Emotion Regulation as the Role Moderator of Self-Esteem on Adolescents Fear of Missing Out

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Abstract. Fear of missing out (FoMO) is derived from the anxiety that arises when an individual feels excluded from informational and experiential aspects due to exposure to social media. Therefore, this study aimed to determine the contribution of emotion regulation as a moderator on the role of self-esteem on adolescents fear of missing out. A quantitative method employing a causality design was employed, involving 349 active social media users aged 15 to 18. The measurement tools used consisted of psychological scales, namely fear of missing out, two-dimensional self-esteem, and emotion regulation questionnaire. Furthermore, the data analysis was conducted using Moderated Regression Analysis (MRA), which reported a significant impact of self-esteem on fear of missing out, with emotion regulation acting as a moderator. The result showed the significance of adolescents possessing positive self-esteem coupled with adaptive emotion regulation to mitigate the inclination towards experiencing fear of missing out while using social media.

Keywords: Fear of missing out, self-esteem, emotion regulation, adolescents

Introduction

In the era of digital technology development, human life has become inseparable from the internet, which has evolved into an essential requirement. Serving as a vital channel for accessing a constant stream of information through smartphones, the internet has attained significant importance. The extensive digital and mobile communications have brought about transformative changes, particularly in the realm of social interactions. The convenience enabled by these technologies has revolutionized how people connect and engage with one another, shaping a new era of interconnectedness. According to the Indonesian Internet Service Providers Association (APJII) survey conducted in 2020, more than two-thirds of the population (73.7%) are active internet users. Among the various purposes for accessing the internet, social media emerged as the primary motivation for a significant majority of individuals (Asosiasi Penyelenggara Jasa Internet Indonesia, 2020).

Referring to the literature review by Aichner et al. (2021), which examined various definitions of social media from 1994 to 2019, it is evident that the differences in definitions vary significantly based on the specific needs of studies in their respective fields. Generally, social media platforms serve as channels that enable users to disseminate content, engage in dialogue, and communicate with a broader audience, fostering interactions and networks across multiple domains, including personal, professional, business, marketing, political, and social realms (Kapoor et al., 2018).

Around 62% of the population are active social media users (Riyanto, 2021). Generation Z, especially adolescents, comprise most social media users. For adolescents, the platform is used for various purposes, such as interacting to stay connected with friends, adding relationships, expressing themselves, exploring various information, and a series of other things. The use of social media has a positive effect in helping to fulfill the developmental tasks of adolescents. Social media is a place to show self-disclosure online, especially for those who have difficulty establishing direct social interactions. This self-openness can maintain communication and improve peer relationships (Christina et al., 2019).

Despite its utility, adolescents' prolonged excessive and continuous use of social media has consequences that need attention. It provides a constant and increasingly abundant stream of updates and notifications of various online or offline social activities. The perpetual influx of information triggered...
by digital platforms generates a sense of urgency that compels adolescents to seek comprehensive awareness, leading to the development of a psychological state known as fear of missing out, commonly referred to as FoMO.

Fear of missing out refers to an individual’s apprehension about potentially missing out on meaningful moments when they are not present for interactions within their social circles or peer groups (Przybylski et al., 2013). McGinnis (2020) has characterized fear of missing out as an undesirable form of anxiety resulting from exposure to social media and one’s perception of others’ experiences, which may appear more gratifying than one’s own. According to expert analyses, the concept of fear of missing out originates from the anxiety that emerges from the sensation of being excluded from both informational and experiential aspects, primarily through the influence of social media platforms.

This study has proven that several factors cause a person to experience fear of missing out, including demographic variability, the presence of technology, basic psychological needs, motivation, perception, self-esteem, and social one-upmanship (JWT Marketing Communications, 2012; McGinnis, 2020; Przybylski et al., 2013; Reer et al., 2019; Siddik et al., 2020; Tomczyk et al., 2018).

The presence of technology has the significant role in fostering fear of missing out. This can be exacerbated by outward-looking attitude when accessing social media that makes adolescents compare their lives with the highlights on social media (McLaughlin, 2013). According to Putra (2018), adolescents often compare themselves with their peers or social groups, triggering envy or leading to a lack of self-acceptance.

Adolescents with low self-esteem tend to compare themselves to others and have negative self-perceptions. Through a distorted lens, they assume others live more valuable, meaningful, and fulfilling lives. Ultimately, adolescents seek external validation by engaging in fear of missing out-driven behaviors, such as regularly checking social media, attending social events, or engaging in activities solely to be included or recognized by others.

Recent studies reported that self-esteem mediates increased social anxiety in social media use (Jiang & Ngien, 2020). Siddik et al. (2020) proved that high and low self-esteem predicts fear of missing out tendency on adolescents who are active users of social media. In line with this study, Triani and Ramadhani (2017) stated that a person’s self-esteem is one of the predictors of fear of missing out on experience.

Self-esteem reflects self-evaluation where people compare themselves to their standards or idealized sense of self (Leary, 2012). A person’s self-esteem level can be seen from self-competence and self-liking, related to individuals’ self-evaluation of their capabilities and self-worth (Tafarodi & Swann, 2001). According to Orth and Robins (2014), the role of self-esteem can predict well-being and success in the realm of human life, such as adolescents’ psychological health.

Fear of missing out, as a decision to worry about the possibility of missing out on something from other people’s experiences, is entirely driven by emotion (McGinnis, 2020). Several studies have also explained that problematic internet and social media users are partly due to the inability to regulate emotion. Furthermore, emotion regulation is broadly defined as individuals’ ability to manage and control the concept appearing in their actions (Gross, 2014).

Hormes et al. (2014) found that irregular and addictive use of online social networks appears as part of the symptoms of poor emotion regulation skills. Based on a study by Elhai et al. (2016), individuals with problematic or excessive smartphone use are caused by a lack of regulation skills. In addition, problematic smartphone use may also be a coping technique and regulating negative emotion. An additional study discovered that individuals who engage in problematic internet usage exhibit challenges in effectively regulating their emotion (Yu et al., 2013). People who use smartphones effectively can regulate their negative emotion by using these technological devices (Hoffner & Lee, 2015). Meanwhile, external and internal Dysfunctional emotion regulation significantly predicts internet and smartphone addiction (Yildiz, 2017).

Difficulty regulating emotion can affect adolescents to engage in impulsive actions, such as increased problematic social media use (Blackwell et al., 2017; Weiss et al., 2015), where fear of missing out is experienced (Buglass et al., 2017). Adolescents with difficulty regulating emotion often make rash decisions about things without considering preferences and long-term consequences (Nansi & Utami in Hermawati et al., 2020). This is carried out to distract them from the associated negative emotion and satisfy the psychological need to stay connected.

Emotion regulation also moderates the relationship between smartphone use and psychological well-being, as well as between smartphone use and functional impairment (Fortes et al., 2020). This is because relevant literature shows a significant relationship between emotion regulation, the internet, and smartphone addiction. However, the role of emotion regulation in moderating the relationship between self-esteem and fear of missing out is insufficient. Fear of missing out is a common phenomenon observed in individuals who exhibit addiction to the internet or smartphones. The individuals often experience concerns about missing
out on the experiences of their acquaintances through social media platforms. Numerous studies have provided evidence that self-esteem can serve as a predictor of the level of fear of missing out. However, the novelty lies in its exploration of emotion regulation as a moderator variable within this relationship. No previous studies have investigated the simultaneous interaction between self-esteem, fear of missing out, and emotion regulation. The primary objective is to examine the impact of emotion regulation as a moderator on the role of self-esteem in influencing fear of missing out among adolescents.

Methods
This study was conducted using a quantitative method and causality design. Population characteristics included adolescents who were active users of social media, namely followers of one of the teen Twitter menfess accounts. The sample size was 349 respondents, obtained through a simple random sampling technique with inclusion criteria, namely adolescents aged 15 - 18 years who were active users of social media in the last three months. The sample size was determined considering the unknown population with an error rate of 5% (Isaac & Michael in Sugiyono, 2017).

Data were collected through an online questionnaire with a Likert scale model. There were three measuring instruments which were the result of adaptation by other studies, with a trial of 55 respondents.

First, fear of missing out scale was adapted by Siddik et al. (2020) based on the scale developed by Przybylski et al. (2013). The scale consisted of 10 unidimensional items (for example: "It feels bad if I missed out on an opportunity to hang out with my friends"). Items on the scale were Likert scales with a score range of 1 - 5 with response options ranging from "not me at all" to "very much me". Meanwhile, the item power ranged from .405 - .799, with a reliability of .877.

Second, the Two-Dimensional self-esteem scale developed by Siddik et al. (2020) was based on the theory developed by Tafarodi and Swan (2001). The scale was composed of 16 two-dimensional items, where 8 items represented self-competence and self-liking dimension (for example: "I tend to look down on myself"). The items on this scale were Likert scales with a score range of 1 - 5 with the response options "strongly disagree" to "strongly agree". The item power ranged from .323 - .613, with a reliability of .795.

Third, the Indonesian version of Emotion Regulation Questionnaire (ERQ) developed by Radde et al. (2021) was based on the theory developed by Gross and John (2003). The scale consisted of 6 and 4 items representing cognitive reappraisal and expressive suppression (example: "I control my emotion by changing my mindset according to the situation in the environment"). The items on this scale were a Likert scale with a score range of 1 - 7 with the answer options "strongly disagree" to "strongly agree". Meanwhile, the item power ranged from .373 - .698, with a reliability of .766.

The data analysis technique used a simple linear regression and interaction test with Moderating Regression Analysis (MRA).

Results and Discussion
Result
Respondents totaled 349 adolescents, and the demographic data in Table 1 showed that the respondents were dominated by females (84.5%) aged 15 to 18 years. Regarding the duration of access, 62.5% use social media for more than 5 hours per day. Furthermore, 67.9% have more than 4 social media platforms based on the number of users. More than half, namely 181 respondents (51.9%), experienced fear of missing out at a high level. A total of 196 respondents (56.16%) had low self-esteem, while 192 (55.04%) had low emotion regulation (Table 2).

The results of the classical assumption test showed that the prerequisite tests were met. First, the normality test with One Sample Kolmogorov-Smirnov indicated that the data were normally distributed (Asymp. Sig (2-tailed) .200 > .05). Second, the linearity test showed there was a linear relationship between the predictor and response variables (sig. deviation from linearity .681 and .290 > .05). Third, the heteroscedasticity and Glejser Test reported no heteroscedasticity problem in the regression model (significance .152 > .05). Fourth, multicollinearity test showed no multicollinearity problem in the regression model or no linear relationship between predictor variables (variance inflation factor (VIF) value 1.013 < 10 and tolerance value .987 > .01).

Table 1
Demographic Overview of Respondents

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>54</td>
<td>15.5%</td>
</tr>
<tr>
<td>Female</td>
<td>295</td>
<td>84.5%</td>
</tr>
<tr>
<td>Duration of Social Media Access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 Hours/ Day</td>
<td>61</td>
<td>17.5%</td>
</tr>
<tr>
<td>3-5 Hours/ Day</td>
<td>70</td>
<td>20.1%</td>
</tr>
<tr>
<td>5+ Hours/ Day</td>
<td>218</td>
<td>62.5%</td>
</tr>
<tr>
<td>Number of Social Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 Platforms</td>
<td>25</td>
<td>7.2%</td>
</tr>
<tr>
<td>3-4 Platforms</td>
<td>87</td>
<td>24.9%</td>
</tr>
<tr>
<td>More than 4 Platforms</td>
<td>237</td>
<td>67.9%</td>
</tr>
</tbody>
</table>

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A simple linear regression test was conducted to examine the effect of self-esteem as a predictor variable on fear of missing out. The calculation results (Table 3) showed that the correlation value (R) was .390, and the coefficient of determination (R square) was .152. Therefore, the regression model's ability indicated that the 15.2% fear of missing out on experience was explained through self-esteem, while variables outside the model explained the rest.

The F test statistic was 62.394 with a significance level of .000 < .05. Therefore, the regression model was used to predict fear of missing out variable. The hypothesis was proven that self-esteem had a significant effect on fear of missing out in active users of social media.

The regression equation model to predict fear of missing out was Y = 1.931 + (.908) X1 + (.509) X2 + .908 X1X2 + e. These results explained the coefficient value of self-esteem at .390, meaning that every 1% increase in the variable reduces fear of missing out by .39%. The effect size in the structural level of the effect was moderate (f square = .019). Furthermore, Kenny (2018, in Hair et al., 2021) stated that the value of f square> .01 in the moderating effect was moderate.

**Discussion**

The results demonstrate that self-esteem level of adolescents who are active users of social media is a significant predictor of fear of missing out, contributing 15.2%. According to Triani and Ramadhani's (2017), the variable can predict adolescents' tendency to fear missing out. Low self-esteem can make adolescents experience fear of missing out on conditions. Starting from the tendency of individuals to compare their personal lives with others, a sense of inadequacy is developed regarding their accomplishments. This instigates adolescents to question their self-worth, often resulting in dissatisfaction and a persistent struggle to feel content. Consequently, adolescents inevitably experience a decline in self-esteem, which significantly impacts their attitude towards self-acceptance, leading to a prevailing pessimism regarding capabilities and a belief to be excluded within their social milieu (Ritcher in Siddik et al., 2020).

Solace is sought through the realm of virtual platforms to establish connections with peers or social groups. The prolonged exposure to social media exacerbates the perception that individuals online are leading a more captivating existence, intensifying an urgent internal sensation known as anxiety. This sensation is commonly referred to as fear of missing out (McGinnis, 2020).

The categorization of respondents based on self-esteem shows that more than half of adolescents who are active users of social media have a level in the low category. Therefore most respondents have a negative assessment or feel worthless about themselves. Adolescents self-esteem is an appreciation of oneself and others and the experiences achieved through recognition, respect, and appreciation. Low self-esteem can refer to inappropriate or incorrect perceptions of self-image. McGinnis (2020) explained that inaccurate perceptions create an information gap. The gap between perception and reality leads to negative

### Table 2
**Variable Categorization**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of Missing Out</td>
<td></td>
<td>181</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(51.9%)</td>
<td>(48.1%)</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td></td>
<td>153</td>
<td>196</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(43.84%)</td>
<td>(56.16%)</td>
</tr>
<tr>
<td>Emotion Regulation</td>
<td></td>
<td>157</td>
<td>192</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(44.96%)</td>
<td>(55.04%)</td>
</tr>
</tbody>
</table>

### Table 3
**Simple Linear Regression Test Results and MRA**

<table>
<thead>
<tr>
<th>Variable</th>
<th>r²</th>
<th>β</th>
<th>T</th>
<th>Sig.</th>
<th>F²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Esteem – FoMO</td>
<td>.152</td>
<td>.390</td>
<td>7.899</td>
<td>.000</td>
<td>.242</td>
</tr>
<tr>
<td>Self-Esteem * Emotion Regulation - FoMO</td>
<td>.165</td>
<td>.908</td>
<td>2.239</td>
<td>.026</td>
<td></td>
</tr>
</tbody>
</table>
thoughts, stress, and unhappiness, and this can trigger fear of missing out condition.

Adolescents who experience fear of missing out are gripped by apprehension over potentially missing out on valuable information and experiences shared by their peers or social groups. The advent of social media, as a collection of digital media platforms, has transformed the dynamics of social interaction and communication (McFarland & Ployhart, 2015). Descriptive analysis findings show that more than half of the respondents possess over four social media platforms and dedicate more than five hours per day to accessing them. This data underscores the heightened level of online social connectedness among adolescents through the utilization of social media. The pronounced desire to constantly remain connected to peers or social groups elucidates their preoccupation with the activities of others, leading them to neglect their pursuits. Consequently, this state of disconnection engenders anxiety and fosters fear of being left behind.

To investigate the phenomenon of adolescents showing elevated levels of fear of missing out, an examination of the statement items was conducted. The findings indicated that 56.9% of adolescents experienced distress when unable to participate in social outings with their friends. Additionally, 53.6% reported contemplating whether they dedicated excessive time to monitoring social media activities. A total of 48.1% expressed the belief that comprehending the prevailing jokes within their social circles held significance. This condition is intricately linked to the developmental stage of adolescents, particularly in the context of fostering interpersonal relationships and cultivating intimacy with peers (Sullivan in Feist & Feist, 2010). Santrock (in Putra, 2018) stated that adolescents commonly perceive peer groups as benchmarks for conformity, social comparison, and self-evaluation. Furthermore, those who exhibit a pronounced fear of missing out possess an inherent desire to establish connections with others, sustain friendships, and showcase hobbies or updates to evade missing out on the latest information or experiences (Pertiwi, 2021). This aligns with Elhai et al.’s (2016) assertion that individuals afflicted with a heightened fear of missing out often resort to excessive smartphone usage to fulfill their need for social connection and belonging.

From an Islamic perspective, the behavior underlying fear of missing out signifies a tendency towards attachment to worldly desires, known as "hubbud-dunya,” which contradicts the teachings of Islam. This inclination can have an adverse effect on a Muslim’s faith in Allah SWT, as individuals struggle to find contentment with blessings, feeling inadequate in comparison to others. Fear of missing out manifests as a state of fear, worry, and anxiety. In the Quran, this condition is described by the term "khauf." Linguistically, "khauf" refers to fear, anxiety, indecision, and worry. It signifies a restless state of the heart concerning future events or the anticipation of unfavorable outcomes based on conjecture. To attain salvation, a Muslim is encouraged to engage in sound planning and preparation for worldly life. This process begins with introspection and self-evaluation, known as "muhasabah al-nafs" in Islam. By engaging in muhasabah, Muslims become aware of their strengths and weaknesses to be mindful of their actions and live purposefully. This method allows them to set targets and lead a righteous life while keeping their ultimate goals in focus.

The results of the interaction test proved that 16.5% of fear of missing out is predicted by self-esteem after being moderated by emotion regulation. This regulation strengthens the negative effect of self-esteem on fear of missing out in adolescents.

Emotion regulation is defined as the ability to control emotion and make appropriate decision (Gross, 2014). The disparities in employing these strategies carry implications that influence the utilization of social media, thereby determining whether it exerts a positive or negative impact on its users (Jiang & Ngiang, 2020). Furthermore, the strategies are cognitive reappraisal and expressive suppression. Gross and John (2003) explained that individual well-being is obtained from adaptive emotion regulation through high cognitive reappraisal and low expressive suppression strategies. Adolescents who tend to use cognitive reappraisal socially share their emotion and have closer relationships with peers or social groups. They also have a positive assessment or feel valuable about themselves. Meanwhile, adolescents who use expressive suppression are reluctant to share emotion with others and avoid close relationships with their peers.

Fear of missing out entails an apprehension regarding the potential of missing out on something, and the variable is primarily driven by emotion (McGinnis, 2020). The inability of adolescents to regulate their emotion can lead to irrational evaluations and hinder the ability to make decisions on various matters (Nansi & Utami in Hermawati et al., 2020). During adolescents, emotional states often remain unstable due to close association with hormonal changes. Emotion tend to exert a greater influence than rational thoughts during this developmental stage. Consequently, a comprehensive analysis of a situation heavily relies on the predominance of cognitive processes over emotion.

The effect of self-esteem on adolescents’ fear of missing out is influenced by adaptive emotion regulation, which involves enhancing cognitive reappraisal and reducing expressive suppression (Gross...
Adaptive emotion regulation involves modifying the significance or relevance of events that elicit emotion before a complete response (Gross, 2014). By selecting emotional responses after exposure to peers’ posts, adolescents can create positive experiences. In addition, adaptive emotion regulation serves as a protective factor that alters an individual’s initial negative thoughts triggered by social media usage (Yue et al., 2022). Through effective emotion regulation, adolescents can positively evaluate themselves by relying on rational thinking. This leads to the development of high self-esteem and mitigates the occurrence of fear of missing out.

On further analysis of emotion regulation dimension, namely cognitive reappraisal strategies, 18.6% fear of missing out is predicted by self-esteem after being moderated by cognitive reappraisal strategies. Cognitive reappraisal strategies strengthen the negative effect of the variable on adolescents’ fear of missing out. Furthermore, cognitive reappraisal strategies can significantly reduce adolescents’ fear of missing out. This result is in line with Dryman and Heimberg (2018), where emotion regulation’s cognitive reappraisal strategy has the more important role in social anxiety disorder. Cognitive reappraisal strategies play the significant moderating role in the association between smartphone usage, particularly in communication with others, and psychological well-being (Fortes et al., 2020).

Fear of missing out can potentially serve as an explanatory factor for excessive social media usage and the development of addiction. It is important to note that this study has certain limitations, particularly regarding the relatively broad criteria used to select participants. Therefore, future study should involve individuals with specific stages or degrees of addiction to gain a more comprehensive understanding of the phenomenon. It is crucial to expand the investigation by considering other internal and external variables, such as personality traits. To obtain more intricate findings, alternative study designs, such as mixed methods or experiments should be employed.

**Conclusion**

In conclusion, emotion regulation was reported to strengthen self-esteem effect on fear of missing out. This suggested that effective emotion regulation skills helped adolescents to navigate and manage emotion related to fear of missing out more constructively. It was also important to build healthy self-esteem that involved developing self-acceptance and a positive self-image instead of relying on external validation.

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