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An Investigation of Internet Gaming Disorder: A Study with MMO Gamers

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Abstract: Online digital games, which have started to become an ordinary element of individuals' daily life, have many positive outputs such as increasing communication skills, strengthening social ties, and providing motivation. In addition to all these, increasing gaming time and the number of players bring concepts such as problematic gaming behavior and game addiction to the agenda. One of these negative situations is internet gaming disorder (IGD). The main objectives of this study are to conduct the validity and reliability studies of the nine-item short form of the IGD scale and to examine IGD according to various variables. To this end, the Confirmatory Factor Analysis (CFA) results of the data obtained from 405 gamers playing in Massively Multiplayer Online (MMO) environments show that the measurement validity is provided. Furthermore, the internal consistency coefficient and composite reliability values are also satisfactory. The analysis results determined that the participants showed a low level of IGD. It was concluded that, by controlling the age variable with ANCOVA, the singular effects of gender and daily gaming time were significant on IGD, but their joint effects were not significant.

Keywords: Internet gaming disorder, validity, reliability, MMO gamers.

1. Introduction

Virtual worlds have started to attract great attention in contemporary social research under the effect of the internet offering new and multicultural content that includes different virtual experiences that users can interact with and users' spending a lot of time in virtual worlds. In this context, one of the most prominent examples is online games. Especially in recent years, under the effect of a significant change and development in the game industry, there has been a significant increase in the number of individuals playing online games from many different age groups worldwide. When the growth in the game industry and the number of players is examined, it is estimated that the game market revenue in 2020 will reach 159 billion dollars and the number of players worldwide will reach 2.7 billion (Newzoo, 2020). At this point, it is possible to say that playing games in digital environments has become an integral part of daily life.

There are many studies revealing the positive outcomes of online games that have started to become a part of people's routines (Huvila et al., 2010; Reinecke, 2009; Trepte and Reinecke, 2011). It is stated that playing online games motivates gamers socially and can expand the existing relationships of gamers (Frostling-Henningsson, 2009; Jansz and Tanis, 2007). It is also emphasized that online games increase social interaction, strengthen in-game and out-of-game social ties (Ko et al., 2005; Trepte, Reinecke and Juechems, 2012; Yee, 2006), and increase the formation of social ties through which individuals can learn and inspire each other (Steinkuehler and Williams, 2006; Williams et al., 2006). Furthermore, it is stated that online games act as a source of intrinsic motivation, improve focusing and cognitive effort, and increase the effort required to reach goals (Adachi and Willoughby, 2013). Although the positive effects of a desirable and healthy gaming behavior have been revealed widely in the studies conducted (Connolly et al., 2012), for some gamers, if the activity of playing games moves away from being functional, it is also emphasized that it turns into a pathological state that can harm the social, professional, family, educational, and psychological functioning (Gentile et al., 2011).

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In today's cyber age, the fact that playing online games in excessive and irregular ways harms the mental health of individuals in many different ways is addressed as a pathological concept expressed as gaming disorder. Internet gaming disorder (IGD) is expressed as frequent and continuous gaming that harms the individual's activities in daily, professional, and educational areas (Schivinski et al., 2018). Furthermore, the APA (American Psychiatric Association) (2013) in general refers to IGD in DSM-V (Diagnostic and Statistical Manual of Mental Disorders) as a type of behavior of getting involved in computer games in a continuous and repetitive way and addresses it as a mental state that is recommended to be studied more in the literature. Again, nine symptoms used in the diagnosis of IGD are included in DSM-5. These criteria are listed below:

- Being preoccupied with internet games,
- Withdrawal symptoms that occur when games are not played on the Internet,
- The development of tolerance to playing games for longer periods of time on the Internet,
- Unsuccessful attempts to control the internet gaming action,
- Loss of interest in activities and hobbies previously enjoyed,
- Continuing to play excessively on the internet despite negative psycho-social consequences,
- Deceiving family members, therapists, and others about the amount of internet gaming,
- Using internet games to escape or relieve negative moods,
- Jeopardizing or losing an important relationship, job, education, or career opportunity due to participation in internet games.

In addition to these nine negative symptoms used in the diagnosis of IGD, withdrawal (Orleans and Laney, 2000), game addiction (Gruesser, Thalemann and Griffiths, 2007), and deterioration in life relationships can be given as examples of the negative effects of uncontrolled gaming (Kraut et al., 1998). In the studies, many antecedents, indicators, and predictor variables were examined and their effects were revealed in the context of IGD, addiction, and problematic use. In the studies conducted, it has been addressed in connection with many dimensions such as age, gender, gaming time, academic performance, curiosity, excitement, entertainment, challenge, reward, well-being, efficacy, loneliness, self-control, obligation, self-esteem, self-confidence, isolation, abandon, escape, fear, stress, and aggression (Hsu et al., 2009; Hussain and Griffiths, 2009; Beranuy et al., 2013; Toker and Baturay, 2016; King et al., 2011; Caplan, Williams and Yee, 2009; Lemmens, Valkenburg and Peter, 2011; Kuss and Griffiths, 2012; Khang, Kim and Kim, 2013). The mentioned findings, the acceleration of the increase in gaming times and the number of players every year increase the importance of IGD, especially for young players, even more.

Although many studies on IGD have been carried out, the study results differ in terms of participant characteristics, culture, and time. There is a need for current and culture-specific studies to obtain effective and consistent results. In parallel, it is important to verify the measurement tools for online gaming to be used in the studies in the culture in which they are planned to be used. At this point, the use of measurement tools that show good psychometric properties, have a short and concise structure, and are widely accepted by being verified in many different cultures provides significant advantages. Considering the features mentioned above, especially the Internet Gaming Disorder Scale Short Form (IGDS9-SF) stands out. The adaptation studies of the IGDS, developed by Pontes and Griffiths (2015), were performed in many countries such as England (Pontes, Stavropoulos and Griffiths, 2015), Slovenia (Pontes, Macur and Griffiths, 2016), Portugal (Pontes and Griffiths, 2016), Italy (Monacis, Palo and Griffiths, 2016), China (Sigerson et al., 2017), and Iran (Wu et al., 2017). In parallel, the robust psychometric properties of the IGDS as a widely used measurement tool in various cultures and its simplicity and clarity in evaluating IGD are among the points highlighted in the literature (Monacis et al., 2016; Pontes and Griffiths, 2015; Pontes and Griffiths, 2016; Wu et al., 2017). Furthermore, it is stated that the IGDS, based on nine criteria (APA, 2013) proposed by DSM-5, serves as the starting point for more standardized research in the field (Stavropoulos et al., 2018).

When previous studies are examined, it is observed that IGD is associated with many problems such as substance use, behavioral addictions, and emotional disorders (Sigerson et al., 2017). The importance of protecting the physical and psychological health of gamers with IGD is increasing, especially when online gaming opportunities are considered (Wu et al., 2017). Accordingly, it can be said that especially massively multiplayer online (MMO) games and MMO gamers

constitute a significant risk group. Many studies have been carried out on IGD, and the study results differ in terms of participant characteristics. There is a need for up-to-date studies specific to the sample characteristics to obtain effective and consistent results. In parallel, it is also important to verify the measurement tools for online gaming to be used in the studies with the gamer population in which they are planned to be used. Accordingly, the purpose of this study is to verify the validity and reliability of the IGDS in an empirical study in which the participant group is Turkish MMO gamers and to examine the IGD levels of MMO gamers in the context of various variables. In line with this purpose, answers to the following research questions were sought:

1. Does the IGDS give valid and reliable results in a sample of MMO gamers?
2. What is the IGD level of MMO gamers?
3. Does the IGD level of MMO gamers vary according to gender and gaming time?

2. Method

In the study, single survey, correlational survey, and causal comparison designs were used to determine the distribution, relationships between the variables, and differences between the groups without any intervention to the variables (Fraenkel, Wallen and Hyun, 2012).

2.1. Participant Group

Participants were determined by the convenience sampling method and consist of 405 MMO gamers with the age varying between 15 and 50 years ($\bar{x}_{age}=28.03$). In the data of 537 participants collected online, extreme values and missing data were cleared. The characteristics of the data of the 405 participants remaining after this procedure are included in Table 1.

Table 1. Demographic characteristics of the participant group			
		<i>f</i>	%
Gender	Female	143	35.3
	Male	262	64.7
Daily gaming time	Less than one hour	34	8.4
	One to three hours	271	66.9
	Three to five hours	70	17.3
	More than five hours	30	7.4
Total		405	100.0

According to Table 1, 35.3% of the gamers are female, and 64.7% are male. While participants playing games for one to three hours constitute the largest group according to the gaming time, those who play games for more than five hours constitute the smallest group.

2.2. Data Collection Tools and Process

In the study, the IGDS developed by Pontes and Griffiths (2015) was used. The scale has a single-factor structure consisting of nine items. The IGDS was created based on nine symptoms (APA, 2013) used in the diagnosis of internet gaming disorder in DSM-5. The lowest score that can be obtained from the scale created in the five-point Likert type (1: Never, 5: Very often) is nine, and the highest score is 45.

The IGDS was adapted to Turkish by Evren et al. (2018) and Arıcak et al. (2018). It is observed that both studies were conducted simultaneously with this research. While university students with the mean age of 21.84, involved in e-sports activities and reporting that they played online games from time to time constituted the participant group in the adaptation study performed by Evren et al. (2018), the participant group of Arıcak et al. (2018) consisted of students aged between 10-29 years. Both valuable studies reveal the validity and reliability of the IGDS in different sample groups. However, the fact that the participant group covers a wide age range and consists entirely of MMO gamers makes this study more compatible with the participant group of the original scale. Furthermore, MMO games provide an ideal context for examining IGD risks due to their avatar customization features and high addiction potential (Stavropoulos, 2017). The primary necessary permissions were obtained for this study (Doğan, Şahin and Şahin, 2018), the first findings of which regarding the adaptation were presented at the 12th International Computer and Instructional Technologies Symposium on May 2, 2018. The scale items translated into Turkish by the researchers were checked by a linguist and five domain experts who were proficient in English and were academicians in the Guidance and Psychological Counseling and Computer and Instructional Technology Education departments. The final form of the

translation, which was agreed upon by the experts, was applied to 10 participants who regularly played online games, and it was determined that the items were understandable. After this stage, the data required for confirmatory factor analysis (CFA) were collected online through an MMO game, the developer of which was one of the researchers.

2.3. Data Analysis

CFA was performed for the adaptation studies of the IGDS, and the item load values and fit values were examined. CFA is expressed as testing the properties of a newly developed scale or a scale that will be adapted such as construct validity and measurement invariance in terms of time or sampling (Harrington, 2009). It is also explained as a statistical technique that consists of latent variables and operates based on testing models that have been theoretically verified (Tabachnick and Fidell, 2012). With the realization of CFA, values for the fit of the measurement tool and data are obtained. In addition to this, the internal consistency coefficient (α), composite reliability (CR), and standard error of measurement (SEM) values were examined in reliability analyses. Descriptive statistics were used to determine the IGD level of the participants according to the data obtained from the scale, and the two-way analysis of covariance (ANCOVA) was used for the independent groups to examine the differentiation status according to gender and daily gaming frequency.

3. Findings

3.1. Findings Regarding the Validity and Reliability of the IGDS

At this stage, the reliability of the measurement tool was tested first. To evaluate reliability, α and CR values were calculated. These values are expected to be above 0.70 for CR and α . According to the analysis results, it was determined that α and CR values ($\alpha = .82$, CR = .83) were within accepted ranges in the literature (Fornell and Larcker, 1981; Nunnally and Bernstein, 1994). The values obtained are presented in Table 2.

Table 2. Reliability and item load values for the IGDS

IGDS	α	CR	Items	Item loadings
IGDS	.82	.83	M1	.549
			M2	.678
			M3	.607
			M4	.697
			M5	.685
			M6	.565
			M7	.503
			M8	.526
			M9	.371

α = Cronbach's alpha, CR= Composite reliability

In the evaluation of reliability, when the load values of the items in the scale are examined in addition to α and CR, it is observed that the values are at appropriate intervals (>0.32) and statistically significant (Tabachnick and Fidell, 2012). Accordingly, it can be said that reliability was provided at the item level (Figure 1).

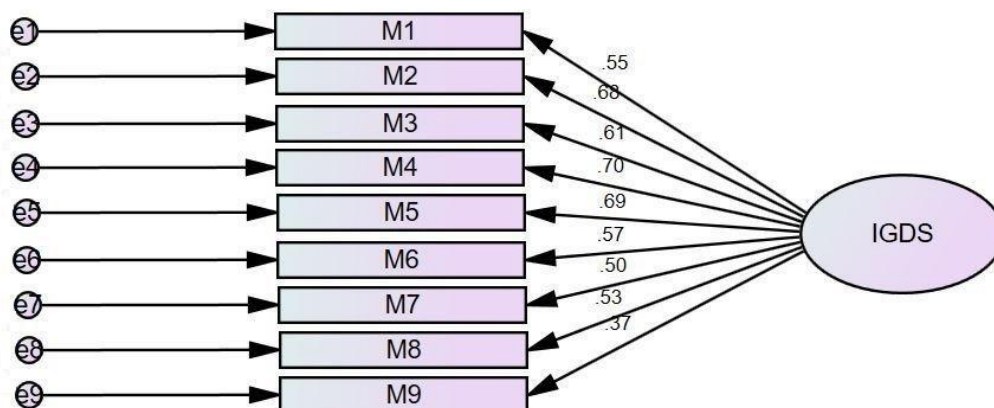


Figure 1. The caption for a figure must follow the figure

CFA was performed after the reliability studies, and it was examined whether the scale was verified with the obtained fit values. The analysis results demonstrated that the fit values ($\chi^2/sd=2.96$, NFI=.93, TLI=.92, CFI=.95, RMSEA=.07, SRMR=.04) were appropriate for the value ranges recommended in the literature. The obtained fit values are presented in Table 3.

Table 3. Confirmatory Factor Analysis Fit Values

Fit Index	Ideal Fit Value	Fit Value	Literature
χ^2/sd	$0 \leq \chi^2/sd \leq 3$	2.96	Kline (2005)
SRMR	$0 \leq SRMR \leq 0.05$	.04	Kline (2005)
RMSEA	$0 \leq RMSEA \leq .07$	.07	Steiger (2007)
NFI	$.90 \leq NFI \leq 1$	.93	Bentler and Bonnet (1980)
TLI	$.90 \leq TLI \leq 1$	.92	Sümer (2000)
CFI	$.95 \leq CFI \leq 1$	.95	Hu and Bentler (1999)
$\chi^2 = 70.963$; $sd = 24$			

In addition to these, the SEM value was calculated in the study. SEM reflects changes in the scores observed in the IGDS according to measurement errors (Morrow et al., 2015). The fact that the calculated SEM value is less than half of the obtained standard deviation is a finding indicating that reliability is provided. In this study, the SEM value calculated for the IGDS is 2.82, and the half of the standard deviation is 3.34. Therefore, since $SEM < sd/2$, it can be said that the IGDS is reliable (Table 4).

Table 4. SEM values calculated for the IGDS

n=405	
SEM	$(\sqrt{1 - 0.82}) * 6.676 = 2.80$
sd/2	$6.676/2 = 3.34$

When all the findings regarding the adaptation studies of the IGDS were examined, it was determined that the scale was also a valid and reliable measurement tool for Turkish MMO gamers.

3.2. Findings Regarding the Distribution of IGD Levels and Their Comparison by Gender and Gaming Time

The mean scores that can be obtained from the IGDS vary between one and five. Accordingly, the mean and standard deviation values of the scores obtained from the scale were examined (Table 5). Therefore, the mean IGD score of the participant group is 19.55. The IGD level of males ($\bar{x}_{\text{male}}=18.54$) is higher than that of females ($\bar{x}_{\text{female}}=20.10$).

Table 5. Investigation of the distribution of the IGD levels by groups (Unadjusted means)

Gender	Daily gaming time	$\bar{x}$	df	n
Female	Less than one hour	13.88	6.820	16
	One to three times	17.96	5.253	89
	Three to five hours	19.83	7.257	24
	More than five hours	25.36	9.111	14
	Total	18.54	6.758	143
Male	Less than one hour	12.28	5.758	18
	One to three times	19.13	5.231	182
	Three to five hours	23.96	6.706	46
	More than five hours	28.88	6.141	16
	Total	20.10	6.578	262
Total	Less than one hour	13.03	6.235	34
	One to three times	18.75	5.258	271
	Three to five hours	22.54	7.126	70
	More than five hours	27.23	7.740	30
	Total	19.55	6.676	405

It is known that the age variable plays an important role in IGD and problematic gaming behavior (Festl et al., 2013). Accordingly, it was determined that adolescents displayed these problematic behaviors more than adults (Festl, Scharkow and Quandt, 2013; Hawi, Samaha and Griffiths, 2018; Kircaburun et al., 2020). Therefore, age was determined

to be the control variable when examining how IGD changed according to gender and the frequency of playing games. As can be seen in Table 6, age has a significant effect ($\eta^2=.443$) on the IGD level (Cohen, 1988). In addition, when gender and daily gaming time are taken into consideration one by one, the level of IGD differentiates ($F_{\text{gender}}(1)=6.19$, $p<.05$; $F_{\text{DGT}}(3)=29.82$, $p<.05$). However, there is no significant difference in terms of IGD levels in subgroups where females and males are separated according to the gaming time ($F_{\text{gender*DGT}}(3)=.92$, $p>.05$). The effect size of gender on IGD is small ($\eta^2_{\text{gender}}=.015$), and that of daily gaming time is large ($\eta^2_{\text{DGT}}=.184$). Accordingly, it can be said that gender may not affect IGD in practice, but daily game playing time affects it.

Table 6. Investigation of IGD according to daily gaming time and gender

Source of variance	Sum of Squares	sd	Mean Square	F	p	Effect size
Age	5992.24	1	5992.24	315.13	.000	.443
Gender	117.70	1	117.70	6.19	.013	.015
DGT	1700.80	3	566.93	29.82	.000	.184
Gender*DGT	52.60	3	17.53	.92	.430	.007

When age is taken under control, the means of the IGD level in the subgroups is also recalculated. When Table 5 and Table 7 are examined together, the adjusted means of the females' and males' IGD level ($\bar{x}_{\text{female}}=19.54$, $\bar{x}_{\text{male}}=21.10$) is higher than the unadjusted means ($\bar{x}_{\text{female}}=2.06$, $\bar{x}_{\text{male}}=2.17$), and this occurs in the same way in the subgroups of gender formed according to gaming time. Furthermore, it can be calculated that the adjusted means of all participants are 20.47.

Table 7. Investigation of the distribution of the IGD levels by groups (Adjusted means)

Gender	Daily gaming time	$\bar{x}$	SE	n
Female	Less than one hour	16.20	1.098	16
	One to three hours	18.00	.462	89
	Three to five hours	20.05	.890	24
	More than five hours	23.91	1.168	14
	Total	19.54	.471	143
Male	Less than one hour	16.02	1.049	18
	One to three hours	19.21	.323	182
	Three to five hours	22.31	.650	46
	More than five hours	26.86	1.096	16
	Total	21.10	.416	262

Paired comparison tests were examined to determine between which subgroups there was a significant difference according to ANCOVA results (Table 8). Accordingly, it is observed that females have significantly lower IGD levels than males ($\Delta\bar{x}_{(\text{female-male})} = -.174$; $p<.05$). When the IGD level is examined in terms of daily gaming time, it is revealed that each group is significantly different from the other, and those who play more time have higher IGD levels.

Table 8. Paired comparison results of IGD according to gender and daily gaming time

(I) Independent v.	(J) Independent v.	$\Delta\bar{x}_{(I-J)}$	SE	p
Female	Male	-.174*	.070	.013
	One to three hours	-.277*	.091	.015
	Three to five hours	-.563*	.106	.000
	More than five hours	-1.030*	.125	.000
One to three hours	Three to five hours	-.286*	.069	.000
	More than five hours	-.753*	.095	.000
Three to five hours	More than five hours	-.467*	.108	.000

To summarize all the findings obtained, it can be said that the IGDS is valid and reliable, the mean of IGD level has increased a little bit, although it is still low, when age is taken under control, the gender and gaming time alone affect IGD, but there is no significant difference in the subgroups formed by addressing both of them together.

4. Discussion, Conclusion, and Recommendations

Within the scope of the study, the IGDS was empirically verified. It can be said that the measurement validity was ensured since the fit values and factor loads examined with the performed CFA were within the appropriate intervals. Furthermore, α , CR, and SEM values were calculated for reliability studies. When these values are examined, it is observed that the IGDS yields reliable results. Accordingly, it can be said that the IGDS is a valid and reliable measurement tool within the scope of Turkish MMO gamers. The fact that the single-factor structure of the scale is also maintained in this study is consistent with the original study (Pontes and Griffiths, 2015) and adaptation studies conducted both in Turkey (Arıcak et al., 2018; Evren et al., 2018) and other cultures (Pontes & Griffiths, 2016; Pontes, Macur, and Griffiths, 2016; Wu et al., 2017; Yam et al., 2019). The sample group in these studies usually consists of adolescents or university students. Although Montag et al. (2019) and Stavropoulos et al. (2018) selected gamers as the participant group in their studies, the mean age of these gamers is around 13 in both studies. Therefore, the fact that this measurement tool also gives valid and reliable results with a group of adult gamers also includes adult MMO gamers in the IGD diagnostic framework determined by the APA.

When the distribution of the participants according to the IGD level was examined, it was observed that the IGD mean was 18.54 for females, 20.10 for males, and 19.55 for the general mean. Considering that the scale is in the five-point Likert type, it can be said that the participants scored less than 27, which is the average score that can be obtained, and therefore IGD was low. Pontes and Griffiths (2015) argue that 36 points can be used as a cut-off point to classify the distribution of participants as "There is IGD" and "There is no IGD." In this case, the gamers' IGD score is very low according to the specified cut-off point. However, Severo et al. (2020) statistically analyzed the evaluation of expert psychiatrists and the scores obtained from the IGDS and clinically determined that scores higher than 16 indicate groups at risk in terms of IGD. In this case, if the means are examined again, it can be said that both female and male gamers in this study are in the risky group in terms of IGD. It can be said that this is due to the fact that the participants consist of gamers who play games regularly.

The IGD levels of the participant group were examined according to gaming time and gender, and it was determined that the singular effects of both variables were significant and their joint effects were not significant. Here, age (Pontes et al., 2014), which is known to be highly correlated with IGD, was determined to be the control variable. As a result of ANCOVA, it is observed that the effect size of age on IGD is quite large. When the literature is reviewed, it is observed that the role of gender in IGD is controversial. Some studies determined that gender significantly differentiates IGD (Griffiths and Hunt, 1998; Hoeft et al., 2008; Kuss, Pontes and Griffiths, 2013), while others determined that it does not create a difference (Pontes et al., 2014; Scerri et al., 2019; Stavropoulos et al., 2018). However, in their meta-analysis study, Su et al. (2020) revealed that males had higher IGD levels than females. In the mentioned meta-analysis study, it is regarded as important to make a judgment about the gender variable by examining the effect sizes obtained in 53 studies. In other words, the findings obtained in this study regarding the role of gender on IGD are generally compatible with the literature. However, the fact that the effect size is quite small raises questions about whether the difference determined may not be valid in practice. The difference in question may be due to the fact that males play more online games than females (Chang, Hsied and Lin, 2018) or the competitive nature of the game is more attractive to male gamers (Warthberg, Kriston and Thomasius, 2020). Therefore, it will be useful to examine social, psychological, or biological variables together to eliminate this uncertainty regarding gender.

As a result of ANCOVA, in addition to gender, the effect of gaming time on IGD was also examined, and it was observed that the effect was quite large. The APA (2013) states that if the weekly gaming time is over 30 hours, individuals are in the risk group in terms of IGD. It is known that situations such as problematic gaming, game addiction, and IGD are directly related to gaming times (Fumero et al., 2020; Jeromin, Rief and Barke, 2016; Pontes and Griffiths, 2015). Therefore, the difference between the categories of daily gaming time in terms of IGD is a finding expected to be in favor of the groups playing more, and it also coincides with the literature. An important predictor of gaming time is the power to meet needs within the game (Johnson, Gardner and Sweetser, 2016). In addition to this, there are the gamer type, the number of friends in the game, and the game type (Cole and Griffiths, 2007, Johnson, Gardner and Sweetser, 2016; Mills et al., 2018; Williams, Yee, and Caplan, 2008). Therefore, it can be said that these variables are also related to IGD, and examining them together with variables (such as age, gender, gaming time) the effects of which have been proven in future studies may be useful in explaining IGD better.

Finally, the statistical difference as a result of ANCOVA is not significant in subgroups in which females and males are separated according to the gaming time (for example, the difference between females who play less than an hour and males who play less than one hour, etc.). In other words, females and males do not differ significantly when compared to the same gaming time categories. Although the fact that the singular effects of these two independent variables are significant predicts that their joint effects will also be significant, it can be interpreted that the differences related to controlling the age variable become insignificant.

Although it is thought that the study contains results that will contribute to the literature, some limitations should also be mentioned. The fact that the participants were determined by the convenience sampling method reduces the generalizability of the study regarding the gamer population. Including random gamers in research for subsequent studies will yield more reliable results. Furthermore, in the study, analyses were conducted on the basis of gender, gaming time and age, which had been proven to be effective on IGD in many studies. In subsequent studies, the variables mentioned in the previous sections can also be examined. The cross-cultural validity of IGD has also been analyzed in many studies (Pontes, Stavropoulos and Griffiths, 2017; Stavropoulos et al., 2019). However, Turkish culture has not been addressed in the relevant studies. Therefore, cross-cultural validity studies in which the sample of Turkey will also be included can be designed. Moreover, the IGDS is used not to diagnose problematic behavior but to determine the distribution of the sample (Pontes and Griffiths, 2015). Therefore, it can be used as a diagnostic tool by analyzing the clinical validity of the scale. Finally, it is observed that the participant group is in the risky group in terms of IGD according to the cut-off point determined by Severo et al. (2020). Thus, some training can be planned to prevent the negative psycho-social effects of IGD.

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Availability of Mobile Banking Applications for Teachers

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Abstract: The development of technology enables banks to provide efficient services. Mobile applications, one of these services, have an important place in increasing the satisfaction of the users. This study aims to evaluate Ziraat Mobile Application in terms of usability. In this context, "Demographic Information Form" and "Ziraat Mobile Application Task List Scale" were applied to 20 teachers. Descriptive statistics technique and Mann Whitney U-test were used in the analysis of the obtained data. It has been determined that there is a direct proportion between the number of wrong actions taken by the users while performing the assigned tasks and the time to complete the task. It has been observed that the number of wrong actions decreased to an average of 0.21 while performing tasks involving operations that are frequently used in daily life, while the number of incorrect actions increased to an average of 2.36 while performing tasks with operations that are not frequently used in daily life. The research findings showed that there was no significant difference between the duration of use of the application and the usability, and the gender and usability. At the end of this study, suggestions were made in order to evaluate the application in different criteria.

Keywords: Usability, Banking Services, Mobile Banking, Mobil Application.

1. Introduction

Thanks to the rapid developments in technology, changes are taking place in many areas today. These changes are also seen in banking environments today. Banks have begun to use new methods to provide effective and efficient service to their customers. Telephone banking, internet banking, sms banking, ATM (Automatic Payment Machines / ATM) banking, mobile (mobile phone connected internet) banking are within the scope of these services. Mobile banking applications have become one of the important service environments where retail customers using internet banking can access information and perform necessary transactions without going to a bank branch. In this way, the way has been opened to make transactions quickly and easily.

Continuous development of technology has made it necessary to renew business activities. Like many other sectors, the banking sector is affected by the developing technology and offers various and quality services to its customers. In this context, the superiority of technology greatly affects the banking sector on the basis of providing services via electronic channels (Uzun and Berberoğlu, 2017:51-62).

Pala and Kartal (2010) defines internet banking as a virtual ADC (Alternative Distribution Channel), which is a part of electronic banking services, using connection systems that can be directly communicated, and where all corporate and individual banking transactions can be made.

Dursun et al., (2014: 95), in the study conducted to evaluate the attitudes of customers towards branch banking and internet banking, emphasized the differences between the two channels, taking into account the factors of physical factors, service diversity, security, reliability, enthusiasm, execution of transactions, transaction fees. In this direction, the only factor that did not differ was the service diversity. As a result of the study, it was concluded that customer satisfaction in internet banking is at a higher level than branch banking. In this direction, the only factor that did not

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differ was the service diversity. As a result of the study, it was concluded that customer satisfaction in internet banking is at a higher level than branch banking.

Mobile banking is defined as a service through which customers can perform their banking transactions via a network connection using a mobile device, namely a smartphone or tablet (Shaikh and Karjaluoto, 2015). The most important issues in the spread of mobile banking today; Internet access is the widespread use of smart phones, the increase in the use of tablet computers and the quality of mobile applications offered (Koç, 2015). Mobile banking is used for money transfer, payments, etc. via an electronic device. It provides the opportunity to perform financial transactions such as (Lee & Chung, 2009). Banks with mobile banking services; It aims to adapt to changing customer demands and needs, to create a positive image for the company, to get ahead in the competition and to gain new customers (Rajnish and Buse, 2007: 70).

Baabdullah (2017) tried to determine the effect of mobile banking on the performance of commercial banks, taking into account the banking sector in Kenya. The relationship between commercial banking and mobile banking correlation was investigated. They measured by analysis and moderately positive result d have to determine that relationship. According to the study findings, mobile banking makes a significant contribution to the performance of commercial banks. That's why banks should pay more attention to mobile banking. Mobile banking customers, on the other hand, must synchronize their systems constantly in order to benefit from the benefits of the service.

Internet banking not only has many opportunities that will benefit, but it also has dangers that can cause damage. Security risk is one of these dangers. One of the most important duties of service providers has been to ensure the security of customers in the mobile environment.

Many users are not inclined to use new technologies. Customers have stated that they are concerned that the personal information of hackers will be shared with third parties and their money will be stolen without their knowledge and permission (Learn & Lin, 2005) . While sociodemographic characteristics affect mobile banking usage, education level does not affect mobile banking usage (Karjaluoto et al. , 2002). Younger users trust mobile banking more than older users. Older users place more emphasis on performing their transactions through a bank clerk (Howcroft et al., 2002: 111-121).

During the years when mobile banking became popular, some security problems arose. To prevent these security problems, banks have applied some security measures and the current two-step security solution has been passed. The period of obtaining account information over the Internet is largely over. Despite this, there is a segment that does not use this system and makes transactions by going to banks. In order to make transactions in banks, people should go to the bank and wait in line and take into account the opening and closing hours of banks.

Mobile banking basically provides two benefits to people:

- 7/24 access to the system
- Saving on time

Banks are updating their mobile applications by enriching them with many new functions as well as transaction flows. The number of users accessing the mobile banking service is increasing day by day. This increase reveals the usability problem of the application. In this context, the aim of the study is to evaluate the usability of Ziraat Mobile Application.

Ziraat Mobile Application's to have the highest concentration ratio of the share's ratio 14.02% and Turkey's Lovemarks Research in three consecutive years to be honored with this award by selecting the most popular Bank in Turkey in 2018 to assess usability of the bank has been effective in being selected for.

Usability is about how the user's success that results in product use. International Standards Organization (ISO) usability: "How effective, effective and pleasing a product is used by certain users for certain purposes, in specified environments." expressed in the form.

2. Method

The research is a descriptive study in which qualitative research technique is used.

2.1. Studying group

20 teachers who have used the Ziraat Mobile Application before were selected as participants. Participants' ages range from 22–31 years. The study with 1 female teacher was excluded from the study group because it did not fit the desired age range. The study was conducted with 13 female and 6 male teachers. The demographic information of the participants is given in the table below (Table1).

Table 1. Demographic information of the participants (N=19)

SPECIFICATIONS		N	%
Gender	Female	13	68,4
	Male	6	31,6
Duration of Use	0-1 years	5	26,3
	1-2 years	5	26,3
	2-3 years	3	15,8
	3-4 years	6	31,6
Level of Use	good	7	36,8
	Middle	10	52,6
	little	2	10,5
Frequency of use	Everyday	5	26,3
	Once a week	10	52,6
	Once a month	4	21,1

2.2. Collection of Data

Trait record chart, which is one of the observational recognition techniques, was used as a data collection tool. Research data; "Demographic Information Form" evaluating the general characteristics of the participants and "Ziraat Mobile Application Task List Scale" were used. The scales used were developed by the researcher with expert opinion. A demographic information form was used in order to define the target audience and determine the level of use of the Ziraat Mobile Application. In the questionnaire form, the age, gender, education level of the participant, how long the application has been used, and the frequency of use of the application were questioned. While developing the Ziraat Mobile Application Task List Scale, a task pool was created by first scanning the Ziraat Mobile Application. While creating the task pool, attention has been paid to select at least one task from each service category. 10 different tasks chosen by the researcher were drafted. The scale, which was turned into a draft, was presented to the expert lecturer individually. The language of the expressions in the options has been made clear and understandable in line with the recommendations of the expert who examined the bill. In addition, three of the tasks were not found suitable for the scope since they are not among the frequently used operations. For this reason, the number of tasks was reduced to seven by removing the three task measurement tools. The developed feature record chart consists of 2 parts. In the first part, the number of deviations made while performing the task is written in the second part, and the completion time of the task in seconds. The steps of the user must be followed sequentially while performing the task in the current stage. The next step in a different way from the action implemented by each researcher observing "deviation count" is written on the scale.

The research was conducted between 20 November 2019 - 29 November 2019. Before the researcher started to observe, the Ziraat Mobile Application and the stopwatch were prepared. The scales were applied in a non-noisy environment. During the application, it was avoided to give clue to the users who asked questions. The tasks in the scale were performed on the researcher's mobile device in order to take security precautions and to ensure that each user can perform the tasks in the application with the same updated version. The mobile device was given to the user after the application was opened and the login information was completed. Each observation lasted an average of 342 seconds. When the Ziraat Mobile Application did not respond, the timer was paused and continued when the application was ready.

2.3. Data Analysis

The data obtained from the questionnaire were transferred to Microsoft Excel Worksheet and SPSS Statistics 22 program. Descriptive statistics (mean, percentage, total, frequency) were used to make a general evaluation in the analysis of the transferred data. The significance level of usability was analyzed by gender and the duration of use of the application with the nonparametric "Mann Whitney U-test". In this study, the significance level was taken as 0,05.

3. Findings and Discussion

After the data collection process was completed, the data obtained were transferred to the computer for appropriate statistical operations. Table 2 contains data on the frequency of use of the application by the teachers in the study group and the duration of the data to perform the tasks.

Table 2. Information about the teachers in the study group

Gender	Level	Frequency	Total Deviation	Total Time
Female	Medium	A few times a week	4	319
Female	Medium	Everyday	10	361
Female	Medium	A few times a week	9	394
Female	Medium	A few times a week	7	294
Male	Good	Everyday	5	275
Female	Good	A few times a week	9	340
Female	Good	Everyday	15	473
Male	Good	Everyday	5	261
Female	Little	A few times a week	8	373
Female	Good	A few times a week	12	555
Male	Medium	A few times a week	4	233
Female	Medium	A few times a week	10	210
Male	Good	A few times a week	7	227
Male	Medium	Several times a month	14	465
Female	Little	Several times a month	15	463
Female	Medium	Several times a month	9	468
Female	Good	Everyday	3	165
Male	Medium	A few times a week	10	366
Female	Medium	Several times a month	5	261
Average			8,47	342,26

In Table 2, it is understood that users can complete all tasks in an average of 342 seconds with an average of 8 deviations. The person who completed the tasks the fastest and with the least deviation was a female teacher in 165 seconds with 3 deviations, and the slowest one was a female teacher in 555 seconds with 12 deviations. Two people who completed the tasks with the highest deviation made a total of 15 deviations. Task completion times are 473 and 463 seconds, respectively. When the use of time is evaluated, it becomes clear that there is a big difference between the longest completion time and the shortest completion time. It is observed that the level of use of the application by the person completing the task the fastest is "good" and the frequency of using the application is "everyday". It is observed that the level of using the application is "good" and the frequency of using the application is "several times a week" of the person who finishes the task the slowest. Table 2 shows that as the total number of deviations increases, the total duration also increases. Correlation analysis was conducted to determine whether there was a relationship between the deviation completion times of the participants while performing the task. Analysis result is shown in Table 3.

Table 3. The relationship between the task completion time of the participants and the number of deviations.

Number of deviations	Total Time		
	N	R	p
	19	0.79	0.00

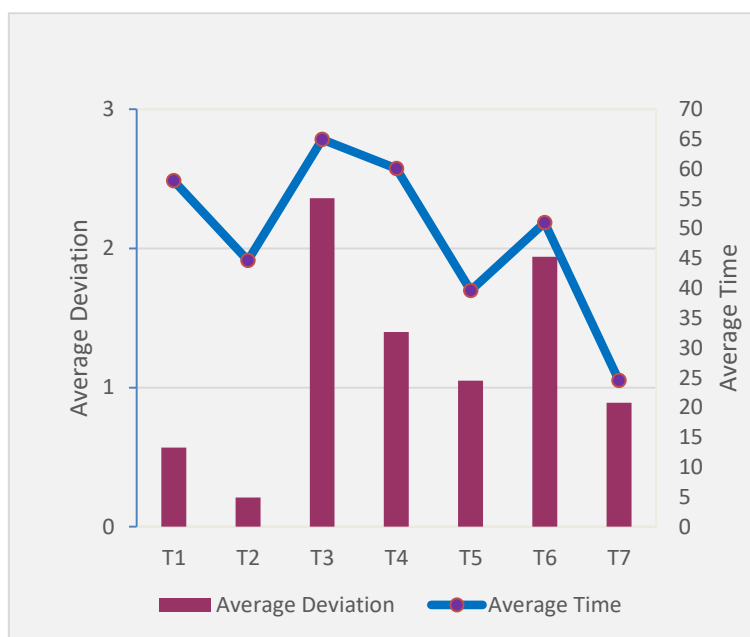
The relationship between the number of deviations made by the participants while performing their tasks and the time they completed was found to be $r = 0.79$. It can be said that there is a highly positive and significant relationship between the number of deviations and the completion time. In other words, as the number of deviations made while completing the task increases, the task completion time increases. The data regarding the number of deviations made for each task given within the scope of the research and the time to complete the task are given in Table 4.

Table 4. Average task completion time and average deviation of tasks

		Average Number of Deviation	Average Time (sec)
T1	Find the minimum 50% maximum 250% withdrawal transactions in the last 3 months from the account transactions and tell them the number of transactions.	0,57	57,57
T2	Make 50% Money EFT/Transfer to the IBAN number of "TR54 0001 8875 2718 **** *".	0,21	44,63
T3	Close/open your debit card for foreign transaction trade.	2,36	64,94
T4	Add an automatic water bill payment order to Konya Water - (Koski) with the subscriber number "12345678".	1,4	60,05
T5	Check the traffic ticket debt status of the vehicle with license plate 42 ADV 271.	1,05	39,57
T6	Reach Ziraat Bank's "customer contact center" number and tell this number you reached.	1,94	50,94
T7	Open the map showing the closest agricultural ATMs.	0,89	24,52

When Table 4 is examined, the task with the highest number of deviations and the longest completed task was task3. In Table 4, it is seen that as the average number of deviations decreases, the average duration also decreases. According to Table 4, the two tasks performed as soon as possible were task 2 and task 1, respectively. Daily life of users in a short time, the cause of which occur most frequently used operations are thought to arise from taking place between. According to Table 4, the two tasks performed in the longest time were task 3 and task 6, respectively. It is thought that the reason why Task 3 was carried out in a long time is due to the fact that it is not among the operations that users frequently use in daily life. While the first 5 tasks to be performed are among the menu options, the last 2 tasks are on the main page, unlike the first 5 tasks. Since they are in different categories, the realization of task 6 was completed in a longer time with more deviations. Although the number of stages to be performed in order to complete the task 6 and task 7 is the same and the operations are in the same category, the task 7 was completed faster and with less deviation number. Although the difficulty levels are equal, it is thought that the reason why task 7 is completed faster than task 6 is due to the succession in the ranking. The graphical view of the average deviation and average completion time of the given tasks is given in Figure 1.

Figure 1. Average deviation-Average duration graph



The Mann Whitney U-test was conducted to determine whether the Ziraat Mobile Application's performance of the tasks differed according to the time the participants used the application.

Table 5. U-Test Results of Ziraat Mobile Application Usability According to Usage Period

Results according to total deviation and total time::						
	Group	n	Mean Rank	Total Rank	U	P
According deviation	0-2 year	10	12,10	121,00	24,00	0,08
	2++	9	7,67	69,00		
According time	0-2 year	10	11,35	113,50	31,50	0,27
	2++	9	8,50	76,50		

Mann Whitney U-test results are given in Table5 according to the total deviation and total duration of the tasks completed in the scale among the observed teachers who have used the application for 0-2 years and those who have used the application for more than 2 years. Accordingly, no significant difference was found between the duration of use of the application and the total number of deviations ($U=24.00, p<.05$). In addition, there was no significant difference between the usage time of the application and the total task completion times ($U=31.50, p<.05$).

Participants 13(68.4%) are female, 6(31.6%) are male and all of them are university graduates. The Mann Whitney U-test was conducted to determine whether the Ziraat Mobile Application's performance of the tasks differed according to the gender of the participants.

Table 6. U-Test Results of Usability of Ziraat Mobile Application According to Gender

According to the results and the time deviation:						
	Group	n	Mean Rank	Total Rank	U	P
According deviation	Female	13	10,69	142,50	30,00	0,42
	Male	6	7,92	47,50		
According time	Female	13	10,96	139,00	26,50	0,27
	Male	6	8,50	51,00		

Mann Whitney U-test results are given in the table according to the task completion times and total deviation numbers in the usability scale after the application of men and women among the observed teachers. Accordingly, there was no significant difference between the number of deviations and gender.

4. Results and Recommendations

Ziraat Bank, one of the three state-owned banks in Turkey; It was established as a charity fund in 1863 and developed with great strides over time, and expanded its services in order to become the bank of everyone and every segment (URL-1). It also continues to improve its services. Ziraat Mobile Application is one of these services. One of the purposes of banks in implementing mobile banking applications is to offer financial services easier, more efficient and faster thanks to the practical solutions provided by technology. With smart phones becoming an indispensable part of daily life, the mobile banking service offered by banks as an important alternative distribution channel, eliminates the distance between customers and banks and provides easy service without time and space limits (Demirel, 2017). The most up-to-date service type in mobile banking is performing banking transactions with applications downloaded to smart phones (Seyrek and Akşahin, 2016: 47-61). As the fast and effective use of mobile banking applications by customers increases, customer satisfaction increases (Özer et al., 2013). In other words, usability from the dimensions of mobile service quality has a direct and positive effect on customer satisfaction (Thakur, 2014: 628-646).

The determination of the achievement of the objectives of banks to offer the mobile banking system to users can be achieved by qualitatively evaluating the data of real user observations. In this study, currently serving hundreds of thousands of people and of Turkey's largest banks located within the first 5 Ziraat Bank mobile app is evaluated in terms of usability. The research findings were reached by analyzing the results of the Ziraat Mobile Application Task List Scale collected from 20 participants in the study. The study of 1 participant was excluded from the group because it did not fit the desired age range. Task execution times and the number of deviations made while performing the task are important in revealing the differences in perspective between mobile application developers and real users. Considering the number of deviations and task completion times during task completion, it was observed that the most difficulties were in closing / opening the bank card for foreign transaction trade and in the task of reaching the "customer contact center" number of the ziraat bank and saying the number reached. Most of the participants did not think that the task could be on the home page. The number of deviations and time spent by the users while performing the task does not differ according to their gender. The number of deviations and time spent by the users while performing the task does not differ according to their experience of using the application. According to the research, no significant difference was found between gender and usability, and the duration of use of the application and usability. According to the research, no significant difference was found between gender and usability, and the duration of use of the application and usability. The result obtained is also compatible with the study of (Kurt ve Turan, 2017: 25-59). This is explained by the fact that individuals using smartphones are already accustomed to mobile lifestyle and can easily use applications. This study was conducted on university graduate teachers. No difference was found in terms of demographic data since it was applied to individuals with the same education level and close age range (22-31). When the study is applied on individuals of different education and age groups, different results can be obtained.

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An Examination of Adolescents' Conflict Resolution Skills in terms of Their Social Support and Autonomy*

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Abstract: The aim of this study is to examine the adolescents' conflict resolution skills in terms of their social support and autonomy. The sample of the study consists of a total 857 adolescents, 369 females and 488 males, between the ages of 14-18, studying at secondary education institutions in the 2019-2020 academic year. The scale of conflict resolution behavior, the perceived social support scale and the adolescent autonomy scale were used in the study. The research was conducted in accordance with the relational survey model. Independent sample t test, ANOVA, Pearson's correlation and stepwise regression analysis were used to analyze the data. Regarding social support with conflict resolution skills' aggression sub-dimension; negative and significant relationships were found with family, teacher and friend sub-dimensions. Regarding social support with conflict resolution skills' problem solving sub-dimension; it is seen that there are positive and meaningful relationships with family, teacher and friend sub-dimensions. It is observed that there is a positive and significant relationship between the conflict resolution skills' problem-solving sub-dimension and the autonomy behavioral sub-dimension. Regarding conflict resolution skills and autonomy with aggression sub-dimension; there was no significant differentiation with emotional and behavioral sub-dimensions. Considering the total scores of the adolescents' conflict resolution skills, it is seen that there is a significant difference between two genders. Regarding the adolescents' conflict resolution skills' aggression sub-dimension; the aggression sub-dimension scores of males were found to be significantly higher than of females. Regarding the problem-solving sub-dimension of the adolescents problem-solving skills; it was observed that the problem-solving sub-dimension scores of females were significantly higher than of males. Regarding the total scores of the adolescents' conflict resolution skills, it is shown that there is no significant difference by grade levels and age.

Key Words: Conflict Resolution Skills, Social Support, Autonomy

1. Introduction

People constantly change and improve throughout their lives. Adolescence is one of the periods in which these changes occur intensely (Deniz, 2010). Kulaksızoğlu (2004), defines the adolescence period as a special phase of biological, psychological, mental and social change and development, starting with puberty and ending with physical growth. Adolescents enter a different period in terms of sexual, social and emotional growth along with their height and physical growth; they feel different due to the situations they experience in these developmental areas, and often have difficulties in communicating with their parents and other people in their lives (Yavuzer, 2007). In other words, individuals experience intensive problems within themselves and with their environment during adolescence. One of the most effective skills to solve these problems in a healthy way is conflict resolution skill (Tuzcuoğlu and Erdoğan, 2014).

Conflict resolution is accepted as an important part of the psychological skills used by adolescents to balance and achieve their developmental functions (Bilgin, 2008; Türnüklü, 2005; Türnüklü ve Şahin, 2004). Aslan (2008) stated that, conflict always exists in our lives and it occurs in the problems that people have mutually experience and in every problem they encounter through the path of reaching their goals. Conflict resolution skills are needed in all kinds of situations in life. For this reason, the parameters that positively and negatively predicts conflict resolution skills should be known (Tuzcuoğlu ve Erdoğan, 2014).

Havighurst (1972) states that there are developmental functions in adolescence and that individuals in adolescence will develop if they achieve these functions correctly. One of these developmental functions is autonomy. Autonomy is important for many adolescents, in terms of "ensuring the development of a sense of identity, which is a

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necessity to reach maturity" (Noom et al., 2001). Steinberg (2007) divided autonomy into three categories: emotional, behavioral and value. Emotional autonomy is defined as "the autonomy of adolescents, especially regarding the change in their close relationships with their family". The independence, changes and developments of the adolescent in this period, naturally take place in a social environment. It can be said that the psychological and social support the adolescent has received or felt in this social environment will affect the independence and individualization of the adolescent and thus, their autonomy.

Yıldırım (1997) defined social support as "the social and psychological support that an individual obtains from their environment". Dülger (2009), Güney (2017), Köksal Akyol and Salı (2013), Lepore et al. (1991), Saygın (2008) explained social support as "people's attachment to their society by believing that they are loved and protected by the society, they are helped in good faith, or they feel loyalty to a social group that has importance and value for them".

With the change and development experienced during the adolescence period, the self-confusion and adjustment problems of the adolescent who is trying to mature at this stage, increase. In this difficult period, an individual in adolescence can form a healthy identity with the ability to solve the problems they encounter. Social support that is provided to the adolescents at this stage will help them feel more important. In addition, it will increase their self-esteem and enable them to analyze their problems in a simpler and more successful way. Adolescents who cannot analyze their problems may experience issues such as being afraid of establishing intimacy with other individuals, showing a tendency to loneliness, and not being able to establish emotional intimacy with other individuals in the society (Ünüvar, 2003).

The ability to adapt to the situation that causes conflict and stress in the adolescent, to cope effectively with the situation and to show competence by controlling the effect of this situation; is closely related to protective factors such as the adolescent's social competence, autonomy, social support, sense of meaning in life, self-esteem, a positive family sense and effective health and care services. These protective factors are beneficial for individuals to show more meaningful and positive reactions to conflicts (Ileez, 2006). Therefore, this study aims to reveal how much the autonomy and social support of adolescents have an effect on their conflict resolution skills.

The research will also examine adolescents' conflict resolution skills, in terms of social support and autonomy by gender, age, and grade level. The main purpose of this study is to reveal the current situation as it is and to determine the relationship between the dependent variable and the independent variable in the current situation.

2. Method

In this study, the relational survey model, which is a sub-type of the general survey model, was used since the relationship between the conflict resolution skills of adolescents and their social support and autonomy was examined.

2.1. Study Sample

The study group consists of high school students studying in Meram district of city of Konya, in the 2019-2020 academic year. The study group consists of a total of 857 adolescents, 369 females and 488 males. The average age of the participants is 15.92 (sd: 1.17) and their ages range between 14 and 18.

2.2. Data Collection Tools

Conflict Resolution Behaviors Scale: In order to determine the reactions of adolescents to conflicts, the "Conflict Solving Behavior Scale" revised by Koruklu (2018) was used. The scale evaluates with two sub-dimensions that are aggression and problem-solving. It is a scale consisting of 17 items and five-point Likert type assessment options. Internal consistency analyzes were performed within the scope of the reliability test conducted by Koruklu (2018). Cronbach Alpha coefficients calculated with two different data sets were found to be sufficient (Aggression; .87; .84; Problem Solving; .75; .75 n = 474 and n = 493).

Perceived Social Support Scale: This scale was developed by Yıldırım (2004). The scale consists of 50 items, 47 of which are positive and 3 are negative. There are three sub-dimensions as my family, my friends and my teachers. The scale is a three-point Likert type scale. Cronbach's Alpha reliability coefficients were calculated as .88 in the family sub-dimension, .93 in the teachers sub-dimension and .83 in the friends sub-dimension (Yıldırım, 2004).

Adolescent Autonomy Scale: It was developed by Noom, Dekovic, and Meeus (2001) to measure the perceptions of adolescents between the ages of 12-18 regarding autonomy. The validity and reliability study of the scale for the Turkish sample was conducted by Musaağaoğlu (2004). The scale consists of 19 items and 2 sub-dimensions. The sub-dimensions are emotional and behavioral. The scale is a 5-point Likert type scale. Cronbach Alpha internal consistency coefficients of the scale were found as .80 for the general sample, and .79 and .51 for the behavioral and emotional autonomy sub-scales in the reliability analysis results of the scale.

2.3. Analysis of the Data

In the first stage, scales were evaluated separately, and incomplete or incorrect scales were removed. As a result, "Conflict Resolution Behaviors Scale", "Perceived Social Support Scale" and "Adolescent Autonomy Scale" were evaluated for the study group. An extreme value analysis was performed, and after it was determined that the data set meets the univariate and multivariate normality criteria required for parametric tests by performing normality, homogeneity and linearity tests; statistical analyzes were applied through SPSS 21.00 package programs. Independent sample t test, ANOVA, Pearson' correlation and stepwise regression analysis were used to analyze the data.

3. Findings

In this section, findings that explain the conflict resolution skills (aggression, problem-solving) scores of adolescents, regarding whether the scores of adolescents' conflict resolution skills (aggression, problem solving) differ according to gender; whether the scores of conflict resolution skills (aggression, problem solving) differ according to the grade variable; whether conflict resolution skills (aggression, problem solving) scores differ according to age variable; the relationship between perceived social support (family, friend, teacher), autonomy (behavioral, emotional) and conflict resolution (aggression, problem solving); the power of the scores of perceived social support (family, friends, teachers) and scores of autonomy (behavioral, emotional) in terms of explaining conflict resolution (aggression, problem-solving) scores, were included.

3.1. Findings On The Relationship Between Conflict Resolution and Other Variables

Table 1 Sample t Test by Gender							
Variables	Gender	N	$\bar{X}$	S	T	df	p
Aggression	Female	369	18.42	7.16	-6.43	855	0.00
	Male	488	21.73	7.67			
Problem-Solving	Female	369	35.77	5.97	5.68	855	0.00
	Male	488	33.29	6.57			

Whether the scores of the adolescents' conflict resolution skills' aggression sub-dimension differ significantly by the gender variable, was analyzed with the sample t test. When Table-1 was examined, it was seen that the average aggression score of female students is calculated as 18.42, while of male students is calculated as 21.73. According to the -6.43 t value calculated for the difference between the averages, it was observed that the aggression subscale scores of males were significantly higher than of females ($p < 0.05$).

Whether the scores of the adolescents' conflict resolution skills' problem solving sub-dimension differ significantly by the gender variable was analyzed with the t test. When Table-1 was examined, it was seen that the average problem-solving score of female students was calculated as 35.77, while of male students was calculated as 33.29. According to the 5.68 t value calculated for the difference between the averages, it was observed that the problem solving sub-dimension scores of females were significantly higher than of males ($p < 0.05$).

Table 2 Variance Analysis Results of Sub-Dimensions of Conflict Resolution Scale Regarding Grade Variables

	Grade	N	$\bar{X}$	Ss	F	p	Variation
Aggression	Grade 9	220	20.62	7.77	1.44	0.23	-
	Grade 10	209	20.87	7.93			
	Grade 11	205	20.34	7.36			
	Grade 12	223	19.45	7.40			
	Total	857	20.31	7.63			
Problem Solving	Grade 9	220	34.70	6.51	2.26	0.07	-
	Grade 10	209	34.73	6.71			
	Grade 11	205	33.34	6.34			
	Grade 12	223	34.62	6.11			
	Total	857	34.36	6.43			

When Table 2 was analyzed, it was observed that the aggression and problem solving sub-dimensions of the adolescents did not differ significantly according to their grade levels as a result of one-way ANOVA performed to determine whether the conflict resolution of adolescents differed significantly according to their grade levels ($p > 0.05$).

Table 3 Variance Analysis Results of Sub-Dimensions of Conflict Resolution Scale By Age Variables

	Age	N	$\bar{X}$	Ss	F	p	Variation
Aggression	14	123	20.04	7.62	1.63	0.16	-
	15	189	20.75	8.10			
	16	228	21.11	7.36			
	17	260	19.47	7.51			
	18	57	20.01	7.44			
	Total	857	20.31	7.63			
Problem-Solving	14	123	35.35	6.96	1.56	0.18	-
	15	189	34.23	6.23			
	16	228	33.64	6.66			
	17	260	34.51	6.02			
	18	57	34.80	6.69			
	Total	857	34.36	6.43			

When Table 3 was examined, it was observed that the aggression and problem solving sub-dimensions of adolescents did not differ significantly by age as a result of one-way ANOVA performed to determine whether conflict resolution of adolescents differed significantly by age ($p > 0.05$).

3.2. Findings on the Relationship Between Conflict Resolution, Perceived Social Support and Autonomy

Table 4 Correlation Table for the Variables Used in the Study

	1	2	3	4	5	6	7
Conflict Resolution							
1. Problem-Solving	1						
2. Aggression	-.23**	1					
Autonomy							
3. Emotional	.02	-.06	1				
4. Behavioral	.19**	.04	.11**	1			
Perceived Social Support							
5. Teacher	.22**	-.22**	.03	.17**	1		
6. Friend	.27**	-.09*	.02	.12**	.24**	1	
7. Family	.21**	-.17**	-.04	.20**	.43**	.26**	1

** $p < .01$, * $p < .05$

When Table 4 was analyzed, it was observed that there are negative and significant relationships between the aggression sub-dimension of the conflict resolution scale and the perceived social support scale; and family ($r = -.17$, $p < .01$), teacher ($r = -.22$, $p < .01$) and friend ($r = -.09$, $p < .05$) sub-dimensions. It was seen that there were positive and significant relationships between problem solving sub-dimension of the conflict resolution scale and the perceived social support scale; and the sub-dimensions of family ($r = .21$, $p < .01$), teacher ($r = .22$, $p < .01$) and friend ($r = .27$, $p < .01$).

It was seen that there was a positive and significant relationship between the conflict resolution problem solving sub-dimension and the autonomy behavioral ($r = .19$, $p < .01$) sub-dimension.

3.3. Stepwise Regression Analysis Results of Conflict Resolution Sub-Dimensions

Table 5 Stepwise Regression Analysis Results Regarding Perceived Social Support and Autonomy in Terms of Explaining The Aggression Sub-Dimension of The Conflict Resolution Skills' Scale

Aggression		<i>R</i>	<i>R</i> ²	<i>R</i> ² _{ch}	<i>F</i>	<i>Df</i>	<i>B</i>	β	<i>t</i>	<i>p</i>
Step 1	Constant	.24 ^a	.06	.05	17.19	3/856	32.54		14.22	.00 ^a
	Family						-.08	-.08	-2.17	.03
	Friend						-.03	-.02	-.58	.56
	Teacher						-.17	-.19	-4.99	.00
Step 2	Constant	.27 ^b	.07	.07	13.18	5/856	31.50		10.277	.00 ^b
	Family						-.10	-.10	-2.73	.01
	Friend						-.04	-.02	-.71	.48
	Teacher						-.18	-.19	-5.16	.00
	Behavioral						.18	.11	3.18	.00
	Emotional						-.13	-.07	-2.24	.03

When Table 5 was analyzed, stepwise regression analysis was used to determine whether the perceived social support and autonomy significantly explained the aggression sub-dimension of conflict resolution skills scale. In the first step of the model, it was seen that the contribution of perceived social support to the model ($R = .24$) is significant and explains 6% of the variance. It was calculated that the contribution of autonomy added to the second step of the model

($R = .27$) was significant, and it explained 7% of the variance in positive relationships with others along with perceived social support.

Considering the predictors of aggression sub-dimension of the conflict resolution, it was seen that behavioral ($\beta = .11$) predicted positively; family ($= -.10$), teacher ($= -.19$) and emotional ($= -.07$) predicted negatively.

Table 6 Stepwise Regression Analysis Results Regarding Perceived Social Support and Autonomy in Terms of Explaining The Problem Solving Sub-Dimension of The Conflict Resolution Skills' Scale

Problem-Solving		<i>R</i>	<i>R</i> ²	<i>R</i> ² _{ch}	<i>F</i>	<i>Df</i>	<i>B</i>	β	<i>t</i>	<i>p</i>
Step 1	Constant	.33 ^a	.11	.10	34.40	3/856	16.07		8.56	.00 ^a
	Family						.09	.10	2.79	.00
	Friend						.29	.21	6.35	.00
	Teacher						.10	.13	3.49	.00
Step 2	Constant	.35 ^b	.12	.12	24.03	5/856	11.37		4.52	.00 ^b
	Family						.07	.08	2.25	.02
	Friend						.28	.21	6.16	.00
	Teacher						.09	.11	3.19	.00
	Behavioral						.18	.13	3.89	.00
	Emotional						.00	.00	.01	.99

When Table 6 was analyzed, the stepwise regression analysis was used to determine whether perceived social support and autonomy significantly explained the problem-solving sub-dimension of the conflict resolution skills scale. In the first step of the model, it was seen that the contribution of perceived social support to the model ($R = .33$) was significant and explained 11% of the variance. It was calculated that the contribution of autonomy added to the second step of the model ($R = .35$) was significant and explained 12% of the variance in positive relationships with others along with perceived social support.

Considering the predictors of the problem-solving sub-dimension of the conflict resolution skills scale, family ($\beta = .08$), friend ($= .21$), teacher ($= .11$) and behavioral ($= .13$) were found to predict positively.

4. Discussion

According to the findings of this study, it was determined that, the aggression sub-dimension scores of males were significantly higher than of females and the problem solving sub-dimension scores of females were significantly higher than of males, regarding conflict resolution of adolescents. There are many studies that support the findings of this research (Akdoğan, 2017; Atıcı, 2007; Aydınli, 2014; Gündoğdu, 2010; Sevim, 2005; Yavuzer, Karataş, & Gündoğdu, 2013). Different upbringing styles of male and female students may cause females to take a more solution-oriented approach to events, and men to resort to violence.

The total conflict resolution scores of adolescents did not differ significantly according to their grade levels. There are studies showing that adolescents' aggression and problem-solving behaviors do not differ significantly according to their grade levels (Ağlamaz, 2006; Akdoğan, 2017; Karataş, 2002; Rehber & Atıcı, 2009).

According to the findings of this research, when the total scores of adolescents' conflict resolution were examined, it was found that there was no significant difference by age. In the studies of Yılmaz, Karaca and Yılmaz (2009) and Yurttaş and Yetkin (2003), no significant difference was found between the scores of problem solving skills and age. In the studies conducted by Pekince (2012), Sargın (2008) and Kaya (2009), it was concluded that the age variable did not affect aggression; aggression was seen mostly in the age group of 16, but there was no statistically significant difference between the groups.

It was seen that there were negative and significant relationships between the aggression sub-dimension of the conflict resolution scale and the perceived social support scale; and family, teacher and friend sub-dimensions. It is observed that the result of this research is consistent with the results of previous researches in the field (Gündoğan, 2016; Haskan Avcı & Yıldırım, 2014; Ustabaş, 2011; Yalçın, 2004). According to the findings obtained from this study, it may be thought that social support has a role in reducing aggression in adolescents and their aggression scores will increase unless social support is provided.

It was seen that there are positive and meaningful relationships between the problem-solving sub-dimension of the conflict resolution scale and the perceived social support scale; and family, teacher and friend sub-dimensions. Previous researches support the results of this study (Arslan, 2009; Budak, 1999; D'Zurilla & Maschka, 1988; Marrison, Mallinckrodt, & Ladd, 1987). According to the research, if we evaluate the result that problem solving-skills increase as the perceived social support from family, teacher and friend increases; we may say that the support of family, teacher and friends has an important place in the lives of high school students. It may be thought that as the perceived social support from friends increases, the social development of adolescents may also increase, so that they may establish more positive relationships.

It was observed that there was a positive and significant relationship between the problem solving sub-dimension of conflict resolution and the behavioral sub-dimension of autonomy. Hill and Holmbeck (1986) stated that individuals with behavioral autonomy do not reject the individuals around them, they give importance to their views and consider different options while implementing their decisions (cited in Steinberg, 2007). In the study of Akyüz (2011), it was concluded that behavioral autonomy had a full mediating effect on the relationship between the avoidant attachment style of adolescents and the self-insecurity style they reported while solving a problem they had with their mothers. Although there are not many studies examining the relationship between autonomy and conflict resolution, it may be thought that if their behavioral autonomy is high, the adolescent will not have much issues in terms of solving the problems; if their behavioral autonomy is low, that the adolescent may have difficulty in finding solutions to the problems they encounter.

In conclusion, the number of studies researching conflict resolution skills, autonomy and social support together is quite limited in our country. Hence, future studies with different variables on this subject may contribute to the field. The findings obtained within the scope of this research are of quantitative method obtained through the scale. Using a qualitative method, adolescents' perceptions of conflict resolution skills, autonomy and social support might be learned, and more in-depth data might be provided on adolescents. This research is limited with the students studying in high schools in Meram province of city of Konya. Therefore, it might be suggested that future studies on this subject should be conducted with different samples in different provinces and cities. In the light of this research, since social support predicts conflict resolution skills; experts might organize activities such as conferences, seminars, panels for students, administrators, teachers and parents in schools, and trainings might be provided to raise awareness about the importance of social support from families, friends and teachers. In terms of autonomy, the interventions of the psychological counselors working in the schools, that will ensure the development of students' autonomy, and their efforts to support them in creating environments that will improve their autonomy in schools and classrooms, might contribute to the students' conflict resolution skills directly and their academic success indirectly. In schools, students might be provided with conflict resolution training, and activities to improve social relations and increase individual satisfaction, and awareness might be added when the impact of social support and autonomy taken into account.

5. References

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Investigation of Preschoolers' Self- Regulation Skills In Terms Of Social Emotional Skills*

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Abstract: Preschool period is an important period for the development of self-regulation skills in children. Many factors play a role in the development of self-regulation in children. The aim of this study is to examine preschoolers' self-regulation skills in terms of social emotional skills. The research has been conducted in general survey model. The research group of study consists of a total of 212 children, 86 of whom are girls and 126 are boys, of the 5-6 years old preschool children attending private and public kindergartens affiliated to the Directorate of National Education in Konya. The Masdu Social-Emotional Adaptation Scale developed by Güven and Işık in 2006 to collect research data and The Child Behavior Rating Scale (CBRS) scales developed by Bronson, Goodson, Layzer & Love (1990) and adapted into Turkish in 2016 by Sezgin and Demiriz were used to measure the self-regulation skills of children aged 3-6.

Key Words: Preschool period, self-regulation, social emotional development

1. Introduction

The preschool period is important years for development of self-regulation skills just as it is important in terms of many developmental characteristics in children. The development of self-regulation starts from birth. While the period from birth to age three is an early period for children to perform self-regulated behaviours, regulations and interventions made in this period have a critical importance in terms of observing developmental features in the next period (Ertürk Kara, Güler Yıldız, & Fındık, 2018). It is important to provide experiences that support children's self-regulation skills from early childhood to gain self-regulation skills. (Erol, İvrendi, 2018; Aydın and Ulutaş, 2017).

Self-regulation is the situation in which the child has a good command of his own behavioral process and can regulate his behavior. The child can choose, plan, control and assess his own behavior (Bodrova & Leong, 2017). With self-regulation skills, children acquire the ability to manage their emotions, shift their attention, or focus, and inhibit or activate their behavior (Dağgöl, 2016). In addition, self-regulation is considered to be the ability to adapt to changes (Kopp, 1982).

According to social learning theory, individuals can assess their own behaviors by observing them and comparing them with their own criteria. As a result of the assessment, he organizes his behaviors by reinforcing or punishing himself (Senemoğlu, 2020). These internal mechanisms that interact with each other enable individuals to regulate their own behavior (Aydın & Atalay, 2015). Self-regulation is important not only for the individual but also for social life (Fındık Tanrıbuyurdu & Güler Yıldız, 2014). Blair and Razza (2007), who were influenced by social cognitive theory, describe self-regulation as a two-way process, including cognitive self-regulation and social emotional self-regulation. In other words, self-regulation has two interrelated dimensions, including the regulation of emotions and cognition. The interaction of these two dimensions underlies the regulation of behaviors (Calvins, Perry, & Dollar, 2016; Skonkoff, 2000 cited in Saraç & Güleç, 2019). In preschool education, children need to be supported with a training program specific to their needs in terms of behavior regulation and social skills (Fındık Tanrıbuyurdu & Güler Yıldız, 2014; Aydın & Ulutaş, 2017).

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Social emotional development is a process in which, by controlling his emotions from the moment he is born, the individual shapes the values of the society and his role in the society and acquires the skills that enable him to be an individual in harmony with the society (Jenson, Sloane, & Young, 1988 cited in Küçükçükturan & Keleş, 2020). This process is grounded through some personal characteristics in the prenatal period. The interaction and relationships of the mother with the fetus before the birth affect the baby's social and emotional development, social skills and communication with other individuals in the years ahead (Koçyiğit & Fırat, 2020). Social-emotional skills is a broad term that can encompass a range of competencies, including emotional knowledge, emotional and behavioral regulatory abilities, and social skills (Denham, 2006). Whitted (2011) classified social and emotional skills in four sub-dimensions: emotion management, empathy skills, problem solving skills and self-control skills. Social and emotional dimensions of human behavior are intertwined, and separating these two developmental areas from each other and handling them independently will create limitations in realisation of the other developmental area (Kaya, 2019).

The preschool period is the period when the foundations of social emotional development are laid, as in all other developmental areas. The life of the child in this period will affect his emotional health and social life in the periods ahead. The academic and cognitive development of the individual is also closely related to the level of social emotional development that will ensure his / her adaptation to social life (Özdemir Beceren & Zembat, 2016).

In line with this information, it is thought that determining the relationship between self-regulation and social emotional skills of preschool children will contribute to the field and other studies to be conducted. In this study, it is aimed to examine the self-regulation skills of preschool children in terms of social emotional skills. In line with this main purpose, the following questions have been sought:

- Do self-regulation skills of preschool children have a significant difference according to the gender variable?
- Do social emotional skills of preschool children have a significant difference according to the gender variable?
- Is there a significant relationship between self-regulation and social emotional skills of preschool children?
- Are self-regulation skills of preschool children a significant predictor of their social emotional skills?

2. Method

This study, which aims to examine the self-regulation skills of preschool children in terms of social emotional skills, is a quantitative study in general survey model. General survey models are scanning arrangements made on the whole universe or a group of samples or a sample taken from it in order to reach a general judgment about the universe in a universe consisting of more than one element (Karasar, 2018).

2.1. Study Sample

The study group of the research consists of a total of 212 children, 86 of whom are girls and 126 are boys, of the 5-6 years old preschool children attending private and public kindergartens affiliated to the Directorate of National Education in Konya. In the study, children attending pre-school education institutions were determined by simple random sampling method, one of the random sampling methods. The main feature of random sampling methods is that the sample has a high representation power of the universe. (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel, 2018).

2.2. Data Collection Tools

General Information Form: The general information form has been developed by the researchers in order to reach the demographic information of the children included in the study. In this form, questions about the birth date and gender of the children included in the study have been included.

Child Behavior Rating Scale (CBRS): The Child Behavior Rating Scale (CBRS), developed by Bronson, Goodson, Layzer & Love (1990), has been prepared to measure the self-regulation skills of 3-6 years old children. CBRS is an observational assessment tool used in the teacher's classroom to evaluate children in terms of behavior regulation and social skills. (Bronson, Tivnan and Seppanen, 1995). The scale consists of 17 items and 2 sub-dimensions. There are 10 items in the behavioral regulation sub-dimension (between 1-10) and 7 items in the social skills sub-dimension

(between 11-17). These items are evaluated by scoring the frequency of observing child behaviors described in each item in the CBRS with a five-point rating system. (1-Never, 2-Rarely, 3-Sometimes, 4-Frequently / Mostly, 5-Always) (Ponitz et al., 2009; Matthews et al., 2009; Wanless et al., 2011a; Wanless et al., 2011c). Test-retest reliability of the assessment tool has been found to be 67. (Cadima, Gamelas, McClelland, Peixoto, 2015; McClelland., 2007; McClelland and Morrison, 2003; von Suchodoletz, Gestsdottir, Wanless, McClelland, Birgisdottir, Gunzenhauser and Ragnarsdottir, 2013).

Marmara Social Emotional Adaptation Scale for Five Years Old Children (MSEAS): The scale, which has been developed by an expert group of 9 people from Marmara University faculty members, has been developed to measure the social-emotional adaptation levels of 6.0-6.11 months children. The scale, consisting of 36 items and 7 sub-dimensions, has been reduced to 4 factors and 19 items as a result of the factor analysis applied to the data obtained. The sub-dimensions of the scale, which teacher requires to evaluate the social-emotional adaptation of the child by considering "Never", "Sometimes" and "Always" options, are as follow: Acting in accordance with the requirements of social life, reacting appropriately to the social situation, interaction with peers and a positive approach to the social environment. As a result of the item analysis, all items have been found to be correlated at the 0.1 significance level. The Cronbach Alpha value of the scale is 0.83, and the test-retest reliability correlation value is $r = 0.89$. (Güven and Işık, 2006).

2.3. Analysis of the Data

The data obtained as a result of the research were analyzed with the help of SPSS 18.00 Package Program. Firstly, normality, homogeneity and whether the data are independent of each other has been examined in the analysis of the data. Kolmogorov Smirnov test has been implemented for normality of distribution. After finding that the data have showed normal distribution, self-regulation skills levels and social emotional skill levels have been analyzed with the "Independent Groups T-test" according to the gender and age variables.

3. Results

The findings obtained from the analysis regarding self-regulation and social emotional skills of preschool children are presented in this part of the research.

3.1. Findings On The Self-Regulation Between Social Emotional Skills and Other Variables

Table 1 Descriptive Statistics Regarding the Variables

Scale	Sub-dimensions	$\bar{X}$	S
MSEAS-5 age	Acting in accordance with the requirements of social life	21.75	5.15
	Reacting appropriately to the social situation	9.41	1.83
	Interaction with peers	7.39	1.71
	Positive approach to the social environment	7.83	1.48
CBRS	Behaviour Regulation	34.43	8.94
	Social Skill	24.44	6.41

Table 2 t-Test Results of Social Emotional Skill Levels of Preschool Children According to Gender Variable

MSEAS -5 Age	Gender	n	$\bar{X}$	S	sd	t	p
Acting in accordance with the requirements of social life	Female	86	23.75	3.14	210	4.92	.000*
	Male	126	20.38	5.78			
Reacting appropriately to the social situation	Female	86	9.86	1.56	210	2.96	.002*
	Male	126	9.11	1.95			
Interaction with peers	Female	86	7.80	1.48	210	2.93	.015*
	Male	126	7.11	1.80			
Positive approach to the social environment	Female	86	8.05	1.24	210	1.85	.005*
	Male	126	7.67	1.62			

The (*) sign indicates that the subprocess is significant at the $p < 0.05$ level.

The t-test results of the social emotional skills mean scores of preschool children in the sample group are shown according to the gender variable in Table 2. According to the analysis results, there is a significant difference in favor of girls in the sub-dimension of acting in accordance with the requirements of social life ($t = 4.92$; $p = .000$), reacting appropriately to the social situation ($t = 2.96$; $p = .002$), interaction with peers ($t = 2.93$; $p = .015$) and in the sub-dimension of positive approach to the social environment ($t = 1.85$; $p = .005$) according to the gender variable.

Table 3 t-Test Results of Preschool Children's Self-Regulation Skill Scores Mean According to Gender Variable

CBRS	Gender	n	$\bar{X}$	S	sd	t	p
Behaviour Regulation	Female	86	36.74	7.03	210	3.17	.004*
	Male	126	32.85	9.75			
Social Skill	Female	86	26.72	4.94	210	4.45	.003*
	Male	126	22.89	6.83			

The (*) sign indicates that the subprocess is significant at the $p < 0.05$ level.

The t-test results of the self-regulation skills mean scores of preschool children in the sample group are shown according to the gender variable in Table 3. According to the analysis results and children's gender variable, there is a significant difference in favor of girls in the behavioral regulation sub-dimension ($t = 3.17$; $p = .004$) and in the social skills sub-dimension ($t = 4.45$; $p = .003$).

Table 4: Pearson's Correlation Value Test Results Regarding the Relationship Between Self-Regulation Skills and Social Emotional Skills of Preschool Children

		Behaviour Regulation	Social Skill
Acting in accordance with the requirements of social life	Pearson Correlation	.726**	.714**
	P	.000	.000
	N	212	212
Reacting appropriately to the social situation	Pearson Correlation	.544**	.366**
	P	.000	.000
	N	212	212
Interaction with peers	Pearson Correlation	.607**	.499**
	P	.000	.000
	N	212	212
Positive approach to the social environment	Pearson Correlation	.544**	.482**
	P	.000	.000
	N	212	212

The (*) sign indicates that the subprocess is significant at the $p < 0.05$ level.

Pearson's correlation analysis have been conducted to determine whether there is a significant relationship between the sub-dimensions of variables. There is a high, positively and significant relationship between acting in accordance with the requirements of social life which is the sub-dimensions of Marmara social emotional adaptation scale and behavior regulation ($r=.76$, $p<.05$) and social skills ($r=.71$, $p<.05$) which are the sub-dimensions of the child behaviour assessment scale. There is a medium, positively and significant relationship between reacting appropriately to the social situation which is the sub-dimensions of Marmara social emotional adaptation scale and behavior Regulation ($r=.54$, $p<.05$) and social skills ($r=.36$, $p<.05$) which are the sub-dimensions of the child behaviour assessment scale. There is a medium, positively and significant relationship between interaction with peer which is the sub-dimensions of Marmara social emotional adaptation scale and behavior Regulation ($r=.60$, $p<.05$) and social skills ($r=.49$, $p<.05$) which are the sub-dimensions of the child behaviour assessment scale. There is a medium, positively and significant relationship between positive approach to the social environment which is the sub-dimensions of Marmara social emotional adaptation scale and behavior regulation ($r=.54$, $p<.05$) and social skills ($r=.48$, $p<.05$) which are the sub-dimensions of the child behaviour assessment scale.

Table 5: Multiple Linear Regression Analysis Results Related to Social Emotional Skills Levels as Predictors of Self-Regulation Skills Levels of Preschool Children

Variables	β	Standart Error	t	p	F	F significance
Constant	-	2.44	-.070	.945		
Acting in accordance with the requirements of social life	.50	.11	7.63	.000**		
Reacting appropriately to the social situation	.12	.28	2.17	.031*	70.36	.000**
Interaction with peers	.18	.33	2.84	.005**		
Positive approach to the social environment	.06	.37	.96	.335		

*p<.05 **p<.01;
R=.75 R²=.57

Dependent Variable: self-regulation skill

Independent Variable: social emotional skill

It has been revealed that the self-regulation skills of preschool children in the sample group have been significant on their social emotional skills. ($R^2=.57$, $F_{(4/207)}$, $p<.01$). This result explains 57% of the total variance in preschool children's social emotional skills, self-regulation skills. According to the standardized regression value (β), the order of importance of predictor variables on self-regulation is as follows ; acting in accordance with the requirements of social life ($\beta=.50$, $p<.01$), interaction with peer ($\beta=.18$, $p<.05$), reacting appropriately to the social situation ($\beta=.12$, $p<.01$) and positive approach to the social environment ($\beta=.06$, $p>.01$).

As a result of the study, it has been found that there is a significant positively relationship between self-regulation skill and social emotional skill. In addition, it was found that social emotional skill explains 57% of the total variance in self-regulation skill in preschool children.

4. Discussion

This study has been conducted to examine the self-regulation skills of preschool children in terms of social emotional skills. When the findings of the study have been evaluated, when the analysis results of the self-regulation skills of preschool children according to the gender variable have been examined, a significant difference has been observed in favor of girls. Aksoy and Tozduman Yaralı (2017), Atmaca, Akduman and Sarıbaş (2020), Matthews, Ponitz and Morrison, (2009), Tutkun, Tezel Şahin and Işıktekiner (2016), Tuzcuoğlu, Azkeskin, Niran and Özkan (2020) found a significant difference between children's self-regulation skills and gender in favor of girls within the context of the studies that they conducted. When the studies on the subject are examined, it was expected that there would be a difference in self-regulation skills according to gender (Raffaelli et al., 2005). Atmaca, Akduman and Sarıbaş (2020) have stated that in our society, the reactions given to boys and girls differ, and while many behaviors of boys are tolerated, less tolerance is shown to girls. This may cause differences in girls' self-regulation skills and boys' self-regulation skills. Wanless et al. (2011) examined the behavioral self-regulation skills of children in different countries. They found that American girls had higher levels of behavioral self-regulation, and this didn't differ significantly by gender in other countries. Therefore, it can be stated that the social roles expected of girls and boys with the effect of socio-cultural characteristics cause differentiation in children's self-regulation behaviors.

According to the analysis results, when the social emotional skills of preschool children have been analyzed by gender variable, a significant difference has been found in favor of girls. Dinç (2002) stated in his study that the social development levels of children were affected by the variables of age, gender and school attendance. In addition, Koçak and Tepeli (2006) found in their study that age, gender, maternal education level and socio-economic level variables affect the behaviors of four-five-year-old children regarding cooperation and social relations. There are certain roles that societies expect of different genders. These are called societal gender judgments, or stereotypes. In this period, stereotypes such as "boys don't cry" and "girls must be kind" affect social-emotional development with the development of the superego. Girls were expected to be emotional, gentle and kind, while boys were expected to be bold, strong, independent and not to show their feelings (Küçükturan & Keleş, 2020). Many studies revealed that environmental factors at home, at school and in society in early childhood support gender typing by adding on genetic influences (Berk, 2020). Thus, it is thought that social emotional skill levels of girls may be different from boys due to social differences and expectations.

It has been determined that there is a positive and significant relationship between self-regulation skills and social emotional skills of preschool children. The findings showed that behaving in accordance with the requirements of social life, responding appropriately to the social situation, interaction with peers and a positive approach to the social environment are important variables in predicting the self-regulation skill level considered within the scope of the research. In Vygotsky's tradition, physical, cognitive and social-emotional self-regulation was considered as part of a whole (Bodrova & Leong, 2017). It is very important to create consistent and predictable environments for children in the preschool period when their self-regulation skills are rapidly developing. This period was also a period when children could learn social-emotional skills such as understanding their emotions, calming themselves, etc. (Saraç & Güleç, 2019).

Self-regulation and social emotional skills of children can be examined with different variables and longitudinal studies.

In the study, when the finding "as the levels of social emotional skills of children get higher, their self-regulation skill levels also get higher" is taken into account, more emphasis can be placed on educational activities for teachers and parents in order to support these skills starting from an early age.

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Predictive Relationships Between General Belonging, Nomophobia And Life Satisfaction Among University Students*

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Abstract: The purpose of this study is to examine the predictive relationship between university students' general belonging, nomophobia and life satisfaction. Relational screening model was used in the research. The study group of the study was chosen by random cluster sampling method from students studying in different departments studying in universities in Konya. 390 girls and 121 boys and 511 university students participated in the study. In order to collect data in the study, General Belonging, Nomophobia and Life Satisfaction Scale and Personal Information Form prepared by the researcher were used. In the research, pearson moments product correlation technique and regression analysis were used. It was found that there was a significant and positive relationship between the mean scores of the students on the general belonging, nomophobia and life satisfaction scale. According to the research findings, the general belonging scores were predictive on the nomophobia and life satisfaction scale scores.

Key Words: General Belonging, Nomophobia, Life Satisfaction.

1. Introduction

Belonging is a requirement that can be saturated with interpersonal relationships, and each person feels the need for belonging at different levels. Some people need more attention, social ties or love to meet this need, while others feel less need. Likewise, while some people try to feed this need of love, love and social bonds very often, others may have less social contact (Duru, 2015). According to Maslow, when the general physiological needs and safety needs of individuals are met, the individual wants to establish close relationships with other people and to take place in a group (Boeree, 2006; Maslow, 1943, 1954). The sense of belonging for psychological and physical well-being is stated as a very critical feature (Hagert & Patusky, 1995).

Happiness and general well-being in life depend on having close relationships. Accordingly, it was stated that individuals with strong bonds are happier, healthier and have less difficulty in coping with daily stresses. (Baumeister & Leary, 1995). It can be said that a person who feels insecure and rootless has lost her/his sense of belonging (Duru, 2007). As one of the basic needs of the individual, the satisfaction of the need for belonging, which indicates the harmony with the world and life satisfaction, enables the individual who is in interaction with the environment to shape and evaluate her/his own future expectations, supports the development of a harmonious personality and effective solution of problems (Trommsdorff, 1983).

As a basic need, belonging is very important for the individual, family and society, and the sense of belonging can be defined as an element of relatedness and social/emotional connectedness (Hill, 2006). In the context of a basic need, it draws attention that belonging is very important for the individual, family and society. People experience many social interactions together in their daily lives. It becomes an important need for individuals who experience these social interactions to be accepted by close family members, relatives, friends, colleagues and other important individuals in their lives (Baumeister & Leary, 1995).

Smart phones are also observed as an element that increases social interaction. It is stated that the first users of smart phones are considered as university students (Lee, Chang, Lin, & Cheng, 2014). Studies indicate that the use of smartphones is popular among university students (Yıldırım, 2014). Both the use of smartphones and the fear of being

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separated from them are increasing day by day. Recently, many developments, especially in communication and technologies, have brought about global transformations. With communication technologies, communication via computers, mobile phones and tablets is becoming more popular, as well as face-to-face communication (Chen et al., 2016).

The use of smart phones, which make daily life very easy, has become an indispensable part of life over time. Functions of smartphones can be counted as calling contacts, sending and receiving e-mails, texting, playing games, using social networks, surfing the Internet, shopping online, jotting appointments, reading, searching for information, reading news, having fun, listening to music, taking photos and videos etc. (Hoffner & Lee, 2015; Kang & Jung, 2014). It can be assumed that besides the many benefits that smartphones provide, they can also bring various problems. It is stated that these devices cause many problems such as technology addiction, smartphone addiction, digital game addiction and social media addiction (Adnan & Gezin, 2016; Kang & Jung, 2014).

Problems caused by smartphones are common, especially among young people (Öz & Tortop, 2018). In clinical psychology, nomophobia, which comes from the English word nomophobia (no mobile phobia) and is one of the new concepts encountered in the literature, is stated as unreal fear when the individual experiences anxiety and discomfort in the absence of virtual communication tools such as computers, mobile phones and tablets (King et al. 2013; Yıldırım & Correia, 2015). Symptoms of nomophobia can be listed as follows: Owning one or more mobile devices and spending too much time with these devices; worrying about losing the smartphone, running out of charge, not being able to reach the smartphone, the smartphone being not nearby, and having no service on the phone; trying to avoid places and situations where the use of the phone is prohibited, as much as possible; checking the phone frequently to see if a message or call has been received, keeping the smartphone on at all hours of the day, going to sleep with the smartphone, preferring virtual communication rather than face-to-face communication, making large spending or debt due to smartphone use (Bragazzi Del Puente, 2014).

Considering that nomophobia behavior is common, it can be seen as a risk factor for individuals of all age groups, especially adolescents and university students (Adnan & Gezin, 2016; Gezin, Şumuer, Arslan & Yıldırım, 2017; Kaur, Sharma & Manu, 2015; Pavitra and Madhukumar, 2015).

Life satisfaction, which can be shown as one of the basic positive emotions created by the sense of belonging in people, refers to the satisfaction of the individual with her/his own life in general. The concept of life satisfaction, first introduced by Neugarten in 1961, refers to the result or situation obtained by making a comparison between the individual's personal expectations and what s/he currently has (Karabulut & Özer, 2003). Life satisfaction is a cognitive evaluation based on the individual judging her/his own life according to various criteria and to what extent s/he is satisfied with her/his life (Pavot & Diener, 1993).

Life satisfaction can be considered as an important quest for university students as well as for various age groups. It is stated that university students are in a critical period in terms of relieving the sense of belonging in a healthy way (Kuşat, 2003).

Based on this, the main purpose of the study is to examine the predictive correlation between university students' general belonging, nomophobia and life satisfaction.

Based on the purpose of the study, answers to the following questions were sought:

1. Is there a significant relationship between university students' general belongingness and nomophobia and life satisfaction?
2. Do university students' nomophobia and life satisfaction levels predict general belonging significantly?

2. Method

The research model is the general relational screening model. Relational screening model is used in studies aiming to determine the existence of a co-change between two or more variables and/or the degree of this change (Karasar, 2018). In this study, it is aimed to explain the general belonging levels of the university students in terms of life satisfaction and nomophobia and to reveal whether the general belonging of life satisfaction and nomophobia is meaningful or not.

2.1. Study Sample

The study group of this research consists of teacher candidates having pedagogical formation training and university students at Necmettin Erbakan University, Ahmet Keleşoğlu Education Faculty in Konya in 2019-2020 academic years. University students were selected by the simple random sampling method, in which the elements in the study universe have the chance to be selected equally (Karasar, 2018). Data was distributed to 514 university students. Data that were found to be empty or incomplete in the scales obtained were not entered. Analysis was made on 511 raw data. 390 (76%) of the participants are women and 121 (23%) are men. Participants continue their education in 1st grade (n = 73, 14.2%), 2nd grade (n = 178, 34.8%), 3rd grade (n = 118, 23%), 4th grade (n = 86, 16.8%) and above 4th grade (n = 56, 10.9%). The ages of the participants vary between 17 and 50 (sd = 4.19).

2.2. Data Collection Tools

In the study, Nomophobia Scale adapted to Turkish by Yıldırım and Correia, General Belonging Scale adapted into Turkish by Duru and Life Satisfaction Scale adapted to Turkish by Köker and Yetim were used to collect data in the study. In addition, Personal Information Form created by the researcher to collect the personal information of the students was used.

General Belonging Scale: The scale, developed by Malone et al. (2012), and adapted to Turkish by Duru (2015), consists of 12 items. It is evaluated in two dimensions. These are sub-dimensions of acceptance and exclusion (rejection). The scale has a 7-point Likert-type rating (1. Absolutely Disagree, 7 Absolutely Agree). The exclusion subscale scores of the General Belonging Scale are reversed and both the general sense of belonging total score is calculated and the scores can be used for both sub-dimensions, namely acceptance and exclusion, without reversing. It can be concluded that the higher the scores obtained from the scale, the higher the sense of belonging of the individual. Analyzes related to the reliability of the scale have shown that the internal consistency of both the subscales and the General Belonging Scale is high. The internal consistency coefficient of the General Belonging Scale was found to be .92. The internal consistency coefficient of the Acceptance/Inclusion subscale is .89, and the internal consistency coefficient of the Rejection/Exclusion scale is .91 (Duru, 2015). In this study, the Cronbach's alpha values were examined in two sub-dimensions. The acceptance sub-dimension was .88, and the exclusion sub-dimension was .89.

Nomophobia Scale: In the study, Nomophobia Scale, which was developed by Yıldırım and Correia, and adapted to Turkish by Yıldırım et al. (2015), was used, and here nomophobia was translated as fear of being detached from cell phone. The scale consists of a total of 20 items, and 4 sub-dimensions: "(1) not being online, (2) losing communication, (3) lack of device, (4) not being able to access information". Nomophobia level increases as the scores obtained from the scale increase. There is no reverse scored item. Cronbach's alpha reliability coefficient of the scale was determined as .94, and its Turkish version was determined as .92. The Cronbach alpha reliability coefficient of this research was found to be .90.

Life Satisfaction Scale: Designed to measure general life satisfaction and developed by Diener, Emmons, Larsen and Griffin in 1985, the scale consists of one dimension and 5 items in total. The scale is a 7-point Likert type (1. Absolutely agree and 7. Absolutely disagree). There is no reverse scored item in the scale. In the scale, the highest score is 35 and the lowest score is 5. The higher life satisfaction level means the higher scores.

In studies conducted by Diener et al. (1985), for the general life satisfaction scale, the Cronbach alpha reliability coefficient is found to be .87. The criterion for dependency validity is .82 coefficient. Turkish adaptation studies of the scale were carried out by Yetim (1991) and Köker (1991). In the studies of Köker (1991), the reliability coefficients were

found as .85 with the test-retest method. Yetim found the reliability coefficients as .85 with the test-retest method in his research. In Yetim's study, the test-retest reliability of the scale was found to be .73 and the Cronbach alpha internal consistency coefficient as .86. In addition, Yetim (1991) conducted a face validity study. In this thesis study, he found the Cronbach alpha value of the scale as .86.

Personal Information Form: The personal information form developed by the researcher includes information about the participants' gender, age, school type, grade level, number of siblings, parents' education level, parental relationship status, economic status of the family, and whether there is a romantic relationship.

2.3. Collection of the Data

During the application, the students were informed about the purpose of the application and the instructions of the scales were read. The application lasted approximately 15-20 minutes. During the data collection process, some ethical issues (informed consent and confidentiality) were taken into account.

2.4. Analysis of the Data

The data collected in the study were analysed through an appropriate statistical program. The data of the study were analysed using SPSS 21.0 (Statistical Package for the Social Science) program. Frequency, reliability, factor and regression analyses were carried out to analyse the obtained data. Pearson Moments Product Correlation Analysis processes were carried out to perform correlational operations in the study.

3. Findings

Table 1. Correlation Results of the Relationship between General Belonging, Nomophobia and Life Satisfaction Levels

Variables	General Belongingness	Nomophobia	Life Satisfaction
General Belongingness	1		
Nomophobia	-.114**	1	
Life Satisfaction	.424**	-.062	1

** p< .01, *p<.05

When Table 1 was examined, it was found that there was a significant negative correlation between the mean scores obtained by university students from the general belonging scale and the nomophobia scale ($r = -.11$, $p < .05$). It was found that there is a significant and positive relationship between the mean scores of the university students obtained from the general belonging scale and the life satisfaction scale ($r = .42$, $p < .01$). No significant relationship was found between the mean scores of university students obtained from the nomophobia scale and the life satisfaction scale ($r = -.06$, $p < .01$).

Table 2. Regression Analysis Results Related to General Belonging Means

Variables	B	SE	β	T
Nomophobia	-.08	.03	-.08	-2.19
Life Satisfaction	.83	.08	.42	10.51

$R=0.436$, $R^2=0.19$, $F(2,507)=59.363$, $p<.001$

When Table 2 is examined, it is seen that the general belonging scores of university students show a significant relationship with the variables of nomophobia and life satisfaction. ($R = .436$, $R^2 = 0.19$, $p < .01$) predicts 19% of the total variance in general belonging together with the predictor variables. According to the standardized regression coefficient

(beta), the relative importance order of independent variables on general belonging is as follows; life satisfaction ($\beta = .42$, $t = 10.517$, $p < .001$), nomophobia ($\beta = -.08$, $t = -2.196$, $p < .001$).

4. Discussion and Conclusion

In this study, it was investigated whether there is a significant relationship between the nomophobia and life satisfaction variables and the general belonging scores of university students. It was found that there was a significant and low negative relationship between the mean scores of university students from the general belonging scale and the scores from the nomophobia scale. When the studies on this subject are examined, the following results are found: It is seen that the sense of belonging plays an important role in smartphone addiction. Individuals prefer smartphones and the internet for various reasons, usually for their need to be accepted and to establish relationships (Arpacı, Baloğlu, Özteke Kozan & Bıçak, 2017). It was concluded that individuals who are rejected or excluded by their environment may turn to the Internet and try to meet their psychological needs there, which may cause internet addiction (Kavaklı, 2018).

It is stated that needs such as belonging and self-esteem can be satisfied with the use of social media (Nadkarni & Hofmann, 2012). There is a significant relationship between the density of Facebook use, which is one of the ways to satisfy the sense of social belonging, and smartphone addiction (Traş & Öztemel, 2019).

Another finding of this study is that there is a significant and moderately positive correlation between the mean scores of university students from the general belonging scale and the mean scores from the life satisfaction scale. It was found that one of the variables that most predicted subjective well-being was psychological need satisfaction. In other words, as university students' level of meeting basic psychological needs such as competence, autonomy and relatedness increases, their subjective well-being levels also increase (İlhan & Özbay, 2010). In a longitudinal study, it was found that the increase in students' level of meeting psychological needs positively affects their subjective well-being levels (Sheldon & Elliot, 1999).

It was concluded that individuals experience high levels of positive emotions and vitality, and low levels of negative emotions as the levels of meeting their competence, autonomy, and relatedness needs increase during the day (Sheldon, Ryan & Reis, 1996). It shows that the satisfaction of three basic psychological needs, namely autonomy, competence, and relatedness, determine the level of well-being (Cihangir-Çankaya, 2005; Deci & Ryan, 2000; Deci et al., 2001). It was observed that subjective well-being, which is affected by daily activities, changes according to the satisfaction of basic psychological needs (Reis et al., 2000).

As a result of another study, it was found that subjective well-beings of adolescents do not differ according to the behaviors of parents towards their children (Çakır, 2015). In a study conducted with adolescents, it was observed that individuals who perceive their parents in a tolerant and democratic way have higher intra-family relationship satisfaction, life satisfaction and well-being compared to individuals who perceive their parents as authoritative (Özkan, 2014). In a study conducted with adolescents, it was concluded that parental perceptions of adolescents are related to their subjective well-being (Kocayörük, 2012). Again, in a study conducted with adolescents, it was concluded that parents' supportive attitudes were effective in subjective well-being of adolescents (Park, 2004).

Another finding of this study is that a significant and low level negative relationship was found between the mean scores of university students from the nomophobia scale and the life satisfaction scale. In another study examining the relationship between smartphone addiction and happiness levels of university students, it was found that there was a significant negative relationship (Süler, 2016).

The predictive variables in this study predicted 19% of the total variance in general belonging. The results of some of the studies on similar topics are as follows: In a study conducted with university students, it was observed that satisfaction with basic psychological needs explained subjective well-being by 41.7% (Türkdoğan, 2010). Autonomy, relatedness and competence psychological needs were observed to predict subjective well-being by 58% (Özer, 2009). In a study, in which need satisfaction variables are examined as well as well-being, it is seen that there is a high level and positively significant relationship and the variables explain 65% of the variance in well-being (Cihangir-Çankaya, 2009).

In some studies, it was observed that family support is also effective in predicting life satisfaction of individuals (Gallagher & Brodrick, 2008). In a study conducted on the relationship between individuals' perceived family support and subjective well-being, it was observed that family support explained subjective well-being by 32% (Çevik, 2010). There are research findings revealing the significant role of variables of perceived satisfaction from friends and family relationships (Biswas-Diener & Diener, 2001; Diener & Diener, 1995) and the need to be related, which defines feeling a sense of social belonging in predicting the subjective well-being level (Cihangir-Çankaya, 2009; Reis et al., 2000). In a research, it was determined that basic psychological needs, family belonging, mother perception and father perception variables explain subjective well-being by 39% in total (Gök, 2009).

5. Recommendations

Findings show that the general level of belonging among university students is predicted by nomophobia and life satisfaction. It may be useful to examine these variables with various longitudinal studies. The developmental differences in the perception of belonging by various age groups can be examined. When we look at the scores of belonging according to the attitude perceived by university students while they were raised, the belonging to the family with a democratic attitude differed significantly from the family with a negligent attitude. As a result, conscious parenting education can be given by public education centers and universities to raise awareness in families. The mean scores of university students who receive support from friends are higher than those who do not receive support. Based on this result, students can be supported to participate in social clubs and trips at universities.

6. References

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