

Undergraduate Students Predisposition From Instagram And Snapchat Interactive Effect On Stress

*** ADEEL AHMAD AAMIR, ** DR. NOOR HAYAT**

*Ph.D Scholar Media and Communication Studies School of Media and Communication Studies
University Central Punjab.

** Assistant Professor School of Media and Communication Studies University of Central Punjab.

ABSTRACT

Undergraduate students use SNS for variety of purposes. The basic motives behind are gratification of their need for information, a sense of self belonging and a feel of connectivity with their peer group. Present study investigates social media networking application (snapchat and Instagram) their addictive use and effect on perceived stress levels of undergraduate students (N=659). Social media addition and frequency is measured for its effect on perceived stress levels of undergraduate students. Results indicated that that addictive use of SNS applications has significant impact on increased level of stress among undergraduate students. Results yielded that use of Snapchat and Instagram in class timings and during meals has a positive correlation with stress.

Keywords: SNS, Stress, Undergraduate students, Snapchat, Instagram

INTRODUCTION

With the inception of the printing press by Gutenberg, a paradigm shift changed the way we used to communicate and read newspapers. In early 19th century radio again transformed the means and ways of communication and that was the start of an electronic way of communication. Then the world saw a huge paradigm shift from radio to television during the mid-19th century and television took a whole new flight from black and white to color and then from terrestrial to the satellite. The initiation of the World Wide Web and email revolutionized the way human beings ever communicated. Connectivity in the late nineties and early 2000s shape up the term global village, and computer-mediated communications. From 2000 to 2005 YouTube, LinkedIn, My Space and Flickr gained huge popularity items of photo sharing and video sharing (Del Rosario et al., 2015).

By 2006, Facebook and Twitter started their services and both social networking sites remain relevant and famous up until now. Steve Jobs of Apple introduced the first iPhone in 2007 that revolutionized the way we use mobile phones (Panek et al., 2013). On the contrary, in 2008

Google's new operating system known as android revolutionize the mobile phone industry. Both platforms enable users to use application-based social media on their mobile phones. App Store and Google Play are the respectively for iPhone and Android to download these applications (Kietzmann et al., 2011a). Internet on the mobile phone is another phenomenon, which is adding power to the use of these mobile applications because without a strong internet connection these applications are useless. In today's world, 4G and 4G LTE mobile internet technologies are providing a suitable platform and ease for mobile users to use social media mobile applications on the go. No matter whether you are driving, sitting in a restaurant, shopping in a mall, or traveling in a plane social media is on your fingertips. A download speed of 100 Mbps and upload speed of 50 Mbps enables users to download videos, upload, and go even live using their mobile phones. With this data, speed applications like Snapchat and Instagram have become leading audiovisual status sharing mobile applications apart from Facebook and YouTube. Though these mobile applications were released in-between 2009 to 2011 after 2011 the start of 3G, then 4G and 4G LTE mobile technologies have taken these mobile applications to new heights of functionalities and usages(Huang et al., 2012)

In the current scenario, Facebook, Snapchat, WhatsApp, and Instagram are very much among popular among students and they are using all these applications for different purposes. With the extensive use of these social media platforms, undergraduate students are more prone to mental health disorders. As students of the 21st century is more connected and into communication, on the other hand, they are exposed to the side effects of social media which go unnoticed during the extensive online activity. According to the PEW survey in the United States, social media usage has been drastically increased and compare to previous years students are spending more than six hours on social media. According to University Missouri, excessive use of Facebook leads to the symptoms of envy, anxiety, and depression. Because students are detached from their peer group and the real world that makes them unable to understand the difference between fiction and facts students who are unable to cope up with their current circumstances they take this mediated reality as an escape (Kietzmann et al., 2011a). So social media become quite easy to feel excluded and make students less involved in their life leading them to go into stress. People put the more entertaining, happy, and perfect version of them on these social media platforms and this creates a false impression of how happy and successful people are. Positive feedback helps its users to feel good negative feedback or feedback, not all make them anxious (Kietzmann et al., 2011b)

RATIONALE

The current study aims to explore the relationship between addictive use of social media and dependent variables of stress. Previous literature suggests that addictive exposure to Facebook correlates to a higher narcissism, higher stressed and a higher bandwagon effect (Ryan & Xenos, 2011). Mostly previous research is based on Facebook and its relationship with stress and development other personality traits because Facebook is the pioneer platform in modern social interaction. With special reference to Pakistan there is research gap on this area and to fill this gap

substantial studies are needed on internet and social media use and its effect on undergraduate students

LITERATURE REVIEW

Snapchat: Snapchat kicked off at a time when three social media giants were already in the market for checking on friends and family there was Facebook. When it comes to sharing your great memories and travel moments Instagram was doing well and twitter was a like discussion on a cocktail party while Snapchat added a new flavor to the conversation and created its own niche audience. All the other platforms went after storing, documenting and saving digital footprints of their users while Snapchat worked quite the opposite by putting real life theme in its innovation that moments are temporary this is exactly the unique selling point and behavior of this application ('The Snap Generation', 1970). Snapchat is co-founded by Spiegel, Bobby Murphy, and Reggie Brown in 2011. Initially it was known as Picaboo. Snapchat is one on one messaging application, and it allows its users to send pictures and videos around 150 million users use Snapchat everyday every second users watch 800 hours of videos collectively. Messages sent on snapchat disappear after several seconds. Among its many other feature's users can send stickers can create stories. Snapchat is popular among Millennials and teenagers and the application is available on both android and apple platforms (Bernazzani, n.d.). Currently users send around 50 million snaps on snapchat every day. In 2013 Snapchat introduced story feature story in Snapchat is a series of pictures telling story which a user can post for their friends and their friends can view this story for 24 hours. 2014 was the year when Snapchat introduced chat feature and in the same year it introduced Snapchat advertising and advertisements started appearing in users' recent updates. In November 2014 Snapcash was introduced through which users started receiving money from Snapchat into their bank account. By 2015 Snapchat introduced many innovative methods for its advertisers to use its growing audience for their advertisement. In September 2015 they launched a new method to cater avid selfie taker's need by introducing new selfie techniques where users can use different filters to enhance their facial features filters included puppy ears cat and dog facial features. In that way Snapchat started a new era of selfies. According to Financial Times in 2016 Snapchat users were watching 6 billion videos in 24 hours which according to Bloomberg reached 10 billion in 2016 which is 2 billion more views than Facebook reported in 2015. Snapchat had 150 million active users surpassing Twitter in 2016. A new functionality was introduced in July 2016 known as Snapchat Memories which allowed users to save their videos on their devices to edit them later. During same year they partnered with Bitstrips to create Bitmoji a personalized avatar of users. In September 2016 Snapchat rebranded itself as Snap Inc and introduced Spectacles enabling users to record 360-degree circular viewing pictures and videos. By the mid of 2017 Snapchat grew steadily and became a public Inc and changed its stories feed to algorithmic feed which was reverted back in 2018 due to public backlash (Snapchat's History, n.d.). In 2011 where a lot of parents were joining Facebook at the same time teens and young adults were leaving Facebook Snapchat provided them a great alternative and it became a new cool thing for them

(‘The Snap Generation’, 1970). Social media platform that offers content to their users for a limited time became integral part of social ecosystem. Data shows that it is enjoyable activity among students most of the college going student do not see this platform for saving moment rather they use it for showing spontaneous moments of their lives with trusted contacts (Bayer et al., 2016). Ephemeral Media is gaining popularity day by day. Compare to persistent media there is a growing interest in the social media platforms that erase communications after a fleeting period. Snapchat is exceptionally good at it because it deletes the content in ten seconds after user opens it and students believes that due to these functionalities Snapchat is more enjoyable compared to other social media platforms.

Instagram: Instagram was launched exclusively in 2010 for iPhone users which is a location based mobile phone application that allows its users to take and upload pictures. It also enables its users to apply different manipulations to their picture and these manipulations are known as filters. Users of Instagram can instantly share their pictures with their friends (Hochman & Schwartz, 2012). It crossed a million users in two months right after its launch in 2010 and in 2012 they launched its Android version and same year Facebook bought it. By 2012 it marked its 80 million users and from 2021 to 2017 Instagram introduced multiple features like bringing in 25 new languages new photo filters introducing boomerang and videos and multiple photo uploading options and drastically increased its reach from 80 million to 1 billion users. Started as a part time project by Kevin Systrom and Mike Krieger became a new photo sharing sensation in the world. The interesting element about Instagram is that it allows you to take ordinary pictures and make them extraordinary with its functionalities. Instagram is the app that introduced Selfie culture on social media Research on Instagram has become part of digital humanities research recent years where humanists and data scientists works together to collaborate in analyzing cultural and human artifacts. Most of its users falls between 16-29 years or age (Lup et al., 2015). The reason behind being popular among this age group is its convenience because one can have the option of taking a picture and 60 second video and customizing with numerous available filters and editing tools and then uploading it instantly. It allows its users to post public, private, direct message and Instagram stories. Teens and young adults also love this application because it enables them to create and consume media for self-gratification of socializing especially the popular feature of creating stories which disappear after 24 hours. University students consider Instagram a great tool to create a social circle (Linashke, 2011). Instagram has made fashion industry and young adults more connected and allowed brands to display their products to its desired young customers thus it has created a sense of being trendier and more fashionable among youth. This is how Instagram has achieved high engagement rate (Casaló et al., 2020). Factor analysis of a study shows that Instagram is used for self-expression, recording, socialization, recreation, creativity, and prying. Travel picture sharing is also very popular on Instagram A research (Kocak et al., 2020) shows that above 90 percent of the travelers share their picture on Instagram and since its inception more than 50 million travel pictures has been shared on this social media platform.

An average user spends 53 minutes per day on Instagram though it is equally popular among male and female users but 51 percent of the users of Instagram are female, and 49 percent are male. Their usage time has increased after the story sharing feature was introduced by Instagram. 500 million users use its story sharing feature daily making it 6th most visited website 9th most popular Google query and 4th most users of any mobile application. Another feature named explore is used by 50% of the users to explore latest content. Instagram's growth is steady among young users. Hashtag is a quintessential phenomenon on social media since its inception by Twitter in 2007 and it is popular on Instagram as well according to (Hupspot,2020) an average Instagram post contains 10.7 hashtags. Over the period of one year 133 percent Instagram influencers used #ad hashtag. Among 1 billion users' 71 percent of its users are under 35 years of age. The most popular age range is 25-34 years of age followed by 18-24. It also helps 80 percent of Instagrammers to make decision to buy a certain product of services because 50 percent of Instagram users follow at least one business account.

METHOD AND MATERIAL

Participant and Sample: The final sample of current research was (N=659) students studying at the undergraduate level in universities of Pakistan. The age of the participants was between 16-31 years. Among all participants 312 were male participants and 347 were female participants. To be eligible for current study all participants must be user of smartphone who use either 3G, 4G or LTE internet connection on their mobile phones and use social media applications on their mobile phone. Among all participants 37.8% were between ages of 16-20, 57% were between 20-25 3% were between 26-30 only 1.1% were between 31 or above.

Instruments: Current study has used five scales after some minor modifications to measure social media use intensity, stress. Demographic instrument was designed keeping in view the current participants, motivation behind this research and several aspects of undergraduate students.

Social Media Addiction Tool: Social Media addiction tool was developed by (Sahin, 2018) and is adopted in this study Cronbach alpha of the scale was 0.93 . This is the latest tool available to measure the frequency of social media use. Social media intensity scale has measured the extent to which participants use social media to interact with people they already know offline and the extent to which they use it to meet new people online. This tool has 29 items having response options of strongly agree, agree, neutral, disagree and strongly disagree, which have been given values as 5,4,3,2 and 1 respectively.

Perceived Stress Tool: The current study will use perceived stress tool PSS to measure stress which was developed by (Cohen et al., 1994). Stress measure will fathom the amount of stress social media users are experiencing. This tool has 10 items having response options of strongly

agree, agree, moderate, disagree and strongly disagree which have been given values as 5,4,3,2 and 1 respectively.

OBJECTIVES OF THE STUDY

Present study is based on following objectives.

1. To explore relationship between stress and addictive use of social media
2. To investigate impact of addictive use of social media on stress.

HYPOTHESIS

For present study following hypothesis and research questions are formulated

H1: Participants scoring social media addiction scale will predict a higher level of stress.

H0: There is no effect of social media addiction on higher level of stress

Present study is based on following research questions.

RESEARCH QUESTIONS

R1: Does there any relationship between SNS use between meals and stress

R2: Does there any relationship between SNS use during class and stress

FINDINGS

Table 01: Descriptive Statistics and Reliability Coefficients for Study Variables

Scales	A	K	M	SD	Range	
					Potential	Actual
Social Media Addiction Tool	.911	28	80.37	16.55	28-140	28-140
Perceived Stress Scale	.71	10	31.58	5.51	10-50	10-50

Note: a= Reliability coefficient and K= no. of items in the scale

Table 2: Distribution of respondents according to age

Age Group of Participants	Freq	Freq (%)
16-20 Years	249	37.8%
20-25	379	57.5%
26-30	24	3.6%
30-Above	07	01.1%

Table 2.1: Distribution of respondents according to gender

Gender of Participants	Freq	Freq%
Male	312	47.3%
Female	347	52.7%
Total	659	100%

Table 2.2: Distribution of respondents according to academic rank

Academic Rank	Freq	Freq%
1 st Year	108	16.4%
2 nd Year	105	15.9%
3 rd Year	153	23.2%
4 th Year	281	42.6%
Missing Value	12	(1.8%)

Table 2.3: Distribution of respondents according to academic faculty

Academic Faculty	Freq	Freq%
Arts and Humanities	211	32%
Social Sciences	259	39.3%
Business Studies	95	14.4%
Natural Sciences	57	8.6%
Others	35	5.3%
Missing Value	2	.3%

Table 2.4: Usage of Smartphone, Instagram, Snapchat

Usage of Smartphone, Instagram, Snapchat	Freq	Freq%
Internet Use on Smartphone		
Yes	659	100%
No	0	0%
Use of Snapchat		
Yes	507	76.9%
No	152	23.1%
Use of Instagram		
Yes	647	98.2%
No	12	1.8%

Table 2.5: Distribution of respondents according to frequency of time

Time Spent on Instagram and Snapchat	Freq	Freq%
Time spent on Instagram		
1 Hour	258	39.2%
1-2 Hours	185	28.1%
2-4 Hours	142	21.5%
5 Hours or More	73	11.1%
Time spent on Snapchat		
1 Hour	488	74.1%
1-2 Hours	90	13.7%
2-4 Hours	49	7.4%
5 Hours or More	32	4.9%

Table: 03 Descriptive Statistics Frequency of Stress

Variables	Mean	SD	Median	IQR	Freq	Freq%
During last one month						
I have been upset						
because of something						
that happened						
unexpectedly.						
Strongly	3.0577	1.2462	3.0000	3.0577	82	12.4%
Disagree					163	24.7%
Disagree					133	20.2%
Neutral					197	29.9%
Agree					84	12.7%
Strongly Agree						
In the last month, I						
have been unable to						
control the important						
things in your life.						
Strongly	3.0046	1.1753	3.0000	3.0046	69	10.5%
Disagree					178	27.0%
Disagree					161	24.4%
Neutral					183	27.8%
Agree					68	10.3%
Strongly Agree						
In the last month, I						
have felt nervous and						
“stressed”	3.2762	1.2190	4.0000	3.2762	64	9.7%
					127	19.3%

Strongly					135	20.5%
Disagree					229	34.7%
Disagree					104	15.8%
Neutral						
Agree						
Strongly Agree						
In the last month, I have felt confident about my ability to handle my personal problems.						
Strongly	3.4674	1.0181	4.0000	3.4674	25	3.8%
Disagree					90	13.7%
Disagree					190	28.8%
Disagree					260	39.5%
Neutral					94	14.3%
Agree						
Strongly Agree						
In the last month, I often felt that things were going my way.						
Strongly					44	6.7%
Disagree	3.0577	0.9845	3.0000	3.0577	136	20.6%
Disagree					250	37.9%
Neutral					196	29.7%
Agree					33	5.0%
Strongly Agree						
In the last month, I often have found that I cannot not cope with all the things that I had to do.						
Strongly	3.2291	0.9757	3.0000	1.0000	35	5.3%
Disagree					101	15.3%
Disagree					250	37.9%
Neutral					224	34.0%
Agree					49	7.4%
Strongly Agree						

In the last month, I have been able to control irritations in my life.							
Strongly Disagree	3.1502	0.9708	3.0000	1.0000	34	5.2%	
Disagree					126	19.1%	
Disagree					246	37.3%	
Neutral					213	32.3%	
Agree					40	6.1%	
Strongly Agree							
In the last month, I felt that I have been on top of the things.							
Strongly Disagree	2.9727	0.9561	3.0000	2.0000	40	6.1%	
Disagree					155	23.5%	
Disagree					282	42.8%	
Neutral					147	22.3%	
Agree					35	5.3%	
Strongly Agree							
In the last month, I have been angered because of things that were outside of my control.							
Strongly Disagree	3.2959	1.1035	3.0000	1.0000	43	6.5%	
Disagree					116	17.6%	
Disagree					190	28.8%	
Neutral					223	33.8%	
Agree					87	13.2%	
Strongly Agree							
In the last month, I felt difficulties were piling up so high that I could not overcome them.							
Strongly Disagree	3.0637	1.0953	3.0000	2.0000	53	8.0%	
Disagree					153	23.2%	
Disagree					215	32.6%	
Neutral					175	26.6%	
Agree					63	9.6%	
Strongly Agree							

Relationship Use of SNS Between Meals & Class with Stress

Table 4: Correlation Between use of SNS Between Meals & Class with Stress

		Do you use Snapchat & Instagram during class?	Stress	Do You use Snapchat & Instagram when during your meals?
Do you use Snapchat & Instagram during class?	Pearson	1	-	.172**
	Correlation		.130**	
	Sig. (2-tailed)		.001	.000
	N	654	654	654
Stress	Pearson	-.130**	1	-.111**
	Correlation			
	Sig. (2-tailed)	.001		.004
	N	654	659	659
Do You use Snapchat & Instagram when during your meals?	Pearson	.172**	-	1
	Correlation		.111**	
	Sig. (2-tailed)	.000	.004	
	N	654	659	659

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5: Liner Regression for Predicting Cause and Effect Among Variables

H₁ Participants scoring social media intensity scale will predict a higher level of stress. (Accepted)

Table 8: Simple linear Regression for Predicting Stress (N=659)

Variable	Stress			
	B	B	SE	P
Frequency of using Instagram	.827	.154	.207	.000
R ²	.024			
F	15.976			

Table 5.1: Interactive Effect of Frequency of Using Instagram Factor and Perceived Stress

Table 9 Simple linear Regression for Predicting Stress (N=659)

Variable	Stress			
	B	B	SE	P
Frequency of using Snapchat	1.020	.153	.257	.000
R ²	.023			

DISCUSSION

Simple linear regression is applied to analyze the interactive effect of frequency of using Instagram factor and stress. Independent variable (frequency of using Instagram Factor) and dependent variable (Stress) were entered. The results indicated significant impact of social identity factor ($\beta = .15$, $p < .001$) on stress by producing variance of 02 %. The overall model was significant. Frequency of using Instagram positively predicted stress, which means the higher the frequency of using Instagram the higher is the stress. This may imply that the more students use Instagram may result in higher level of stress. Simple linear regression was used to analyze the interactive effect of frequency of using Snapchat factor and Stress. Independent variable (frequency of using Snapchat Factor) and dependent variable (Stress) were entered. The results indicated significant impact of frequency of using Snapchat factor ($\beta = .15$, $p < .001$) on stress by producing variance of 02 %. The overall model was significant. Frequency of using Snapchat positively predicted stress, which means the higher the frequency of using Snapchat the higher is the stress. Frequency of Instagram and snapchat has significant impact on stress among undergraduate students. The majority cohort are between the age of 20-25 years of age this implies that students studying at sophomore or second year of their studies at the undergraduate level are more exposed to stress, and they use social media more frequently and majority of them are female students It is evident from the literature students use social media during their meals and it brings them many problems like bad appetite and depression. This research aims to explore the pheromone that if there is a relationship between use of Snapchat and Instagram during eating and its relationship to depression. A Pearson Correlation test was applied to two variables use of Snapchat and Instagram during meals and perceived stress. It is found that there is an inverse/ negative relationship between use of Snapchat and Instagram during meals and stress at the level of $-.111^{**}$. It is significant relationship. That means the more you use these two applications during meals the less you are stressed Similarly, relationship between use of these two applications during class time and stress was measured by using Pearson Correlation test on these two variables and it is noted that there is strong positive Correlation between use of Snapchat and Instagram during class timings and stress at the levels of $.172^{**}$. The relationship is two tailed. That means that the more you use these applications during class time the more you are stressed. Both of applications frequency also predicts the relationship between stress and frequency use of these two applications at the levels of $.154^{**}$ and $.153^{**}$. That means using them in the class and using them out of the class in both scenarios it is significantly correlates to perceived stress. But surprisingly it is negatively correlated to use of these applications during meals timings. This is an interesting finding, and it needs more research in this area.

CONCLUSION AND SUGGESTIONS

With the introduction 3G and 4G internet on cellular devices in past on decades use of social media on mobile phones is increased drastically in developing countries like Pakistan. Availability of

smart phones has also increased because of comparatively low prices. Majority of Pakistan population is comprised of youth and social media is a popular tool among youth for information gratification, entertainment, and post covid scenario has played an important role putting educational activities on mobile applications and online forums. It is observed that majority of the students who are studying at undergraduate level are using social media application e.g., Snapchat, Instagram in their day-to-day life. previous research explored level of stress among college and university going students. Present study proved the hypothesis that use of snapchat and Instagram are making undergraduate students more stressed. Due to limited sample size present study can only be generalized to the undergraduate students studying in Pakistani universities. More research with a larger sample size is required to explore this phenomenon in detail. It is also recommended that study with current variables should be expanded to school level students as well.

REFERENCES

- Abbas Naqvi, M. H., Jiang, Y., Miao, M., & Naqvi, M. H. (2020). The effect of social influence, trust, and entertainment value on social media use: Evidence from Pakistan. *Cogent Business & Management*, 7(1), 1723825. <https://doi.org/10.1080/23311975.2020.1723825>
- Bayer, J. B., Ellison, N. B., Schoenebeck, S. Y., & Falk, E. B. (2016). Sharing the small moments: Ephemeral social interaction on Snapchat. *Information, Communication & Society*, 19(7), 956–977. <https://doi.org/10.1080/1369118X.2015.1084349>
- Bernazzani, S. (n.d.). A Brief History of Snapchat. Retrieved 9 September 2020, from <https://blog.hubspot.com/marketing/history-of-snapchat>
- Casaló, L. V., Flavián, C., & Ibáñez-Sánchez, S. (2020). Be creative, my friend! Engaging users on Instagram by promoting positive emotions. *Journal of Business Research*. <https://doi.org/10.1016/j.jbusres.2020.02.014>
- Cohen, S., Kamarck, T., & Mermelstein, R. (1994). Perceived stress scale. *Measuring Stress: A Guide for Health and Social Scientists*, 10(2), 1–2.
- Del Rosario, M. B., Redmond, S. J., & Lovell, N. H. (2015). Tracking the evolution of smartphone sensing for monitoring human movement. *Sensors*, 15(8), 18901–18933.
- Digital in Pakistan: All the Statistics You Need in 2021. (n.d.). DataReportal – Global Digital Insights. Retrieved 18 August 2021, from <https://datareportal.com/reports/digital-2021-pakistan>
- Hochman, N., & Schwartz, R. (2012). Visualizing Instagram: Tracing Cultural Visual Rhythms. In: The workshop on Social Media Visualization (SocMedVis. In Conjunction with 6th International AAAI Conference on Weblogs and Social Media (ICWSM-12, 6–9.
- Huang, J., Qian, F., Gerber, A., Mao, Z. M., Sen, S., & Spatscheck, O. (2012). A close examination of performance and power characteristics of 4G LTE networks. *Proceedings of the 10th International Conference on Mobile Systems, Applications, and Services*, 225–238.
- Ida, R., Saud, M., & Mashud, M. (2020). An empirical analysis of social media usage, political learning and participation among youth: A comparative study of Indonesia and Pakistan. *Quality & Quantity*, 54(4), 1285–1297. <https://doi.org/10.1007/s11135-020-00985-9>

- Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011a). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3), 241–251.
- Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011b). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3), 241–251.
- Kocak, E., Nasir, V. A., & Turker, H. B. (2020). What drives Instagram usage? User motives and personality traits. *Online Information Review*, 44(3), 625–643. <https://doi.org/10.1108/OIR-08-2019-0260>
- Linashcke, J. (2011). *Getting the Most from Instagram*. Peachpit Press.
- Lup, K., Trub, L., & Rosenthal, L. (2015). Instagram #Instasad?: Exploring Associations Among Instagram Use, Depressive Symptoms, Negative Social Comparison, and Strangers Followed. *Cyberpsychology, Behavior, and Social Networking*, 18(5), 247–252. <https://doi.org/10.1089/cyber.2014.0560>
- Mourtada, R., Salem, F., Al-Dabbagh, M., & Gargani, G. (2011). The role of social media in Arab women's empowerment. *Dubai, Dubai School of Government*, 1, 26.
- Panek, E. T., Nardis, Y., & Konrath, S. (2013). Mirror or Megaphone?: How relationships between narcissism and social networking site use differ on Facebook and Twitter. *Computers in Human Behavior*, 29(5), 2004–2012.
- Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the Big Five, shyness, narcissism, loneliness, and Facebook usage. *Computers in Human Behavior*, 27(5), 1658–1664.
- Sahin, C. (2018). Social Media Addiction Scale-Student Form: The Reliability and Validity Study. *Turkish Online Journal of Educational Technology-TOJET*, 17(1), 169–182.
- Snapchat's History: Evolution Of Snapchat And Timeline (2020). (n.d.). BuyCustomGeofilters.Com. Retrieved 10 September 2020, from <https://www.buycustomgeofilters.com/blog/snapchat-history-and-updated-timeline>
- The Snap Generation: A Guide to Snapchat's History. (1970, January 1). GaryVaynerchuk.Com. <https://www.garyvaynerchuk.com/the-snap-generation-a-guide-to-snapchats-history/>