Fear of Missing Out (FoMO) as Really Lived: Five Classifications and one Ecology

Aarif Alutaybi, John McAlaney, Emily Arden-Close, Angelos Stefanidis, Keith Phalp, Raian Ali
Faculty of Science and Technology
Bournemouth University, UK
{aalutaybi, jmcalaney, eardenclose, astefanidis, kphalp, rali}@bournemouth.ac.uk

Abstract— **Social media provides a platform for information sharing and dissemination and has speedily become a popular method for individuals to relate to others regardless of the time and geographical distance. However, this wealth of connectivity and availability of information may lead to the experience of the Fear of Missing Out (FoMO) that typically refers to a preoccupation of the users of social media about lost opportunities when they are offline or unable to connect and communicate as wished. Despite the recognition of the concept, studies around FoMO have used offline data collection techniques such as interviews, focus groups and surveys. This has led to a limited understanding of the lived FoMO experience and a rather simplified and coarse-grained view of the concept. In this paper, we delve into the specifics and nuances of FoMO through multi-stage qualitative research, including interviews, diary study and three focus group sessions and elaborate upon the concept and determine its various manifestations and classification. The lived experience is mainly gathered through a diary study. We present five main classifications characterising FoMO and develop an ecology for it.**

Index Terms— **Social media, Fear of Missing Out, Digital Wellbeing, Cyberpsychology**

I. INTRODUCTION

Social media enables people to write about their daily life, express opinions, share information and connect with other people for personal and business requirements. Also, social media facilitate a great opportunity for different business to advert their brands and reach out to customers and create opportunities and communities [1]. However, this wealth of connectivity may drive people to relate to social media in a problematic style and experience fear of missing out (FoMO). FoMO has been defined as a "pervasive apprehension that others might be having rewarding experiences from which one is absent and is characterised by the desire to stay continually connected with what others are doing" [2]. Social media provides diverse information in real-time about events, conversations and activities. It allows individuals to be informed with new developments. This may lead individuals to experience FoMO by compelling them to check their social media activities frequently or stay online continuously to avoid missing out. FoMO explains the desire of people who experience chronic deficits of satisfaction, to constantly engage with social media, even when this happens in unsuitable or dangerous situations such as while driving [2], or attending lectures [3]. It is important to note that, as with many psychological processes, the core motivation is not inherently problematic. Humans are a social species and have evolved to

exist within social groups that reinforce their group identity through the sharing of social information [4]. Instead, the issue is when this preoccupation with sharing and receiving social information grows to the extent that it interferes with normal daily functioning or causes distress to the individuals.

Lee and Chiou [5] argue that people are becoming increasingly dependent on social media to gratify their social needs, in particular, the need to belong. As the usage of social media increases, face-to-face interactions are decreasing, which in turn increases reliance on social media to meet the relatedness and belonging human needs. However, the cost of this need is FoMO on friends' interactions. Individuals feel anxious when they are unable to connect or interact with such interactions that gratify their needs [6].

Individuals often experience negative emotions such as anxiety when they are unable to connect to the internet or do not receive expected interactions, such as likes or comments on Facebook posts [7]. Fox and Moreland [8] state that FoMO is the main reason why people use Facebook extensively and feel the pressure to do so. While the underlying reasons for this could be diverse, changes in the design of social media could facilitate control of usage [9] and help people experience less FoMO and combat it.

Research on FoMO is in its infancy and has mainly been conducted from a social science perspective, attempting to identify the relation between FoMO and social media addiction, or the relation between FoMO, and wellbeing, such as the work in [10]. More research is needed in software design practices such as UX, requirements engineering and HCI, in order to develop intervention systems that specifically target FoMO. Alutaybi et al. [11] proposed that countermeasures should be embedded into social media. However, in order to design such countermeasures, a greater understanding of FoMO and the situations in which it occurs is needed.

In this paper, we build on the work conducted in[11] to explore the real-time experience of FoMO through a series of studies, including interviews, diary study and three focus group sessions, to develop a conceptual model by which FoMO can be represented. Our classification of FoMO could aid future information system design in relation to social media to combat FoMO, enable people to be more informed about how FoMO happens, and in turn to identify FoMO in their own social media usage. Our use of diary studies was vital to get FoMO experience as lived and get more ecologically valid data.

II. RESEARCH METHOD

Previous research on FoMO adopted methods of interviews [2], focus groups [8, 12] and surveys [2, 6, 10, 12-14] and showed a correlation between social media design, psychological factors such as depression, and FoMO. However, these studies were retrospective, meaning they suffered from recall bias, and have limited ecological validity. They also have not focused on the role of social media design and the various kinds of FoMO and treated the concept at a relatively high level of abstraction.

To address the limitation of previous research, we conducted a new qualitative study. Table (1) outlines the data collection methods used in this study.

Table 1: The data collection methods used in the study

Phase	Method used	Brief Explanation
1	Interview	- With 16 participants – Familiarizing them with the issue – Familiarizing them with the FoMO classification concluded from the analysis of the 1st study - Extract opinions and suggestions - 40 minutes for each interviewee
2	Diary Study	- With the participants from the 1st phase - Daily basis for 14 days- - Sending diary template via email every day -Recording personal stories - Investigating new categories of FoMO – Reminding by text message and email
3	Two focus group sessions	- With 10 participants from 2nd phase – Scenario-based sessions - To discuss their diaries' entries and elaborate on them

The first phase consisted of an interview with sixteen participants, aged between 18 and 30 years. As in the first study, participants were recruited via an open call to a student forum, where individuals could nominate themselves to participate. Participants were first given a brief description regarding FoMO to engage them in the issue. They were also issued with instructions detailing how to complete FOMO diaries including a practice diary form, and given the printed copy of the diary template in order to familiarize themselves with the proposed classification of FoMO.

The second phase consisted of a diary study with the same sixteen participants who were interviewed for fourteen days. Participants received a template via email every day for two weeks and were asked to fill in the diary as close as possible to when their FoMO occurred. When doing so, they were asked to attempt to reflect on the FOMO categories provided in the template and their classification, based on their personal experience. Participants were asked to suggest new categories if they felt no existing category captured their experience. Also, they were invited to annotate the categories by adding or rephrasing concepts. Participants were reminded by text messages and email if they did not send their diary.

In the third phase, two focus groups were asked to elaborate their personal stories from the second phase (the diary study). Each group consisted of five members, and was given five scenarios of FoMO with a set of questions and a sheet on which to write comments that might be appropriate for each scenario. The scenarios were built around the findings of the first study. The data collected were analysed using thematic analysis, following Braun and Clarke [15]

III. FINDINGS: FoMO FIVE CLASSIFICATIONS

We identified five main classifications of FoMO, with each consisting of several subcategories.

A. *Classification 1: FoMO when others do not interact as expected*

Diverse expectations of social media interactions may increase the level of FoMO and lead to spending increasing amounts of time checking and expecting certain interactions from others on social media such as receiving Likes, comments or replies. When the actual experience does not meet expectations of interactions, individuals may seek answers as to why others did not interact with them, why interaction is lacking, or why the style of interaction may not seem sufficiently comprehensive. Hence, they may experience one or more kinds of the following FoMO.

- **Fear of missing the ability to be popular**

People typically seek a degree of popularity when using social media. They also attempt to maintain their achieved popularity among peers on social media by taking into consideration the norms of the group such as frequent participation or immediate responses.

However, when an individual experiences this kind of FoMO they may be preoccupied with various interpretations. One of these interpretations is that individuals may attribute this FoMO to "*the lack of participation on a certain social media and thus the tendency to spend more effort in order to restore or increase their popularity.*" Another noticeable interpretation in this category is around missing prior interactions with significant others that needed me to reply.

- **Fear of missing the ability to be interesting**

People are motivated in sharing their daily lives with peers and getting feedback from them in terms of Likes or comments. Some people may have negative feelings if they receive no or limited interactions from others. It is expected that this may result in low self-esteem and feeling unworthy or uninteresting, due to high dependence on others' feedback. There are several explanations for this form of FoMO. First, people may be preoccupied with whether or not their post is appealing enough. Second, people may be preoccupied with "*the use of social media rarely may make the profile less active and less popular among peers.*"

- **Fear of missing the ability to get the right interpretation**

When individuals misinterpret non-interaction from others as being ignored or unwanted, they may take action that affects their relationship with others. For example, one participant commented: "*Some of my followers have not put Like on my posts. I doubtfully interpreted this to the point that they may have excluded my posts. I fear that misinterpretations affect my friendship.*"

B. *Classification 2: FoMO when unable to interact or connect as wished*

Interactions via social media are occasionally limited as individuals in certain circumstances (such as when they are busy or have no internet access etc.) may be unable to interact or connect to social media as they would like, and thus may experience one or more kinds of the following FoMO because of their limited ability to postpone their gratification.

- **Fear of missing information due to large volumes**

Information overload is when people receive a lot of information and interactions from their contacts on social media and feel frustrated because they want to respond or interact but cannot do so. This can occur when individuals desire to see particular posts but do not find it easy to do, due to a large number of posts, or are unable to look at posts one by one to pick a particular post. E.g. *"I finally got Wi-Fi at a restaurant so I could get messages from social media. However, I experienced FoMO because the Wi-Fi signal was weak, and I had only very limited time. I was looking for posts on Facebook from my university among a high volume of posts from others so I feared missing them as I had not enough time so I could not go through all of them to see it"*.

When encountering large volumes of information, people may worry about how they can reach necessary or useful information and thus fear missing it. One student said that *"Today was a due date for an assignment so my friends used a group chat on Facebook to ask each others. There were a lot of questions and many people commented on the chat so it was difficult to keep up with the volume of information. I feared I might miss useful information as I did not have time to read all the comments."*

- **Fear of missing the ability to deal with different social media**

Some individuals use more than one form of social media. This may lead them to experience FoMO when they receive multiple interactions from various social media at the same time, and are therefore unable to interact with them all at once or in a short pace of time. Individuals may be preoccupied with deciding about the messages that are most important for them. E.g. *"My mum and sister kept sending me a lot of messages and photos today on WhatsApp of the snow back home and [there was also] a group chat of my friends about the weather and being unable to travel on Facebook. I have been trying to do some university work today and have been unable to properly check each app and find important messages regarding the weather. So I fear that I will miss important information that my friends and family knew it"*.

Additionally, people may be thinking of whom to first respond to when they receive multiple messages from different friends and different social media. They are concerned that the first response to a certain friend may determine the level of the relationship. Hence, this may affect their relationship with other friends when they know that a certain friend has received a response while they have not. E.g. *"In such a hurry to reply back so when I am unable to interact or connect as I wish, I cannot decide whom to text back first so I really fear missing to deal with those messages that came from Facebook and WhatsApp as I do not want to respond to someone and thus others feel I respect him/her more than them"*.

- **Fear of missing temporally available information**

Temporarily available information is information that has a specific time and then expires or is removed such as stories on Snapchat or status on WhatsApp. Some individuals may be eager not to miss this type of information. However, when they are prevented from connecting to this kind of information, they may be preoccupied with missing a source of influence such as celebrities or shop advertisements. Alternatively, such content may be removed by the person themselves or expires.

Furthermore, frustration around the speed and frequency of checking and the temporal availability of information may be attributed to this kind of FoMO. This means that the speed of connectivity or ability to interact does not match the temporal information. E.g. *"I have a bad internet connection which means I could not see stories on Snapchat and Instagram. I fear to miss them as stories take ages to be downloaded"*.

Another noticeable aspect is the frustration of limited connectivity versus temporally available information which means that the availability of resources like data usage and network speed or even allowed browsing content are insufficient to access to this kind of information. People want are nudged to economise on their online usage, but fear missing temporally available information.

- **Fear of missing timely interactions**

Timely interaction means interactions that individuals need to take action without delay. This is the case when there are some messages that need to be replied to without delay such as confirming a social invitation.

Moreover, individuals may attribute fear of missing timely interaction to *"not give negative impressions as other parties are accustomed to immediate responses from them."* Another noticeable aspect of this kind of FoMO is around missing people who are rarely available on social media, particularly when individuals want to respond instantly to people who are rarely available online.

- **Fear of missing participation in popular interactions**

When individuals expect or know there are interesting interactions on social media that they are eager to participate in but are prevented by certain circumstances from doing so, they may experience FoMO and feel a limited ability to postpone their gratification. For example, individuals may attribute this FoMO to *"not missing involvement in the current online discussion within it's the timeframe."* Hence, people may think that they also miss supporting others or their opinions or defending their favourite team. Additionally, an inability to talk regarding missing online interactions at the time of a social gathering may be attributed to this kind of FoMO.

- **Fear of missing the ability to keep followers**

Keeping and increasing the number of followers on social media may be a goal for some individuals. However, if those

people cannot be on a certain social media frequently or occasionally, they may become preoccupied with *"the need to increase participation on social media or to update their profile frequently in order to keep their followers interested and not lose them."*

- **Fear of missing information/events due to the multi following**

People on social media typically follow others or befriend them in order to gratify their social needs such as relatedness and belonging. However, a high number of contacts and active followings can make people experience this kind of FoMO when they find huge numbers of posts and they cannot check all of them. Hence, they may be *"preoccupied with missing posts from a certain account."*

C. *Classification 3:* FoMO when unwilling to engage in social interaction

Interactions through social media vary in degree of interest, depending on people's opinions or interests. Individuals may be unwilling to engage in social interaction, particularly in group chat, because they think the interaction may not be useful but they *"feel compelled to do so."* In this situation, individuals may experience of the following FoMO.

- **Fear of missing valuable information**

When an individual experiences this kind of FoMO, they may be preoccupied with *"ad hoc requests that need them to respond immediately"* and they are unwilling to open the messages but still fear of missing something potentially important. Another noticeable aspect is about missing the benefits of the group such as arrangements for a meeting.

- **Fear of missing the ability to defend popularity**

One of the gratifications for people interested in using social media is around an increased level of popularity. Therefore, people attempt to maintain the level of their popularity and connectedness to an acceptable level. However, if an individual experiences this kind of FoMO, i.e. the unwillingness to engage and respond, they may be preoccupied with various interpretations. One of these interpretations is that individuals may attribute this FoMO to *"misunderstanding that peers think that they are ignored and thus may affect the level of my popularity among them."*

Furthermore, another interpretation is that individuals may be preoccupied with missing the social relationship and reputation with peers when they do not frequently engage with them on social media, e.g., *"I often find myself replying to things I don't need to, but I do it in order to maintain a relationship with people and benefit me in the future."*

Additionally, fear of being excluded from future interactions could be related to the various interpretations that people may be preoccupied with it when they receive interactions but are unwilling to engage in them. Prompt response and empathy are measures to maintain popularity, e.g., *"I always find myself engaging in conversation that does not necessarily interest to me just to remain my level of*

popularity; else I feel I will not be involved in future conversations."

D. *Classification 4:* FoMO when having to or feeling a need to engage in continuous and untimed interaction

Interactions through social media occasionally encourage individuals to stay online and these interactions may not be bound by time which means they can occur at any time and last for an unknown period. Hence, people tend to be online because they may experience one or more kinds of the following FoMO.

- **Fear of missing empathy and leaving a good impression**

On social media, individuals are willing to maintain their image and social stand amongst others such as friends or colleagues. This becomes a pressure on them when they want to leave the spontaneous and untimed conversation. However, individuals are keeping the chat active because they are preoccupied with different interpretations. One of these interpretations is that individuals may attribute this kind of FoMO to *"making people think they are not interested in the interactions with them."* Another noticeable aspect is about missing empathy with peers. Negative effect on others' self-image could be another aspect that individuals are preoccupied with. Furthermore, people want to maintain their social relationships. Hence, this kind of FoMO, relates to preoccupation with *"missing their level of social relationship"*.

- **Fear of missing the opportunity to know others' impressions**

Because online interactions are not bound by time, people tend to stay online in order not to miss the opportunity to know others' impressions. Hence, they may attribute this FoMO to *"the need to appreciate people who comment on the posts, otherwise they may think you are impolite with them."* Another noticeable aspect is the need to remove their post if it receives negative comments, before the number of such comments increases.

- **Fear of losing popularity**

In this classification, this is when people have to or feel a need to engage in continuous untimed interactions because popularity is one of the gratifications that people may attempt to maintain it on social media. However, a fear of missing popularity may make people preoccupied with the need to reply immediately, e.g., *"I kept checking the responses and updates so that I could comment and respond to each one as I feared that if I did not reply or react immediately I would miss the level of my self-image among my followers"*. Additionally, people may be preoccupied with *"misunderstanding that peers think they are ignored and they may do the same in the future."*

- **Fear of missing a valuable opportunity**

One of the services provided by social media is valuable opportunities that people can benefit from such as discounts, career opportunities and advice. People may stay online if they are preoccupied with missing such opportunities.

- **Fear of missing the sense of relatedness**

Belonging is one of the gratifications that people interested in using social media typically seek. Therefore, people attempt to maintain the level of their belonging and connectedness to an acceptable level. However, if an individual experiences this kind of FoMO, they may attribute their preoccupation and compulsive checking to *"not miss what is going on in others' lives."*

- **Fear of missing a spontaneous response**

Sending message is one of the services provided by social media. Sending a message to someone for some purpose and waiting for a spontaneous response from the recipient can make people preoccupied: *"more information may be needed immediately from the contact when they replay the first messages."*

E. *Classification 5: FoMO when an online social gathering is expected*

Social gatherings mean that interactions among a diversity of individuals of all abilities in small or large groups for social and community purposes. This can occur through social media such as a WhatsApp group, Facebook group, etc. However, if individuals expect a certain interaction on social media, they may experience one or more of the kinds of the following FoMO.

- **Fear of missing the opportunity to attend an online event**

online gathering can be motivated by an event, such football matches, which are live streamed on social media where people can create a chat room or a forum to comment. Consequently, individuals like to watch these events on social media and try not to miss them due to the socialness value they add. Hence, when people experience this kind of FoMO, they expect the event may make them preoccupied with *missing the live chat presented in various social media.*

- **Fear of missing the sense of relatedness**

Individuals participate in the online group or prefer to be online in order to satisfy their need to belong. However, when individuals cannot interact on an online group as expected they may experience this kind of FoMO. Hence, they may become preoccupied with untimed and spontaneous interactions, e.g., *"I have a group chat on WhatsApp and every night members start to talk about their day. I like to be there in order to feel the sense of belonging but if I do not check I am thinking that my name may be mentioned by members"*).

- **Fear of missing the ability to be popular**

Individuals attempt to maintain their popularity among peers on social media by taking into consideration group norms such as frequent participation or immediate responses. When people could not interact on online group as expected they may become preoccupied with *"missing social rank among peers or family"*

IV. FoMO: ECOLOGY

In this section, we abstract the findings presenting in the previous section and create ecology to describe FoMO. Figure 1 summarises it. FoMO is the interplay of different factors that create a situation in which people become more susceptible to that apprehension about their online persona. Each kind of FoMO could exist in different classifications, e.g. the fear of missing the ability to be popular exists in Classifications 1 and 5. Additionally, some triggers and worries in FoMO seem to also be part of different classifications. For example, ad hoc requests can trigger fear of missing valuable information and fear of missing a sense of relatedness. This section is meant to give an upper ecology of the phenomenon in terms of its core ingredients and their role in FoMO experience. It is also meant to act as a reference model when discussing FoMO and designing solutions to combat it.

One factor in FoMO experience is the innate desire and urge for people to attempt and *gain* or *explore* a valuable *opportunity* online and, also, *defend* their current stand and position. This may be affected if they are not connected as needed, thought to be needed, or as desired. Another factor relates to the *social pressure* which leads individuals to behave in a way that conforms to the norms of their social cycle, e.g. their *commitment* to interact on a certain social media is considered to be sufficient to *conform to the group norms* in terms of responding on time and providing support to others. In line with such a need to belong comes the pressure that some may feel to maintain a certain level of *popularity* on social media and maintaining it over time.

Furthermore, *personal factors* and aspirations seemed to be one of those key factors that can affect the existence and degree of FoMO. This includes the perceived need for *social recognition* in which individuals seek to be important for their social group in a certain social media, e.g. leaders, helpful or influencers. This need comes often together with high demand or preoccupation about *impression management* in which individuals strive to cultivate a certain social identity; or in other words, the way in which they wish to be seen by their social group [16]. Social media greatly enhances the ability of individuals to engage in impression management, through for example enabling them to carefully select which images they want to share or giving them time to consider a response that might particularly sound witty. In addition, *normative social influence* can be noticed in Classifications 3, 4, and 5 in which people retain a sense of belonging to the online group, and are preoccupied about their communication online which aim to maintain the desired level of perceived popularity and connectedness [17].

FoMO results in individuals constantly checking their social media account or worrying about them in order to be highly in control of their online presence and profile and the mental model others form about them. When escalated to a higher degree, this worry can translate to *compulsive behaviour,* as can be seen clearly in Classification 4. Even when the worry and salience about the online space are low, such a worry can lead to habitual or *impulsive behaviours*, i.e.

checking social media without thinking of the rationale and need for it, e.g., using an opportunistic approach, and being receptive to what may come from there. Almost all our participants faced a situation where they did not have clear reasons for checking their social media accounts, despite the fear they would feel when they were unable to connect as wished or get others to interact with them as expected.
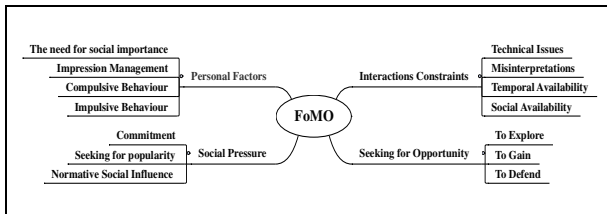

Fig. 1 FoMO Ecology

The way online *interaction constraints* are designed and managed in social media can be another factor in triggering and feeding FoMO. Participants were highly concerned that control over conversation online is different from those in person, e.g. when the other party's response is not received or known. *Misinterpretation* of social interaction can trigger FoMO in which people are unable to interpret the lack of responses, including the Likes and comments, from others. They fear of missing the ability to get the right interpretation and may increase their online presence to get it, e.g. posting through another account and trying to track the contact's recent responses. Another form of interaction constraints which may trigger FoMO is the *temporal availability* of some interactions and content, e.g. a post only available for 1 hour and the time-sensitive and personalized feed news. This exploits the scarcity principle of influence [18]. *The technical issues* can also trigger FoMO through affecting the ability to interact in terms of connectivity, speed and volume. This is exacerbated when people are in doubt of the ability of others to be connected, creating again certain undesired behaviours such as cyberstalking and spying to work out reasons for lack of communication and whether it is *social* or technical, i.e. people are unable or unwilling to communicate for personal reasons or technical connectivity constraints.

V. CONCLUSION AND FUTURE WORK

In this paper, we studied the experience of FoMO in relation to social media in depth and as lived. We explored five classifications detailing how people face FoMO about social media. We elaborated on each classification in terms of sub-categories and worries. Our classifications can be used as a base that aids the future social media designs to better understand FoMO and provide solutions to enable individuals to combat it. Additionally, we have discussed a number of factors affecting FoMO and created ecology for the concept to facilitate discussions around it. In our future work, we plan to test the effectiveness of such proposed countermeasures and investigate different modalities and processes of designing and applying countermeasures. Also, Disseminating knowledge about FoMO and coping strategies for the public audience is, i.e. aiding people's digital resilience in order to combat FoMO.

References

[1] A. Nigam, S. Aguinaga, and N. V. Chawla, "Connecting the dots to infer followers' topical interest on Twitter," in *2016 International Conference on Behavioral, Economic and Socio-cultural Computing (BESC)*, 2016: IEEE, pp. 1-6.

[2] A. K. Przybylski, K. Murayama, C. R. DeHaan, and V. Gladwell, "Motivational, emotional, and behavioral correlates of fear of missing out," *Computers in Human Behavior,* vol. 29, no. 4, pp. 1841-1848, 2013.

[3] D. Alt, "College students' academic motivation, media engagement and fear of missing out," *Computers in Human Behavior,* vol. 49, pp. 111-119, 2015.

[4] R. Dunbar and R. I. M. Dunbar, *Grooming, gossip, and the evolution of language*. Harvard University Press, 1998.

[5] C.-C. Lee and W.-B. Chiou, "Keep logging in! Experimental evidence showing the relation of affiliation needs to the idea of online social networking," *Cyberpsychology, Behavior, and Social Networking,* vol. 16, no. 6, pp. 419-422, 2013.

[6] I. Beyens, E. Frison, and S. Eggermont, "'I don't want to miss a thing": Adolescents' fear of missing out and its relationship to adolescents' social needs, Facebook use, and Facebook related stress," *Computers in Human Behavior,* vol. 64, pp. 1-8, 2016.

[7] N. A. Cheever, L. D. Rosen, L. M. Carrier, and A. Chavez, "Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate and high users," *Computers in Human Behavior,* vol. 37, pp. 290-297, 2014.

[8] J. Fox and J. J. Moreland, "The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances," *Computers in Human Behavior,* vol. 45, pp. 168-176, 2015.

[9] R. Ali, N. Jiang, K. Phalp, S. Muir, and J. McAlaney, "The emerging requirement for digital addiction labels," in *International working conference on requirements engineering: Foundation for software quality*, 2015: Springer, pp. 198-213.

[10] S. Casale, L. Rugai, and G. Fioravanti, "Exploring the role of positive metacognitions in explaining the association between the fear of missing out and social media addiction," *Addictive behaviors,* 2018.

[11] A. Alutaybi, J. McAlaney, A. Stefanidis, K. Phalp, and R. Ali, "Designing Social Networks to Combat Fear of Missing Out," in *Proceedings of British HCI*, 2018, vol. 18, p. 1.

[12] P. R. Hetz, C. L. Dawson, and T. A. Cullen, "Social media use and the fear of missing out (FoMO) while studying abroad," *Journal of Research on Technology in Education,* vol. 47, no. 4, pp. 259-272, 2015.

[13] J. P. Abel, C. L. Buff, and S. A. Burr, "Social media and the fear of missing out: Scale development and assessment," *Journal of Business & Economics Research (Online),* vol. 14, no. 1, p. 33, 2016.

[14] S. L. Buglass, J. F. Binder, L. R. Betts, and J. D. Underwood, "Motivators of online vulnerability: The impact of social network site use and FOMO," *Computers in Human Behavior,* vol. 66, pp. 248-255, 2017.

[15] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative research in psychology,* vol. 3, no. 2, pp. 77-101, 2006.

[16] E. Goffman, *The presentation of self in everyday life*. Garden City, NY: Doubleday, 1959.

[17] D. R. Forsyth, *Group dynamics*. Cengage Learning, 2018.

[18] R. B. Cialdini, *Influence: Science and practice*. Pearson education Boston, MA, 2009.