankara.

Kim, W., Jeong, O. R., Kim, C., & So, J. (2011). The dark side of the internet: Attacks, costs and responses. *Information Systems, 36*(3), 675-705. doi: 10.1016/j.is.2010.11.003.

Kırcaburun , K., Griffiths, M. D., & Billieux, J. (2019). Trait emotional intelligence and problematic online behaviors among adolescents: The mediating role of mindfulness, rumination, and depression. *Personality and Individual Differences,* 139, 208-213. doi: 10.1016/j. paid.2018.11.024.

Kırcaburun, K., Demetrovics, Z., Griffiths, M. D., Kiraly, O., Kun, B., & Tosuntaş, Ş. B. (2020). Trait emotional intelligence and internet gaming disorder among gamers: The mediating role of online gaming motives and moderating role of age groups. *International Journal of Mental Health and Addiction*, 18:1446–1457. doi: 10.1007/s11469-019-00179-x.

Kirkpatrick, K. L. (2005). *Enhancing self-compassion using a gestalt two-chair ınterventıon*. (Doctoral Dissertation). University of Texas, Austin. http://hdl.handle.net/2152/1966.

Klimburg, A. (2012). National cyber security framework manual. Estonia: NATO Cooperative Cyber Defence Centre of Excellence Tallinn.

Koole, S. L. (2009). The psychology of emotion regulation: An integrative review. *Cognition & Emotion, 23*(1), 4-41. doi: 10.1080/02699930802619031.

Kritzinger, E., & Solms, S. H. (2010). Cyber security for home users: A new way of production through awareness enforcement. *Computers & Security, 29*(8), 840-847. doi: 10.1016/j.cose.2010.08.001.

Landress, A. D. (2018). The impact of mindfulness on non-malicious spillage within images on social networking sites. ABD: Nova Southeastern University.

Martínez-Monteagudo, M. C., Delgado, B., García-Fernández, J. M., & Rubio, E. (2019). Cyberbullying, aggressiveness and emotional intelligence in adolescence. *Int. J. Environ. Res. Public Health*, 16, 5079. doi: 10.3390/ijerph16245079

Mavroveli, S., Petrides, K. V., Rieffe, C., & Bakker, F. (2007). Trait emotional intelligence, psychological well-being and peer-rated social competence in adolescence. *British Journal of Developmental Psychology*, 25(2), 263-275, doi: 10.1348 / 026151006X118577.

Montoya, A. K., & Hayes, A. F. (2017). Two-condition within-participant statistical mediation analysis: A path-analytic framework. *Psychological Methods, 22*(1), 6-27. doi: 10.1037/met0000086

Mayer, J. D., Salovey, P., & Cruso, D. R. (2008). Emotional intelligence: New ability or eclectic traits? *American Psychologist, 63*(6), 503-517. doi: 10.1037/0003-066x.63.6.503.

Nowak, G. J., & Phelps, J. (1992). Understanding privacy concerns. An assessment of consumers' information related knowledge and beliefs. *Journal of Direct Marketing, 6*(4), 28-39. doi: 10.1002/dir.4000060407.

Öğütçü, G. (2010). *E-dönüşüm sürecinde kişisel bilişim güvenliği davranışı ve farkındalığının analizi* [*Analysis of personal information security behavior and awareness in e-transformation process*]. (Dissertation No. 266448) (Master's Dissertation). Başkent University, Ankara. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Öğütçü, G., Testik , Ö. M., & Chouseinoglou, O. (2016). Analysis of personal information security behavior and awareness. *Computers & Security*, *56*, 83-93. doi:10.1016/j.cose.2015.10.002.

Öztabak, M. Ü. (2018). Problemli internet kullanımı olan ergenlerin internet kullanımına ilişkin duygu ve görüşlerinin incelenmesi [Examination of feelings and opinions about internet use of adolescents with problematic internet use]. *OPUS, 8*(15), 1022-1055. https://dergipark.org.tr/en/download/article-file/500349.

Özyeşil, Z., Arslan, C., Kesici , Ş., & Deniz, M. E. (2011). Adaptation of the Mindful attention awareness scale into Turkish. *Education and Science*, *36*(160), 224-235. https://toad.halileksi.net/olcek/bilincli-farkindalik-olcegi-3/

Pallant, J. (2016). *SPSS kullanma kılavuzu-SPSS ile adım adım veri analizi* [*SPSS survival manual- A step by step guide to data analtsis using IBM SPSS*]. Anı Yayıncılık: Ankara.

Parrish, J. L., & Nicolas-Rocca, T. S. (2012). *Toward better decisions with respect to is security: Integrating mindfulness into is security training*. Orlando: Proceedings of the Seventh Pre-ICIS Workshop on Information Security and Privacy.

Peker, A., Nebioğlu, M., & Ödemiş, M. H. (2019). Sanal ortamda bağımlılık: Bilinçli farkındalığın aracı rolüne ilişkin bir model sınaması [Addiction in a virtual environment: A model test for the mediation role of mindfulness]. *Anadolu Psikiatri Dergisi*, *20*(2), 153-158. doi: 10.5455/apd.301945.

Petrides, K. V., & Furnham, A. (2000). Gender differences in measured and self-estimated trait emotional intelligence. *Sex Roles, 42*(5/6), 449-461. doi: 10.1023/A:1007006523133.

Petrides, K. V., Gomez, M. G., & Perez-Gonzalez, J. C. (2017). Pathways into psychopathology: Modeling the effects of trait emotional intelligence, mindfulness and irrational bliefs in a clinical sample. *Clinical Psychology & Psychotherapy*, 24, 1130-1141. doi: 10.1002/cpp.2079.

Petrides, K. V., Mikolajczak, M., Mavroveli, S., Sanchez-Ruiz, M. J., Fumham, A., & Perez-Gonzalez , J. C. (2016). Developments in trait emotional intelligence research. *Emotion Review*, 8, 335-341. doi: 10.1177/17540739166650493.

Reisoğlu, İ., Gedik, N., & Göktaş, Y. (2013). Öğretmen adaylarının özsaygı ve duygusal zekâ düzeylerinin problemli internet kullanımıyla ilişkisi [Relationship between pre-service teachers'levels of self-esteem, emotional intelligence and problematic internet use]. *Education and Science*, *38*(170), 150-165. http://egitimvebilim.ted.org.tr/index.php/EB/article/view/1606.

Salovey, P., & Mayer , J. D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, *9*, 185-211. doi: 10.2190/DUGG-P24E-52WK-6CDG.

Schutte, N. S., & Malouff, J. M. (2011). Emotional intelligence mediates the relationship between mindfulness and subjective well-being. *Personality and Individual Differences*, *50*(7), 116-1119. doi: 10.1016/j.paid.2011.01.037.

Shulman, E. P., Smith, A. R., Silva, K., Icenogle, G., Duell, N., Chein, J., et al. (2016). The dual systems model: Review, reappraisal, and reaffirmation. *Developmental Cognitive Neuroscience*, 17, 103-117. doi: 10.1016/j.dcn.2015.12.010.

Sinclair, H., & Feigenbaum, J. (2012). Trait emotional intelligence and borderline personality disorder. *Personality and Individual Differences*, *52*(6), 674-679. doi: 10.1016/j.paid.2011.12.022.

Tarhan, K. (2017). Siber uzayda realist teorinin değerlendirilmesi [Evaluation of realist theory in cyberspace]. *Cyberpolıtık Journel*, *2*(3), 1-17. http://cyberpolitikjournal.org/index.php/main/article/view/66.

Teal, C., Downey, L. A., Lomas , J. E., Ford, T. C., Bunnet, E. R., & Stough , C. (2018). The role of dispositional mindfulness and emotional intelligence in adolescent males. *Mindfulness*, *10*(3), 1-9. doi: 10.1007 / s12671-018-0962-8.

TUIK. (2020, 8 25). Retrieved from https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2020-33679.

Valcke, M., Bonte, S., Wever, B. D., & Rots, I. (2010). Internet parenting styles and the impact on Internet use of primary school. *Computers & Education*, *55*(2), 454-464. doi: 10.1016/j.compedu.2010.02.009.

Van Deursen, A. J., Bolle , C. L., Hegner , S. M., & Kommers, P. A. (2015). Modeling habitual and addictive smartphone behavior The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in Human Behavior*, 45, 411-420. doi: 10.1016/j.chb.2014.12.039.

Von Solms, B., & Kritzinger, E. (2012). *Critical information infrastructure protection (CIIP) and cyber security in Africa – has the CIIP and cyber security rubicon been crossed?* Zanzibar Proceedings of the AFRICOMM conference. doi: 10.1007/978-3-642-29093-0_11.

Vural, Y., & Sağıroğlu, Ş. (2008*). Country information security*. ISCTURKEY, 3-20, 25-27 December, Ankara.

Wang, Y., & Kong , F. (2013). The role of emotional intelligence in the impact of mindfulness on life satisfaction and mental distress. *Social Indicators Research*, *116*(3), 843-852. doi: 10.1007 / s11205-013-0327-6.

Yılmaz, E., Şahin , Y. L., & Akbulut, Y. (2016). Öğretmenlerin dijital veri güvenliği farkındalığı [Digital data security awareness of teachers]. *Sakarya University Journal of Education*, *6*(2), 26-45. doi: 10.19126/suje.29650.

Young, S. (2008). Parental influence and teens' attitude toward online privacy protection. *The Journal of Consumer Affairs*, *42*(3), 362-388. doi: 10.1111/j.1745-6606.2008.00113.x.