

**PREDICTORS OF FACEBOOK ADDICTION AMONG YOUTH:  
A STRUCTURAL EQUATION MODELING (SEM)**

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**Abstract:**

With the popularity of Facebook, more and more youth extensively adopt Facebook for different motives. They are spending a plenty of time daily on surfing the site, which may be an indication of addiction. The current study investigates the predictors of Facebook addiction among youth from the uses and Gratifications theory perspective. Using online survey, the data was obtained from 309 youth from a Sub-Saharan African country. Data was analyzed using AMOS version 18 and SPSS version 17. The results of the structural equation modeling suggested that social interaction ( $\beta = .21, p < .001$ ) and entertainment motives ( $\beta = .42, p < .001$ ) had statistically positive and significant effects on Facebook addiction among youth, yielding 30% of variance. Limitations and future research scope are further elaborated.

**Keywords:** Facebook addiction, Motives, Uses and Gratifications Theory, SEM, Youth.

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## INTRODUCTION

Facebook nowadays became a global phenomenon. It is widely accepted by people globally; using it for many different reasons including social and business reasons. Facebook provides several features for its users such as chatting, groups, private messaging, and wall posts, among others in order to keep in touch with family, friends, and world happenings. As for business reasons, many organizations, companies, and institutions adopted Facebook to promote for their businesses among the target population.

Facebook is a popular and preferred tool for keeping in touch among students (Foregger, 2008; Sofiah, Omar, Bolong, & Osman, 2011; Hew & Cheung, 2012). Students used the site for passing time, connection, sexual attraction, utilities and upkeep, accumulation, channel use, establish/maintain old ties, networking, and social comparison (Foregger, 2008); for communication, entertainment, passing time, companionship, and social interaction (Sofiah et.al, 2011); and for keeping in touch with existing friends, entertainment reasons, and relaxing their emotion (Hew & Cheung, 2012).

The number of Facebook users is overwhelmingly increasing. As of June 2013, Facebook users reached more than one billion around the globe, and approximately 80 percent of those users live outside the United States of America and Canada (Facebook, 2013). It was also reported that there were more than 800 million active users who were using the site daily as of June 2013. In terms of Somali youth engagement, there is a huge presence for Somalis in the most popular social networking site, Facebook. As reported by Socialbakers [2013], there were 117, 300 active users in Somalia as of April 2013, with penetration of 1.16% compared to the country's population. According to this report, there was a male majority (73%) among Facebook users in the country. In addition, the younger youth (18-24 years old) comprised the largest age group, followed by middle young youth (25-34 years old). Somali youth used the site for information seeking, interpersonal habitual entertainment, virtual companionship escape, self-description of own country, self-expression, and passing time (Dhaha & Igale, 2013). The study also showed an extensive use of the site, which may be an indication of addiction. However, this study did not focus on whether they were addicted to the site or not. Relatively little is known about Somali youth engagement in the social networking sites particularly Facebook. Against this background, the current study tries to explore Facebook addiction and its predictors among Somali youth through applying Structural Equation Modeling (SEM) approach. The study will enrich the literature on Facebook usage among youth in under developed countries.

### 1.LITERATURE REVIEW:

#### 2.1USES AND GRATIFICATIONS THEORY:

The Uses and Gratification (U&G) theory serves as a theoretical base for the current study. The U&G has long roots in examining user's needs and motives for media consumption. The theory is considered as a best suitable for examining new media technologies (Ebersole, 2000). Ruggerio (2000) argues that the U&G approach is useful in examining internet, asserting that the internet has three unique characteristics that are not found in traditional media. These characteristics include interactivity, asynchronicity, and demassification. Although the assumptions of this theory were found in previous studies in 1940s, and 1950s, the first usage of the term U&G was reported in a paper written by Elihu Katz (1959). He was responding to Berelson, who claimed that the field of mass communication was dying. Katz (1959) argued that the field can survive if the attention is shifted to "what do people do with the media" instead of focusing on "what do media do with the people". Thus, this theory is considered as a user-oriented approach.

The theory assumes that the media provides fulfillment of certain social and psychological needs. By reviewing the literature, Katz, Gurevitch, and Haas (1973) found 35 needs satisfied by the media. They classified those needs into five major categories: *cognitive needs*, *affective needs*, *integrative needs*, *personal integrative needs*, *social integrative needs*, and *tension release needs*. Katz, Blumler, and Gurevitch (1974) argued that the U&G approach is concerned with the following: (1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media or other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) need gratifications, and (7) other consequences, perhaps mostly unintended ones" (p.20).

Katz et.al (1974) put forward several assumptions for the theory. The first assumption is that the audiences are active users, which is different from the previous media effects that considered the audiences as passive users. The second assumption is that the audiences can determine the link between need gratification and media choice. Third, there is competition of media with other sources of gratifications. Fourth, the data is derived from audience members through self-report questionnaires, since they are aware of their interests and motives. Fifth, no judgment of cultural significance is encouraged, only the audiences are examined on their own term.

The theory was first applied to the traditional media such as television, radio, and newspapers, however, researchers later expanded it to the new media technologies. Applying the U&G approach to the context of World Wide Web, Kaye (1998) found six motives for using the Web including entertainment, information seeking, social interaction, passing time, escape, and website preference. Papacharissi and Rubin (2007) also found five motives for using the internet: personal utility, information seeking, pass time, entertainment, and convenience. Roy (2007) found eight motives for using internet, namely user-friendly, convenience in communication, self-development, wide exposure, educational opportunities, global exchange, relaxation, and enhancement of self-development.

As for Facebook, it has been found several motives for using the site including education, business, religious, entertainment, social interaction, and communication (Shahnaz, 2011); relationship maintenance, entertainment, following the trend/crowd, expression emotions, broadening the social network, and fun (Hew & Cheung, 2012). Sheldon (2008) found six motives to visit Facebook, namely relationship maintenance, virtual community, passing time, coolness, entertainment, and companionship. Relationship maintenance, entertainment, passing time, and information seeking were found to be motive for using Facebook among college students and high school students (Hunt, Aktin & Krishnan, 2012). In this study, entertainment and relationship maintenance were predicted by the amount of time spent on Facebook. Smock, Ellison, Lampe, and Wohn (2011) found nine motives for using Facebook. These include habitual pass time, relaxing entertainment, companionship, escapism, professional advancement, social interaction, cool and new trend, meeting new people, and expressive information sharing. Among these motives, only expressive information sharing predicted status updates feature. Relaxing entertainment, social interaction, and companionship predicted comments feature. However, entertainment and passing time were most frequently reported factors for internet motives generally, and Facebook motives particularly.

## 2.2FACEBOOK ADDICTION

Facebook addiction is not new phenomenon since the site is one of the internet applications. Previous studies focused extensively on the internet addiction characteristics among different populations. However, relatively little is known about the Facebook addiction and its predictors from the U&G perspective.

Young adults are increasingly spending a plenty of time in using social networking sites (SNS) particularly Facebook and MySpace (Wilson, Fornaiser, & White, 2010). Wilson et.al (2010) found that personality characteristics such as extroversion and conscientiousness and self-esteem predicted both time spent on SNS use and addictive tendencies toward SNS. In addition, personality characteristics were found to have effect on Facebook usage among students (Rouis, Limayen, & Salehi-Sangari, 2011). In this study, excessive Facebook use particularly among students with extraverted personalities was found to have effect on their academic achievement. These students achieved low grades in the university due to their excessive use of the site.

By reviewing the SNS literature, Kuss and Griffiths (2011) found 43 empirical studies, five of them focused on SNS addiction. The remaining studies focused on usage patterns, motives for using SNS, personality traits and SNS use, and negative correlates of SNS use. They argued that “Negative correlates of SNS usage include the decrease in real life social community participation and academic achievement, as well as relationship problems, each of which may be indicative of potential addiction” (p.3528). Kuss and Griffiths (2011) asserted that there is a need to address the motives for using the SNS and the negative correlates of excessive SNS use. They also asserted the need for “clear-cut and validated addiction criteria for SNS addiction” (p.70).

Facebook addiction is considered as “specific form of internet addiction” (Andreassen, Torsheim, Brunborg, & Pallesen, 2012). The concept of Facebook addiction had received little attention in the literature (Sofiah et.al, 2011; Take, 2011; Sherman, 2011, Andreassen et.al, 2012; Cam & Isbulan, 2012; Alabi, 2013). Sofiah et.al (2011) found that Facebook addiction has positive correlation with Facebook motives such as communication, passing time, social

interaction, entertainment, and companionship. Among these motives, only passing time, entertainment, and communication were found to be the predictors of Facebook addiction among female students in a public university in Malaysia. Sherman (2011) found that Facebook addiction was positively and significantly correlated with Facebook devotion, Facebook withdrawal, and two types of personality characteristics such as neuroticism and extroversion. However, Sherman's study revealed that only neuroticism was the best predictor of Facebook addiction.

Cam and Isbulan (2012) analyzed Facebook addiction among teacher candidates in Turkey. They found a gender, and class differences with regard to Facebook addiction. Males were found to be more addicted to the site than the females. Furthermore, seniors were more addicted to the site than the juniors, sophomores, and freshmen. In this study, Young's IAT (internet addiction test) scale was adapted to measure Facebook addiction. Similar to the original scale, Facebook addiction scale was found to be unidimensional with an alpha of .92.

In a more recent study, Andreassen et.al (2012) developed Bergen Facebook addiction scale (BFAS). BFAS has been based on previous addiction scales, comprising initially 18 items representing six dimensions, namely tolerance, withdrawal, salience, conflict, relapse, and mood modification. The final model of BFAS consisted of six items reflecting those dimensions. The scale was correlated with other scales such as Facebook attitude scale, online sociability scale, addictive tendencies scale, among others. The BFAS showed good psychometric properties, thus considering a valid and reliable instrument for measuring FB addiction. However, the scale was criticized for being focusing on a particular commercial website, rather than focusing on whole activity (Griffiths, 2012). He argued, "What is needed is a new psychometric scale examining potential addiction to a particular online application (i.e., social networking) rather than activity on a particular website (i.e., Facebook)" (p.518). He also urged that in Facebook, people can engage in many activities such as playing games, gambling, watching video and films, updating the profile or messaging friends. Thus, he suggested that FB addiction is not synonymous to social networking addiction.

Previous studies did not focus on the motives for using Facebook and their contribution to the addiction. Very few studies focused on these motives [(Sofiah et.al, 2011; Alabi, 2013), drawing on the U&G and media dependency theories. For instance, Alabi (2013), who developed Facebook addiction symptoms scale (FASS) based on Young's IAT scale, found that students of public universities in Nigeria were low addicts to Facebook (84%) compared with students of private universities (69%). Furthermore, Alabi's study suggested that students of private universities were more likely to be addicted to the site than the students of public universities. Although, Alabi's study was based on the assumptions of these theories, it does not report clearly the motives for using the site, nor the dependency on the site. It only provided descriptive statistics to motives and FB addiction scale.

Moreover, drawing on the U&G theory, Sofiah et.al (2011) found five main motives for using Facebook: passing time, social interaction, communication, companionship, and entertainment. These motives were positively correlated with FB addiction. However, only three motives (passing time, entertainment, and communication) predicted FB addiction by contributing a total of 24% of the variance. Similarly, Kim and Haridakis (2009) found motives for using internet predicted its addiction. Motives for using internet such habitual entertainment, escape, caring for others, economical information seeking, control, and excitement predicted the three dimensions of internet addiction, namely intrusion, escaping the reality, and attachment.

### **2.3HYPOTHESIZED MODEL**

As shown figure 1, the hypothesized model for predictors of Facebook addiction consists of three motives for using the site. FB addiction is the only outcome in the model.

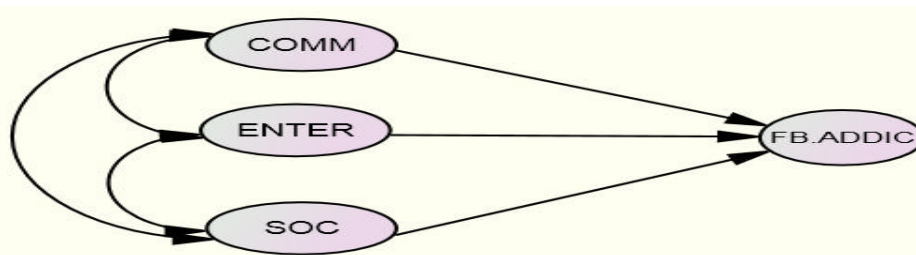


Figure 1. Hypothesized Model for FB addiction Predictors

*Communication motive:*

Communication was found to be motive for using the site among students (Sofiah et.al, 2011; Shahnaz, 2011). Similarly, communication motive was found to be a predictor of Facebook addiction among female students in a public university in Malaysia (Sofiah et.al, 2011). Thus, this study hypothesizes:

**H1:** *Communication motive positively predicts FB addiction*

*Entertainment motive:*

Entertainment was most frequently cited motive for using Facebook (Sofiah et.al, 2011; Shahnaz, 2011; Wilson et.al, 2010). However, very few have given attention to the prediction of this motive to the FB addiction, suggesting that it is the best predictor of addiction to the site (Sofiah et.al, 2011). Therefore, this study posits:

**H2:** *Entertainment motive positively predicts FB addiction*

*Social interaction motive:*

Several studies found social interaction to be a major motive for using the site (Sofiah et.al, 2011; Shahnaz, 2011; Wilson et.al, 2010). This variable was found to have significant relationship with FB addiction (Sofiah et.al, 2011). As such, the current study proposes:

**H3:** *Social interaction motive positively predicts FB addiction*

**2.METHODOLOGY:**

The data for this study was obtained through online survey administered to all Somali youth inside and outside of their country. The link of the survey was posted on Facebook walls and all Somali youth (20-40 years old) were invited to participate in the study. The data was collected within three months from September 2012. A total of 309 youth participated in the current study. Majority of them were male (84%). Exactly half of them obtained university degree (50%). While majority of the respondents were below 30 years (91%).

The sample of the study was considered sufficient (Hair, Black, Babin, & Anderson, 2010) for the application of the SEM technique to address the research objectives and hypotheses. The data was analyzed using SPSS version 17.0. AMOS software version 18.0 was used for the analyzing the measurement models and structural relationships among the constructs under investigation.

**3.1. MEASUREMENTS:**

*Motive scale:* the motive scale consisted of 16 items covering three motives for using Facebook, namely social interaction, communication, and entertainment. All those motives were adopted from Shahnaz (2011). A five-point likert scale was used for the scale, asking the respondents to indicate their level of agreement/disagreement with the items using anchor of (1) strongly disagree and (5) strongly agree.

*Facebook addiction scale:* this scale was adopted from Sofiah et.al (2011). It consisted of 11 items covering the problems created by the use of Facebook such as neglecting duties and responsibilities and conflicting with social relations. The items seem to be similar with those reported in internet addiction scales. Respondents were asked to indicate their levels of agreement/disagreement on these items based on five-point likert scale of (1) strongly disagree and (5) strongly agree.

### 3.RESULTS

This section discusses the results of the study to test the hypothesized model. The section includes two components: the measurement model, which gives the correlation among the latent and observed variables and the full-fledged structural model, which provides the magnitude and direction of the relationships among the exogenous and endogenous variables by using Maximum Likelihood Estimation (MLE).

#### 4.1. VALIDITY OF MEASUREMENT MODEL

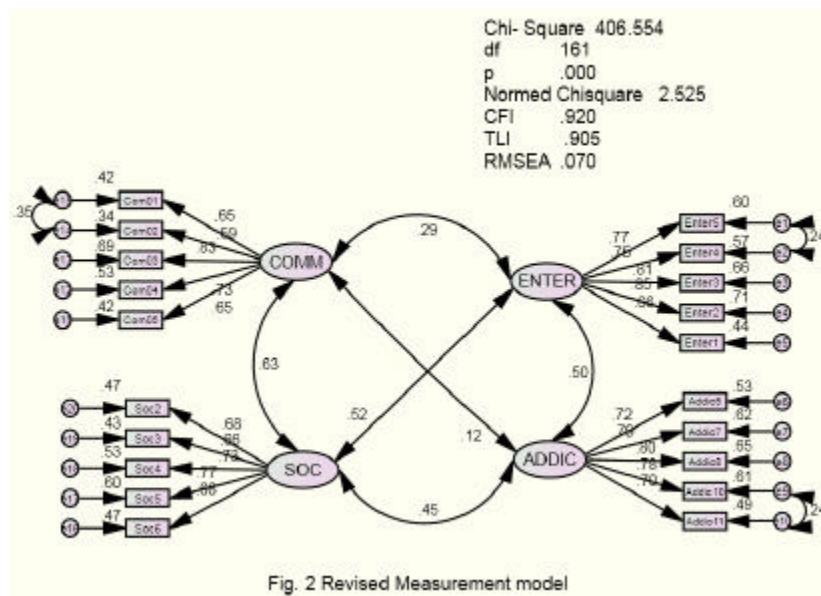
The overall fit indices were assessed for the measurement model by using four common measures: Normed  $\chi^2$  (ratio of chi square divided by the degrees of freedom), Comparative Fit Index (CFI), Tucker-Lewis index (TLI), Root Mean Square Error of Approximation (RMSEA).

Table 2 provides details for all the latent variables used in this study. Confirmatory factor analysis (CFA) was conducted to validate the measurement models. CFA was run for each of the four measurement models, namely CFA-1 (COMM); CFA-2 (SOC); CFA-3 (ENTER); and CFA-4 (ADDIC). Several items were dropped due to the violation of estimation. The revised four-CFA measurement models were consistent with the empirical data [ CFA-1: ( $\chi^2$  (df=4)= 9.826, p=.043, CFI= .989, TLI= .973, RMSEA= .069); CFA-2 ( $\chi^2$  (df=5)= 12.862, p=.025, CFI=.985, TLI= .970, RMSEA= .071); CFA-3 ( $\chi^2$  (df=2)= 2.539, p=.281, CFI= .999, TLI= .997, RMSEA= .030); CFA-4 ( $\chi^2$  (df=4)= 4.525, p= .340, CFI= .999, TLI= .998, RMSEA= .021) ]. The overall fit index for the measurement model was then assessed (Figure 2). The goodness- of-fit for the model was satisfied; with normed Chi square: 2.25, p=.000, CFI=.920, TLI= .905, RMSEA= .070. The correlation among all measurement variables were statistically significant (p<.05) except the relationship between COMM and ADDIC.

**Table 1: Measurement model of the variables of the hypothesized model**

Construct	Item	Items	Loadings	M	SD	a
<b>Communication Motive</b>	Com01	To chat with friends and family members	.65	4.29	.786	.859
	Com02	To maintain old friendship	.59	4.15	.804	
	Com03	To share opinions with friends and family members	.83	4.05	.784	
	Com04	To send to and receive messages from friend and family members	.73	4.17	.803	
	Com05	To express feelings and viewpoints	.65	3.75	.977	
<b>Entertainment Motive</b>	Enter1	To play games	.66	2.26	1.366	.882
	Enter2	To share movies, hobbies, previews, music, videos, etc	.85	2.68	1.315	
	Enter3	To share links related to entertainment	.81	3.04	1.225	
	Enter4	To get update on gossip about celebrities	.75	2.63	1.326	
	Enter5	To download music, video, and picture	.77	2.72	1.363	
<b>Social Interaction Motive</b>	Soc2	To build network with others	.68	3.55	1.067	.848
	Soc3	To make new friends	.66	3.75	.990	
	Soc4	To share latest pictures and videos	.73	3.05	1.234	
	Soc5	To share recent activities	.77	3.53	1.011	
	Soc6	To check on wedding /birthday/event invitations	.66	3.06	1.209	
<b>Facebook Addiction</b>	Addic5	I tend to spend more time in Facebook over going out with others	.72	2.86	.920	
	Addic7	I often think about Facebook when I am not using it	.78	2.46	.813	

	Addic8	I often lose sleep due to late-night login to Facebook	.80	3.50	1.02	.875
	Addic10	My priority is to log on to Facebook rather than doing other things	.78	2.35	1.192	
	Addic11	My work/study is getting lower because of the amount of time I spend on Facebook	.79	3.29	1.203	



After the overall fit indices were accepted, the author evaluated the psychometric properties of the model particularly reliability, convergent, and Discriminant validity. Table 4 gives the details of reliability and validity of the model.

The reliability of the variables of the model was assessed in terms of composite reliability (CR). CR should be greater than .70 in order to obtain internal consistency (Hair et.al, 2010). As such, the CR for all the constructs is greater than the acceptable level. Moreover, convergent validity was assessed in terms of average variance extracted (AVE). Convergent validity assesses the extent of two measures are significantly correlated (Hair et.al, 2010). A high correlation indicates that the variables are measuring its anticipated concept. Thus, all the scores for AVE were above .50 except for COMM and SOC variables (.480 and .498 respectively). However, it can be safe to say that there are no validity concerns since .480 and .498 are almost .50. In addition, convergent validity can be assessed by looking at the loadings (Hair et.al, 2010). All factor loadings were above the acceptable level (>.50). Furthermore, Discriminant validity (DV) was assessed. DV refers to the extent that the concept sufficiently differs from other related concepts (Hair et.al, 2010). DV is achieved when AVE is greater than the square of correlation between the two factors. Therefore, the AVE for all factors is greater than the square of their correlation. In addition, AVE scores were greater than both the maximum Shared Variance (MSV) and Average Shared Variance (ASV), which indicates that each construct differs from the other related constructs (Hair et.al, 2010).

**Table 2: Reliability, convergent validity, and Discriminant validity for the measurement model**

Construct	CR	AVE	MSV	ASV	ADDIC	ENTER	COMM	SOC
<b>ADDIC</b>	0.871	0.576	0.300	0.173	0.759			
<b>ENTER</b>	0.844	0.577	0.329	0.240	0.548	0.760		
<b>COMM</b>	0.820	0.480	0.396	0.167	0.122	0.302	0.693	
<b>SOC</b>	0.832	0.498	0.396	0.309	0.450	0.574	0.629	0.706

**4.2. ESTIMATING FULL-FLEDGED MODEL**

In order to estimate the hypothesized model, all four-measurement models were incorporated. The hypothesized model was not consistent with the data. Therefore, it necessitated to revise the model. As shown in figure 3, the model was fitted to the empirical data after removing the negative path coefficient of .24 (COMM > ADDIC), indicating that H1 was not supported. As shown in table 3 and figure 3, the revised model shown goodness-of-fit to the data, with Normed Chi square= 2.548,  $p < .001$ , CFI=.918, TLI=.904, RMSEA=.071. The results of the revised model depicted that its parameters were free from offending estimates.

**Table 3: Fit indices**

Fit indices	Cut-scores (Hair et.al (2010))	This study's scores
X <sup>2</sup>		412.813
Df		162
X <sup>2</sup> /df	= 5.0	2.548
CFI	= .90	.918
TLI	= .90	.904
RMSEA	=.080	.071

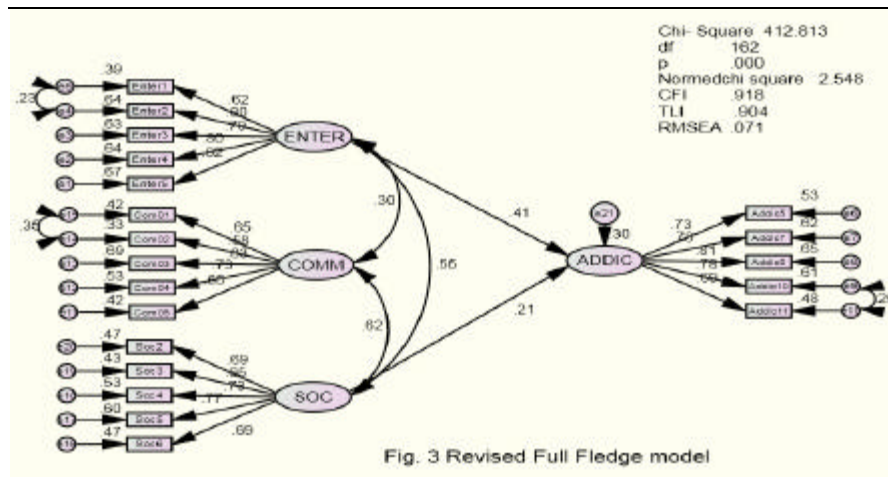


Fig. 3 Revised Full Fledge model

The model suggested that entertainment ( $\beta=.41$ ) and social interaction ( $\beta=.21$ ) motives had statistically significant effects on Facebook addiction, thus, suggesting that H2 and H3 were fully supported. However, entertainment motive was the best predictor of Facebook addiction ( $p=.000$ ). Contrary to the author's expectation, communication motive had no positive and significant effect on Facebook addiction.

**4.DISCUSSION**

The current study sought to determine the predictors of Facebook addiction from the uses and Gratifications perspective. By employing SEM, the study hypothesized that communication, entertainment, and social interaction motives for using Facebook will be positively predicting the addiction to the site.

The study employed SEM to validate the measurement and full-fledged structural models. The measurement model was first assessed followed by structural model. Therefore, the measurement and structural models were consistent with the empirical data after making some modifications due to violations of rules of thumbs.

The study revealed that entertainment motive was significantly and positively predicted Facebook addiction. This is consistent with previous studies (Kim, J., & Haridakis, 2009; Sofiah et.al, 2011) that found entertainment to be a predictor of internet and Facebook respectively. Moreover, the study suggested that social interaction motive positively and significantly predicted the addiction to the Facebook. This is in contrary with Sofiah et.al (2011) who found that this motive did not predict FB addiction among female students in Malaysia. In addition, the results suggested statistically significant interrelationships among the exogenous variables of the hypothesized model. On the other hand, this study found that communication motive did not predict FB addiction. This is contrary to a previous study, which found that communication motive as a predictor of FB addiction (Sofiah et.al, 2011).



## 5.CONCLUSION

The findings of this study contributed to the body of knowledge on new media uses and gratifications in several ways. First, the study is the first empirical attempt to investigate Facebook addiction and its predicts among Somali youth. Second, the results suggested that the U&G approach is applicable to the context of Somalia. Third, the study validated two hypotheses and rejected another. Fourth, the study found that motives for using Facebook could predict the addiction to the site. Finally, the results of the study suggested that social interaction and entertainment were predictors of FB addiction, thus, supporting previous studies.

The study has several limitations. One major limitation lies in the way of the data collection. The study employed online survey, thus, the results should be cautiously interpreted. As well, the study did not address the moderating effects and calls for future studies to look at the moderation effects of demographics such as gender, education, and place of living. The study also recommends drawing probability sampling and increasing the sample size in order to generalize the results to the whole Somali youth. Furthermore, the study investigated generally the youth in Somalia. Thus, future studies should focus on specific segments such as students, youth inside and outside of the country or working youth.

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