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RESEARCH ARTICLE

Behind the Youtube Addiction and Online Stickiness. Does Fear of Missing Out Count?

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Abstract
As social media has evolved into a predominant aspect of daily life, with over 5 billion users globally, understanding the motivations behind user engagement is essential. The purpose of this study was to examine the relationships between loneliness, self-esteem, FoMO (Fear of Missing Out), YouTube addiction, and online stickiness concepts. This study hypothesizes that self-esteem and loneliness significantly affect FoMO, which in turn influences YouTube addiction and online stickiness. Data were collected from Turkish adults using an online survey tool with convenience sampling method. Confirmatory Factor Analysis, correlation, and path analyses were conducted to test the research hypotheses. The findings indicate positive and significant correlations, as well as the effect of self-esteem on FoMO. Additionally, loneliness was found to be negatively correlated with FoMO Social Experience and positively correlated with FoMO Rewarding Experience, whereas no significant effect of loneliness on both dimensions was found. FoMO Social Experience and FoMO Rewarding Experience were positively correlated with YouTube addiction, and FoMO Social Experience had a significant effect on YouTube addiction. Finally, YouTube addiction is strongly correlated with online stickiness, and its effect on it is significant. The implications of the results are discussed, and future research areas are suggested.

Keywords: Loneliness, Self-esteem, Fear of missing Out, YouTube addiction, Online stickiness

Introduction

Social media have become an important part of daily life in the last two decades (Sampasa-Kanyinga & Lewis, 2015). Research suggests that there are 5.07 billion social media users worldwide, representing 62.6% of the global population as of April 2024. Additionally, the average daily social media use per internet user has increased to 143 min per day (Statista, 2024). This implies that if a person signed up at age 16 and lived to 70, they would spend 5.36 years on social media (Backlinko, 2021).

Used as a generic term, social media can be considered a descriptive concept for all internet-based applications that allow users to create and share content (i.e., knowledge, expe-

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riences, emotions, thoughts, information, etc.) generally in the form of videos, pictures, and text (Kaplan & Haenlein, 2010). Facebook, Instagram, Snapchat, Twitter, YouTube, Pinterest, Thumblr, Reddit, TikTok, and Foursquare are the most popular platforms among many others.

Considering the great interest in social media, numerous studies have been conducted to explain why people engage actively (by sharing) or passively (by following) in it (Dhir et al., 2018; Roberts & David, 2020). Various theories relate to the popularity of social media, such as belongingness, social comparison, validation, information foraging, and compensatory internet activity. These theories suggest that satisfaction with various needs is one of the most important drivers for engaging in such platforms, where users seek gratification in different forms through their participation (Kardefelt-Winther, 2014; Quinn, 2016; Quan-Haase & Young, 2010; Toma & Hancock, 2013).

Previous studies have suggested that social media engagement is particularly related to satisfying needs such as well-being, belongingness, connectedness, life satisfaction, self-esteem, social involvement, information sharing and collecting, and self-presentation (Beyens et al., 2016; Christofides et al., 2009; Hunt et al., 2018; Kuss & Griffiths, 2017; Nadkarni & Hofmann, 2012; Seidman, 2013; Turel & Serenko, 2012; Utz et al., 2012; Przybylski et al., 2013; Winter et al., 2014). Billions of users worldwide interact over social media applications in an attempt to satisfy these needs, where their experiences function as an inducer for behavioural reinforcement.

In particular, the more users engage in social media and the more satisfying their experiences, the stronger their drive becomes. This mechanism is asserted to create a loop of "addiction to the activities engaged" and lead to habitual and addictive behaviours towards social media use (Abel et al., 2016; Kim et al., 2010; Kuss & Griffiths, 2017). Needs satisfaction has been asserted to foster social media addiction either directly or indirectly (Barry & Wong, 2020; Przybylski et al., 2013).

Applications can be perceived as efficient means of connecting with others, sharing information, and being part of something; therefore, people may resort to using them intensively, directly enhancing the effect. Additionally, unsatisfied needs like loneliness, low self-esteem, low self-compassion, insecure self-perception, and unhappiness can function as mediators or moderators for excessive use of social media (Barry & Wong, 2020; Przybylski et al., 2013). In that case, the relationship between need satisfaction and social media use is indirect.

Nevertheless, in pursuit of fulfilment, maladaptive use of social media is reported to produce negative outcomes such as anxiety, depression, high stress levels, lower sleep quality, increased suicide incidents, reduced relationship quality, and fear of missing out (FoMO) (Adams & Kisler, 2013; Donnelly & Kuss, 2016; Kalpidou et al., 2011; Kross et al., 2013; Lup et al., 2015; Rosen et al., 2013; Tandoc et al., 2015).

FoMO is conceptualised as a feeling of missing a rewarding experience or being absent from an experience that others enjoy (Pollard, 2012; Przybylski et al., 2013). Closely related to negative or insecure self-perceptions and individuals' assessments of their relationships with others, FoMO is asserted to consist of two main components: "the desire to stay connected with what others are doing" (Przybylski et al., 2013) and "worry about others having a good time without them" (Barry & Wong, 2020). In relation to the rapid advancement of information and communication technologies that have shaped social media applications, the possibility of experiencing FoMO has increased significantly (Barry & Wong, 2020). Nourished by needs such as relatedness, belonging, and connectedness (Beyens et al., 2016; Deci & Ryan, 1985), FoMO is reported to induce problematic, addictive digital technology use (Aydın, 2018; 2022; Elhai et al., 2020; Ercengiz, 2020; Erciş et al., 2021; Kurtoğlu & Aydın, 2023; Özdemir, 2021; Sarıbay & Durgun, 2020; Teke & Yılmaz, 2024). Studies have reported two fundamental drivers that induce maladaptive use of social media and form the basis for FoMO: loneliness and low self-esteem (Abel et al., 2016; Burke et al., 2010; De Cock et al., 2014; Hunt et al., 2018; Kalpidou et al., 2011; Song et al., 2014; Xu & Tan, 2012). Mostly caused by general economic, political, and social conditions, loneliness, alienation, isolation, and related negative affects are asserted to be increasing worldwide (Blai, 1989; Lu et al., 2023; Rook, 1984; Sundberg, 1988; Wang et al., 2021; Zhu et al., 2021). Because loneliness is a strong driver for negative feelings that are undesirable (Burke et al., 2010), social media is found to be an easy and inexpensive (compared to the tangible and intangible costs of real relationships) venue by a large number of users to avoid or compensate for these feelings. Research shows that loneliness is related to not only higher consumption of social media but also FoMO, especially among younger generations (Barry & Wong, 2020).

Self-esteem can be defined as how people feel about themselves based on cognitive or affective self-evaluations (Leary & Baumeister, 2000). Social media is reported to provide safe and gratifying venues for such needs as self-expression, external validation, and self-image, which are related to self-esteem and are used to elevate them (Báachnio et al., 2016; Tian et al., 2019). Social media offers a secure space, especially for individuals with low self-esteem, where they can express themselves and connect with others without the boundaries they feel or experience in real life. On the other hand, social media also functions as a source that enables users to retrieve information about others for use in self-comparisons. Hence, it can be argued that through social media applications, people tend to both send and collect information to overcome loneliness and establish and improve a sense of self-worth, which lays the foundation for building self-esteem.

Considering the relationship between need satisfaction and social media use, it can be theorised that drivers such as self-esteem and loneliness should affect FoMO, thus reinforcing addiction and stickiness towards the applications. To examine this assumption, YouTube, which is the second most visited website in the world after Google (Alexa, 2019), was selec-

ted. On YouTube, users share and view videos on various topics, including politics, social or business events, products, people, games, music, TV, and education. It is reported that YouTube has over 2 billion monthly logged-in users (almost one-third of all internet users and 25% of the world population), with over one billion hours of content viewed every day (YouTube, 2021). Research has revealed that viewers tend to identify with their favourite YouTubers, and this one-way relationship is positively correlated with loneliness and self-esteem (Bérail et al., 2019; Tian et al., 2019). Although it is not reciprocal, these relationships are asserted to satisfy the need to belong, particularly for people who are lonely, socially depressed, or have social skills deficiencies, by replacing the absence of real relationships (Hartmann, 2016). The intensity of need and satisfaction is linked to levels of YouTube addiction (Baek et al., 2014).

Conceptual Framework

FoMO is defined as "a pervasive apprehension that others might be having rewarding experiences from which one is absent and characterised by the desire to stay continually connected with what others are doing" (Przybylski et al., 2013). The concept is suggested to have existed in various communication channels throughout history, such as newspapers, almanacks, letters, bulletins, etc., which are instrumental in satisfying curiosity about the lives of others (Wortham, 2011).

In line with technological advancements that have made it easier to send and receive information than ever before, social media applications have emerged, providing user-friendly and attractive services for sharing activities and experiences. One downside of this convenience is the increased anxiety level of individuals who fear missing out (Ellison et al., 2007). Mainly related to this self-reinforcing loop, three-quarters of young adults and nearly 70% of adults experience FoMO (JWTIntelligence, 2012; Przybylski et al., 2013).

The antecedents of FoMO are low self-esteem, loneliness, low needs satisfaction, lower feelings of acceptance and approval, and social anxiety, which foster high engagement in social media (Alt, 2015; Barry et al., 2017; Bérail et al., 2019; Blackwell et al., 2017; Hunt et al., 2018; Oberst et al., 2017). Studies have shown that individuals with high levels of FoMO are more likely to experience stress, anxiety, depression, sleeplessness, social media addiction, sleep problems, diminished well-being, and lower self-esteem (Adams et al., 2017; Alt, 2015; Baker et al., 2016; Beyens et al., 2016; Oberst et al., 2017). Additionally, high levels of FoMO are associated with eating disorders, poor mental health, and low self-esteem.

Taking previous studies into consideration, it can be asserted that using FoMO antecedents to examine related causal relationships is productive (Barry & Wong, 2020; Beyens et al., 2016; Blackwell et al., 2017; Elhai et al., 2018; Przybylski et al., 2013; Rozgonjuk et

al., 2021; Stead & Bibby, 2017). Loneliness and self-esteem constructs are efficient in studying FoMO. One of the theoretically closest concepts to FoMO, loneliness, is shown to be correlated with self-reported FoMO. Together with loneliness, FoMO affects addictive social media engagement (Alt, 2015; Barry et al., 2017; Blackwell et al., 2017; Song et al., 2014). Although people tend to use social media applications to avoid or compensate for loneliness (Burke et al., 2010; De Cock et al., 2014; Xu & Tan, 2012), experimental research on the relationship between concepts indicates that limiting social media use significantly reduces both loneliness and FoMO, suggesting that these concepts work as self-reinforcing constructs that strengthen each other (Hunt et al., 2018).

The other research variable, self-esteem, is a result of individuals' positive or negative self-evaluations (Smith et al., 2015). Social media applications can be instrumental in self-assessment in various ways. The internet provides data to establish a basis for benchmarks that result in a subjective sense of self-worth or value. People gather information about others, develop frames of "norms," "standards," or "expected values" concerning family, wealth, achievements, success, well-being, life in general, and also compare themselves with others using content they find on the internet. Social media can also be used for external validation that affects self-esteem. Components such as wealth, fame, body image, belongings, lifestyle, affiliations, etc., are subjected to both social comparison and external validation and are instrumental in forming self-esteem. Especially when self-worth is strongly related to others' approval or acceptance, social media is proven to be even more influential (Stapleton et al., 2017). On the other hand, social media applications can also serve as a tool to compensate for the lack of popularity and friendships in real life, helping to increase self-esteem. In line with this argument, research has revealed that social media can bridge social capital among college students who have low self-esteem (Steinfield et al., 2008).

Taking all into consideration, it can be asserted that people with lower self-esteem are prone to engage in social media more intensively (Báachnio et al., 2016; Hunt et al., 2018), and there is a negative correlation between self-esteem and FoMO (Barry & Wong, 2020; Buglass et al., 2017; Kalpidou et al., 2011).

Although listed among the most popular social media applications (Alexa, 2019), YouTube is asserted to be fundamentally different from other platforms as it does not contain traditional social networking features and is thus seen more as a content provider (Kaplan & Haenlein, 2010; Kuss & Griffiths, 2017). There are various reasons for this differentiation.

First, YouTube focuses on content viewing, whereas others focus more on user interactions (Khan, 2017). Second, YouTube supports and offers longer videos called video blogs or "vlogs." Utilising this feature, almost anything can be shared in detail, from news to lectures, to individual experiences to art, with few length or file size limitations. Third, having the advantage of the ability to provide longer videos, YouTube appeals to a distinct user profile

that can be categorised into two main groups: viewers and content creators. Although the first group is almost similar to other social media users, there is a great deal of diversity among the latter. Content creators include individuals, companies, interest groups, non-profit organisations, teachers, professional content developers, and hobbyists (Khan, 2017). Fourth, in relation to the reasons mentioned above, vlogs are more efficient at facilitating deeper and wide-ranging emotional expressions than other platforms (Tian et al., 2019). Fifth, the dynamics of the relationship between YouTubers and followers differ from other social media applications. YouTubers share their personal information, interests, opinions, experiences about life, products, services, etc., in other words, they engage in self-sharing activities to build a base of viewers and sustain their attention (Chen, 2016; Ferchaud et al., 2018). Viewers generally remain anonymous and watch content, making the relationship between YouTubers and viewers non-reciprocal. In line with the nature of this process, YouTube is more addictive for content creators than viewers (Balakrishnan & Griffiths, 2017). Sixth, compared to other social media platforms where people tend to share carefully arranged and pictured "positive," "happy," "healthy," "wealthy," "selected" moments of their lives, which presents an edited or filtered perception for others, YouTubers appear real and natural due to the format that allows them to share a great deal of information and emotions about themselves, intentionally or unintentionally (Tian et al., 2019).

It is theorised that YouTube can be used to create online relationships that function as surrogates for real relationships and help people overcome personal problems (Caplan & High, 2010; Ferris, 2001). If this is the case, then YouTube should be instrumental in strengthening self-esteem and reducing loneliness.

One of the biggest challenges for social media platforms is to allow users to stay longer or stick around on their websites or applications. The more time users spend on them, the better it is for the company in terms of visibility and profitability. One way to achieve this goal is to focus on developing features that can be used for satisfying the needs of users, thereby keeping them on the platform.

Stickiness is defined as a user's willingness to return to and prolong their visits to the platform or application (Teng, 2010). Research has revealed that continuance motivation and sharing behaviours are the main determinants of stickiness (Chiang and Hsiao, 2015). Sharing behaviour is related to individuals' willingness to share, and continuance motivation refers to individuals' continuous inner drive or motivation to share their experiences, ideas, feelings, thoughts, or content with others.

Users' needs, environmental, and personal factors such as social norms, identification, reputation, self-expression, interactivity, altruism, confidence, and self-efficacy have a significant impact on sharing behaviour (Chang and Chuang, 2011; Chiang and Hsiao, 2015; Choi and Chung, 2013; Compeau and Higgins, 1995; Hsu and Lin, 2008; Jiacheng et al., 2010;

Lee et al., 2011; Marakas et al., 1998; Park et al., 2011; Yang et al., 2010). Stickiness can be considered a habit (Wu et al., 2010).

Users gain intangible benefits—although sometimes they receive tangible benefits like ad revenues, sponsorships, or direct payments as well—in the form of appreciation and praise as viewers like, share, or comment on their posts. This mechanism not only builds reputation and self-esteem but also fosters addictive social media use by reinforcing the drive for it.

Considering all this, studying the relationships among self-esteem, loneliness, FoMO, YouTube addiction, and online stickiness concepts can contribute to the current literature. Based on the literature review, the research model presented in Figure 1 was developed, and it has four hypotheses to be tested.

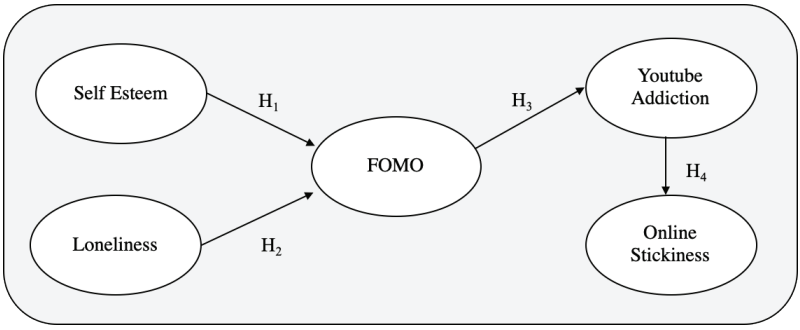

Figure 1. Research Model

H_1: Self-esteem is related to FoMo.

H_2: Loneliness is related to FoMo.

H_3: FoMo is related to YouTube addiction.

H_4: Youtube addiction is related to online stickiness.

Methodology

Instruments

Developed by Przybylski et al. (2013), the FoMO scale was designed as a 10-item, single-dimension instrument that was evaluated on a 5-point Likert scale. Turkish adaptation was conducted by Gökler et al. (2016). In the initial validation study by Przybylski et al. (2013), the Cronbach's alpha reliability coefficient for the scale was found to be .90, indicating excellent reliability. In Gökler et al. (2016), $\alpha = .81$, reflecting strong internal consistency. Items

included statements such as “It bothers me when I miss an opportunity to meet up with friends” and “I fear my friends have more rewarding experiences than me.”

Rosenberg’s Self-Esteem Scale was adapted to Turkish by Çuhadaroğlu (1986). The scale was originally developed as a 10-item, single-dimension instrument and is evaluated on a 5-point Likert scale. The Cronbach’s alpha reliability coefficient in the initial validation study was .89 (Rosenberg, 1965), indicating high reliability. In the Turkish adaptation by Çuhadaroğlu (1986), α = .89, thereby maintaining high reliability. Items included statements such as “On the whole, I am satisfied with myself” and “I feel that I am a person of worth, at least on an equal plane with others.”

Loneliness Scale The Loneliness Scale used in this study was adapted from Hays and DiMatteo’s (1987) short form of Russell et al.’s (1980) UCLA Loneliness Scale. The initial validation study consists of 20 items, but the short form used here contains eight items. The Cronbach’s alpha reliability coefficient in the initial validation study by Russell et al. (1980) was.94, indicating excellent reliability. For the short form by Hays and DiMatteo (1987), α = .85, indicating good reliability. Items included statements such as “I feel excluded” and “I feel isolated from others.”

The Online Stickiness Scale developed by Tsao (2014) consists of four items measured on a 5-point Likert scale. The initial validation study reported α = .79, indicating acceptable reliability. This scale assesses user engagement and propensity to revisit online content. Items include statements such as “I would visit this website as often as I can” and “I intend to prolong my staying on this website.”

YouTube Addiction Scale adapted from Moghavvemi et al. (2017). The Cronbach’s alpha reliability coefficient in the initial validation study was .83, indicating good reliability. Items included statements such as “When I use YouTube, I lose track of time” and “Time goes by very quickly when I am using YouTube.”

All statements in the adapted scales were evaluated on a five-point Likert scale ranging from 1 (Totally Disagree) to 5 (Totally Agree), except for the Loneliness Scale, which was evaluated on a scale ranging from 1 (Never) to 5 (Always).

Sampling and Data Collection

This study aimed to test the effects of self-esteem and loneliness on FoMO, which leads to YouTube addiction in the first phase and online stickiness in the second phase. The target population of this research is Turkish adults who use YouTube. An online Turkish questionnaire was developed using a survey tool, and the link was posted on various social media platforms for sampling. The study was approved by ethics committee of Altınbaş University

on 25.04.2023 (register number: E-96136591-050.06.04-44095). And informed consent form was obtained from the participants for the study. The questionnaire was mainly divided into three sections: demographic profile questions (gender, marital status, education level, age and monthly income), YouTube usage behaviour of respondents (daily average time and number of videos watched on YouTube), and questions-statements related to the constructs in the research model. All participants voluntarily responded to the questionnaire, where a screening question was initially administered ("Do you watch YouTube videos?"). Those who answered this question positively were allowed to continue the survey, and a total of 1084 valid responses were collected during the period April 28 and May 11, 2023. Considering a 5% error margin and 95% confidence interval, the sample size exceeded the minimum sample size requirement.

Demographic Profile of the Sample

Table 1 presents the demographic profile of the sample. The mean age of the participants was 30.5 years with a standard deviation of 7.9 years, ranging between 18 and 70 years. A total of 54.7% of all participants (n=593) were in the 19-29 age group and 31.8% (n=345) were in the 30-39 age group; hence, the sample could be considered young. The majority of respondents were female (62.1%) and single (64.3%), and the sample was reported to be highly educated because most of them (83.8%) hold at least a Bachelor's degree. Most respondents (48%) had an income level around the minimum wage, which is parallel to Turkey's wage distribution. The sample's daily average time spent on YouTube varied; nevertheless, a majority of them (54.2%) indicated that they spend less than 1 hour on a daily basis, and 44.7% stated that they are watching 1 to 3 videos on average.

Table 1
Demographic Profile of the Sample

Variable	Category	Frequency	Percentage	Variable	Category	Frequency	Percentage
Gender	Female	673	62.1%	**Monthly Income**	<5000 TL	520	48.0%
	Male	409	37.7%		5001-10,000 TL	375	34.6%
	Rather not to say	2	0.2%		10,001-15,000 TL	105	9.7%
Marital Status	Married	387	35.7%		> 15,000 TLs	84	7.7%
	Single	697	64.3%				

Variable	Category	Frequency	Percentage	Variable	Category	Frequency	Percentage
Education	High school and less	90	8.3%	**Average number of videos on YouTube**	1	63	5.8%
	Vocational school	86	7.9%		1-3	485	44.7%
	Bachelor	612	56.5%		3-5	318	29.3%
	Master's	266	24.5%		5-8	114	10.5%
	PhD	30	2.8%		More than 8	104	9.6%
Age Group	19-29	593	54.7%	**Daily Average Time on YouTube**	Less than 1 h	588	54.2%
	30-39	345	31.8%		1-3 hours	372	34.3%
	40-49	110	10.1%		3-5 hours	88	8.1%
	50 and more	36	3.3%		5 h or more	36	3.3%

Findings

Validity and Reliability

Standard confirmatory factor analysis (CFA) procedures were performed using IBM SPSS Amos 26. The CFA results indicated an acceptable model fit ($\chi^2(224)=873.810$ $p<.001$; GFI=.936; AGFI=.915; CFI=.962; TLI=.953; RMSEA=.052). The assessment of the measurement model provided significant and sufficient convergent and discriminant validity and construct reliability. We followed Fornell-Larcker criterion for convergent and discriminant validity.

As stated in Table 2, the composite reliability (CR) of all constructs was greater than.75, indicating high reliability and evidence for convergent validity (Chin, 1998). The item factor loadings were all above .596, further confirming convergent validity (Bagozzi and Yi, 1988). Average variance extracted (AVE) scores exceeded the threshold of 0.50. Additionally, the constructs showed high internal consistency among the items with at least .75 Cronbach's alpha (α) score. The square roots of AVEs were greater than the correlation of constructs (see Table 3) and revealed an adequate level of discriminant validity (Fornell & Larcker, 1981).

Table 2
Validity and Reliability of Measures

Factors and Items	Factor Loadings
Self Esteem-Belief (α=.92; CR=.91; AVE=.67)	
At times, I think I am not good at all.	.923
On the whole, I am satisfied with myself.	.863
I feel that I am'm a person of worth, at least on an equal plane with others.	.746
I certainly feel useless at times.	.753
I am able to do things as well as most other people.	.791

Factors and Items	Factor Loadings
Online Stickiness (α =.92; CR=.92; AVE=.74)	
I would visit this website as often as I can.	.906
I intend to prolong my staying on this website.	.844
I would stay a longer time on the LINE than other applications.	.836
I intend to link to this website every time I am online.	.845
Self Esteem - Affective (α =.86; CR=.85; AVE=.53)	
I take a positive attitude toward myself.	.777
All in all, I am inclined to feel that I am a failure.	.763
I feel I do not have much to be proud of.	.751
I feel that I have a number of good qualities.	.749
I wish I could have more respect for myself.	.596
Loneliness (α =.81; CR=.76; AVE=.51)	
I feel left out.	.705
I feel isolated from others.	.673
I am unhappy being so withdrawn.	.759
FOMO-Social Experience (α =.75; CR=.75; AVE=.50)	
It bothers me when I miss an opportunity to meet up with friends.	.689
It is important that I understand my friends ‘‘in jokes’’.	.675
When I miss out on a planned get together it bothers me.	.752
FOMO-Rewarding Experience (α =.89; CR=.89; AVE=.81)	
I fear others have more rewarding experiences than me.	.888
I fear my friends have more rewarding experiences than me.	.908
YouTube Addiction (α =.94; CR=.94; AVE=.89)	
When I use YouTube, I lose track of time.	.937
Time goes by very quickly when I am using YouTube.	.949
GFI=*.936; **AGFI=****.915; **CFI=****.962; **TLI=****.953; **RMSEA=****.052; χ^2 (224)=873.810 p<.001*	

CR: Composite Reliability, AVE: Average Variance Extracted, GFI: Goodness of Fit, AGFI: Adjusted Goodness of Fit Index, CFI: Comparative Fit Index, TLI: Tucker-Lewis Index

In the preliminary analysis, Pearson correlations were also examined (see Table 3). Apart from loneliness, all the constructs were significantly associated with YouTube addiction and online stickiness, supporting previous studies. In particular, the association between YouTube addiction and online stickiness (r=.721) was found to be remarkably high.

Table 3
Correlations and Square Roots of AVEs

	1	2	3	4	5	6	7
1. Self Esteem – Belief	**.818**						
2. Online Stickiness	.086**	**.858**					
3. Self Esteem – Affective	-.138**	.073*	**.730**				
4. Loneliness	-.323**	.041	.441**	**.713**			
5. FoMo – Social Experience	.673**	.165**	.257**	-.128**	**.706**		
6. FoMo – Rewarding Experience	.072*	.170**	.429**	.169**	.372**	**.898**	
7. YouTube Addiction	.154**	.721**	.109**	.017	.230**	.118**	**.943**

*Note: Diagonal values are the square roots of the AVEs: ** p<.01 and * p<.05*

Assessment of the Structural Model

The second procedure is the assessment of the structural model; thus, path analysis was conducted. The structural model was found to fit the data ($\chi^2(176)=763.800$ p<.001; GFI=.936; AGFI=.916; CFI=.962; TLI=.955; RMSEA=.056), as all the fit indices obtained were satisfactory.

Table 4
Hypothesis Testing

Hypothesis and Related Paths	β	t	Std. β	Result
H_{1a}: Self Esteem – Belief →FoMo – Social Experience	.636	20.384**	.733	Supported
H_{1b}: Self Esteem – Belief → FoMo – Rewarding Experience	.134	4.783**	.149	Supported
H_{1c}: Self Esteem – Affective → FoMo – Social Experience	.421	11.135**	.376	Supported
H_{1d}: Self Esteem – Affective → FoMo – Rewarding Experience	.540	12.518**	.468	Supported
H_{2a}: Loneliness → FoMo – Social Experience	ns	-	ns	Not Supported
H_{2b}: Loneliness → FoMo – Rewarding Experience	ns	-	ns	Not Supported
H_{3a}: FoMo – Social Experience →YouTube Addiction	.302	6.912**	.241	Supported
H_{3b}: FoMo – Rewarding Experience → YouTube Addiction	ns	-	ns	Not Supported
H_4: YouTube Addiction → Online Stickiness	.648	25.069**	.720	Supported
GFI=.936; **AGFI**=.916; **CFI**=.962; **TLI**=.955; **RMSEA**=.056; χ^2 (176)=763.800 p<.001				

*** p<.001; * p<.01; **ns:** not significant.*

Table 4 and Figure 2 demonstrate the relationships of the paths, indicating that both self-esteem dimensions—belief and affective—had significant positive effects on FoMO dimensions—rewarding experience and social experience; thus, H_1 was fully supported. In detail, self-esteem-belief (β=.636, t=20.384, p<.001) and self-esteem-affective (β=.421, t=11.135, p<.001) had a significant effect on FoMO-social experience.

Furthermore, self-esteem-belief (β=.134, t=4.783, p<.001) and self-esteem-affective (β=.540, t=12.258, p<.001) had a significant effect on FoMO-rewarding experience.

Loneliness was found to have an insignificant effect on FoMO-social and FoMO-rewarding experiences; thus, H_2 was not supported. FoMO was found to be partially affecting YouTube addiction. FoMO-social experience (β=.302, t=6.912, p<.001) had a significant effect on Youtube addiction, whereas FoMO-rewarding experience had an insignificant effect, H_3 was partially supported. Finally, YouTube addiction (β=.648, t=25.069, p<.001) as independent variable, had a significant effect on online stickiness, implying that H_4 was also supported.

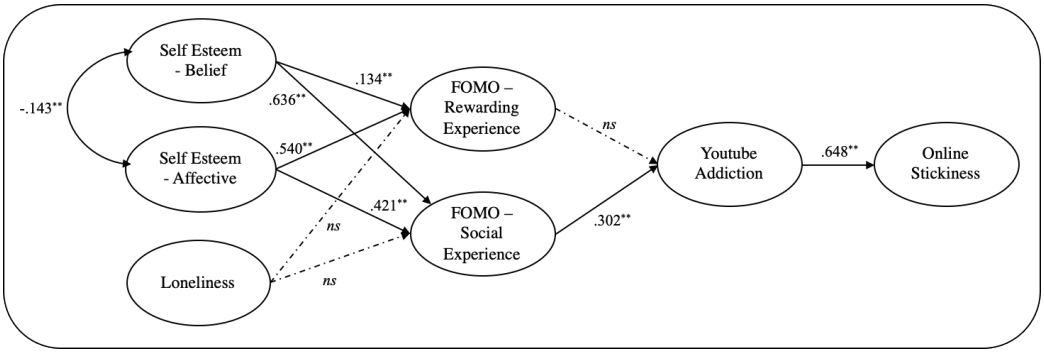

Figure 2. Path Model

Conclusion and Discussion

The purpose of this study was to examine the relationships between YouTube addiction, online stickiness, and FoMO concepts through their predictors of self-esteem and loneliness. Therefore, the effects of self-esteem and loneliness on FoMO are tested in the first phase. After studying the antecedents of FoMO, its effects on YouTube addiction is examined. Finally, the link between YouTube addiction and stickiness is reviewed.

The first finding of the study is the positive and significant effect of self-esteem (affective and belief) on FoMO. Previous studies have suggested that self-evaluations, either cognitive or emotional, are related to needs such as approval, acceptance, and validation, which directly affect the level of self-esteem. In this sense, correlations found between self-esteem belief, self-esteem affective, FoMO-rewarding experience, and FoMO-social experience are likely to suggest that those needs tend to be verified, addressed, and satisfied through friendships and social comparisons. In line with the developments on the internet and telecommunication technologies, a growing industry of social media applications is providing efficient and user-friendly tools that can be used for satisfying those motives. Hence, considering that a significant portion of relationships (not only personal but also professional ones as well) are started, lived, or ended online in our times, it can be argued that social media can be taken as a "preferred venue" in which communication and relatedness needs are satisfied in one way or another. On the other hand, social media applications are also claimed to enhance the natural human drive to seek information as well (Gazzaley & Rosen, 2016). To identify opportunities, avoid threads, understand what is going on, what others are doing, protect themselves from risks, decide their place in the social hierarchy, etc. people seek information constantly even though they cannot possibly process all the data out there (Whiting & Williams, 2013; Roberts et al., 2014; Abel et al., 2016). One other point of view that may contribute to the discussion is that, according to social comparison theory, individuals determine their own personal worth based on comparisons with others (Festinger, 1954). In other words, people

compare themselves with others and establish a sense of self-value according to the results (Abel et al., 2016). Social media is providing sufficient—even at an annoying level—accessible opportunities to obtain information about others that can be used for this purpose (Roberts & David, 2020). Easy access to technology and information encourages people to compare their lives with others, which generally adversely affects psychological well-being negatively (Tian et al., 2019). In line with the results of previous studies, considering the effects of connectedness and communication needs, the drive for assessing self-worth, and information collection as a basis for subjective self-esteem perception, it can be said that lower self-esteem and poor self-image is positively correlated with excessive use of social media (Hunt et al., 2018), creating concerns about disconnecting with others and not experiencing rewarding activities that others enjoy, hence inducing FoMO. This study's results show that, especially for those whose self-esteem is dependent on what others do or if others' experiences are more pleasant than theirs, the concept functions as a reinforcer for FoMO. In such cases, vulnerable or dependent self-esteem structures can be theorised. Current literature on self-esteem tends to focus mostly on the self-assessment and self-evaluation aspects of the concept. Results of this study offer a different perspective, suggesting a positive relationship between self-esteem and FoMO that may urge adoption of a new approach to explain the concept better. In light of the findings mentioned above, studies on high and low self-esteem and the relationship between FoMO can be suggested for further investigation.

Loneliness did not have a significant effect on both dimensions of FoMO. Although study results indicate correlations between loneliness and FoMO in line with the literature, no significant effect was found (Alt, 2015; Barry et al., 2017; Blackwell et al., 2017; Burke et al., 2010; De Cock et al., 2014; Song et al., 2014; Xu & Tan, 2012). Specifically, social experience is negatively correlated to loneliness, whereas rewarding experience is positively correlated to FoMO. Looking deeper into the questionnaire items, social experience represents staying up to date or being on the same page with friends; hence, the negative correlation found with FoMO is self-explanatory. On the other hand, rewarding experiences represent fear of others having better payoffs in terms of experiences, and loneliness is found to strengthen this feeling. Nevertheless, loneliness was not found to have a significant effect on both FoMO social and rewarding experiences. Considering previous findings suggesting that limiting social media engagement reduces loneliness and FoMO, it can be theorised that the relationship between constructs is reciprocal but not unilateral. Therefore, further studies are suggested to take loneliness as a complementary construct rather than an antecedent for the FoMO concept.

Another finding of this research is the significant effect of FoMO Social Experience on YouTube addiction. YouTube is fundamentally different from other platforms since the relationship between YouTubers and viewers is generally non-reciprocal. An interesting fact about engaging in social media is that to satisfy the need to belong, efforts do not need to be mutual.

In other words, even following or sharing without the other party doing the same thing seems to be enough to feel good and involved. This mechanism tends to create an unorthodox form of relationship called a "parasocial relationship" in which followers consume media about someone they do not actually know or meet before (Horton & Wohl, 1956; Dibble, Hartmann, & Rosaen, 2016). In an attempt to compensate for their lack of real relationships, individuals develop bond parasocial connections to satisfy their need to belong (Horton & Wohl, 1956; Hartmann, 2016). Considering that the human brain is flawed in terms of distinguishing between real friends and parasocial relationships, it can be argued that even one-way connections can be substitutes for real relationships to satisfy social needs (Kanazawa, 2002). In line with the literature, this study's findings indicate that FoMO social experiences induce YouTube addiction. In an aspect, it can be asserted that YouTube is providing a substitute for social relationships even if it is claimed as "parasocial" and from the other perspective, it can be said that online YouTube meetings satisfy social needs, and FoMO can be reduced by attending such gatherings. Another interesting finding is that although both social and rewarding experiences are positively correlated with FoMO, the latter does not have a significant effect on YouTube addiction. YouTube is reported to be more addictive for content creators than for viewers (Balakrishnan & Griffiths, 2017). Therefore, it can be asserted that regular users who are "just watching" are indifferent in terms of feeling rewarded simply because of the non-reciprocal nature of the application. On the other hand, since all the passively engaged users have the same experience, it is not possible to increase the individual payoff in terms of rewarding experiences due to the one-way nature of YouTube; thus, everyone has the same rewards, and no one is better than others. An important point is that the dataset of the study does not have a YouTube viewer–content creator distinction; therefore, it is not possible to conduct difference analyses. It can be suggested for future studies to differentiate the two groups to further enlighten the subject.

Finally, YouTube addiction was found to have not only a strong correlation but also a significant effect on online stickiness, as expected. Literature suggests that stickiness is a habitual behaviour (Wu et al., 2010) that is strengthened by various tangible and intangible benefits, such as ego gratification, identification, reputation building, sponsorships, and direct advertisement. This study asserts that self-esteem, FoMO, and YouTube addiction constructs affect online stickiness, which requires further research.

This study examined the relationships among self-esteem, loneliness, FoMO, YouTube addiction, and online stickiness concepts. Findings indicated positive effects of self-esteem on FoMO, but loneliness was not found to affect the construct. On the other hand, FoMO social experience has shown a positive effect on YouTube Addiction and YouTube addiction on online stickiness. The positive effect of self-esteem on FoMO is particularly interesting and requires further research, especially taking needs satisfaction, self-value, and vulnerable-dependent self-esteem concepts into consideration. Although correlations were found between

loneliness and FoMO, no direct effect was observed. Therefore, the relationship between loneliness and FoMO might present another fertile area for further research. Finally, studies on interactions between specific YouTube features and parasocial relationships may also contribute to the growing literature.

Limitations

This study is not without limitations. First, self-report measures are used to obtain the data. Use of different, more sensitive scales can be suggested to compare and contrast the results of this study. Second, although the sample size is adequate, using a different dataset with participants from different countries may increase the generalizability of the results as well as enable cross-cultural comparisons. Third, given this is a cross-sectional study, longitudinal research can help explore exploring the causal relationships between the concepts.

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