

## Research Article

# Effects of Cell Phone Dependency on Peer Attachment and Life Satisfaction among Korean Youth

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### Abstract

Physiological and psychological changes during puberty impact greatly on subjective happiness, as do pressures from parents, teachers, and peer attachment. Cell phone dependency compounds these pressures. In this study, 2,264 fifth grade elementary students were asked 25 questions pertaining to peer attachment, cell phone usage, and life satisfaction. Cronbach's alpha, Structural Equation Modelling (SEM), goodness of fit indices, and Pearson CFI correlation coefficient were used. Extremely high cell phone dependency correlated with low life satisfaction. There were positive correlations between cell phone usage and peers/family and life satisfaction, but negative correlations with peer alienation. Students increase their dependence on cell phones regardless of their peer attachment and family satisfaction. Happier students use their phone more frequently to communicate frequently with friends and family, but also for entertainment. Students with weak social support depend on this entertainment function to the point of clinical addiction. Over-dependency and cyber bullying must be addressed.

**Keywords:** Cell Phone; Cell Phone Dependence; Life Satisfaction; Peer Attachment

What are the determinants of quality of life and how do we measure them? Is quality of life high whenever we are free from distress, can express our own feelings and thoughts, and are able to discern life satisfaction [1]. Is it identical to life satisfaction, which refers to the cognitive evaluation of the degree of satisfaction by an individual in various areas of his/her own life, and self-satisfaction with the previous life path that one had performed [2]. We can be certain that quality of life and life satisfaction are subjective concept.

According to a comparative study on 26 Organization for Economic Co-operation and Development (OECD) countries, Korean students occupied the second highest place in the education sector with academic achievement, attendance, and learning desire-in other words, However, their subjective happiness index was deemed the lowest among OECD countries for five consecutive years [3]. Kim and Hong (2007) [4] reported that the Korean education system, in concert with growing pains, was the primary cause for the low Life Satisfaction level. The unhappiness and pes-

simism from school were leading to increasingly violent behavior and even suicide in extreme cases [5]. There is immeasurable pressure to perform in the classroom and on the standardized exams; however, as of late, those growing pains have become more complex and more formidable. To the chagrin of many, the age of these students of interest is becoming lower and lower [6].

The aforementioned growing pains pertain to the rapid physical and psychological development within a frequently brutal social environment known as school. Our students of interest can be forced into this process from as early as fourth grade when they enter puberty [6]. Sensitive to their bodies and peer pressure, as well as being psychologically unstable, fifth graders are an ideal target for studying life satisfaction in youth [7]. What complicates the growing pains is the proliferation of the cell phone, around which these children's lives revolve.

The cell phone has long become the link to kindling and nurturing relationships, providing a medium for contact and intimacy [8]. With diehard passion to secure their places in various peer groups, children and their cell phones have become inseparable [9]. However, merely talking on or texting through the phone with

someone is no longer the primary function. With constant upgrades in technology, the cell phone has evolved into not only a powerful library and entertainment center, but also an indispensable medium of communication via diverse social networking platforms.

However, there is a very dark side to the cell phone among these children. Cyber bullying can ostracize a child from peer groups instantly, as alienation or permanent elimination among students of all ages is rampant in Korea (Kim & Hwang, 2012; Na, 2001; Sim, 2003) [10,11,12]. With video and computer games, addiction is always an issue. As the possession rate increases, so does the intensity of addiction (Koo, 2010; Lee, 2010; Lee, & Myung, 2007) [13,14,15]. Given the current roles that the cell phone plays, it is an excellent barometer for measuring life satisfaction among children. Han, Ma, Choi and Hong (2011)[16] determined that what is important is how they use the capabilities of the cell phone and the subsequent impact on the quality of their life. The research objective here, then, is to examine the direct and mediated effects of cell phone dependency on life satisfaction among Korea fifth graders.

## Method

The 2,264 students in our sample were 11-year-old fifth graders representing sixteen cities and provinces nationwide with the data culled from the Korea Children & Youth Panel Surveys (KCYPs) conducted by the National Youth Policy Institute.

Gender	Frequency	%
Male	1180	52.1
Female	1084	47.9
Total	2264	100.0

Table 1: General Participant Characteristics.

## Peer Attachment

Featuring 25 questions (IPPA) produced by Armsden and Greenberg (1987) [17], nine questions were asked to cover the three components of peer attachment: communication, trust, and alienation. Questions for communication inquired how they were respected, how their friends regarded emotions, and how well they listened during conversations. Trust questions asked if they were able to talk freely when in trouble, how well they believed in their own judgment, and if they thought of themselves as a good friend. Alienation questions pertained to receiving help when they encountered problems, did not get attention, and did not receive understanding. A 4-point Likert scale was used for the responses,

	Peer Attachment			Cell Phone Usage			Cell Phone Dependency	Life Satisfaction
	Peer Communication	Peer Trust	Peer Alienation	Family	Friends	Entertain		

and Cronbach’s alphas were .83 for communication, .81 for trust, and .70 for alienation.

## Cell Phone Usage

Following the research of Lee et al. (2002) [18], nine questions were asked regarding the purpose of using the cell phone: calling or texting family members, calling or texting friends, or entertainment, including playing games, taking pictures, watching videos, and listening to music. A 4-point Likert scale was used, and Cronbach’s scale s measured .64 for family, .82 for friends, and .67 for entertainment. The overall dependence on the cell phone was .88.

## Life Satisfaction

Based on the life satisfaction study of Kim and Baek (2006) [19], participants were asked questions where their answers were as follows: “I am Enjoying My Life,” “I Do Not Worry Too Much” and as follows asked, and .67 A higher score indicated higher life satisfaction; the Cronbach’s alpha was .81.

## Data Analysis

The present research used technical statistics analysis, correlation analysis, and structural model verification using PASW Statistics 18.0 and Amos 17.0 for this survey. First, Cronbach’s alpha was used for trust analysis and, using technical statistics, the basic statistical data were obtained on our participants. Before the model was verified, the correlation between the variables was analyzed. Second, to verify the effect of peer attachment and cell phone usage on life satisfaction, a Structural Equation Model (SEM) was used. To evaluate the goodness of fit for each model, an index of goodness of fit was considered along with  $\chi^2$ . Since the content of the null hypothesis of  $\chi^2$  verification was so strict and the value of  $\chi^2$  was sensitive to the sample size, the model could have easily been dismissed.

Several indices of goodness of fit-TLI (Tucker-Lewis Index), NFI (Bentler-Bonett normed fit index), CFI (Comparative Fit Index), and RMSEA (Root Mean Square Error of Approximation)-were used because these indices are not affected by the sample size, especially in cases of TLI and RMSEA (Hong, 2000). For TLI, NFI, and CFI, a better goodness of fit is reached when the value is above .95 and, for RMSEA, below .06 (Hu & Bentler, 1999) [20]. Before the analysis, the hypothesis of normal distribution was verified to avoid distorted results (West, Finch, & Curran (1995) [21]. Kurtosis and skewness were <2 and <7, respectively, as suggested by West, Finch, and Curran (1995) [21].

M	5.88	5.72	8.87	2.93	3.12	11.24	22.48	5.23
SD	1.97	2.01	2.25	1.16	1.38	3.23	4.54	1.90

**Table 2:** Mean Scores: Peer Attachment, Cell Phone Usage, and Life Satisfaction (N = 2264).

## Results

### Peer Attachment, Cell Phone Dependency, and Life Satisfaction Among the Korean Youth

For peer attachment, the averages were 5.88 for communication, 5.72 for trust, and 8.87 for alienation. For cell phone usage, it was 2.93 for family, 3.12 for friends, and 11.24 for entertainment. The average dependency on cell phones was 22.48 at the minimum and maximum points (7. 28), and the average life satisfaction was 5.23 at points 3 and 12. Based on these averages, peer communication or peer trust was low while peer alienation was in the middle for cell phone usage, family and friends were relatively low, and entertainment was in the middle. In addition, while cell phone dependency was relatively high, life satisfaction was low.

### Correlation: Peer Attachment, Cell Phone Dependency, and Life Satisfaction

To determine the correlation among these variables, the results were computed using Pearson incorrelation coefficients (Table 3).

<b>Communication</b>	1							
<b>Trust</b>	.774**	1						
<b>Alienation</b>	-.061**	-.125**	1					
<b>Family</b>	.184**	.161**	-.032	1				
<b>Friends</b>	.227**	.236**	-.058*	.289**	1			
<b>Entertain</b>	.135**	.125**	.090**	.253**	.336**	1		
<b>Dependency</b>	.001	-.028	.181**	.023	.191**	.324**	1	
<b>Life Satisfaction</b>	.449**	.438**	-.126**	.159**	.018	.046*	-.130**	1
* p < .05 **p < .01								

**Table 3:** Correlation between Major Variables (N = 2264).

For peer communication, the correlation was  $r = .774, p < .01$  for peer trust;  $r = .184, p < .01$  for family;  $r = .227, p < .01$  for friends;  $r = .135, p < .01$  for entertainment;  $r = .449, p < .01$  for life satisfaction; and  $r = -.061, p < .01$  for peer alienation.

For peer trust, the correlation was  $r = .161, p < .01$  for family;  $r = .236, p < .01$  for friends;  $r = .125, p < .01$  for entertainment;  $r = .438, p < .01$  for life satisfaction; and  $r = -.125, p < .01$  for peer alienation.

For peer alienation, the correlation was negative for friends ( $r = -.058, p < .05$ ) and life satisfaction( $r = -.126, p < .01$ ), but positive for cell phone dependency ( $r = .181, p < .01$ ) and entertainment ( $r = .090, p < .01$ ).

For cell phone usage with family, the correlation was positive with friends ( $r = .289, p < .01$ ), entertainment ( $r = .253, p < .01$ ), and life satisfaction( $r = .159, p < .01$ ).

For cell phone usage with friends, the correlation was positive for cell phone dependency ( $r = .191, p < .01$ ) and entertainment ( $r = .336, p < .01$ ).

For cell phone usage for entertainment, the correlation was positive for cell phone dependency ( $r = .324, p < .01$ ) and life satisfaction ( $r = -.046, p < .05$ ).

Given the correlation size of the variables, the possibility of multicollinearity among the variables was low. Multicollinearity refers to a difficult situation that cannot distinguish the effects of the dependent variables because of high mutual correlations among the independent variables. In general, there are no multicollinearity issues when the correlation coefficient is below .70 (Kim, 2001) [22], and this research showed all the variables as under .70 with the exception of peer communication to peer trust.

### Mediated Effect of Cell Phones in Peer Attachment on Life Satisfaction Among Korean Youth

#### Analysis of Path Model

A path model to hypothesize the mediated effect of cell phone was applied to analyze the effect of peer attachment in Korea’s youth on life satisfaction (Figure 1).

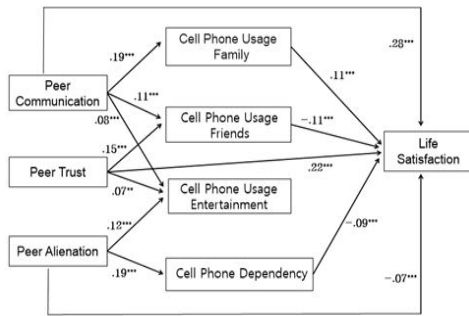


Figure 1: Path Model.

A goodness of fit index was computed for the model, and the results are as follows (Table 4). Based on the results, all goodness of fit indices corresponds to a suitable range to produce an acceptable model:  $\chi^2 = 8.405$  (df = 6), TLI = 0.996, CFI = 0.999, RMSEA = 0.013 (Table 4).

$\chi^2$	df	NFI	TLI	CFI	RMSEA (90% Trust Range)
8.405	6	.998	.996	.999	.013 (.000-.086)

Table 4: Goodness of Fit Path Model for Peer Attachment and Life Satisfaction.

As illustrated in (Table 5) the direct path from the components of peer attachment (i.e., peer communication, peer trust, and peer alienation to life satisfaction), from peer communication to cell phone usage (family, friends, entertainment), from peer trust to cell phone usage (friends, entertainment), from peer alienation to cell phone usage (entertainment), and from peer alienation to cell phone dependency all displayed similarity. There is also a similar direct path from cell phone usage (family, friends) to life satisfaction and from cell phone dependency to life satisfaction.

Path				B	$\beta$	SE	t
Peer Attachment	Communication	→	Family	.11	.19	.01	8.25***
	Communication	→	Friends	.08	.11	.02	3.32***
	Communication	→	Entertainment	.14	.08	.06	2.53***
	Communication	→	Life Satisfaction	.27	.28	.03	9.68***
	Trust	→	Friends	.10	.15	.02	4.45***
	Trust	→	Entertainment	.12	.07	.05	2.22**
	Trust	→	Life Satisfaction	.21	.22	.03	7.52***
	Alienation	→	Entertainment	.17	.12	.03	5.47***
	Alienation	→	Cell Phone Dependency	.37	.19	.04	8.38***
Usage	Family	→	Life Satisfaction	.17	.11	.03	5.04***
	Friends	→	Life Satisfaction	-.16	-.11	.03	-5.22***
Cell Phone Dependency	→	Life Satisfaction	-.04	-.09	.01	-4.47***	

Table 5: Path Coefficient and Standardization Coefficient Between Variables.

However, the direct path from peer communication and peer trust to cell phone dependency, from peer trust to cell phone usage (family), and from peer alienation to the use of cell phone (family, friends) did not show similarity. Therefore, among the components of peer attachment, only peer alienation showed a direct path to cell phone dependency.

## Discussion

The present research examined the peer factors that affect life satisfaction among Korean youth, the effect of peer attachment on life satisfaction, and the mediated effect of the use and dependency on the cell phone. First, under peer attachment, peer alienation scored the highest, followed by peer communication and peer trust. Entertainment was the biggest reason for using the cell phone, followed by communicating with friends and communicating with family members. This is consistent with Lee and

Hwang(2009) [23], “It was the biggest pastime and fun was the primary motivation to use the cell phone by teens but contradicts Lee, Lee, and Shin (2009) [24] who claimed that text messaging was the most widely used function of the cell phone among Korean youth. Lim text messaging was the most findings that entertainment was the biggest reason for dependency on cell phones, with peer communication and family communication coming second and third, respectively. The downside, of course, is that the entertainment function readily leads to cell phone addiction.

Second, we can summarize the correlation between peer attachment with cell phone dependency pertaining to life satisfaction as follows: the higher the peer communication and peer trust, the higher the cell phone usage with family and friends and life satisfaction. The higher the peer alienation, the lower the cell phone usage with friends and life satisfaction, and the higher the dependency and use of cell phone for entertainment. These conclusions

are echoed by Kim (2014) [25] who claimed that peer alienation greatly increased cell phone dependency to the point of addiction. Lim (2014) [26] and Song, Kwon and Kim (2014) [27] also concluded that high cell phone dependency was the result of using it too much for entertainment purposes.

Cell phone use with family showed a positive correlation with cell phone use with friends, entertainment, and life satisfaction. Cell phone use with friends showed a positive correlation with cell phone dependency and using the cell phone for entertainment. Using the cell phone for entertainment showed a positive correlation with cell phone dependency and life satisfaction. Most importantly, using the cell phone with friends and for entertainment showed a positive correlation with cell phone dependency. This means that the higher the number of calls among friends, or the higher the peer alienation, then the higher the higher cell phone dependency. Ultimately, it does not matter how many friends they have or the quality of their peer relationships; they are all going to use the cell phone with great frequency.

Third, while examining peer attachment in relation to life satisfaction, we were able to discern the mediated effect of cell phones. Peer communication, peer trust, and peer alienation all caused a direct effect on life satisfaction, as when the peer attachment was high, the life satisfaction was also high (Ko, 2008; Lee & Kwon, 2013; Cho, Kang, & Lee, 2012, Nickerson & Nagle, 2004) [28,29,30,31,32]. However, as communication increases with greater peer or family attachment, so does cell phone usage. Therefore, good communication also has an indirect effect on life satisfaction as support from family and friends enhances the youth from family and friends (Cho, Kang, & Lee, 2012) [30,31], However, peer alienation, while directly producing a lower level of life satisfaction, also produces a mediated effect of increased dependency on the cell phone.

## Remedial Measures

Peer alienation and cell phone addiction are the two major social problems identified in this study. There is a dire need to create a school atmosphere to promote positive relationships among students and to develop and implement a variety of programs to enhance their social skills. For example, a well-organized mentoring program might help reduce peer alienation. At the very least, cell phone addiction and peer alienation must be addressed and appropriate behavior regarding cell phone dependency taught from the earliest levels of elementary school. Academic performance is essential, but not at the cost of social deterioration among our youth.

## Limitations

This research did not take gender distinction into account for peer attachment, dependency on cell phones, and life satisfaction among the youth. Future studies should examine how the cell phone affects the lives of boys and girls separately.

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