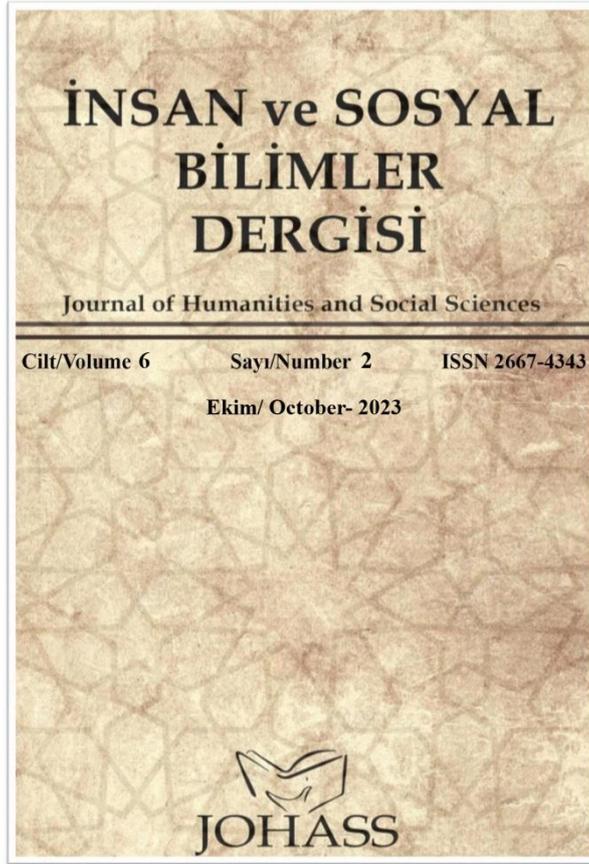


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**Digital Game Addiction Tendency and Social Competence in Preschool  
Children: The Mediating Role of Self-Regulation**

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## **Digital Game Addiction Tendency and Social Competence in Preschool Children: The Mediating Role of Self-Regulation**

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### **Abstract**

The aim of this study is to investigate the relationship between digital game addiction tendency and social competence in preschool children and the mediating role of self-regulation skills in this relationship. The sample included 310 preschool children aged 4-6 years (150 girls and 160 boys) studying in three kindergartens in the city center of Aydın. Digital Game Addiction Tendency Scale, Self-Regulation Skills Scale for 4–6-Year-Old Children (Mother Form), Social Competence and Behavior Evaluation-30 Scale - Social Competence Subscale, and Personal Information Form were used to collect the data. Descriptive statistics, Pearson product-moment correlation, and structural equation modeling were used to analyze the data. The results of the Pearson product-moment correlation analysis showed that digital game addiction tendency was negatively correlated with self-regulation skills and social competence in preschool children. Moreover, the results indicated that there was a positive association between self-regulation skills and social competence in preschool children. The results of the structural equation model analysis revealed that digital game addiction tendency was directly related to self-regulation skills and indirectly related to social competence. Self-regulation skills have a full mediating role in the relationship between digital game addiction tendency and social competence. The research revealed the negative effects of digital game addiction on self-regulation skills which in turn affects social competence in preschool children. The results suggest that the effects of digital game addiction and self-regulation skills should be considered when assessing the social skills of preschool children.

**Keywords:** Digital game addiction, social competence, self-regulation, preschool period

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## **Introduction**

Today, digital devices involved in the daily lives of children from a relatively young age. Therefore, digital devices and their effects on young children are crucial areas of research. However, there is a limited amount of research available on this topic. For this reason, there is a need to conduct a national study on how digital game addiction affects preschoolers in our country. According to the report "Children with Statistics" by the Turkish Statistical Institute (2021), the frequency of internet use among children aged 6-10 years is 78.1% and mobile phones are mostly used for playing games. Similarly, a study conducted by Bulut (2018) reported that children mostly use digital devices for watching cartoons and playing online games.

Digital game addiction is characterized as an overuse and uncontrollable usage that causes social and emotional problems in people's lives and interferes with what they need to do in their daily lives (Lemmens, Valkenburg, & Peter, 2009). The World Health Organization (WHO) and the American Psychiatric Association (APA) consider gaming disorder to be a mental health problem. The third section of the Diagnostic and Statistical Manual of Mental Disorders – 5 (DSM-5), published by the APA (2013), included "Internet gaming disorder" under the title "Condition for Further Study". In addition, the WHO (2019) recognized "gaming disorder" in the International Statistical Classification of Diseases, 11th revision (ICD-11).

Over the past years, as children's digital access has increased, uncontrolled and unconscious digital device use has begun, and the concepts of digital addiction, screen addiction, and digital game addiction have emerged (UNICEF, 2017). In the preschool period, children lack the ability to control their usage of digital games due to low levels of self-control. This situation increases the likelihood of children showing addiction tendencies (Horzum, Ayas, & Çakır Balta, 2008). Budak (2020) investigated digital game addiction among preschool children and found that one in five children had a tendency to become a digital game addict.

As digital game addiction in the preschool years has increased in recent years, there has been an increased interest in studies that examine digital game addiction in this period. However, there are still fewer investigations of digital game addiction in preschool children compared to primary, middle, or high school students. In the literature, some previous works have investigated the relationship between digital game addictive tendencies in the preschool

period and some factors such as parenting (Bağatarhan, 2023; Kay, 2022; Tatsiopoulou et al., 2022) or problem behaviors (Budak, 2020; Cheng & Cao, 2023). However, studies using structural equation modeling in this context are more limited. In order to focus on studies aimed at preventing digital game addiction in the preschool years, there is a need to conduct studies that more comprehensively examine the variables on addiction to digital games. The data obtained from these studies should be used as a source for prevention studies.

### **Digital Game Addiction Tendency and Self-Regulation**

Self-regulation is identified as a structure in which individuals greatly increase the flexibility and adaptability of their behaviors according to the environment and situation they are in and adjust their behaviors according to these situations (Baumeister & Vohs, 2007). According to the behavioral approach, self-regulation is learning self-control (Bronson, 2000). In social cognitive learning theory, Bandura highlights the value of self-regulation capacity. The process of self-regulation involves self-reinforcement and self-punishment. In this way, an individual controls his or her behaviors (Zhou & Brown, 2017). Self-regulation comprises cognitive, behavioral, and emotional processes. It becomes functional with abilities such as controlling impulses and maintaining attention. Therefore, self-regulation is considered to be the ability to suppress, stimulate, or modify attention or behavior as a response to a condition (Eisenberg, Smith et al., 2009). In explanations about self-regulation, the link between self-regulation and the capacity to manage behaviors is emphasized. Therefore, it is predicted that digital game addiction would be negatively related to self-regulation skills. As a matter of fact, a study revealed that self-regulation is negatively related to pathological gaming addiction (Liau et al., 2015). Another study conducted by Duran (2019) showed that self-regulation is negatively related to online gaming addiction among children. As self-regulation skills decrease, online game addiction increases. However, no research was identified that examined the relationship between self-regulation with digital game addiction tendency among preschool children.

### **Self-Regulation and Social Competence**

According to the social cognitive approach, self-regulation is a multistep process in which self-created thinking, affect, and actions are organized and adapted to achieve personal goals (Zimmerman, 2000). In social cognitive theory, self-regulation requires the individual to use internal mechanisms that include self-motivation, self-control, and self-regulation of

behavior. In this framework, self-regulation is considered as the capacity to control oneself in regulating one's life and behavior in society (Bandura, 1999; Senemoğlu, 2012). Studies have demonstrated a positive link between self-regulation and social competence in preschool years. In a research carried out by Diener and Kim (2004) to identify predictors of social competence, self-regulation was found as a predictor of social competence. Another study conducted by Işıksolu Aysel and Tok (2022) investigated the association of self-regulation with social competence among early childhood children.

### **Digital Game Addiction Tendency and Social Competence**

Growing addiction to digital games in young children negatively affects social and emotional development (Şenol, Şenol, & Can Yaşar, 2023). Children with poor social and emotional development experience problems such as communication difficulties, social adjustment problems, or concentration difficulties (Stavrou, 2018). Similarly, social skills such as anger control and social adjustment have been found to decline as problematic media use increases in preschool children (Beadini, 2023).

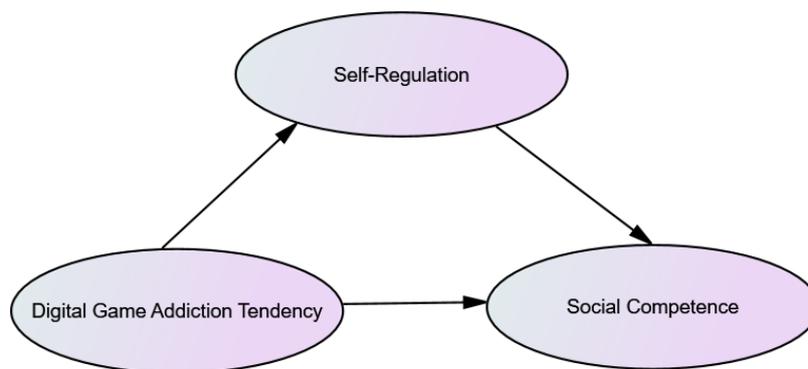
Research has shown that there is a link between digital game addiction and social competence and that digital game addiction reduces social competence. A study carried out by Budak (2020) indicated that as digital game addiction increased in preschool children, social competence decreased, but aggression, anxiety, and withdrawal increased. Another research conducted by Budak (2017) to examine the perspectives of teachers and mothers on digital games revealed that the biggest difference between digital and traditional games is related to social skills and that digital games reduce children's socialization. In another study investigating the impact of digital game addiction in pre-school children according to teachers' views, social effects stand out among the negative effects of digital addiction (Süral, 2022). According to teachers, digital game addiction causes social maladaptation among children, leading to behaviors like difficulties in communication, isolation, and alienation. Spending time in digital games without any communication prevents the development of social skills and causes social inadequacy. Although research provides evidence of the effects of digital game addiction on social competence, more research is needed on this issue. In particular, there is no study on the effect of mediating variables in the link between digital game addiction tendency and social competence. This remains an essential area to be researched.

## **Present Study**

The aim of this study is to examine the relationship between digital game addiction and social competence in preschool children and to identify the mediating effect of self-regulation in this relationship. The following three hypotheses were developed for this purpose and the model of the research is shown in Figure 1:

**Figure 1**

Research Model



**Hypothesis 1.** Digital game addiction tendency would be directly and negatively associated with self-regulation in preschool children.

**Hypothesis 2.** Self-regulation would be positively associated with social competence in preschool children.

**Hypothesis 3.** Self-regulation would mediate the relationship between digital game addiction tendency and social competence.

## **Method**

### **Model**

In the current research, the relational survey model was used to examine the relationship between social competence and digital game addiction tendency in preschool children and to test the mediating role of self-regulation in this relationship. The aim of the relational research model is the identification of the existence and degree of change of two or more variables together (Karasar, 2011).

## **Sample and Population**

The population of this study included children aged 4-6 years old who attended preschool education in kindergarten. Simple random sampling, one of the sampling methods, was used to ensure that the sample was representative of the population. In this sampling method, all units in the universe have an equal and independent chance of being selected for the sample (Büyüköztürk et al., 2012). Initially, 313 students' data were collected to form the sample; however, 3 students' data were identified as outliers and excluded from the data set. As a result, the sample included 310 children aged 4-6 years (150 girls and 160 boys) and their parents who attended three kindergartens selected using the simple random sampling method in Aydın in the 2023-2024 school year. The mean age of the children between 4 and 6 years was 4.54 (SD = 0.58).

## **Data Collection Tools**

### ***Digital Play Addiction Tendency Scale***

The Digital Game Addiction Tendency Scale was created by Budak and Işıkoğlu (2022). It is a 20-item, 5-point Likert-type scale that measures the digital game addiction tendencies of children between 4 and 6 years on the basis of their parents' opinions. The scale scores range from 20 to 100. Increasing scores on the scale indicate that the tendency of digital game addiction in children is increasing. A total score between 20-35 indicates the lowest level of digital game addiction tendency, between 36-51 indicates a lower digital game addiction tendency, between 52-67 indicates a moderate level of digital game addiction tendency, between 68-83 indicates a higher digital game addiction tendency and between 84-100 indicates a significantly greater level of digital game addiction tendency.

Exploratory factor analysis results revealed a 4-factor structure. The subscales were named “dissociation from life, conflict, constant play, and reflection on life”. Confirmatory factor analysis was used to test the 4-factor structure of the scale. The following goodness-of-fit indices were determined:  $\chi^2/df=3.40$ , AGFI=0.85, CFI=0.92, SRMR=0.52, RMSEA=0.064. Cronbach's alpha and composite reliability coefficients were used to assess the scale's reliability. The coefficients were calculated for the factors of “dissociation from life” ( $\alpha=0.88$ ; CR=0.85), “conflict” ( $\alpha=0.90$ ; CR=0.86), “constant play” ( $\alpha=0.82$ ; CR=0.81), “reflection on life” ( $\alpha=0.70$ ; CR=0.78), and the whole scale score ( $\alpha=0.93$ ; CR=0.95) (Budak & Işıkoğlu, 2022). Cronbach's alpha coefficient was computed as 0.95 in the current study.

### **Self-Regulation Skills Scale for 4–6-Year-Old Children (Mother Form)**

The Self-Regulation Skills Scale (Mother Form) was created by Erol and İvrendi (2018). It is a self-report 20-item and 5-point Likert-type scale. It is used to evaluate the 4-6-year-old children's self-regulation skills from the perspective of their parents. The validity and reliability of the scale were tested on 509 preschool children. Construct validity was assessed using concurrent criterion validity, exploratory factor analysis, and confirmatory factor analysis. According to the results of the exploratory factor analysis, the scale consisted of 4 factors explaining 61% of the total variance. These factors were identified as “attention, working memory, inhibitory control-emotion, and inhibitory control-behavior”. The goodness of fit indices were adequate based on the results of the confirmatory factor analysis:  $\chi^2/df=1.91$ , RMSEA=0.07, SRMR=0.07. The total correlations of the items in the scale were between 0.36 and 0.70. Cronbach's alpha coefficient is 0.90, concurrent validity is 0.84, and test-retest reliability is 0.77, based on the analyses of the scale. The total scale scores were used in the analysis of the study. Using the Guttman Lambda (Li) method, it was found that the reliability level varied between 0.90 and 0.96 (Erol & İvrendi, 2018). Cronbach's alpha coefficient was computed as 0.86 in the current study.

### **Social Competence and Behavior Evaluation-30 Scale – Social Competence Subscale**

The scale developed by LaFreniere and Dumas (1996) was adapted into Turkish by Çorapçı, Aksan, Arslan Yalçın and Yağmurlu (2010). The scale is comprised of 30 items and has a 6-point Likert-type structure. Exploratory factor analysis of the construct validity of the scale revealed a 3-factor structure. The 3-factor structure of the scale was tested using confirmatory factor analysis. The following goodness of fit indices were obtained:  $\chi^2/df=3.06$ , GFI=0.84, AGFI=0.81, CFI=0.84, TLI=0.83, RMSEA=0.07. The subscales consisted of 10 items each and were identified as “social competence, anxiety-withdrawal, and anger-aggression”. The social competence subscale was used in the present study. The Social Competence subscale measures children's positive skills in peer relationships, such as cooperation and conflict resolution.

For reliability of the scale, Cronbach's alpha coefficient was computed as 0.88 for the “social competence” subscale, 0.87 for the “anger-aggression” subscale, and 0.84 for the “anxiety-withdrawal” subscale (Çorapçı et al., 2010). Cronbach's alpha coefficient for the social competence subscale was computed as 0.87 in the current research.

### **Personal Information Form**

Information on gender, age, mother's education level, father's education level, and family structure of the children participating in the study was collected using the Personal Information Form.

### **Collection of Data and Analysis**

The data were collected from three kindergartens in the center of Aydın province at the beginning of the 2023-2024 school year. The data collection instruments were sent to the parents of the sampled schools after the research was announced by the teachers of the schools. The data collection forms of the parents who volunteered for the study were collected by the teachers.

Prior to analyzing the data in this study, the Mahalanobis distance was calculated for the overall scores obtained from the scales used to conduct the research, and the multiple normal distribution was examined (Çokluk, Şekercioğlu, & Büyüköztürk, 2016). After the outlier data were removed from the data set, the mean scores, standard deviation values, kurtosis, and skewness coefficients were calculated for the total scores obtained from the three scales and it was found that the data was normally distributed.

The relationships between social competence, digital game addiction tendency, and self-regulation in the preschool period were first investigated using the Pearson Product Moment Correlation Coefficient. The direct relationship between social competence and digital game addiction tendency in preschool children and the indirect relationship through self-regulation skills were examined using structural equation modeling. Prior to the structural equation modeling, the construct validity of all the scales used in the model was tested using confirmatory factor analysis.

In evaluating the model goodness of fit indices, the  $\chi^2/df$  ratio is less than 5, the CFI value is higher than 0.90 (Hu & Bentler, 1999), the GFI value is greater than 0.85 (Byrne, 1998), RMSEA and SRMR values less than 0.10 (Browne & Cudeck, 1993) were considered as acceptable fit criteria. A bootstrapping procedure (5000 bootstrapped samples, with 95% bootstrap confidence intervals) was used to examine the significance of the mediation effects of self-regulation in the structural model. Data were analyzed using IBM SPSS 23 and IBM AMOS 24.

### **Compliance with Ethical Standarts**

This research has been approved by Aydın Adnan Menderes University Social and Human Sciences Research Ethics Committee with decision number 23 at the regular meeting on 29.09.2023.

## **Findings**

### **Descriptive Statistics**

Table 1 shows descriptive statistics for gender, age, family structure, mother's and father's education, and daily Internet usage time.

**Table 1**

*Descriptive Statistics of the Demographic Variables*

	<b>f</b>	<b>%</b>	<b>M (SD)</b>
Age			4.54 (0.58)
Gender			
Girl	150	48.4	
Boy	160	51.6	
Family structure			
Two biological parent family	287	92.6	
Other	23	7.4	
Mother education			
Illiterate	1	0.3	
Literate	1	0.3	
Elementary school	19	6.1	
Middle school	29	9.4	
High school	87	28.1	
Associate degree	56	18.1	
University	102	32.9	
Advanced degree (Master or PhD Degree)	15	4.8	
Father Education			
Elementary school	31	10.0	
Middle school	37	11.9	
High school	85	27.4	
Associate degree	43	13.9	
University	87	28.1	
Advanced degree (Master or PhD Degree)	27	8.7	
Daily Internet Usage Time			
Never	60	19.4	
Half hour or less	103	33.2	
1 hour or less	75	24.2	
2 hour or less	45	14.5	
More than 2 hours	27	8.7	

*Note.* M = Mean; SD = Standard deviation. N = 310.

### The Pearson Product Moment Correlation Coefficients

The means, statistical deviations, and bivariate correlations between digital game addiction, self-regulation, and social competence were calculated and presented in Table 2.

**Table 2**

*Descriptive Statistics and Correlations*

	<b>M</b>	<b>SD</b>	<b>1</b>	<b>2</b>	<b>3</b>
1. Digital Game Addiction	42.53	15.67	1		
2. Self-Regulation	76.95	9.01	-0.28**	1	
3. Social Competence	46.78	8.38	-0.24**	0.64**	1

\*\*p < .01

The results indicated that digital game addiction was negatively associated with self-regulation ( $r = -0.28$ ,  $p < .01$ ) and social competence ( $r = -0.24$ ,  $p < .01$ ) in preschool children. Self-regulation was positively associated with social competence ( $r = 0.64$ ,  $p < .01$ ) in preschool children.

### Measurement Model

Prior to testing the structural equation model, the construct validity of the Digital Game Addiction Tendency Scale, the Self-Regulation Skills Scale for 4-6-year-olds, and the Social Competence Subscale of the Social Competence and Behavior Evaluation-30 Scale were tested with confirmatory factor analysis. Table 3 shows the results.

**Table 3**

*Confirmatory Factor Analysis Results*

<b>Measures</b>	<b><math>\chi^2/df</math></b>	<b>p</b>	<b>CFI</b>	<b>GFI</b>	<b>RMSEA</b>
Digital Game Addiction Tendency Scale	2.75	0.000	0.94	0.87	0.07
Self-Regulation Skills Scale for 4-6-year-olds	2.08	0.000	0.92	0.90	0.06
Social Competence Subscale of the Social Competence and Behavior Evaluation-30 Scale	3.95	0.000	0.92	0.92	0.09

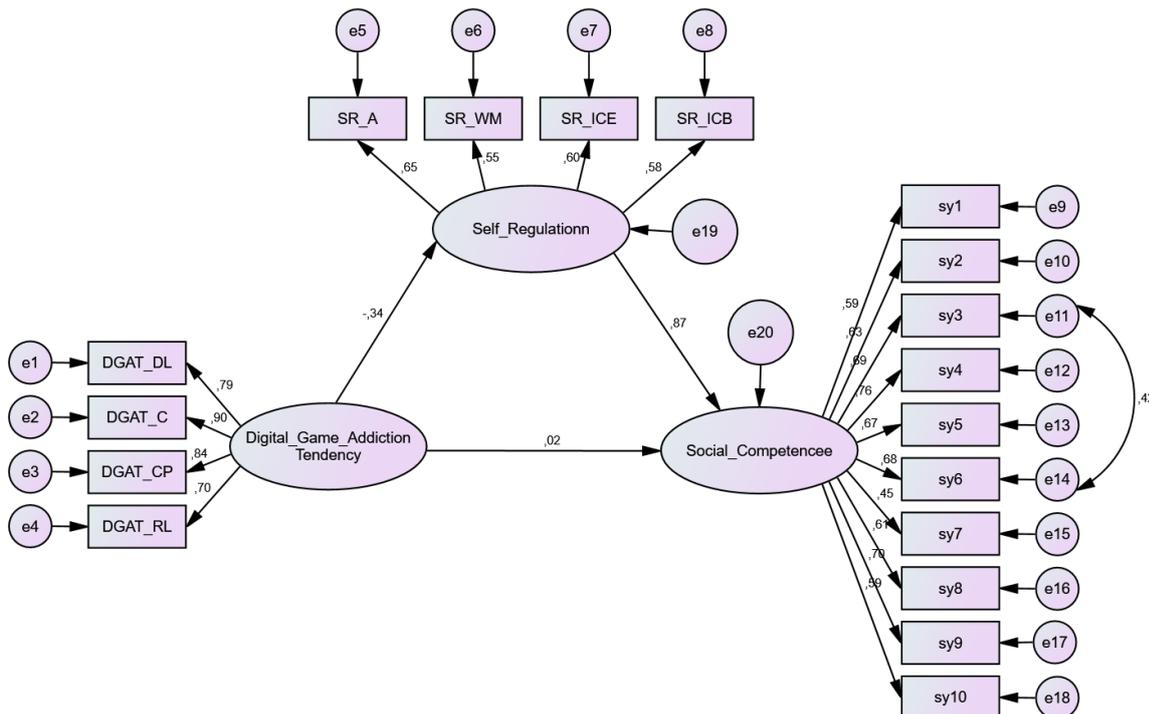
The 4-factor structure of the Digital Game Addiction Tendency Scale was assessed via confirmatory factor analysis. The obtained goodness of fit indices are at an acceptable level:  $\chi^2/df = 2.75$ ,  $p = 0.000$ ,  $CFI = 0.94$ ,  $GFI = 0.87$ ,  $RMSEA = 0.07$ . The 4-factor structure of the Self-Regulation Skills Scale for 4-6-year-olds was examined using confirmatory factor analysis. Three covariances between the error terms were included in the model, as proposed by the modification indices. The obtained fit indices were also found to be at a good level:  $\chi^2/df = 2.08$ ,  $p = 0.000$ ,  $CFI = 0.92$ ,  $GFI = 0.90$ ,  $RMSEA = 0.06$ . The structure of the Social Competence Subscale of the Social Competence and Behavior Evaluation-30 Scale was investigated by confirmatory factor analysis. A covariance between the error terms was added to the model, as proposed by the modification indices. The goodness of fit indices are at an acceptable level:  $\chi^2/df = 3.95$ ,  $p = 0.000$ ,  $CFI = 0.92$ ,  $GFI = 0.92$ ,  $RMSEA = 0.09$ .

**Structural Equation Model**

A full structural model was examined with maximum likelihood estimation. The findings of these analyses are shown in Figure 2.

**Figure 2**

*The Mediating Role of Self-Regulation in the Relationship between Digital Game Addiction Tendency and Social Competence in Preschool Children*



DGAT\_DL: Digital Game Addiction Tendency-Dissociation from Life, DGAT\_C: Digital Game Addiction Tendency-Conflict, DGAT\_CP: Digital Game Addiction Tendency-Constant Play, DGAT\_RL: Digital Game Addiction Tendency-Reflection on Life, SR\_A: Self\_Regualtion-Attention, SR\_WM: Self\_Regualtion-Working memory, SR\_ICE: Self\_Regualtion-Inhibitory Control-Emotion, SR\_ICB: Self\_Regualtion-Inhibitory Control-Behavior.

The goodness of fit indices of the model shown in Figure 2 are as follows:  $\chi^2=336.08$ ,  $df=131$ ,  $\chi^2/df=2.57$ ,  $p=0.000$ ,  $CFI=0.91$ ,  $GFI=0.89$ ,  $RMSEA=0.07$ , 90%  $RMSEA$  CI [0.062, 0.081]. The findings showed that digital game addiction tendency significantly and negatively predicted self-regulation in preschool children ( $\beta=-0.34$ ,  $p<.01$ ). According to this result, hypothesis 1 of the study was confirmed.

The results revealed that self-regulation significantly and positively predicted social competence in preschool children ( $\beta=0.87$ ,  $p<.05$ ). According to this result, hypothesis 2 of the study was confirmed.

### **Mediation Test**

Digital game addiction tendency was not directly predictive of social competence in preschool children ( $\beta=0.02$ ,  $p>.05$ ). It was examined whether digital game addiction tendency indirectly predicts social competence and whether this relationship is mediated by self-regulation for the third research hypothesis. A bootstrapping procedure was applied to determine whether the mediation effects were statistically significant.

The findings of the bootstrapping analyses revealed a significant indirect effect of digital game addiction tendency on social competence through self-regulation. Self-regulation fully mediated the relationship between digital game addiction tendency and social competence in preschool children ( $\beta=-0.30$ , 95%  $BcCI$  [-0.44 -0.20],  $p=0.004$ ). According to this result, hypothesis 3 was confirmed.

At the end of all analyses, the results of the direct, indirect, and total effects between the research variables and their levels of significance are given in Table 4.

**Table 4**

*Direct, Indirect, and Total Effects*

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Model pathways	$\beta$	95% CI	p
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		Lower bounds	Upper bounds	
<b>Direct effects</b>				
Digital Game Addiction → Self-Regulation	-0.34	-0.47	-0.24	0.004
Digital Game Addiction → Social Competence	0.02	-0.08	0.12	0.776
Self-Regulation → Social Competence	0.87	0.79	0.93	0.036
<b>Indirect effects</b>				
Digital Game Addiction → Social Competence	-0.30	-0.44	-0.20	0.004
<b>Total effects</b>				
Digital Game Addiction → Self-Regulation	-0.34	-0.45	-0.21	0.010
Digital Game Addiction → Social Competence	-0.27	-0.38	-0.14	0.010
Self-Regulation → Social Competence	0.87	0.81	0.95	0.010

## Discussion and Results

The aim of this research was to explore the association between social competence and digital game addiction tendency in preschool children and the mediating role of self-regulation in this relationship. The findings related to the research hypotheses were discussed in the context of the related literature.

The first research hypothesis is that digital game addiction tendency is directly and negatively related to self-regulation in preschool children. The findings revealed that digital game addiction tendency directly and negatively associated with self-regulation in preschool children. As a result of this finding, the first research hypothesis was supported. According to this finding, the first hypothesis of the study was supported. This result of the research is coherent with previously published research (Duran, 2019; Liao et al., 2015). A negative link between self-regulation and online gaming addiction in children was also reported by Duran (2019). Self-regulation is an individual's capacity to control and prevent his/her own impulses, cope with negative emotions, and exhibit behaviors accepted by society (Acar-Şengül & Yükselen, 2015). Social cognitive learning theory emphasizes the link between self-regulation and behavior, and self-regulation is considered the behavior control capacity (Eisenberg, Smith et al., 2009). Therefore, it seems likely that digital game addiction, which refers to the inability to control behaviors, is related to self-regulation. It can be said that the finding obtained in this research is consistent with both previous research (Duran, 2019; Liao

et al., 2015) and social cognitive learning theory (Bandura, 1999; Eisenberg, Smith et al., 2009). However, no study was found on the association between self-regulation and digital game addiction in early childhood. Further studies on this area are necessary.

The second research hypothesis is that self-regulation is positively associated with social competence in preschool children. The results revealed that self-regulation was positively related to social competence in preschool children. Thus, the second research hypothesis was confirmed. This finding of the current study is coherent with the previous research in the literature (Diener & Kim, 2004; Işıksolu Aysel & Tok, 2022). Işıksolu Aysel and Tok (2022) reported a positive association between self-regulation and social competence in preschool children. In social cognitive learning theory, self-regulation is considered as the ability to control oneself in regulating one's life and behaviors in society (Bandura, 1999; Senemoğlu, 2012). Accordingly, being able to control behaviors in social life is expected to provide more positive results in social relationships. Therefore, individuals with high self-regulation skills are likely to have high social competence. Although this study confirms this information, more studies should be conducted on this topic. In particular, few studies in the literature have examined the association between self-regulation and social competence in the preschool period. This information needs to be further examined with studies that use both quantitative and qualitative data.

The third research hypothesis is that self-regulation mediates the relationship between digital game addiction tendency and social competence. The results revealed that self-regulation was the full mediator in the relationship between digital game addiction tendency and social competence. As a result of this finding, the third research hypothesis was supported. Some studies show that there is an association between digital game addiction and self-regulation in the preschool years (Duran, 2019; Liao et al., 2015). In addition, there are some studies showing that self-regulation skills in the preschool period are positively correlated with social competence (Diener & Kim, 2004; Işıksolu Aysel & Tok, 2022). An important point here is that there is no direct link between digital game addiction and social competence. Digital game addiction tendency is related to social competence through self-regulation. In other words, self-regulation has a full mediating role in the relationship between digital game addiction tendency and social competence in preschool children. The mediating role of self-regulation in this relationship has not been examined in the literature. Therefore, this research contributed to the literature. However, more studies are needed on this topic.

In general, evaluating the research results, digital game addiction in preschool children has an impact on self-regulation and therefore social competence. Children spending too much time with digital games decreases their ability to control their behavior, that is, their self-regulation skills. Since these children spend less time in social environments due to digital games and their ability to regulate their behavior in social environments decreases, their social competence also decreases. In fact, behavioral addictions cause the child to disconnect from social life and decrease their ability to control their behavior, reducing their social competence. In order to prevent this situation, some prevention activities can be carried out, especially through parents. At this point, parent education studies can be carried out to ensure that parents should be positive role models for their children regarding the use of digital devices and that they have information about which games their children will play and for how long. This way, parents can give appropriate guidance to their children. Thus, digital game addiction can be prevented at an early stage.

### **Recommendations**

Some suggestions can be made in this research, which examines the relationship between digital game addiction tendency and social competence in preschool children and the mediating role of self-regulation in this relationship. This research was conducted with preschool children and their parents in Aydın province. In order to generalize the findings, this study can be repeated with larger samples. This study is based on the opinions of parents. A similar study might be conducted based on the opinions of teachers. In addition, this is quantitative research. In future studies, the relationships between digital game addiction, self-regulation, and social competencies in preschool children might be examined with qualitative data by carrying out interviews with teachers or parents. Additionally, the relationship between preschool children's emotion regulation skills, digital game addiction, and social competence might be examined in future studies.

### **Compliance with Ethical Standarts**

This research has been approved by Aydın Adnan Menderes University Social and Human Sciences Research Ethics Committee with decision number 23 at the regular meeting on 29.09.2023.

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