



Investigating The Effect of Facebook Addiction on Students` Happiness Mediated by Nomophobia Across Countries: Multi-Group MIMIC Approach

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Abstract

This study investigated the effect of Facebook addiction level behavior and nomophobia on the students' happiness level. It is assumed that Facebook addiction employs a direct and indirect effect on happiness through the mediating effect of nomophobia. Therefore, the direct effect of Facebook addiction level on nomophobia and indirect effect of Facebook addiction through nomophobia on happiness were examined. Additionally, effects of various covariates, such as gender and class, on proposed model were examined and compared for both Turkey vs. Pakistan by means of testing the proposed model with multi-group MIMIC method. The results indicate that Facebook addiction had positive and significant direct effect on nomophobia for both Pakistani and Turkish students and positive effect implies that students having higher level of Facebook addiction tend to exert increased level of nomophobic behaviors. On the other hand, direct effects of Nomophobia and Facebook addiction levels on happiness were significant for Pakistan, while these effects were not significant Turkey. These results indicate that the relationship among these factors differs across the countries. One reason behind this finding could be the differing availability and accessibility of the information and communication technologies (ICTs) and popularity level of the social media for each country. The positive significant effect of nomophobia on

happiness for Pakistan implies that students with higher nomophobia level consider themselves happier. Considering covariates factors on nomophobia, Facebook and happiness, the gender effect on Facebook addiction was positive and significant for both countries indicating that male students show higher level of Facebook addiction than females. Unlike the other factors, the non-significant effects of class and gender factors on nomophobia for both countries imply that the level of the nomophobic behaviors do not differ significantly across gender categories and is independent of the years spent at campus. The study indicates that the excessive smartphone use has significant and undeniable negative effect on individual's psychological well-being and the relationship between these factors might differ across the countries and regions.

Keywords: Facebook Usage, Nomophobia, Self-Happiness, Mediation Effects, MIMIC Models

Introduction

The 21st century appeared as a century of unprecedented innovations, inventions, information; and information and communication technologies –ICTs (Hussain, & Sajjad, 2020; Hussain, 2005). The today's adolescent university students grew up with ICTs including mobile phones [and Facebook]. These students are generally regarded as the digital natives (Forgays, Hyman, & Schreiber, 2014). The prevalence and frequency of the use of mobile devices is found to be the highest among university-aged students (Forgays, Hyman, & Schreiber, 2014; Cheever, Rosen, Carrier, & Chavez, 2014). In 2012 about two third of the university-aged students were reported to check their smartphones as frequently as every 15 minutes or in less time (Rosen, Cheever, & Carrier (2012).

The use of [android] mobile phones and Facebook seems to become one of the popular apps among the youth particularly, the adolescent students at university (Hussain, Çakir, Ozdemir, & Tahirkheli, 2017). The excessive use of [android] mobile or smartphones and Facebook makes students to become addicted of these; and termed as nomophobia and Facebook addiction respectively. Generally it is observed that university students think mobile phones and Facebook as part and parcel of their [academic] lives without which they appear to feel discomfort (Hussain, Cakir, & Ozdemir, 2020; Ozdemir, Cakir, & Hussain, 2018). Currently, the use of mobile phones appears as a more prevalent phenomenon among university students and it is increasing day by day. They usually seem to be engaged with mobile phone even in the classroom. They seem to use smartphones and Facebook as fun (Smetaniuk, 2014). However, excessive use of smartphones and Facebook leads them towards some socio-psychological problems like emotional disturbance anxiety etc. A study conducted on problematic use of internet and mobile phones found psychological distress among college students and demonstrated it to be related to their maladaptive use. For mobile phones, it

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found higher scores of the female respondents than those of their counterparts i.e. males which showed the effects of maladaptive use of Internet to be more negative for these respondents (Beranuy, Oberst, Carbonell&Chamarro, 2009).

Effect of Facebook Addiction on Student's Happiness

The Facebook addiction appears as excessive use of social networking site –the Facebook as fun or changing the mood(s) by the user(s). It occurs when an individual does not feel how much time s/he has spent in using Facebook (Lee, Cheung &Thadani, 2012). Now-a-days the social networking sites or social media have become the popular among the youth even in developing countries. Amongst other social networking sites, Facebook has become most popular medium of entertainment and communication in adolescents' life. Facebook is used to enhance connectivity for sharing of experiences around the world. Adolescents use Facebook as pastime and to be happy and cheerful. Students appear as majority of Facebook users; and it enhances their satisfaction with life, self-esteem and cheerfulness or happiness. Majority of the students share their ideas or comments, pictures and information about events (Pempek&Calvert, 2009). Those who actively use Facebook have better social connectivity and they feel happier. Appreciating comments by their peers and followers enrich happiness. Conclusively, the use of Facebook promotes happiness among the users by facilitating their interactions(DiMico& Millen, 2007).

Facebook provides opportunity to its users to share their personal information and pictures and to communicate with other users around the world. It is most widely used medium among students. Usually, it is observed that effects of Facebook depend upon users' attributes and their purpose of use. According to Ellison and Steinfeld (2007), use of Facebook is associated with the connecting, bonding, and maintaining of social relations that affects the happiness of users. In fact, individuals who use Facebook are more likely to be satisfied and happy in their life. Facebook is also considered as "social glue" that aids students to be happy in their life. Therefore, Facebook plays its role by supporting social interactions and assisting its users to become happy in their daily activities. Facebook has wide range of social and communication properties which gives convenience to users. However, on the other side of the picture, these various features of Facebook might be extremely problematic.

The excessive use of Facebook appears to influence students' happiness. The [university] students who use Facebook continually; they develop new relationships, have an increased loneliness and lower social interaction with their peers as compared to those who spend their time wisely in using Facebook and other social networking sites. The later maintain social interactions and feel less loneliness (Yang & Brown, (2013). Generally, the users want positive and appreciating comments from others to be happy and it is affected by such appreciation (Pettijohn II, LaPiene, Pettijohn, &Horting, 2012).

The excessive use of Facebook by the [university] students promotes emotional and physical problems among the users (Andreassen, Torsheim, Brunborg&Pallesen, 2012). A survey reported that three hundred and fifty million of the people were suffering from Facebook addiction disorder (Sickfacebook.com). Another study affirmed that 49% of the users spent more than three hours in using Facebook; whereas, 72% were using Facebook for a few hours daily (Nawafleh, Harfoush, Fakhouri, Obiedat&Rababah, 2012). Observably, there appears a negative relationship between happiness and social media usage among the users. The excessive use of Facebook replaces physical relationships with virtual relationships leaving negative effects on happiness among users (Lee, Lee, Choi, Kim & Han, 2014).

However, on other hand social networking sites particularly, the Facebook extends opportunities of communication and socialization among the users establishing a positive relationship between happiness and the use of Facebook and other social media websites (Gonzales & Hancock, 2011).

Effect of Nomophobia on Student's Happiness

Nomophobia generally, denotes "no mobile phone phobia". It describes state where the mobile phone especially the smartphone users have a fear or tension when away from their mobile phones. Different psychological aspects seem to be involved in frequent use of mobile phone which is increasing throughout the world (Bhattacharya, Bashar, Srivastava, & Singh, 2019). Anxiety, loss of interest, low confidence, shyness and feeling awkward in social gatherings are signs of nomophobia. It is troubling for the victim and his/her family (Bragazzi & Del Puente, 2014).

From its invention mobile phone has been part and parcel of the life of an individual. Seemingly it has impacted on the life of users. Nomophobia is a substance-less or non-drug-addiction (Shambare, 2012). The use of mobile phones promotes addictive behavior as 93% of [university] students were too crazy to lose their cellphones and they always kept their cell phones with them (Pavithra, Madhukumar & Murthy, 2015). They further affirmed that the overuse of cellphones promotes nomophobia and self-isolation. Such students are more likely to be sad, depressed, and unhappy in their social life. Moreover, Dechelotte and Ladner (2015) observed physical, psychological, social, and sleeping problems among students having nomophobia.

One can say nomophobia as a modern addiction which is caused by the use of mobile phone technologies. In UK, the overall more than half (53%) of the cellphone users appeared to be suffering from nomophobia; and 58% of them were male and 48% were female (King, Valença, & Nardi, 2010). However, victims of the nomophobia increased in 2012 from 53% to 66%; whereas, the ratio of women was recorded higher than men as 70% were women

and 61% were men (SecurEnvoy, 2012). Therefore, it is inferred that women are more nomophobic than men. It demonstrates that women are more dependent on cellphones with increased nomophobia (Ozdemir, Cakir & Hussain, 2018). Even so, Nikhita, Jadhav and Ajinkya (2015) affirmed that 53% of the people in UK feel anxiety when they lose their cellphone and have no internet access.

The above discussion demonstrates significant relationship between [excessive] use of mobile phone, Facebook addiction and happiness. However, there are limited studies that examine how these factors are related and affect each other in the presence of covariates such as gender and nationality. Therefore, it is believed that studying relationship between these factors, and how these factors affect each other and covariates with more advanced methods that unveil complex relationships to add significantly to the existing literature.

The purpose of this project

The purpose of this study was to investigate the effect of Facebook addiction level behavior and nomophobia on the students' happiness level. Moreover, the direct effect of Facebook addiction level on nomophobia and indirect effect of Facebook addiction through nomophobia on happiness were examined. Additionally, effects of various covariates, such as gender and class, on proposed model were examined and compared across the categories of country variable (Turkey vs. Pakistan) by means of multi-group MIMIC models. More detailed information about the structure of proposed model was provided in the following sections. We assume that Facebook addiction employs a direct effect and an indirect effect on happiness through the mediating effect of nomophobia. Thus, considering the proposed model, we aim to address the following research question:

RQ1. How do Facebook addiction and nomophobia affect the happiness of students?

RQ2. How does Facebook addiction level affect the nomophobia level of students?

RQ3. Do the main effects of Facebook addiction level, nomophobia and happiness, differ across the categories of gender and class groups?

RQ4. How do direct and indirect effects of Facebook addiction level and nomophobia on happiness defined by proposed model differ across countries (Turkey vs Pakistan)?

Method

The Participants and Tools

The study group consists of 649 university students in which 344 of them come from Pakistan and, 305 of them come from Turkey, respectively. Among those students, 69.2% of them are female while 29.2% of them are male students. The data set comprise of the responses of students to the "Subjective Happiness Scale -SHS" (Lyubomirsky & Lepper, 1999); "Nomophobia Scale -NMP-Q" (Yildirim & Correia, 2015) and "Bergen Facebook

Addiction Scale –BFAS” (Andreassen et al., 2012). Therefore, aforementioned scales are used to measure students` happiness, Facebook addiction and nomophobia levels.

Subjective Happiness Scale (SHS)

This scale was used to assess overall happiness of the students. It has four items to measure the self-reported happiness of the individuals [students]. It reports happiness level through self-evaluation of the respondents (Lyubomirsky&Lepper, 1999) on the scale which ranges from 1.0 to 7.0; where the higher scores reflect greater [level of] happiness (Lyubomirsky&Lepper) among the students. The “item-1 (1=not a very happy person to 7= a very happy person) reports the extent of happiness; items-2 (1=less happy to 7= more happy) affirms level of happiness among the respondents relative to their peers; item-3 “generally very happy” (1= not at all to 7= a great deal)” and the “item-4 “generally not very happy” (1= not at all to 7= a great deal) details if the respondents generally feel happiness of unhappy”. The reverse coding (i.e., turning a 7 into a 1, a 6 into a 2, a 5 into a 3, a 3 into a 5, a 2 into a 6, and a 1 into a 7) of the 4th item by computing mean of the 4-items.

Nomophobia Questionnaire (NMP-Q)

This tool measures nomophobia through 20-items rated on a 7-points`Likert scale. The scale values ranged from “1=Strongly Disagree” and “7=Strongly Agree”. The responses of each item were summed up to calculate the total score –minimum 20 and maximum 140. The higher scores demonstrated higher level(s) of nomophobia or its severity. The interpretation was made as “score of 20 indicates absence of nomophobia; the score greater than 20 and less than 60 reflects mild level of nomophobia; the score greater than or equal to 60 and less than 100 corresponds to moderate level of nomophobia; and the score greater than or equal to 100 reflects severe nomophobia” (Yildirim, & Correia, 2015, p.133) among the students.

The Bergen Facebook Addiction Scale (BFAS)

This is a self-reporting scale which is used to assess Facebook addiction. It “pools 18 items three reflecting each of the six core elements of addiction (salience, mood modification, tolerance, withdrawal, conflict, and relapse)” (Andreassen, et al., 2012, p.501). It measures the responses on 5-point Likert scale with the scale values ranging from “1= Very rarely to 5= Very often”. The higher scores reflect the higher level(s) of Facebook addiction (Andreassen, et al., 2012; Pontes, Andreassen, & Griffiths, 2016).

The researchers personally collected data from both of the countries by administering the above tools. The students of the Islamia University of Bahawalpur, Pakistan; and the Ankara University, Ankara, Turkey participated in the study. All of the research ethics of conducting research in social sciences were observed during the process of data collection.

Statistical Analysis

This study mainly comprises of two stages. In the first stage of analyses, the proposed multi-group MIMIC model depicted in Figure 1 was tested in order to determine the degree of the fit between proposed model and data, and to detect which factors (Facebook addiction, nomophobia and happiness) and covariates (gender and class groups) make significant contribution to the model. In the second stage, the revised final model based on the results of the first stage was tested for both Pakistan and Turkey data with MIMIC model.

Multiple Indicators, Multiple Causes (MIMIC) Modeling

MIMIC models allow us to examine the effect of covariates on latent variables in the presence of covariates (Brown, 2006; Muthen&Muthen, 2009). The MIMIC model constitutes of two parts that are measurement model, which investigates the relationship between latent variable and its indicators, and structural model, which examines the “direct effect of covariates” (indicating group membership, such as gender and nationality) on latent variables or indicators, respectively.

MIMIC methods require two main steps, defined by Brown (2006) that are establishing a CFA measurement model and adding covariate to the model in order to investigate direct effect of covariates on latent factors and indicators, respectively. If the direct effect of a covariate on a factor is significant, then it is assumed that factor mean differs across the categories of the covariate. Likewise, if the direct effect of a covariate on an item is significant, then it is assumed that item mean differs across the categories of the covariate significantly.

The multi-group MIMIC model was used to examine the effects of gender and class variables on latent factors that are Facebook addiction, nomophobia and happiness, respectively. Moreover, the proposed MIMIC model was used to examine the effect of “Facebook addiction” and nomophobia on happiness as well as the effect of “Facebook addiction” on nomophobia factors. Figure 1 depicts the MIMIC model tested for each country. One can clearly observe from the model that the “happiness regresses on both nomophobia and Facebook addiction, and nomophobia regresses on the Facebook addiction latent factors”, respectively.

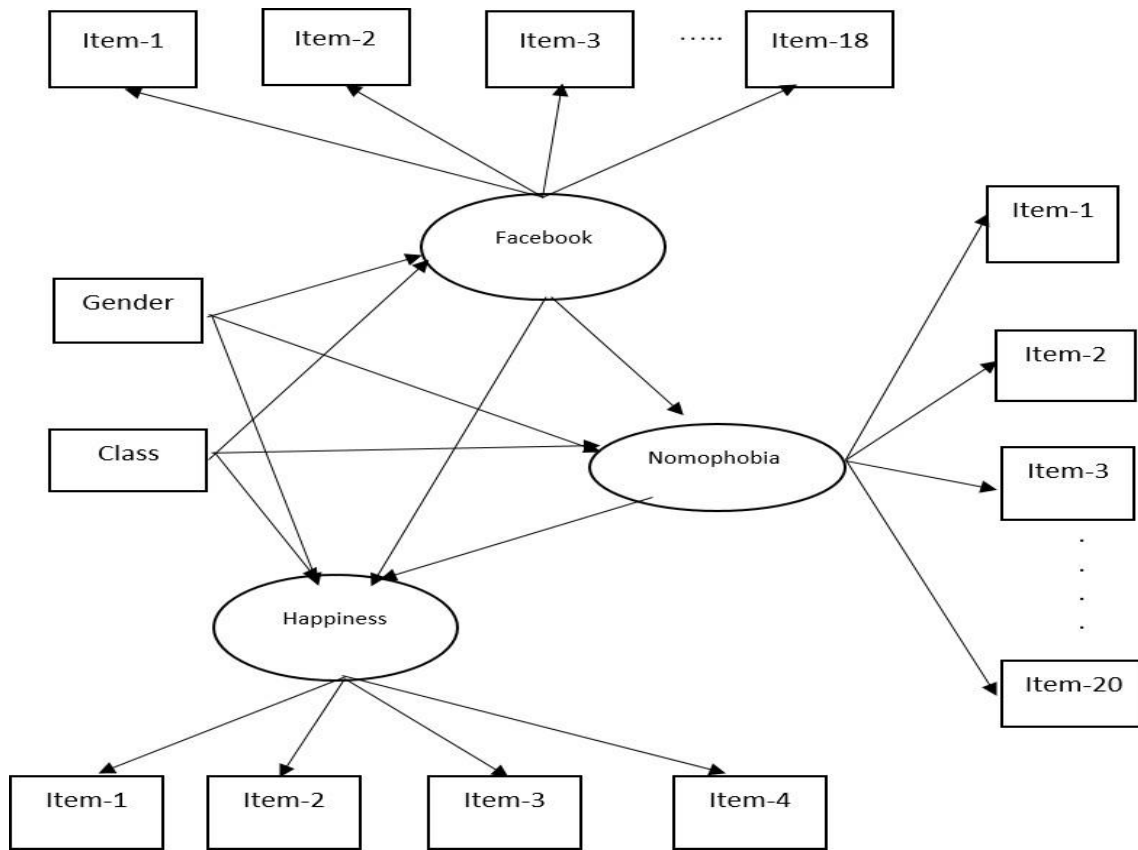


Figure 1. MIMIC model diagram tested for each country.

Results

In the first phase of analysis, the MIMIC model depicted in Figure 1 was tested for each country in order to determine the latent factors and covariates that made significant contribution to the model and to determine whether proposed model fits to the data. Therefore, the fit between the multi-group MIMIC model and the data were examined based on fit measures. Table 1 provides fit measures related to the revised model without covariates.

Table 1. The fit measures associated with Multi-group MIMIC model.

	χ^2	df	p-value	RMSEA (LL-UL)	CFI	TLI
MIMIC model	7173.110	1788	<0.001	0.094 (0.092-0.096)	0.915	0.910

The proposed MIMIC model was converged after 79 iterations. Moreover, the CFI and TLI fit measures appears to be above 0.90, while the RMSEA value is below 0.10 indicating that an acceptable fit between proposed model and the data was achieved (Marsh, Hau&Wen, 2004). Additionally, investigating the relationship between latent variables and their indicators defined in the measurement part of the model indicate that all the factor loadings of indicators (items) of nomophobia, Facebook addiction and happiness factors were significant except for one indicator of happiness factor which had factor loading greater than 0.30. Thus, one can infer from the fit measures that the proposed MIMIC model fits to the data.

The results of multi-group MIMIC model are provided in Table 2 that consists of two parts. The first part of the Table 2 presents the results of MIMIC model depicted in Figure 1 associated with Pakistan, while the second part presents the results associated with Turkey. Additionally, Figure 2 and Figure 3 depict the path diagrams that show the MIMIC model results including standardized regression coefficients and factor loadings of measurement models for each country, respectively.

Table 2. Multi-group MIMIC model results

Country	Dependent Variable	Independent Variable	Standardized Est. (β)	Estimate (B)	Std. Error	p-values	
Pakistan	Happiness	Nomophobia	0.895	0.847	0.119	<0.001	
		Facebook	-0.471	-1.034	0.224	<0.001	
		Gender	-0.011	-0.027	0.147	0.853	
	Nomophobia	Class	-0.003	-0.002	0.035	0.964	
		Facebook	0.534	1.239	0.208	<0.001	
		Gender	-0.059	-0.157	0.138	0.258	
	Facebook	Class	-0.018	-0.011	0.033	0.728	
		Gender	0.150	0.172	0.068	0.011	
	Turkey	Happiness	Class	-0.153	-0.042	0.016	0.010
			Nomophobia	0.041	0.058	0.093	0.531
Facebook			-0.042	-0.052	0.081	0.521	
		Gender	-0.031	-0.097	0.197	0.621	

	Class	0.127	0.102	0.050	0.041
	Facebook	0.188	0.162	0.056	0.003
Nomophobia	Gender	-0.095	-0.208	0.131	0.113
	Class	-0.084	-0.048	0.033	0.153
	Gender	0.171	0.436	0.151	0.004
Facebook	Class	-0.072	-0.047	0.038	0.220

The results associated with Pakistan indicate that the effects of nomophobia and Facebook addiction on the happiness factor were significant. Moreover, the nomophobia had positive significant effect on happiness, while the effect of Facebook addiction level on happiness was negative. These results indicate that the students with higher level of nomophobia feel somehow happier. In other words, the more they spend time with their cellphones, the happier they feel or consider themselves happier. On the other hand, significant negative effect of Facebook addiction on the happiness indicates that students with higher Facebook addiction level feel less happy. Additionally, Facebook addiction had a significant positive effect on nomophobia implying that as the students' Facebook addiction increases; they tend to show more nomophobic behaviors. Apart from that, the indirect effect of Facebook addiction factor on happiness through nomophobia was positive but not significant ($\beta=0.08$, p -value= 0.538), while the direct effect of Facebook addiction on happiness was negative but significant. Additionally, total effect of Facebook on the happiness was not significant indicating that positive direct effect and negative indirect effect through nomophobia cancels each other.

When it comes to the effects of covariate variables (categorical variables) on each of the latent factor, only the direct effects of gender and class on Facebook addiction were significant compared to the effects of these two covariates on nomophobia and happiness. Moreover, the effect of gender on Facebook addiction was positive, while the effect of class variable was negative. These results imply that there is no significant difference between male and female students' nomophobia and happiness levels, while male students show higher level of Facebook addiction (female category is coded as 0 and male category as 1), respectively. Additionally, negative significant class effect implies that students in higher classes tend to show lower level of Facebook addiction.

The second part of the Table 2 presents the results of MIMIC model associated with Turkish students' data. The results associated with Turkish students indicate that the effects of nomophobia and Facebook addiction on the happiness factor were not significant. Additionally, Facebook addiction had a significant positive effect on nomophobia. This result

implies that the students with higher Facebook addiction level tend to show higher level of nomophobia. Similar results were obtained for both Pakistani and Turkish students with respect to the Facebook addiction effect on nomophobia levels. Unlike the Pakistani students, Facebook addiction and nomophobia did not have significant effect on Turkish students' happiness.

Regarding the effects of covariate variables on each of the latent factor for Turkey, only the direct effects of gender on Facebook addiction and the direct effect of class on happiness were significant compared to the effects of these two covariates on other factors.

Moreover, the positive significant gender effect on Facebook addiction indicates that male students showed higher level of Facebook addiction. The similar gender effect was obtained for Pakistani students. Additionally, the positive effect of class variable on happiness indicates that the Turkish students in higher class consider themselves happier compared the new students. On the other hand, non-significant effect of gender on happiness and nomophobia indicates that both male and female Turkish students have similar happiness and nomophobia levels. Likewise, the non-significant effect of class variable on Facebook and nomophobia implies that the Facebook addiction and nomophobia levels of Turkish students' remains same across the classes. On the other hand, the indirect effect of Facebook addiction factor on happiness through nomophobia was not significant ($\beta=0.08$, p -value=0.538) which indicates that Facebook addiction level do not mediate the effect of nomophobia on happiness.

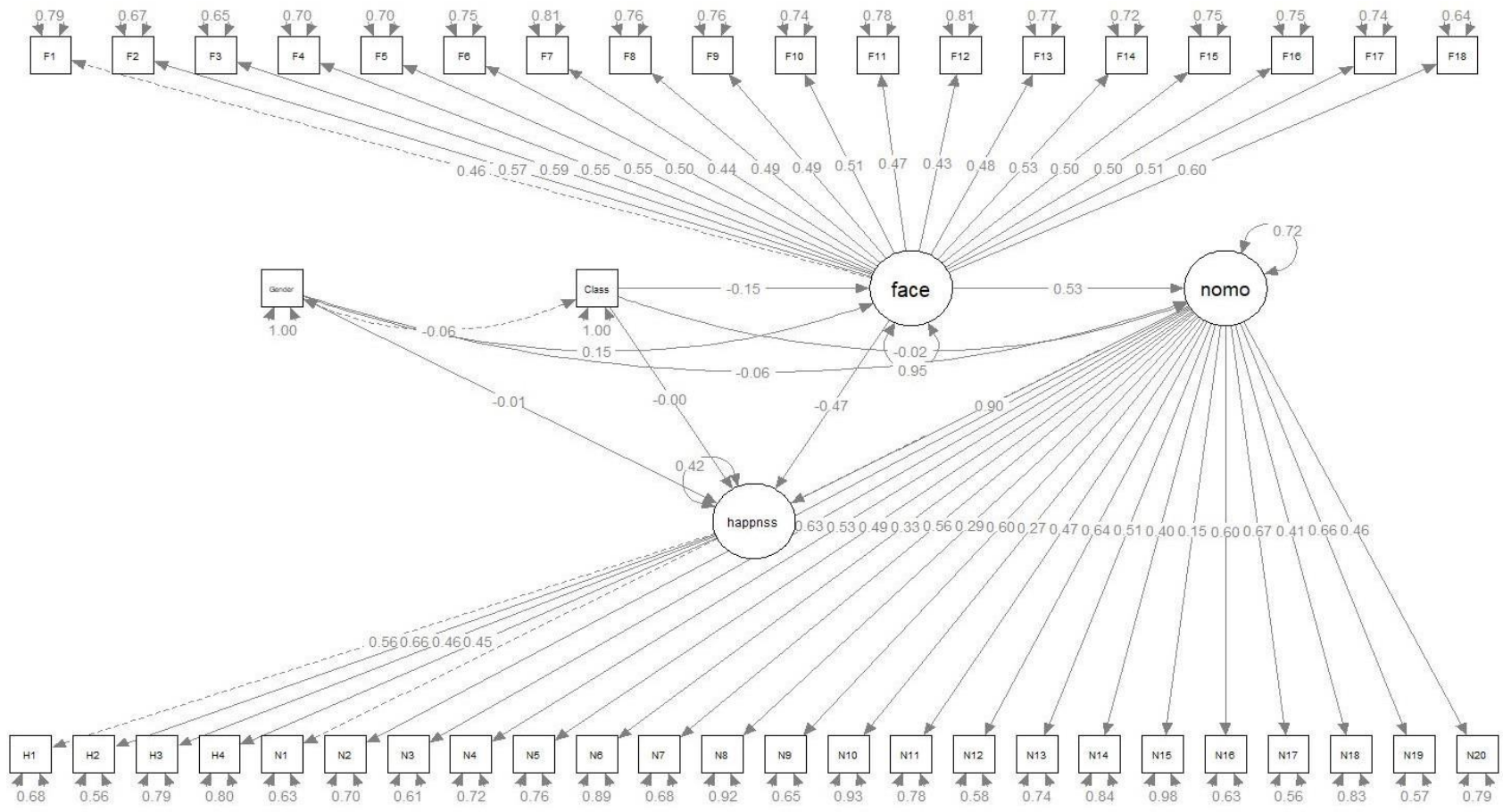


Figure 2. Path diagram of MIMIC model tested for Pakistan

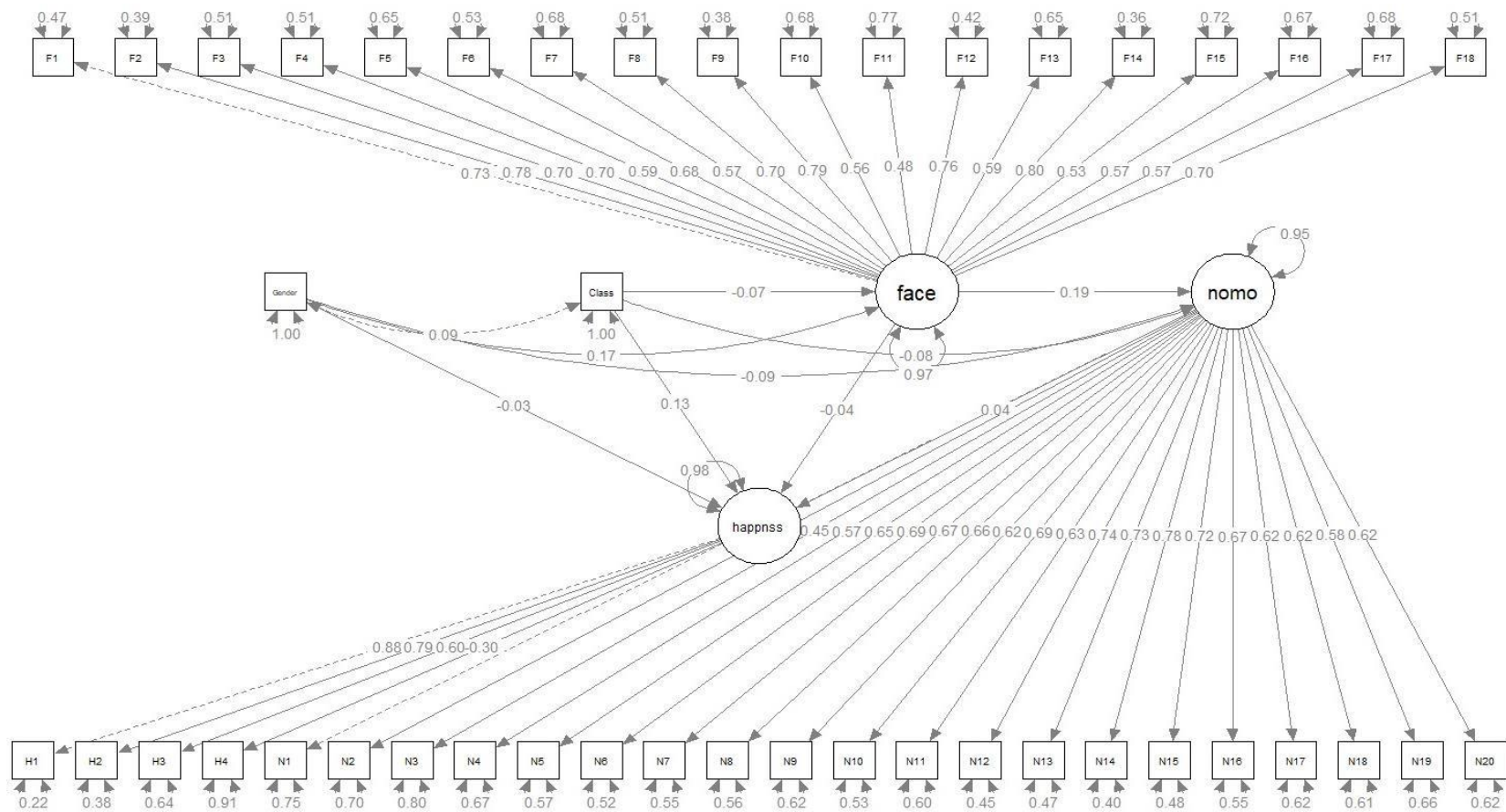


Figure 3. Path diagram of MIMIC model tested for Turkey

Discussion and Conclusion

This study focuses on investigating how individuals Facebook addiction and nomophobia levels affect their happiness level. Additionally, indirect effects of Facebook addiction through nomophobia on happiness were examined assuming that nomophobia mediates the relationship between the excessive Facebook usage and happiness. Moreover, effects of various covariates, such as gender and class, on proposed model were examined and compared across the categories of country variable (Turkey vs. Pakistan) using multi-group MIMIC models to unveil complex relationship among the variables.

The results indicate that Facebook addiction had positive and significant direct effect on nomophobia for both Pakistani and Turkish students and positive effect implies that students with higher level of Facebook addiction tend to show higher level of nomophobic behaviors. However, direct effects of Nomophobia and Facebook addiction levels on happiness were significant for Pakistan, while these effects were not significant Turkey. These results indicate that the relationship among these factors differs across the countries. One reason behind this finding could be the differing availability and accessibility of the information and communication technologies (ICTs) and popularity level of the social media for each country. On the other hand, the positive significant effect of nomophobia on happiness for Pakistan implies that students with higher nomophobia level consider themselves happier. In other words, the more they spend time with their cellphones, the happier they feel or consider themselves. However, negative significant effect of Facebook addiction level on happiness indicate that excessive Facebook usage or addiction had negative impact on students' happiness level. Additionally, indirect effect of Facebook addiction factor on happiness through nomophobia was positive but not significant ($\beta=0.08$, $p\text{-value}=0.538$), while the direct effect of Facebook addiction on happiness was negative and significant indicating that positive direct effect and negative indirect effect through nomophobia cancels each other. The results associated with indirect effect of Facebook addiction on happiness through nomophobia indicate that nomophobia fails to moderate the relationship between Facebook addiction and happiness for both countries.

When it comes to the effect of the covariate factors (class and gender) on nomophobia, Facebook and happiness, the effect of gender factor on Facebook addiction was positive and significant for both countries. This finding implies that male students show higher level of Facebook addiction since females coded as 0 and males as 1 for both countries. Moreover, the non-significant effects of class and gender factors on nomophobia imply that the levels of the nomophobic behaviors do not differ across gender categories and is independent of the year spent at campus for both countries. However, the class effect on the Facebook addiction was negative and significant for Pakistan, while it was not significant for Turkey. The negative significant class effect for Pakistani students indicates that the Facebook addiction level of them tend to decrease throughout their education, while it remains same

for Turkish students. Another difference between two countries occurs in the effect of class factor on happiness where the effect of class factor on happiness was positive and significant in Turkey, while this effect was not significant for Pakistan. This result implies that the happiness level of the Turkish students tends to increase throughout their education, while it remains same for Pakistani students.

To conclude, the results of this study indicate that the excessive smartphone use has significant and undeniable negative effect on individual's psychological well-being. Previously conducted studies have shown the negative impact of excessive usage of smartphones on psychological wellbeing (Horwood&Anglim, 2019; Tangmunkongvorakulet al., 2019; Yang, Asbury & Griffiths, 2018). Additionally, it might cause anxiety (Darcinet al., 2016; Hawi&Samaha, 2017; Lee et al., 2014), stress (Ragu-Nathan, Tarafdar& Ragu-nathan, 2008; Samaha&Hawi, 2016; Vahedi&Saiphoo, 2018), distress (Alam& Wagner, 2013; Griffiths, 2012), depression and somniphathy (Rozgonjuket al., 2018; Thomée, Härenstam&Hagberg, 2011) and loneliness (Darcinet al., 2016).

Implication of this study

It is believed that this study contributes to the theoretical diversity of studies related to the Facebook addiction and nomophobia, and their effects on happiness unveiling the complex relationship between these factors (Bakker &Leiter, 2008; Bragazzi& Del Puente, 2014; Rubino et al., 2012; Samaha&Hawi, 2016; Tam, Legoux,&Léger, 2018;Yildirim&Correia, 2015). Moreover, this study shed light on how relationship between these factors differs across the countries.

The other contribution of this study is that it allows examining how Facebook addiction level, nomophobia level and happiness differ across gender and class categories for each country. The results of this study reveals that effect of gender and class variables may differ from one country to another. Although testing the defined model for only two countries might be considered as a limitation of this study, differing effect of the covariates might be due to the difference in familiarity of the students with focal technology and popularity of the social media, and their relevance to the smartphones (Samaha&Hawi, 2016, Tam, Legoux, &Léger, 2018).

This study treats nomophobia as a mediator in examining the effect of Facebook addiction on happiness assuming that nomophobia mediates the effect of Facebook addiction on happiness. However, other psychological factors, such as stress and social overload, can be added to the model and their effects can be studied. For instance relevant to our study, Maier et al. (2015) studied social overload as a mediator between Facebook addiction and personal behaviors. The study revealed that Facebook addiction caused social overload because of increasing number of friends which leads to the excessive social network usage. Likewise, Tam et al. (2020) studied relationship between nomophobia and stress to provide insight

into the effect of nomophobia on stress treating nomophobia as a mediator and other factors as moderator.

Conflict of Interest

Authors declare that they have no conflict of interest with any individual of institution.

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