

# **FOMO as a Mediator between number of SNS Accounts used and Subjective Wellbeing**

## **Abstract**

Social Networking Sites (SNS) are the bread and butter of our digital lives, but research has shown SNS usage to lead to higher levels of Fear of Missing Out (FOMO) and lower levels of subjective wellbeing (Przybilski, Murayama, Dehaan, & Gladwell, 2013). Existing psychological theories explain this causal relationship as an outcome of either an innate need for relatedness (Self Determination Theory) or behavioral addiction (SNS Addiction). Theoretically, these theories also posit that individuals with a greater number of SNS accounts are also more likely to experience FOMO and in turn lower levels of subjective wellbeing. The aim of this paper is to investigate this hypothesis, through a post hoc analysis of data previously obtained for a college project. Our sample consisted of 181 participants (Males = 57, Females = 123, Others = 1) with the mean age being 21.51 (SD = 1.76). Results show FOMO to completely indirectly mediate the relationship between number of SNS accounts used and subjective wellbeing (effect =  $-.20$ , SE =  $.10$ , CI =  $-.43$  to  $-.03$ ); supporting our hypothesis. Future directions for research and interventions are discussed.

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Using social networking sites (SNS) is the norm in current times (Lenhart, 2015). One in four people in the world use platforms such as Facebook, Twitter and Instagram (Whiteman, 2015). India is no exception to this rule with the current number of social media users at 326.1 million and rising (Statista Research Department, 2019). Social networking site use has permeated across all demographics - young and old – with older adults favoring platforms like Facebook and their younger counterparts preferring relatively new-comers like Instagram (Pew Research Center, 2019), with the average time spent using SNS increasing every year (Clement, 2020).

Interestingly, the negative effects of possessing multiple SNS accounts have rarely been investigated, more so its relationship with FOMO and subjective wellbeing is a complete mystery. This research aims to bridge the gap in the literature by investigating the relationship between the number of SNS accounts, FOMO, and subjective wellbeing. Przybilski et al. (2013) defined FOMO as a “pervasive apprehension that others might be having a rewarding experience from which one is absent; FoMO is characterized by the desire to stay continuously connected with what others are doing”. It can trigger feelings of loneliness, anxiety, and inadequacy (Przybilski, Murayama, Dehaan, & Gladwell, 2013; Barry, Sidoti, Briggs, Reiter, & Lindsey, 2017). On the other hand, subjective wellbeing is an umbrella concept that covers cognitive and affective aspects of the evaluation of one’s life (Diener E., Oishi S. & Lucas R. E., 2003) measured by a combination of several indicators, such as life satisfaction, affect, depression, or stress (Ahn J., 2011).

Increased SNS usage has been linked to increased stress (Egan & Moreno, 2011), depressive symptoms (Eijnden, Meerkerk, Vermulst, & Spijkerman, 2008; Moreno, M. A. et al., 2011), social

anxiety (Harman, Hansen, Cochran, & Lindsey, 2005; Shaw, Timpano, Tran & Joormann, 2015), and lower levels of subjective wellbeing (Kross E. et al., 2013) and satisfaction (Chou & Edge, 2011). Thus, SNS use is negatively associated with one's subjective wellbeing, with a research finding fear of missing out (FOMO) as the missing causal link between SNS use and subjective wellbeing (Przybilski, Murayama, Dehaan, & Gladwell, 2013). This causal link has been explained through self-determination theory (Przybilski, Murayama, Dehaan, & Gladwell, 2013). The theory posits individuals have an innate set of universal intertwined needs, one of which being the desire to affiliate with others. This desire to affiliate termed the "need for relatedness" motivates one to create social connections, including those on SNS (Ryan, R. M.; Deci, E. L., 2000). According to self-determination theory, an individual would engage in both SNS usage and creation of multiple SNS accounts, as both would lead to a greater number of social connections. FOMO can then be understood as a label attached to the need for relatedness, motivating the individual to obtain a greater number of social connections. Empirical research has found FOMO to have an indirect positive mediation effect on the number of social connections an individual creates, caused by the intensity of the individual's SNS use (Roberts & David, 2019). The same study also found intensity of SNS use to have a negative impact on subjective wellbeing through FOMO, but have the opposite effect when the individual acts upon FOMO and create social connections. Thus, theory and empirical research suggests FOMO can be understood as a driving force to create social connections online, and the inability to do so results in lower levels of subjective wellbeing.

An alternative explanation is the SNS addiction or social media addiction hypothesis. SNS sites are consumer products designed to keep the consumer engaged, for e.g. in an interview, Chamath Palihapitiya - former Vice President of User Growth at Facebook – admitted that popular social

networking sites' interfaces were designed to be addictive by rewarding users with increased dopamine (Stanford Graduate School of Business, 2017). Moreover, social networking sites have a strong element of unpredictability with the reward payout being infrequent (Griffiths & Nuyens, 2017; Griffiths M. D., 2018). According to Robert Sapolsky, the magic of this "maybe" leads to signification secretion of dopamine, reinforcing SNS use and incentivizing the individual to possess multiple SNS accounts (FORA.tv, 2011). FOMO can then be understood as a form of withdrawal when the user is unable to access their social networking sites. Prior research has found SNS addiction to be significantly associated with FOMO (Blackwell, Leaman, Tramposch, Osborne, & Liss, 2017; Yin, et al., 2019; Hamutoglu, Topal, & Gezgin, 2020; Fabris, Marengo, Longobardi, & Settanni, 2020). Naturally, individuals with more SNS accounts are more likely to be "addicted", more likely to experience FOMO leading to lower levels of subjective wellbeing.

While research on SNS usage is bountiful, literature on number of SNS accounts and it's connection with FOMO and subjective wellbeing is scarce despite theoretical support. Hence, the aim of this paper is to examine if FOMO mediates the relationship between number of SNS accounts and subjective wellbeing based on existing psychological theories. To that end, we formulate the following hypotheses:

**H<sub>1</sub>:** Number of SNS accounts will predict FOMO.

**H<sub>2</sub>:** Number of SNS accounts and FOMO will predict subjective wellbeing.

**H<sub>3</sub>:** FOMO will mediate the relationship between number of SNS accounts and subjective wellbeing.

## Method

### Participants

Our sample consisted of 181 participants (Males = 57, Females = 123, Others = 1) with the mean age being 21.51 (SD = 1.76) years ranging from 18 to 25 years belonging to India. Data for this study comes from a college project aimed at developing a new tool for FOMO.

In the college project, participants were solicited using non-probabilistic sampling through social networking sites. Informed consent was taken from every participant prior to induction in study. No incentives were provided in exchange for participation in the study. A checkbox type item was used to determine which social networking sites participants used. The available options were Facebook, Twitter, Instagram, Snapchat and WhatsApp. We included WhatsApp as a SNS platform because one can create a profile (upload a profile picture and add underlying text) and update their status. The total number of social networking sites for each user were then computed. Scores from the following psychometric tools were included in this study:

### Measures

The 10-item generic FOMO scale (Przybilski, Murayama, Dehaan, & Gladwell, 2013): A univariate measure of FOMO. Each item is on a Likert scale with 1 is 'Not at all true of me' and 5 is 'Extremely true of me'. The original study found its internal consistency to be .87. The total score was computed and used. In our study, the Cronbach Alpha was found to be .81 and Donald's Omega was found to be .81 as well.

WHO-5 Wellbeing Index (Psychiatric Research Unit, WHO): a univariate measure of subjective wellbeing developed by the World Health Organization. It consists of five items measuring subjective wellbeing on a Likert scale with responses ranging from 5 'All of the time'

to 0 'At no time'. In our study, the Cronbach Alpha was found to be .87 and Donald's Omega was found to be .87 as well.

The total score was computed and used. Analyses were conducted in IBM SPSS and replicated in jamovi 1.19.

## Results

The average user engaged with approximately 4 social networking sites (mean SNS = 3.68), though using all five social networking sites (FB, Twitter, WhatsApp, Instagram, and Snapchat) was common (mode = 5). 6.1% used 1 social networking site, 12.2% used 2 social networking sites, 26.5% used 3 social networking sites, 17.7% used 4 social networking sites and 37.6% used 5 social networking sites. The mean level of FOMO and Wellbeing across all social networking sites use was 20.90 (SD = 6.46) and 13.62 (SD = 5.82) respectively. Table 1 shows the distribution of FOMO and Wellbeing mean scores across different social networking sites. Interestingly, every participant in our sample reported to use WhatsApp evident by the complete lack of responses (NA) in the “Don’t Use” section for WhatsApp, and is a testament to the platform’s popularity in India. Correlation analysis revealed number of SNS accounts to be positively associated with FOMO ( $r = .22$ , CI = .07 to .35) but not associated with subjective wellbeing ( $r = -.01$ , CI = -.15 to .13). FOMO was found to be negatively associated with subjective wellbeing ( $r = -.18$ , CI = -.32 to -.04). Common method bias was tested using an unmeasured latent method factor technique. The resulting model had CFI = .47, TFI = .39 and RMSEA of .17, which demonstrate lack of common method bias.

According to Baron and Kenny (1986), for mediation effect to exist two assumptions must be fulfilled: (i) The predictor must significantly predict the mediator, and (ii) the mediator must significantly predict the outcome variable. Regression analyses revealed that number of SNS accounts predicts FOMO ( $\beta = .22$ ,  $N = 181$ , CI = .39 to 1.87) supporting  $H_1$ , and FOMO significantly predicts Wellbeing (Refer to Table 2). Though  $H_2$  is partially supported, the basic assumptions for a mediation analysis have been fulfilled. Using Hayes Process Model 4 in IBM

SPSS we found FOMO completely mediates the relationship between number of SNS accounts and Wellbeing (refer to Table 3). This supports our final hypothesis H<sub>3</sub>.

**Table 1:** *FOMO and Wellbeing Scores across each SNS*

<b>Social Networking Site</b>		<b>Frequency</b>		<b>Mean</b>	<b>Standard Deviation</b>
<b>Facebook</b>	Don't Use	38	FOMO	18.65	.86
			Wellbeing	13.71	1.05
	Use	143	FOMO	21.50	.55
			Wellbeing	13.60	.47
<b>Twitter</b>	Don't Use	93	FOMO	20.06	.60
			Wellbeing	13.59	.60
	Use	88	FOMO	21.79	.74
			Wellbeing	13.65	.62
<b>WhatsApp</b>	Don't Use	0	FOMO	NA	NA
			Wellbeing	NA	NA
	Use	181	FOMO	20.90	.48
			Wellbeing	13.62	.43
<b>Instagram</b>	Don't Use	23	FOMO	17.60	.88
			Wellbeing	14.82	1.52
	Use	158	FOMO	21.38	.52
			Wellbeing	13.44	.44
<b>Snapchat</b>	Don't Use	85	FOMO	19.94	.65
			Wellbeing	13.38	.58
	Use	96	FOMO	21.76	.68
			Wellbeing	13.83	.62

**Table 2:** *SNS & FOMO as Predictors of Subjective Wellbeing*

<b>Variables</b>	<b>b</b>	<b>SE</b>	<b>t</b>	<b>LLCI</b>	<b>ULCI</b>
Number of SNS accounts	.14	.36	.40	-.60	.89
FOMO	-.17	.07	-2.60	-.32	-.04

**Table 3:** *Mediation Analysis*

<b>Model Summary</b>				
<b>R</b>	<b>R<sup>2</sup></b>	<b>MSE</b>	<b>F</b>	<b>Sig</b>
.19	.03	33.02	3.40	.03
<b>Mediation Effect of SNS on Wellbeing</b>				
	<b>Effect</b>	<b>SE</b>	<b>LLCI</b>	<b>ULCI</b>
<b>Direct Effect</b>	.14	.34	-.54	.83
<b>Indirect Effect</b>	-.20	.10*	-.43*	-.03*
<b>Completely Standardized Indirect Effects of SNS on Wellbeing</b>				
<b>FOMO</b>	<b>Effect</b>	<b>SE</b>	<b>LLCI</b>	<b>ULCI</b>
	-.04	.02*	-.09*	-.00*

*Note.* \*indicates bootstrapped estimates

## Discussion

The aim of this paper was to examine the effect of number of SNS accounts on subjective wellbeing through FOMO. Our work lies in accordance with theoretical perspectives such as Self-Determination Theory and SNS Addiction Hypothesis, and extends current literature to include the effects of number of SNS accounts along with SNS use on subjective wellbeing. Our study also extends literature in to an alternative cultural context and accounts for WhatsApp – a SNS/social media platform which has been neglected in Western research due to its limited popularity in North America.

Table 1 displays a wealth of information on SNS use among Indian young adults. Some interesting insights that stand out are - WhatsApp, Instagram and Facebook are the most popular social networking sites in that order, and the mean FOMO scores for every SNS is higher for those who use that specific SNS compared to those who don't. This provides some evidence of the importance of our research not just in Western nations but also in India, where such studies are scarce.

The correlational analysis reveals number of SNS accounts to be positively associated with FOMO but not associated with subjective wellbeing, foreshadowing FOMO as a complete mediator between number of SNS accounts and subjective wellbeing. Subsequent regression analysis (refer to Table 2) and mediation analysis (refer to Table 3) prove that point. Our research has interesting implications for theory building. From a SDT perspective, it makes sense having more SNS accounts will predict higher levels of FOMO but only when the individual is unable to act upon FOMO through the creation of more social connections. Does this imply that the participants in our sample are unable to act upon their FOMO or are there other psychosocial factors at play here? Future studies can conduct cross-cultural comparisons to assess this. On the

other hand, individuals with higher levels of SNS addiction are more likely to possess more SNS accounts, experience higher levels of FOMO as a form of withdrawal and have consequently lower levels of subjective wellbeing. While our research was limited as we did not directly assess SNS addiction, prospective studies can directly assess the effect of SNS addiction on subjective wellbeing through two sequential mediators – number of SNS accounts and FOMO. This would confirm the SNS addiction hypothesis and add great value to the discipline.

With respect to designing effective interventions, our research shows that limiting the number of SNS accounts can help control FOMO and improve subjective wellbeing. Moreover, an interesting experiment conducted by Hunt, Marx, Lipson, & Young (2018) sheds even more light on the specifics of such an intervention. Using an experimental design, they divided college students into two groups, with the latter directed to limit their SNS use to ten minutes per day for three weeks. Though they observed significant decreases in loneliness and depression in the experimental group compared to the control group, there was only a slight significant decrease in FOMO and no statistically significant decrease in psychosocial wellbeing. These findings are best explained by SNS Addiction Hypothesis, initially when SNS use was limited then FOMO increased, but as time went on the participants adapted and their FOMO started dropping. Unfortunately, the short duration of this study (three weeks) was unable to completely capture sizeable reductions in FOMO. The takeaway here is interventions aiming to reduce FOMO by limiting number of SNS accounts need to be long term (more than three weeks).

Also, the complete path dependency of the number of SNS accounts used on FOMO suggests that individual differences which moderate FOMO may act as a buffer between SNS use and subjective wellbeing.

### **Conclusion**

Our study experiences a few limitations: first the college project from which data was sourced using non-probabilistic sampling and overall had a small sample size consisting of young Indian adults. Secondly, we did not use triangulation to confirm our results with a qualitative approach. Despite these limitations, our paper makes a contribution by verifying that FOMO mediates between number of SNS accounts used and subjective wellbeing, based on existing theories.

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