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A Hypothetical Model Proposal for Social Connectedness in Adolescents

Ergenlerde Sosyal Bağlılık İçin Bir Hipotetik Model Önerisi*

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Öz. Bu çalışmada sosyal bağlılık için önerilen hipotetik model test edilmiştir. Bu genel amaç doğrultusunda, öncelikle sosyal zekânın sosyal kaygı üzerindeki etkisi test edilmiştir. Daha sonra sosyal kaygının internet bağımlılığı ve akran ilişkileri üzerindeki etkisi test edilmiştir. Son olarak, internet bağımlılığı ve akran ilişkilerinin sosyal bağlılık üzerindeki etkisi test edilmiştir. Her etki için bir hipotez önerilmiştir. Bu çalışma 991 ergen (578 kız ve 413 erkek) üzerinde gerçekleştirilmiştir. Önerilen hipotetik model genel örneklemde, kız ergen örnekleminde ve erkek ergen örnekleminde ayrı ayrı test edilmiştir. Analiz sonucunda, hipotetik modellerin doğrulandığı görülmüştür. Üç örneklemde de hipotezler doğrulanmıştır. Bulgulara göre sosyal zekâ, sosyal kaygıyı negatif yönde etkilemektedir. Sosyal kaygı, internet bağımlılığını pozitif yönde etkilerken; akran ilişkilerini negatif yönde etkilemektedir. Akran ilişkileri, sosyal bağlılığı pozitif yönde etkilemektedir. Son olarak, internet bağımlılığı sosyal bağlılığı negatif yönde etkilemektedir.

Anahtar Kelimeler. Sosyal bağlılık, internet bağımlılığı, akran ilişkileri, sosyal kaygı, sosyal zekâ, hipotetik model

Abstract. In this study, the hypothetical model proposed for social connectedness was tested. Firstly, the effect of social intelligence on social anxiety was tested. Then the effect of social anxiety on internet addiction and peer relations was tested. Finally, the effect of internet addiction and peer relations on social connectedness was tested. A hypothesis has been proposed for each effect. This study was conducted on 991 adolescents (578 girls and 413 boys). The hypothetical model was tested in the general sample, the girls and the boy's sample. As a result of the analysis, the hypothetical model was confirmed in three samples. According to the findings, social intelligence affects social anxiety negatively. Social anxiety affects internet addiction positively but peer relations negatively. Peer relations affects social connectedness positively. Finally, internet addiction affects social connectedness negatively.

Keywords. Social connectedness, internet addiction, peer relationships, social anxiety, social intelligence, hypothetical model.

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Social belonging is considered a basic need. Both Adler (1956) and Maslow (1971) emphasize that a sense of social belonging is a need to be fulfilled. Kohut (1984) notes that the feeling of social belonging is a way of expressing the individual's identity. According to Kohut (1984), the individual aims to confirm his identity through interpersonal relations. Similarly, Lee and Robbins (2000) point out that the development of social relations with others is the basis of their desire to survive. For this reason, social belonging is seen as an instrument for the individual to maintain his/her existence and to express his/her existence. The last stage of social belonging is social connectedness (Lee & Robbins, 1995; Lee & Robbins, 1998). Social connectedness is the subjective perception of whether an individual feels himself or herself as a meaningful part of their social and emotional relationships (Lee & Robbins, 1998). Social connectedness in a different definition is defined as the ability to develop meaningful relationships that will facilitate the individual to view himself / herself as part of his/her social interaction processes (Moore, 2006). In this context, Timpone (1998) states that social connectedness encompasses all social resources that promote interaction with the individual's social networks and participation in social life. High levels of social connectedness to the development of active and positive interpersonal relationships. However, low-level social connectedness leads to the development of nonfunctional social relations (Lee & Robbins, 1998). Individuals with low levels of social connectedness have been found to have problems such as anxiety, loneliness and low self-esteem (Baumeister, 1995; Lee & Robbins, 1998). It was also found that high social connectedness was a protective factor against psychopathology, bullying, violence and addiction (Baumeister, 1995; Bond et al., 2007).

Adolescence is a critical period in terms of the development of social connectedness. Indeed, during adolescence, important developmental events such as identity development, attachment, social belonging and close relationship development occur. Therefore, it is critical to examine the factors that ease and impede the development of social connectedness in adolescence. Peer relations in adolescents are a critical factor affecting the development of social connectedness. Indeed, during adolescence, peer groups contribute to the development of close relationships and the development of connectedness by allowing the adolescent to associate himself / herself with others (Lee, Draper & Lee, 2001). According to Karcher's (2001) connectedness theory,

connectedness begins to develop when adolescents associate with peer groups or with other groups or participate in these groups. Peer relations have functions such as strengthening social ties, expanding areas of social interaction, and protecting against negative feelings (Erkan-Atik, Çok, Esen-Çoban, Doğan & Güney-Karaman, 2014; Vitaro, Boivin & Bukowski, 2011). In addition, peer relations facilitate the interaction of adolescents with people or groups that are similar in terms of interest and ability. This contributes to the development of social connectedness (Lee & Robbins, 1998). The fifth hypothesis of this research, takes into account the effects of peer relations on social connectedness (*H5: Peer relations affects social connectedness significantly, positively and directly*).

Internet addiction is considered as a critical factor in affecting social connectedness. Indeed, research shows that intensive internet use has been associated with loneliness (Gross, 2004; Savci & Aysan, 2018; Savci & Aysan, 2016; Yavuz, 2019), social isolation (Young & Rogers, 1998), impairment of daily life routines (Chou & Hsiao, 2000) and depressive symptoms (Young & Rogers, 1998). According to McIntyre, Wiener and Saliba (2015) compulsive use of the internet causes the individual to shy away from the social environment. The social connectedness of individuals moving away from the social environment is weakening. According to Shen and Williams (2011), although the internet makes it easier for individuals to communicate with one another through virtual networks, individuals who use virtual networks spend much of their time online gaming at the same time. This causes the individual's actual social activities to weaken, to get away from the real social environment, and to reduce his social connectedness. Ögel (2014) sees the internet environments as the loss of social life, which is called the real, and the peak of the socialization that is called the cyber. Similarly, Kraut, Mukhopadhyay, Szczypula, Kiesler and Scherlis (1999) emphasize that excessive use of the internet corrupts family relationships and causes a narrowing of the near and distant social circle. The fourth hypothesis of this research takes into account the effects of internet addiction on social connectedness (*H4: İnternet addiction affects social connectedness significantly, negatively and directly*).

There are various opinions in the literature about which structures are risk factors in terms of internet addiction. The cognitive behavioral model emphasizes that psychopathology is a risk factor for internet addiction. Psychopathological manifestations such as depression, substance abuse and

social anxiety according to the model, incompatible cognition and lack of social support make the individual vulnerable to internet addiction (Davis, 2001). Shepherd and Edelmann (2005) examined the impact of psychopathological symptoms on internet addiction in relation to social anxiety and internet addiction. According to Shepherd and Edelmann (2005), socially anxious individuals are trying to minimize the threats they may encounter in the real social environment through online communication. Indeed, virtual environments offer safer environments for socially anxious individuals. In this context, Ögel (2014) indicates that cognitive distortions such as lack of self-confidence and negative perceptions are risk factors in terms of internet addiction. Yen, Yen, Chen, Wang, Chang & Ko (2012) also emphasize that social anxiety in adolescents increases the susceptibility to internet addiction. Similarly, Caplan (2007) emphasizes that social anxiety is an important risk factor for internet addiction. Cyber environments are less restricted for socially anxious individuals. Therefore, socially anxious individuals often use cyber environments to protect themselves against social rejection (Shepherd & Edelmann, 2005; Stritzke, Nguyen & Durkin, 2004). In this context, Papacharissi and Rubin (2000) emphasize that individuals who do not feel comfortable in face-to-face communication tend to prefer online environments to communicate, and those who feel good in face-to-face communication tend to prefer more real social relationships. In other words, it can be said that individuals who do not feel well enough in the real social environment and who show symptoms such as shyness, fear and anxiety use online environments more frequently (Greenfield, 1999). It is possible to explain the effect of social anxiety on internet addiction through fear of negative evaluation. Socially anxious individuals are less likely to be assessed negatively in online environments. In these environments, the ability to hide the identity of the person with social anxiety protects him from the assertion (such as sweating, stuttering) accompanying the fear of negative evaluation. Therefore, socially anxious individuals often use the internet environment for relaxation, communication, and acting autonomously (Caplan, 2007; McKenna & Bargh, 2000; Savci & Aysan, 2017a). Although the internet is a tool that facilitates the communication of social-anxious individuals, it is addictive when used extensively (Caplan, 2007). In other words, the internet causes addiction when used extensively (Young, 1998). The third hypothesis of this research (*H3: social anxiety affects internet addiction significantly, positively and directly*), takes into account the impact of the social anxiety on internet addiction.

Social anxiety negatively affects adolescents through social interaction, positive relationships with their peers, involvement of a social group, and acceptance by their peers (Rubin, Coplan & Bowker, 2009). Social anxiety is defined in the DSM-5 as an apparent fear or anxiety in one or more social situations in which others can assess the individual, such as mutual conversation, encounter with unknown persons, observation and carrying out an action in front of others. In addition, the social-anxious individual is afraid of the social environment [American Psychiatric Association (APA), 2013)] due to the negative appraisal, humiliation, embarrassment, exclusion or others that may lead to the break-up of others. Social anxiety emerges frequently during adolescence (Rapee & Spence, 2004). Considering the definition of social anxiety according to DSM-5, it can be said that social anxious individuals avoid social behaviors such as seeking new social networks, social interaction and establishing close relationships (APA, 2013). These features of social-anxious individuals have an adverse effect on their development of meaningful social relationships with their peers. Social-anxious individuals use strategies based on self-protection in their social relationships, both explicitly and indirectly. These strategies, developed for self-protection, adversely affect peer relations and prevent the adolescent's peers from being accepted, developing close relationships and participating in new social relationships (Tillfors, Persson, Willén & Burk, 2012). Ginsburg, La Greca and Silverman (1998) emphasize that socially anxious adolescents are less reluctant to develop new social relationships with their peers. In addition, La Greca and Lopez (1998) indicate that social-anxious adolescents have high levels of rejection experiences, fewer friends, more disadvantages in establishing close relationships, lower social support, and less acceptance than their peers. The second hypothesis of this research (*H2: social anxiety affects peer relations significantly, negatively and directly*), takes into account the effects of social distress on peer relationships.

Social anxiety is due to insufficient social skills. As a matter of fact, social skill trainings are often given in order to lower the level of social anxiety (Beidel, Alfano, Kofler, Rao, Scharfstein & Wong Sarver, 2014; Sertelin-Mercan, 2007). Social anxiety is affected by negative perceptions on social skills. Individuals with negative perceptions of social skills are more likely to be more socially anxiety (Heimberg, 2002; Junttila, Vauras, Niemi & Laakkonen, 2012). In this context, it emphasizes that social anxiety is caused by insufficient social skills. Similarly, La Greca and Lopez (1998) indicate that social anxiety is influenced

by the perception of social competence. In this context, the level of social anxiety can be reduced by increasing social skills (Turner, Beidel, Cooley, Woody & Messer, 1994). Social skills are considered as an important component of social intelligence (Silvera, Martinussen & Dahl, 2001). Therefore, it is possible to explain the effect of social intelligence on social anxiety through social skills. Social adaptation which is considered as an important component of social intelligence (Kosmitzki & John, 1993), is emphasized to have an impact on social anxiety (Ingman, 1999). Hampel, Weis, Hiller & Witthöft (2011) examined the influence of social intelligence on social anxiety through the model they developed. Hampel et al. (2011) emphasize that the increase in social intelligence leads to a decrease in social anxiety and the decrease in social intelligence leads to an increase in social anxiety. Baker and Edelmann (2002) state that socially anxious individuals are more disadvantaged in terms of social skills than non-socially anxious individuals. In other words, social skill deficits are an important risk factor in terms of social anxiety. The first hypothesis of this research (*H1: social intelligence affects social anxiety significantly, negatively and directly*), takes into account the effects of social intelligence on social anxiety.

In this study, a hypothetical model for social connectedness was proposed and tested. In the literature, few models have been proposed for understanding social connectedness. Therefore, it is thought that this research will present a new perspective on social connectedness. As a matter of fact, the network of complex relationships among the factors affecting social connectedness is clearly explained in this study. It is thought that this research will contribute to applied and theoretical studies related to social connectedness, peer relations, social anxiety, internet addiction and social intelligence. The proposed hypothetical model for social connectedness is presented in Figure 1. The hypotheses related to the model are presented below.
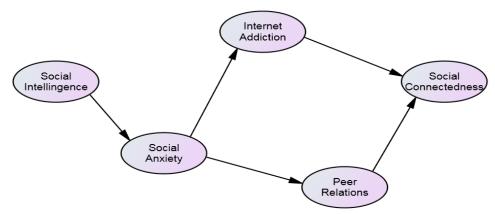
Figure 1. The Proposed Hypothetical Model for Social Connectedness

H1: Social intelligence affects social anxiety significantly, negatively and directly

H2: Social anxiety affects peer relations significantly, negatively and directly

H3: Social anxiety affects internet addiction significantly, positively and directly

H4: İnternet addiction affects social connectedness significantly, negatively and directly

H5: Peer relations affects social connectedness significantly, positively and directly.

METHOD

Research Design

This research is a descriptive research aiming to test the hypothetical model proposed for social connectedness.

Participants

This study was carried out on 1243 adolescents who had studied in 13 different high schools in Elazig/Turkey and were selected by convenience sampling method. The collected data was examined and 102 missing, carelessly filled data were not included in the study. In addition, 99 data, which indicated that the participant has never used the internet, has been removed from the study. The remaining 1042 data was examined and 51 data outliers were not included

in the study. As a result, analysis was performed on data collected from 991 students. 58.3% (n= 578) of the sample are girl and 41.7% (n= 413) are boy. The study group is between 13-18 years of age ($\bar{x}$= 15.29).

Materials

Tromso Social Intelligence Scale (TSIS). TSIS, developed by Silvera et al. (2001) and adapted to Turkish by Doğan and Çetin (2009), is a 5-point Likert type scale consisting of 21 items and three dimensions (social information processing, social skills and social awareness). As a result of the Exploratory Factor Analysis (EFA) it was seen that TSIS has a three factor structure which accounts for 45% of the total variance. This structure has been tested with CFA. As a result of the DFA, the model was found to have acceptable fit values (χ^2=621.26, p=0.00, RMSEA= .057, NFI= .92, CFI= .95, IFI= .95, RFI= .91, GFI= .92, AGFI= .91). Criteria validity of TSIS was examined with social skills. It has been seen that TSIS is associated with social skills in the expected direction and level. Analyzes of the reliability of TSIS were examined by Cronbach alpha, test-retest and test-split methods. As a result of the analyzes, it was determined that TSIS had acceptable reliability coefficients. The scale can be used in three dimensions or in unidimensional.

Social Anxiety Scale for Adolescents (SAS-A). SAS-A, developed by La Greca and Lopez (1998) and adapted to Turkish by Aydın and Tekinsav-Sütçü (2007), is a 5-point Likert type scale consisting of 22 items. As a result of the EFA it was seen that SAS-A has a three factor structure which accounts for 48% of the total variance. The criteria validity of SAS-A were examined with social phobia and state-trait anxiety. As a result of the analyzes, SAS-A was found to be highly related to these structures. The reliability of SAS-A was examined by the Cronbach alpha internal consistency reliability coefficient. The internal consistency coefficients of SAS-A varied from .88 to .68. The scores for SAS-A range from 18 to 90. High scores from SAS-A indicate a high level of social anxiety.

Friendship Qualities Scale (FQS). FQS, developed by Bukowski, Hoza & Boivin (1994) and adapted to Turkish by Erkan-Atik et al. (2014), is a 5-point Likert type scale consisting of 22 items and five dimensions. The 5-factorial structure of FQS was examined with CFA. As a result of the DFA, the model was found to have acceptable fit values (χ^2/df= (669.12/199) 3.362, p= .00,

RMSEA= .063, CFI= .97, GFI= .88, NNFI= .96). The reliability of the FQS was examined by the Cronbach alpha internal consistency reliability coefficient. As a result of analysis, internal consistency coefficients of FQS changed between .86 and .66.

Young Internet Addiction Test-Short Form (YIAT-SF). YIAT-SF, developed by Young (1998), shorted by Pawlikowski, Altstötter-Gleich & Brand, 2013) and adopted to Turkish by Kutlu, Savci, Demir & Aysan (2016), consists of 12 items and one-dimension. YIAT-SF is a 5-point Likert type scale. The Turkish version of the scale was carried out on both adolescents and university students. According to the EFA, it was observed that the scale has a single factor for both adolescents and university students. The one-factor structures of the scale were tested through the CFA. It was observed that fit index values related to the CFA have a good fit for both university students (χ^2 = 144.930, df = 52, RMSEA = 0.072, RMR = 0.70, GFI = 0.93, AGFI = 0.90, CFI = 0.95, IFI = 0.91) and adolescents (χ^2 = 141,934, df = 51, RMSEA = 0.080, GFI = 0.90, CFI = 0.90, IFI = 0.90). The Cronbach Alpha reliability coefficient was observed to be 0.91 for university students and 0.86 for adolescents. The test–retest reliability values were observed to be 0.93 for university students and 0.86 for adolescents. High scores obtained from the scale indicate high levels of internet addiction. There are no reverse score items in the scale.

Social Connectedness Scale (SCS). SCS, developed by Lee and Robbins (1995) and adapted to Turkish by Duru (2007), is consisting of eight items and one-dimension. The SCS is assessed with a rating of 6. As a result of EFA, Turkish adaptation of SCS was seen to be formed from one dimension. Criteria validity of SCS was assessed by Social Provision Scale, UCLA Loneliness Scale and Life Satisfaction Scale. As a result of the criterion-related validity, it is seen that SCS is related to these scales in the expected direction and level. The Cronbach's α internal consistency reliability coefficient of the SCS was .90 and the test-retest reliability coefficient was .90. High scores on the scale indicate high social connectedness. High scores on the scale indicate high social connectedness; low scores indicate low social connectedness.

Procedure and Data Analysis

In this study data was collected after the ethics and application approval were received. The research data was collected from volunteer students from 13 high schools in Elazığ province during the academic year of 2015-2016. It was observed that the application lasted on average 30 minutes. As a result of the application, data was collected from 1243 students. The collected data was examined and 102 missing, carelessly filled data was not included in the study. In addition, 99 data indicating that you have never used the internet has been removed from the study. The remaining 1042 data was examined and 51 data outliers were not included in the study. As a result, analysis was performed on data collected from 991 students. Data in the study was analyzed with AMOS and SPSS packet programs. Prior to the analysis, the data set was examined in terms of outliers, single and multivariate normality, linearity, multicollinearity, and sample size. As result of the analysis, it is seen that the data set meets the assumptions of single and multivariable normality, linearity and multicollinearity. In addition, the sample is large enough to carry out this research. Taking all these findings into consideration, the Maximum Likelihood method was used in the measurement models and structural models. The measurement models and structural models were examined with the fit indexes χ^2/df, RMSEA, GFI, AGFI, CFI, IFI and TLI (NNFI). The acceptability limits for fit indices are presented in Table 1.

Table 1. *Acceptability Limits and Fit Indices*

Indices	Acceptability Limits
χ^2/df	≤5 acceptable fit, ≤3 perfect fit
RMSEA	≤ .10 weak fit, ≤ .08 good fit, ≤ .05 perfect fit
GFI	.85-.89 acceptable fit, ≥ .90 good fit
AGFI	.85-.89 acceptable fit, ≥ .90 good fit
CFI	≥ .90 acceptable fit, ≥ .95 good fit, ≥ .97 perfect fit
IFI	≥ .90 acceptable fit, ≥ .95 good fit, ≥ .97 perfect fit
TLI (NNFI)	≥ .90 acceptable fit, ≥ .95 good fit

(Table 1 was prepared with reference to Brown, 2006; Cokluk, Sekercioglu & Buyukozturk, 2012; Hu & Bentler, 1999; Kelloway, 2015; Kline, 2011; Raykov & Marcoulides, 2008; Meydan & Şeşen, 2011; Schumacker & Lomax, 2004; Schermelleh-Engel et al., 2003, Sümer, 2000; Şimşek, 2007; Tabachnick & Fidell, 2013; Thompson, 2004).

RESULTS

Gender Differences

In the analysis of gender differences (t test), social intelligence, peer relations and social connectedness variables showed a significant differentiation in favor of female adolescents. There are no significant differences in internet addiction and social intelligence according to gender. Considering this, the hypothetical model was tested in the general sample, girl sample and boy sample.

Measurement Models

The measurement model of Tromso Social Intelligence Scale shows good fit in the general sample [χ^2= 608.243, df= 183, χ^2/df= 3.324, RMSEA= .048; GFI= .94, AGFI= .93, CFI= .91, IFI= .91, TLI (NNFI)= .90], girl sample [χ^2= 429.078, df= 182, χ^2/df= 2.319, RMSEA= .048; GFI= .93, AGFI= .92, CFI= .91, IFI= .91, TLI (NNFI)= .90] and boy sample [χ^2= 418.454, df= 183, χ^2/df= 2.287, RMSEA= .056; GFI= .91, AGFI= .89, CFI= .87, IFI= .87, TLI (NNFI)= .86].

The measurement model of Social Anxiety Scale for Adolescent shows good fit in the general sample [χ^2= 560.487, df= 132, χ^2/df= 4.246, RMSEA= .057, GFI= .94, AGFI= .92, CFI= .95, IFI= .95, TLI (NNFI)= .95], girl sample [χ^2= 359.813, df= 132, χ^2/df= 2.726, RMSEA= . 055, GFI= .95, AGFI= .92, CFI= .96; IFI= .96, TLI (NNFI)= .95] and boy sample [χ^2= 302.616, df= 130, χ^2/df= 2.328, RMSEA= .057, GFI= .92, AGFI= .90, CFI= .95, IFI= .95, TLI (NNFI)= .94].

The measurement model of Friendship Qualities Scale shows good fit in the general sample [χ^2= 807.764, df= 204, χ^2/df= 3.960, RMSEA= . 055, GFI= .93, AGFI= .91, CFI= .96; IFI= .96, TLI (NNFI)= .95], girl sample [χ^2= 544.360, df= 202, χ^2/df= 2.695, RMSEA= .054, GFI= .92, AGFI= .90, CFI= .96, IFI= .96, TLI (NNFI)= .95] and boy sample [χ^2= 444.320, df= 204, χ^2/ df= 2.178, RMSEA= .053, GFI= .91, AGFI= .89, CFI= .95, IFI= .95, TLI (NNFI)= .95].

The measurement model of Young Internet Addiction Test-Short Form shows good fit in the general sample [χ^2= 218.914, df= 52, χ^2/df= 4.210; RMSEA= .057; GFI= .97; AGFI= .95; CFI= .96; IFI= .96, TLI (NNFI)= .95], girl sample [χ^2= 159.917, df= 52, χ^2/df= 3.075; RMSEA= .060; GFI= .96; AGFI= .93; CFI= .96; IFI= .96, TLI (NNFI)= .95] and boy sample [χ^2=

136.448, df= 52, χ^2/df= 2.624; RMSEA= .063; GFI= .95; AGFI= .92; CFI= .95; IFI= .95, TLI (NNFI)= .94].

Finally, The measurement model of Social Connectedness Scale shows good fit in the general sample [χ^2= 117.148, df= 17, χ^2/df= 6.891, RMSEA= .077; GFI= .97, AGFI= .94, CFI= .98, IFI= .98, TLI (NNFI)= .97], girl sample [χ^2= 61.479, df= 17, χ^2/ df= 3.616, RMSEA= .067; GFI= .97, AGFI= .94, CFI= .99, IFI= .99, TLI (NNFI)= .98] and boy sample [χ^2= 62.138, df= 17, χ^2/df= 3.655, RMSEA= .080; GFI= .96, AGFI= .92, CFI= .98, IFI= .98, TLI (NNFI)= .97].

Correlations

As shown in Table 2, except for the correlation value between peer relations and internet addiction (r = -.05; p> .05), all binary correlations are statistically significant.

Table 2. *Correlations of Latent Variables*

	Social Intelligence			Social Anxiety			Peer Relations			Internet Addiction			Social Connectedness		
	General	Girl	Boy	General	Girl	Boy	General	Girl	Boy	General	Girl	Boy	General	Girl	Boy
Social Intelligence	1	1	1	-.48**	-.47**	-.49**	.30**	.20**	.33**	-.33**	-.33**	-.34**	.40**	.40**	.40**
Social Anxiety				1	1	1	-.15**	-.16**	-.12*	.33**	.30**	.38**	-.37**	-.39**	-.33**
Peer Relations							1	1	1	-.10**	-.05	-.14**	.34**	.34**	.32**
Internet Addiction										1	1	1	-.29**	-.26**	-.34**
Social Connectedness													1	1	1

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

Structural Models

The proposed hypothetical models for social connectedness are presented in Figure 2, 3, 4.
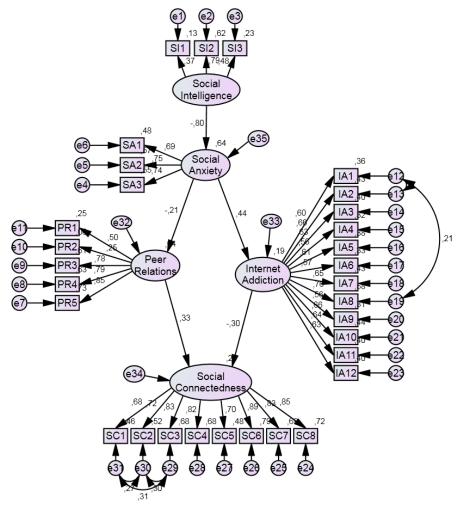

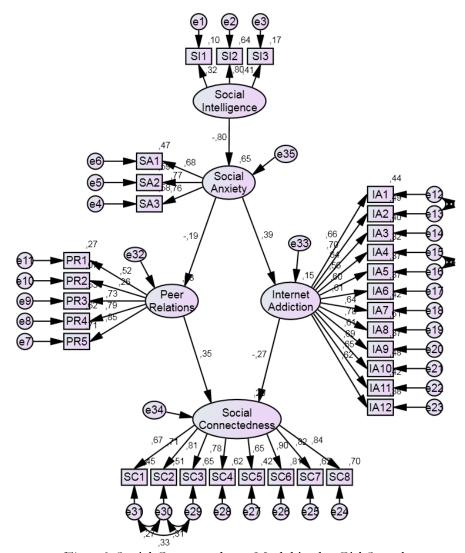*Figure 2.* Social Connectedness Model in the General Sample

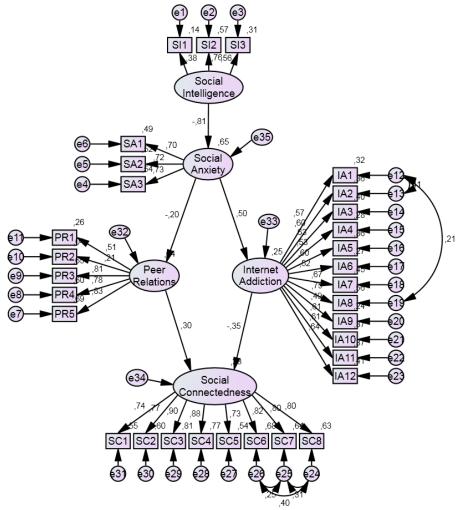*Figure 3.* Social Connectedness Model in the Girl Sample

Figure 4. Social Connectedness Model in the Boy Sample

The fit indices related to hypothetical models were in the general sample, χ^2= 1414.453, df= 424, χ^2/df= 3.336, RMSEA=. 049, GFI= .91, AGFI= .90, CFI= .93; IFI= .93, TLI (NNFI)= .92 in the girl sample χ^2= 1055.944, df= 424, χ^2/df= 2.490, RMSEA=. 051, GFI= .90, AGFI= .88, CFI= .92; IFI= .92, TLI (NNFI)= .92 and in the boy sample χ^2= 807.955, df= 424, χ^2/df= 1.906, RMSEA= .047, GFI= .89, AGFI= .88, CFI= .94; IFI= .94, TLI (NNFI)= .93.

All paths in the models are statistically significant at .001. When the path coefficients in hypothetical models were examined, the path coefficient between social intelligence and social anxiety was -80 in the general sample, -80 in the girl sample and -81 in the boy sample. The path coefficient between social anxiety and peer relations was -21 in the general sample, -19 in the girl sample and -20 in the boy sample. The path coefficient between social anxiety and internet addiction was .44 in the general sample, .39 in the girl sample and .50 in the boy sample. The path coefficient between peer relations and social connectedness was .33 in the general sample, .35 in the girl sample and .30 in the boy sample. Finally, the path coefficient between internet addiction and social connectedness was -30 in the general sample, -27 in the girl sample and -35 in the boy sample. When the differences between the path coefficients in the three samples are evaluated as a whole, it is seen that social intelligence, social anxiety and internet addiction are more powerful predictors in the boy sample. Hypothetical model's standardized regression values and explained variance are presented Table 3.

Table 3. *Hypothetical Model's Standardized Regression Values and Explained Variance*

	General Sample		Girl Sample		Boy Sample	
	λ	R²	λ	R²	λ	R²
Peer Relations → Social Connectedness	.33	.21	.35	.20	.30	.23
İnternet Addiction → Social Connectedness	-.30		-.27		-.35	
Social Intelligence → Social Anxiety	-.80	.64	-.80	.65	-.81	.65
Social Anxiety → İnternet Addiction	.44	.19	.39	.15	.50	.25
Social Anxiety → Peer Relations	-.21	.04	-.19	.03	-.20	.04
Social Intelligence → SI1	.37	.13	.32	.10	.38	.14
Social Intelligence → SI2	.79	.62	.80	.64	.76	.57
Social Intelligence → SI3	.48	.23	.41	.17	.56	.31
Social Anxiety → SA1	.69	.48	.68	.47	.70	.49
Social Anxiety → SA2	.75	.57	.77	.59	.72	.52
Social Anxiety → SA3	.74	.55	.76	.58	.73	.54
Peer Relations → PR1	.50	.25	.52	.27	.51	.26
Peer Relations → PR2	.25	.06	.26	.07	.21	.04
Peer Relations → PR3	.78	.61	.73	.53	.81	.65
Peer Relations → PR4	.79	.63	.79	.62	.78	.60
Peer Relations → PR5	.85	.73	.85	.72	.83	.69
İnternet Addiction → IA1	.60	.37	.66	.44	.57	.32
İnternet Addiction → IA2	.66	.43	.70	.49	.60	.36
İnternet Addiction → IA3	.63	.40	.64	.40	.63	.40
İnternet Addiction → IA4	.56	.32	.56	.32	.53	.28
İnternet Addiction → IA5	.61	.38	.60	.37	.60	.36
İnternet Addiction → IA6	.57	.33	.61	.37	.52	.27
İnternet Addiction → IA7	.65	.43	.65	.42	.67	.45
İnternet Addiction → IA8	.76	.58	.78	.61	.75	.56
İnternet Addiction → IA9	.56	.31	.61	.37	.49	.24
İnternet Addiction → IA10	.66	.44	.69	.48	.61	.37
İnternet Addiction → IA11	.64	.40	.65	.42	.61	.37
İnternet Addiction → IA12	.63	.40	.62	.38	.64	.41
Social Connectedness → SC1	.68	.46	.67	.45	.74	.55
Social Connectedness → SC2	.72	.52	.71	.51	.77	.60
Social Connectedness → SC3	.83	.69	.81	.65	.90	.81
Social Connectedness → SC4	.83	.68	.79	.62	.88	.78
Social Connectedness → SC5	.70	.48	.65	.42	.73	.54
Social Connectedness → SC6	.89	.79	.90	.81	.82	.68
Social Connectedness → SC7	.83	.69	.82	.67	.80	.64
Social Connectedness → SC8	.85	.72	.84	.70	.80	.64

***p<.001

DISCUSSION

The variables related to social connectedness in the hypothetical model proposed in this study were determined by examining the research findings and theoretical explanations. Research on social connectedness can be categorized into two categories in terms of (a) contributing to social connectedness and (b) factors negatively affecting social connectedness. When the factors negatively affecting the development of social connectedness in the literature are examined, it is seen that internet addiction is an important factor. Indeed, internet addiction causes the social functioning of the individual to deteriorate and be isolated from the social point of view. For this reason, internet addiction can be considered as a factor preventing the development of social connectedness (Chou & Hsiao, 2000; McIntyre et al., 2015; Li, Li, Wang, Zhao, Bao & Wen, 2013; Mesch, 2001; Nie, 2001; Savci & Aysan, 2017b). On the other hand, positive peer relations are considered as an effective factor in the development and maintenance of social connectedness. In the literature, it has been found that high level of social connectedness is related to positive peer relations and high level of friendship (Cull, 2009; Czyz, Liu & King, 2012; Hamm & Faircloth, 2005). It is also emphasized that peer relations are a factor in improving social connectedness by protecting the individual against social isolation (Hall-Lande, Eisenberg, Christenson & Neumark-Sztainer, 2007). Considering these reasons, it is thought that internet addiction and peer relations may be factors explaining social connectedness. By evaluating theoretical explanations and research results in the literature, internet addiction and peer relations are included as a predictor of social connectedness.

Social anxiety prevents the development of positive peer relations. It is also stated that socially anxious individuals tend to use more internet. For this reason, social anxiety is thought to be a predictor of both peer relations and internet addiction. Indeed, socially anxious individuals tend to be afraid and tend to avoid the true social environment and situations. It is therefore difficult for social-anxious individuals to interact with their peers. In addition, socially anxious individuals view internet environments as more secure than real social environments. Socially anxious individuals are less afraid of being assessed negatively on the internet. Therefore, social anxious individuals spend more time on the internet. In this context, social anxiety has been modeled as a predictor of internet addiction and peer relations, taking into account theoretical explanations and research results (Erath, Flanagan & Bierman,

2007; Festa & Ginsburg, 2011; Heimberg et al., 1999; Ho et al., 2014; Ko, Liu, Wang, Chen, Yen & Yen, 2014; La Greca & Lopez, 1998; Tillfors et al., 2012; Yen et al., 2012; Yılmaz, 2010). Social anxiety is caused by deficiencies and inadequacies in social intelligence (empathy, social skills, social adaptation, social competence, nonverbal communication skills) (Baker & Edelmann, 2002; Beidel et al., 2014; Hampel et al., 2011; Ingman, 1999; Junttila et al., 2012; Rapee & Heimberg, 1997; Sertelin-Mercan, 2007; Spence, Donovan & Brechman-Toussaint, 1999). Therefore, it was thought that social intelligence could be an important factor in the explanation of social anxiety. Taking into account theoretical explanations and research findings, social intelligence has been modeled as a predictor of social anxiety.

In hypothetical models, the strongest direct effect was observed among the variables of social intelligence and social anxiety in all three samples (general, female and male). In all three samples, social intelligence predicts social anxiety negatively. This result of the research is similar to many research findings in the literature (Beidel et al., 2014; Junttila et al., 2012; Sertelin-Mercan, 2007; Cartwright-Hatton, Tschernitz & Gomersall, 2005). According to Leary and Kowalski (1995), social anxiety arises from anxieties about the self-presentation of the individual. Individuals who feel deficient in self-presentation are more likely to report social anxiety. According to Spence et al., (1999) individuals with social skills deficits have negative perceptions about social situations and events. Socially anxious individuals are more susceptible to fear and avoidance in social situations and environments. Therefore, social skills are critically affecting social anxiety. Baker and Edelmann (2002) emphasize that socially anxious individuals have difficulty in establishing eye contact, using gestures and mimics and expressing themselves. According to Halford and Foddy (1982), lack of social skills causes the individual to instantly worry about social performance and to avoid and fear from the social environment.

In this study, it has been seen that social anxiety affects internet addiction negatively. This finding is similar to many research results (Campbell, Cumming & Hughes, 2006; Caplan, 2007; Erwin, Turk, Heimberg, Fresco & Hantula, 2004; Ho et al., 2014; Yılmaz, 2010). There are many researches in the literature about which psychological factors are influenced or caused by internet addiction. Among these factors, social anxiety has come to the forefront in a striking way. According to Lee and Stapinski, socially anxious individuals prefer online communication more frequently in terms of fear of negative evaluation, better quality of relationship development and better self-

control (Lee & Stapinski, 2012). This makes social-anxious individuals vulnerable to problematic internet use. This situation causes the social anxious individual to spend a lot of time on the internet. Similarly, Erwin et al. (2004) emphasize that socially anxious individuals often prefer online communication in order to minimize the threats to face-to-face communication. Therefore, it can be said that the social anxious individuals are a risk group in terms of problematic internet use. According to Sheldon, socially anxious individuals are lonely because of fear and avoidance behaviors in the social environment (Sheldon, 2008). Social-anxious individuals are turning to online environments to satisfy their sense of loneliness. This situation causes the social anxious individuals to develop an internet addiction.

In this study, it was found out that peer relations are affecting social connectedness positively. This finding is similar in many studies in the literature (Berndt, 2002; Drolet & Arcand, 2013; Hamm & Faircloth, 2005; Lee et al, 2001; Owen, Fincham & Manthos, 2013). Peer relations in adolescence have critical effects on social development. The quality of peer relations is regarded as an important predictor of social and emotional well-being in adolescents. In addition, loneliness is an important risk in terms of adolescents lacking peer relations. Adolescents with positive peer relationships can be positively connected to the society. Lack of peer relationships in adolescence is a risk factor for the development and maintenance of social connectedness (Berndt, 2002; Brown & Larsen, 2009; Rubin, Bukowski & Parker, 2007). Positive peer relationships facilitate solving the loneliness of the adolescent and making it feel as a meaningful part of the relationship with the peer groups and the society (Margalit, 2010). Indeed, the real social world offers many opportunities for adolescents to develop peer relationships. Adolescents who are included in peer groups in the real social world feel the sense of belonging. This leads to the development of a sense of social belonging and social connectedness in adolescents. Therefore, peer groups of adolescents are extremely important in terms of providing emotional closeness and social support (Hall-Lande et al., 2007).

In this study, it was found out that internet addiction affects social connectedness negatively. Many studies have gotten similar results (Li et al., 2013; McIntyre et al., 2015; Mesch, 2001; Nie, 2001). Some researchers in the literature have found that the internet has contributed positively to friendship by strengthening friendship relationships (Lin & Tsai, 1999), facilitating communication and communication (Kraut, Kiesler, Boneva, Cummings,

Helgeson & Crawford, 2002), allowing new social networks to develop (Parks & Roberts, 1998; Quinn & Oldmeadow, 2012), while some researchers have pointed out that intensive internet use causes Internet addiction and internet addiction negatively affects social connectedness (Hu,2009; Shen & Williams, 2011). Although the use of the Internet has been effective to some extent in the development of social connectedness, the use of the Internet causes decline in real social experiences. This affects the development of social connectedness negatively or reduces the level of existing social connectedness. Shen and Williams emphasize that intense internet use leads to a decline in social connectedness by reducing real social interactions (Shen & Williams, 2011). Similarly, Mesch (2001) notes that intense internet use in adolescents negatively affects interpersonal relationships and leads to social isolation. LaRose, Eastin and Gregg (2001) compared internet environments to living alone in crowded environments. This analogy summarizes the damage of internet environments on social connectedness. Although online environments facilitate social communication, communication and information access, online environments lack real interpersonal relationships. In this context, Morahan-Martin and Schumacher (2000) point out that individuals with pathological internet use relieve their social and emotional needs online. Therefore, Morahan-Martin and Schumacher (2000) consider online environments as Prozac of social communication in terms of pathological users.

In this study, it was found out that, social anxiety affects peer relations negatively. Similar results have been obtained in a number of surveys (Erath et al., 2007; Flanagan, Erath & Bierman, 2008;La Greca & Harrison, 2005; La Greca & Lopez, 1998; Tillfors et al., 2012). Tillfors et al. (2012) argue that social anxiety in adolescents reduces peer acceptance and social support; he emphasizes that it increases his peer bullying. Similarly according to Greco (2002), social anxiety negatively affects acceptance, friendliness and close relationships development by friends. Therefore, social anxiety in adolescents is considered as a blocking factor for developing positive peer relationships. Indeed Greco (2002) states that children who cannot develop positive relationships with their peers and who are rejected by their peers have a high level of social anxiety, suggesting that these children are inadequate in social skills and academic sense and have internalization difficulties. Therefore, it is a low possibility that adolescents with social anxiety symptoms have positive peer relations.

Modifications have been made in measurement models. In addition, the modifications in the measurement models have been included in the models. This may affect the generalization of the results of the research in the negative direction. Therefore, the proposed hypothetical model should be tested in different samples. In the proposed hypothetical model, causality based relationships can be examined by experimental, longitudinal and qualitative research. All of the latent variables in the model were measured by self-report scales. There are some limitations to self-report scales in the literature. For this reason, the hypothetical models proposed can be tested using scales to report to others. In this study, data was collected by means of the convenience sampling method. The proposed hypothetical model can be tested using different sampling methods. Finally, this research was carried out on adolescents. The proposed hypothetical model can also be tested on different age groups.

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Yazar Katkıları / Author Contributions

Araştırmanın her aşamasına yazarlar ortak katkı sunmuştur. Araştırma ortak sorumluluk anlayışı çerçevesinde yürütülmüştür.

The authors equally contributed to every stage of the study. The study was conducted in a common sense of collective responsibility.

Çıkar Çatışması / Conflict of Interest

Yazarlar tarafından çıkar çatışmasının olmadığı rapor edilmiştir.

No conflict of interest was reported by the authors.

Etik Bildirim / Ethical Standards

Bu çalışma için etik kurul onayı alındı. Yazarlar çalışmanın Helsinki Deklarasyonuna uygun olarak yapıldığını bildirmiştir.

Ethics committee approval was obtained for this study. The authors report that the study was conducted in accordance with the Helsinki Declaration.

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Genişletilmiş Özet

Giriş: Bu araştırmanın amacı ergenlerin sosyal zekâ, sosyal kaygı, akran ilişkileri, internet bağımlılığı ve sosyal bağlılık düzeyleri arasındaki ilişkileri incelemektir. Bu genel amaç doğrultusunda literatürde yer alan kuramsal açıklamalar ve araştırma sonuçları dikkate alınarak sosyal bağlılık için geliştirilen hipotetik model test edilmiştir. Önerilen hipotetik modelde, sosyal zekânın sosyal kaygı; sosyal kaygının, akran ilişkileri ve internet bağımlılığı; akran ilişkileri ve internet bağımlılığının, sosyal bağlılık üzerindeki doğrudan etkisine ilişkin hipotezler öne sürülmüştür.

Yöntem: Bu araştırma 578'i kız ve 413'ü erkek olmak üzere internet kullanan 991 ergen üzerinde gerçekleştirilmiştir. Araştırmada veri toplama araçları olarak Tromso Sosyal Zekâ Ölçeği, Ergenler için Sosyal Kaygı Ölçeği, Akran İlişkileri Ölçeği, Young İnternet Bağımlılığı Testi Kısa Formu, Sosyal Bağlılık Ölçeği ve Kişisel Bilgi Formu kullanılmıştır. Önerilen hipotetik model, araştırma verilerinin yapısal modellerin ön şartlarından normallik, doğrusallık, çoklu bağlantı problemi, aykırı değerler ve örneklem büyüklüğü kriterlerini karşıladığı dikkate alınarak Maximum Likelihood yöntemi ile test edilmiştir.

Sonuç: Önerilen hipotetik model test edilmeden önce her bir örtük değişkenin yapısal modellerde kullanılabilecek yeterlikte olup olmadığı, ölçüm modelleri ile test edilmiştir. Ölçüm modelleri Doğrulayıcı Faktör Analizi (DFA) aracılığıyla gerçekleştirilmiştir. DFA sonucunda her bir örtük değişkene ait ölçüm modellerinin kabul edilebilir uyum değerlerine sahip olduğu saptanmıştır. Ardından önerilen hipotetik model genel örneklemde test edilmiştir. Analiz sonucunda hipotetik modele ait bütün yolların .001 düzeyinde istatistiksel olarak anlamlı olduğu görülmüştür. Hipotetik modele ait uyum indeksleri χ^2= 1414.453, sd= 424, χ^2/sd= 3.336, RMSEA= .049, GFI= .91, AGFI= .90, CFI= .93; IFI= .93, TLI (NNFI)= .92 olarak bulunmuştur. Bu bulgular önerilen hipotetik modelin genel örneklemde araştırma verileri ile iyi uyuma sahip olduğunu göstermektedir.

Önerilen hipotetik modelin örtük değişkenleri ve örtük değişkenlere ait alt boyutların cinsiyete göre farklılaşıp farklılaşmadığı ilişkisiz örneklemler için t testi ile incelenmiştir. Analiz sonucunda sosyal zekâ, akran ilişkileri ve sosyal bağlılık değişkenlerinde kız ergenlerin lehine bir farklılaşma olduğu görülmüştür. Cinsiyete göre farklılaşan değişkenler dikkate alınarak, önerilen hipotetik modelin genel örneklemin yanı sıra hem kız ergen örnekleminde hem de erkek ergen örnekleminde test edilmesine karar verilmiştir.

Önerilen hipotetik model kız ergen ve erkek ergen örnekleminde test edilmeden önce her iki örneklemde örtük değişkenlerin ölçüm modelleri test edilmiştir. Ölçüm

modelleri DFA aracılığıyla gerçekleştirilmiştir. DFA sonucunda her bir örtük değişkene ait ölçüm modellerinin kabul edilebilir uyum değerlerine sahip olduğu saptanmıştır. Ardından önerilen hipotetik model kız ergen ve erkek ergen örnekleminde ayrı ayrı test edilmiştir. Analiz sonucunda hipotetik modele ait bütün yolların iki örneklemde de .001 düzeyinde istatistiksel olarak anlamlı olduğu görülmüştür. Hipotetik modele ait uyum indeksleri kız ergen örnekleminde χ2= 1055.944, sd= 424, χ2/sd= 2.490, RMSEA= .051, GFI= .90, AGFI= .88, CFI= .92; IFI= .92, TLI (NNFI)= .92 ve erkek ergen örnekleminde χ2= 807.955, sd= 424, χ2/sd= 1.906, RMSEA= .047, GFI= .89, AGFI= .88, CFI= .94; IFI= .94, TLI (NNFI)= .93 olarak saptanmıştır. Bu bulgular önerilen hipotetik modelin genel örneklemin yanı sıra kız ergen ve erkek ergen örnekleminde de doğrulandığını göstermektedir.

Tartışma & Sonuç: Araştırmada elde sonuçlar bir bütün olarak değerlendirildiğinde, hem genel örneklemde hem kız ergen örnekleminde hem de erkek ergen örnekleminde sosyal zekânın sosyal kaygı, sosyal kaygının akran ilişkileri ve internet bağımlılığı, akran ilişkileri ve internet bağımlılığının sosyal bağlılığı anlamlı düzeyde ve doğrudan etkilediği saptanmıştır. Diğer bir ifadeyle hipotetik model üç örneklemde doğrulanmıştır.