

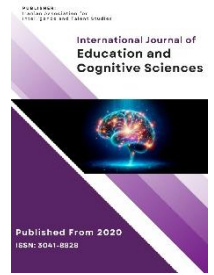


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## Designing a Model of Fear of Missing Out Based on Identity Styles with the Mediating Role of Behavioral Brain Systems in Female University Students Using Cyberspace

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### ABSTRACT

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**Purpose:** The present study aimed to design and test a causal model of fear of missing out (FoMO) based on identity styles with the mediating role of behavioral brain systems among female university students.

**Methods and Materials:** This study employed a descriptive-correlational design within the framework of structural equation modeling (SEM). The statistical population consisted of undergraduate female students at Islamic Azad University, Arak Branch, during the 2025–2026 academic year. A sample of 224 participants was selected using convenience sampling. Data were collected using three standardized instruments: the Identity Style Inventory, the Behavioral Inhibition/Behavioral Activation System (BIS/BAS) scales, and the FoMO scale. Data analysis was conducted using SPSS version 27 and AMOS version 24. Assumptions of normality, linearity, independence of errors, and absence of multicollinearity were confirmed prior to model testing.

**Findings:** The results indicated that the proposed model demonstrated an acceptable fit ( $\chi^2/df < 3$ , CFI > 0.90, IFI > 0.90, RMSEA < 0.08). Identity cohesion showed a significant negative direct relationship with FoMO ( $\beta = -0.21$ ,  $p < 0.01$ ) and a significant relationship with both behavioral inhibition ( $\beta = -0.20$ ,  $p < 0.01$ ) and behavioral activation ( $\beta = 0.31$ ,  $p < 0.01$ ). Identity confusion showed a significant positive relationship with FoMO ( $\beta = 0.29$ ,  $p < 0.01$ ) and behavioral inhibition ( $\beta = 0.42$ ,  $p < 0.01$ ), and a significant negative relationship with behavioral activation ( $\beta = -0.22$ ,  $p < 0.01$ ). Indirect effects analysis revealed that behavioral brain systems significantly mediated the relationship between identity styles and FoMO, with all mediating paths significant at the 95% confidence level.

**Conclusion:** The findings confirm the significant role of identity styles and behavioral brain systems in explaining FoMO, highlighting that cohesive identity acts as a protective factor while identity confusion increases vulnerability, with behavioral inhibition and activation systems functioning as key mediating mechanisms.

**Keywords:** Identity styles, Behavioral brain systems, Fear of missing out, Structural equation modeling, University students

## 1. Introduction

The rapid expansion of digital technologies and social networking platforms has profoundly transformed patterns of human interaction, communication, and identity formation in contemporary societies. In recent years, scholars have increasingly emphasized that excessive engagement with online environments is associated with a wide range of psychological outcomes, including anxiety, depression, and emotional dysregulation, particularly among adolescents and young adults (Keles et al., 2020). Within this context, one of the most salient emerging psychological constructs is the Fear of Missing Out (FoMO), which has gained significant attention due to its pervasive influence on individuals' cognitive, emotional, and behavioral functioning. FoMO is defined as a pervasive apprehension that others might be having rewarding experiences from which one is absent, accompanied by a strong desire to remain continually connected with what others are doing (Przybylski et al., 2013). This phenomenon is not merely a transient emotional reaction but rather a complex psychosocial experience that is deeply embedded in individuals' need for belongingness, social comparison, and self-validation in digital contexts.

A growing body of empirical research has demonstrated that FoMO is closely linked to problematic patterns of social media use, including excessive checking behaviors, compulsive engagement, and dependency on digital interactions. For instance, studies have shown that FoMO significantly predicts problematic smartphone use and social media addiction, as individuals attempt to alleviate their anxiety by maintaining constant connectivity (Blackwell et al., 2017; Oberst et al., 2017). Similarly, FoMO has been associated with increased levels of depression, anxiety, and reduced well-being, highlighting its role as a critical risk factor for mental health problems in modern digital societies (Barry et al., 2017; Wolniewicz et al., 2020). Furthermore, research indicates that FoMO mediates the relationship between emotional distress and problematic internet use, suggesting that it operates as a key psychological mechanism linking internal vulnerabilities to maladaptive online behaviors (Stead & Bibby, 2017; Wolniewicz et al., 2020). More recent studies have also emphasized that FoMO is strongly related to loneliness, social disconnection, and phubbing behaviors, further underscoring its multifaceted impact on interpersonal functioning (Taj et al., 2025; Wahyu & Suhesty, 2025).

University students represent one of the most vulnerable populations in this regard, as they are in a critical developmental stage characterized by identity exploration, increased reliance on peer relationships, and heightened sensitivity to social evaluation. Evidence suggests that FoMO is particularly prevalent among students, as their psychological well-being is closely tied to social acceptance and peer feedback in both offline and online environments (Thomas, 2025). Additionally, contemporary research has highlighted that the digital age has intensified these dynamics, with adolescents and young adults experiencing constant exposure to curated social content that amplifies social comparison processes and perceived social exclusion (Türk & Koçyiğit, 2025; Villegas et al., 2025). These findings indicate that FoMO is not only a behavioral phenomenon but also a reflection of deeper psychological processes related to identity, self-concept, and emotional regulation.

One of the key theoretical perspectives for understanding FoMO is identity theory, particularly the concept of identity styles. Identity styles refer to the cognitive-behavioral strategies individuals use to process self-relevant information and make decisions regarding their beliefs, values, and goals (Berzonsky & Kuk, 2000). According to this framework, individuals differ in the extent to which they actively explore and commit to their identities, resulting in distinct identity styles such as informational, normative, and diffuse-avoidant styles. Individuals with a coherent or achieved identity tend to possess a stable self-concept, clear goals, and a strong sense of personal agency, whereas those with identity diffusion experience uncertainty, indecisiveness, and reliance on external validation. Empirical studies have consistently demonstrated that identity styles are significantly associated with patterns of internet use and psychological adjustment. For example, research has shown that individuals with diffuse identity styles are more likely to engage in problematic internet use and social media addiction, whereas those with coherent identities exhibit greater resilience and psychological well-being (Fathi et al., 2013; Jafari et al., 2021; Moosivand et al., 2021). Moreover, identity disturbances have been linked to depressive symptoms, emotional instability, and maladaptive coping strategies, all of which are closely related to FoMO (Chen et al., 2019).

In addition to identity-related factors, biological and neuropsychological mechanisms also play a crucial role in shaping individuals' susceptibility to FoMO. Gray's Reinforcement Sensitivity Theory provides a comprehensive

framework for understanding the role of brain-behavioral systems in emotional and motivational processes. This theory distinguishes between the Behavioral Activation System (BAS), which is sensitive to rewards and promotes approach behavior, and the Behavioral Inhibition System (BIS), which is sensitive to punishment and triggers avoidance and anxiety responses (Aluja & Blanch, 2011). These systems are rooted in neural circuits involving the cortico-striatal-thalamic pathways and are fundamental to understanding individual differences in emotional reactivity and behavioral tendencies (Fettes et al., 2017). Research has shown that heightened BIS activity is associated with anxiety, negative affect, and increased sensitivity to social threats, whereas BAS activity is linked to reward-seeking behaviors and positive emotional states.

Recent empirical studies have increasingly examined the role of brain-behavioral systems in digital addiction and FoMO. For instance, findings indicate that individuals with high BIS sensitivity are more prone to problematic smartphone use and FoMO due to their heightened sensitivity to social rejection and fear of missing out on social interactions (Jiang & Zhao, 2017; Park et al., 2013). Similarly, research has demonstrated that brain-behavioral systems mediate the relationship between psychological traits and internet addiction, highlighting their role as underlying mechanisms in digital behavior patterns (Ghaderi & Moeinan, 2024; Pourmohseni Koluri et al., 2023). Furthermore, studies have shown that BIS is associated with negatively biased social cognitions and emotional dysregulation, which can exacerbate FoMO experiences in social contexts (Gomez, Watson, Wynen, et al., 2020). At the same time, BAS-related processes, such as reward responsiveness and sensation seeking, may contribute to excessive engagement with social media as individuals seek positive reinforcement from online interactions (Gomez, Watson, & Stavropoulos, 2020).

The interaction between identity styles and brain-behavioral systems provides a particularly promising framework for understanding FoMO as a multidimensional construct. Individuals with a coherent identity are likely to exhibit more adaptive regulation of behavioral activation and inhibition systems, enabling them to maintain balanced engagement with digital environments and resist maladaptive social comparison processes. In contrast, individuals with identity diffusion may experience heightened activation of the BIS, leading to increased anxiety, uncertainty, and reliance on external validation through social media, thereby intensifying FoMO

experiences. Empirical evidence supports this integrative perspective, indicating that identity-related variables and neuropsychological systems jointly contribute to problematic internet use and emotional distress (Gori et al., 2023; Wang et al., 2022). Moreover, FoMO has been conceptualized as a mediator between personality traits and digital behaviors, suggesting that it serves as a key mechanism linking internal psychological processes to observable behavioral outcomes (Tandon, 2021).

Despite the growing body of research on FoMO, several gaps remain in the literature. First, many studies have examined identity styles and brain-behavioral systems independently, without considering their interactive effects in explaining FoMO. Second, most existing research has been conducted in Western contexts, limiting the generalizability of findings to other cultural settings where social relationships and identity formation processes may differ significantly. Third, there is a need for integrative models that incorporate both psychological and neurobiological factors to provide a more comprehensive understanding of FoMO. Addressing these gaps is particularly important in the context of university students, who are at a critical stage of identity development and are highly exposed to digital environments.

In addition, recent studies have emphasized the increasing prevalence of FoMO in diverse populations, including not only adolescents and young adults but also older adults, indicating that this phenomenon is becoming a widespread concern across the lifespan (Sainy, 2025). The expansion of digital communication technologies has created new forms of social interaction that continuously reinforce the need for connectivity and social validation, thereby intensifying FoMO experiences. Furthermore, emerging research highlights the role of cultural and contextual factors in shaping FoMO, suggesting that variations in social norms, family structures, and communication patterns may influence individuals' susceptibility to this phenomenon (Villegas et al., 2025). These findings underscore the importance of developing culturally sensitive models that account for both universal and context-specific determinants of FoMO.

Taken together, the existing literature suggests that FoMO is a complex and multifactorial phenomenon influenced by a combination of psychological, social, and neurobiological factors. Identity styles provide a critical lens for understanding how individuals construct and regulate their sense of self in relation to others, while brain-behavioral systems offer insights into the underlying

mechanisms that drive emotional and motivational responses. Integrating these perspectives can contribute to a more comprehensive understanding of FoMO and inform the development of targeted interventions aimed at promoting psychological well-being and reducing problematic digital behaviors among university students. Therefore, the present study was conducted with the aim of designing and testing a causal model of fear of missing out based on identity styles with the mediating role of behavioral brain systems among female university students.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study was conducted using a descriptive–correlational design within the framework of structural equation modeling (SEM). The statistical population consisted of all undergraduate female students enrolled at Islamic Azad University, Arak Branch, during the 2025–2026 academic year. Considering the recommendations for SEM studies, which suggest a minimum sample size of 200 participants to ensure adequate statistical power and model stability, an initial sample of 300 individuals was selected through convenience sampling to account for potential attrition due to incomplete responses. After data screening and removal of incomplete questionnaires, a final sample of 224 participants was retained for analysis. The inclusion criteria included being an undergraduate student, willingness to participate, and completion of all questionnaire items, while incomplete responses were excluded from the final dataset. Ethical considerations were strictly observed, including obtaining informed consent, ensuring confidentiality of participants' information, and allowing participants to withdraw from the study at any stage without any consequences.

### 2.2. Measures

**Fear of Missing Out (FoMO) Scale:** The Fear of Missing Out scale was developed by Andrew K. Przybylski and colleagues in 2013 to assess individuals' concerns about missing rewarding social experiences. This instrument consists of 10 items designed to measure the extent to which individuals feel anxious about being absent from enjoyable events or social interactions. The scale is unidimensional and is typically scored on a five-point Likert continuum ranging from strongly disagree to strongly agree, with higher scores indicating greater levels of FoMO. Previous studies have

confirmed the construct validity and internal consistency reliability of this scale across diverse populations, including university students, demonstrating its suitability for assessing FoMO in both research and applied settings.

**Behavioral Inhibition System/Behavioral Activation System (BIS/BAS) Scales:** The BIS/BAS scales were developed by Jeffrey Alan Gray's theoretical framework and operationalized by Charles S. Carver and Teri L. White in 1994. This instrument is composed of 24 items and measures two primary neuropsychological systems: the Behavioral Inhibition System (BIS), which reflects sensitivity to punishment and avoidance motivation, and the Behavioral Activation System (BAS), which reflects sensitivity to reward and approach motivation. The BAS component is further divided into three subscales: Drive, Reward Responsiveness, and Fun Seeking. Responses are recorded on a four-point Likert scale ranging from strongly disagree to strongly agree. Higher scores on each subscale indicate greater sensitivity within the corresponding system. Numerous studies have demonstrated the acceptable psychometric properties of the BIS/BAS scales, including strong reliability coefficients and confirmed factorial validity in various cultural contexts.

**Identity Style Inventory (ISI):** The Identity Style Inventory was originally developed by Michael D. Berzonsky and later operationalized in earlier versions by Donald Rosenthal, Roger Gurney, and Susan Moore in 1981 to assess individuals' preferred cognitive–behavioral strategies in processing identity-related information. The instrument typically consists of multiple items measuring different identity styles, including informational (identity coherence/achievement), normative, and diffuse–avoidant (identity confusion) styles. Items are rated on a Likert-type scale, and higher scores in each dimension reflect greater reliance on that particular identity processing style. The inventory has been widely used in psychological research, and its validity and reliability have been consistently supported through confirmatory factor analyses and internal consistency measures across different populations, including adolescents and university students.

### 2.3. Data Analysis

Data analysis was conducted using SPSS version 27 for preliminary analyses and AMOS version 24 for structural equation modeling. Initially, descriptive statistics and Pearson correlation coefficients were calculated to examine the relationships among variables. Prior to testing the

structural model, key statistical assumptions were assessed, including normality (via skewness and kurtosis indices), linearity, independence of errors (using the Durbin–Watson statistic), and absence of multicollinearity (through tolerance and variance inflation factor indices). Following confirmation of these assumptions, the proposed model was evaluated using SEM, and model fit was assessed using multiple fit indices, including the chi-square to degrees of freedom ratio ( $\chi^2/df$ ), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Goodness-of-Fit Index (GFI), and Root Mean Square Error of Approximation (RMSEA). Direct and indirect effects were examined using standardized path coefficients, and the significance of mediating effects was tested through the bootstrap method with 5000 resamples and a 95% confidence interval, ensuring robust estimation of indirect relationships.

### 3. Findings and Results

In the current research, 224 people participated, of whom 128 (57.2%) were in the 20-22 age range, 67 (29.9%) were

in the 23-25 age range, and 29 (12.9%) were over 25 years old. The table results show that the correlation coefficient between all research variables is significant at the 0.01 level. Based on this, the linearity of the relationship between variables is accepted. Also, considering the skewness and kurtosis values for the variables are between -2 and 2, the normality of the distribution is confirmed. Furthermore, to check the assumption of multicollinearity, Tolerance and VIF values were calculated for all variables. Given that the Tolerance value for all variables was higher than 0.4 and VIF values for all variables were smaller than 3, the lack of collinearity among research variables is confirmed. To check the assumption of independence of errors, the Durbin-Watson test was used. Since the precondition for accepting independence of errors is that the statistic value must be between 1.5 and 2.5, and in this research, it was estimated at 1.95, this precondition is also confirmed.

**Table 1**

*Descriptive Indicators and Pearson Correlation of Variables*

Variables	Mean	Std Dev	Skewness	Kurtosis	1	2	3	4	5
1. Identity Cohesion	17.59	3.48	-	-	1				
2. Identity Confusion	18.81	5.04	-	-	-0.58**	1			
3. Inhibition	8.20	6.31	-	-	-0.02	0.24	1		
4. Activation	26.61	3.52	-	-	0.21	-0.25	-0.04	1	
5. FoMO	-	-	-	-	-0.48**	0.53**	0.15**	-0.38**	1

The results of the table show that the correlation coefficient between all research variables is significant at the 0.01 level. Based on this, the linearity of the relationship between variables is accepted. Also, considering the skewness and kurtosis values for the variables are between -2 and 2, the normality of the distribution is confirmed. Furthermore, to check the assumption of multiple collinearity, Tolerance and VIF values were calculated for all variables. Given that the Tolerance value for all variables

was higher than 0.4 and VIF values for all variables were smaller than 3, the non-collinearity of the research variables is confirmed. To check the assumption of independence of errors, the Durbin-Watson test was used. Since the precondition for accepting independence of errors is that the statistic value must be between 1.5 and 2.5, and in this research, it was estimated at 1.95, this precondition is also confirmed.

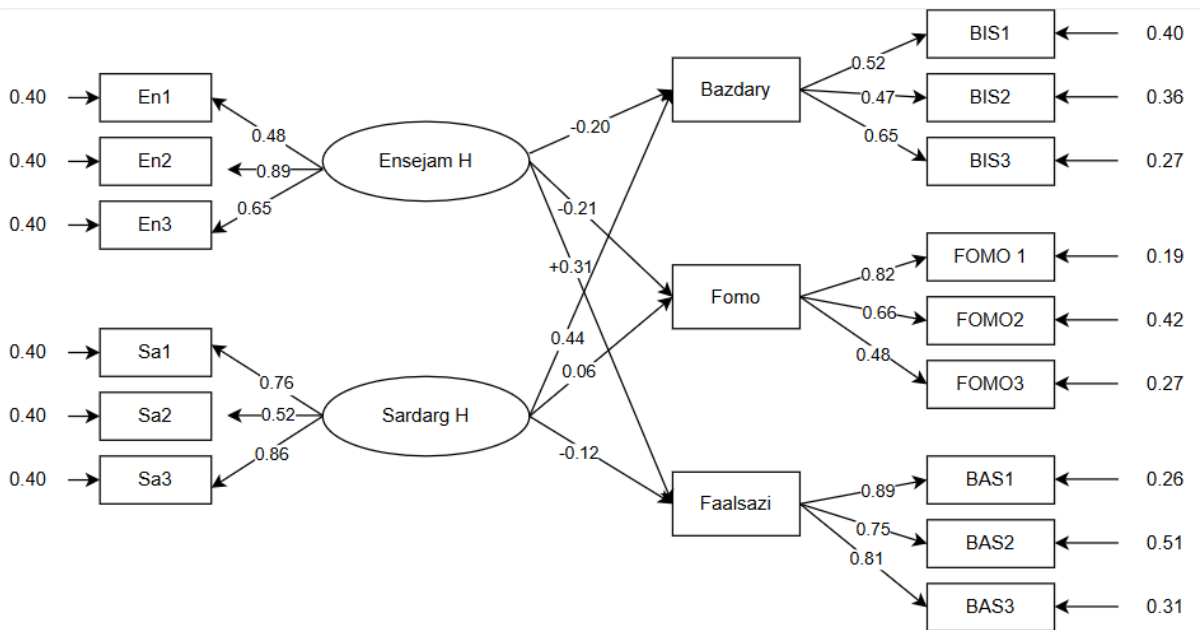
**Table 2**

*Results of the investigation into the mediating role of identity styles in the relationship between behavioral brain systems and FoMO.*

Path	Lower Limit	Upper Limit	Std Error	Std Coeff
Identity Cohesion to Inhibition to FoMO	-0.588	0.023	-0.117	-0.53
Identity Cohesion to Activation to FoMO	-0.102	0.017	-0.136	-0.072
Identity Confusion to Inhibition to FoMO	0.184	0.033	0.151	0.219
Identity Confusion to Activation to FoMO	0.078	0.015	0.114	0.049

**Figure 1**

*Model with Beta Coefficients*



In Table 2, based on the bootstrap method, a 95% confidence level and a bootstrap resampling count of 5000 have been considered. If the upper and lower limit values (confidence intervals) do not include zero, the role of the mediating variable is significant. Based on this, the role of the mediating variable is significant in all situations. The

results of Table 3 show that the model fit indices are desirable, because the RMSEA index is smaller than 0.08 and the GFI, IFI, and CFI indices are also greater than 0.9. Also, the Chi-square value divided by degrees of freedom is smaller than 3. In summary, it can be said that the model fit is confirmed.

**Table 3**

*Fit Indices*

Fit Indices	$\chi^2$	df	$\chi^2/df$	GFI	CFI	IFI	RMSEA
Acceptable Range	-	-	< 3	> 0.9	> 0.9	> 0.9	< 0.08
Obtained Values	766.73	346	2.21	0.91	0.92	0.92	0.074

The results of Table 3 show that the model fit indices are desirable, because the RMSEA index is smaller than 0.08, and the GFI, IFI, and CFI indices are also greater than 0.9. Furthermore, the Chi-square value divided by degrees of freedom is smaller than 3. In summary, it can be said that the model fit is confirmed.

**4. Discussion and Conclusion**

The findings of the present study provide strong empirical support for the proposed structural model, demonstrating that identity styles significantly predict fear of missing out (FoMO) both directly and indirectly through behavioral brain systems. The results indicated that identity cohesion had a significant negative relationship with FoMO and a

significant relationship with both behavioral inhibition and behavioral activation systems, whereas identity confusion showed a significant positive relationship with FoMO and behavioral inhibition, along with a negative relationship with behavioral activation. In addition, the mediating role of behavioral brain systems was confirmed, as indirect pathways between identity styles and FoMO were statistically significant. These findings collectively suggest that FoMO is a multidimensional phenomenon shaped by both psychological identity structures and neurobehavioral mechanisms, aligning with contemporary integrative models of digital behavior and emotional regulation.

The negative relationship between identity cohesion and FoMO is consistent with theoretical and empirical literature

emphasizing the protective role of a coherent identity in psychological functioning. Individuals with a cohesive identity possess a stable self-concept, clear personal values, and a sense of internal consistency, which reduces their dependence on external validation and social comparison processes. This finding is in line with studies indicating that identity achievement is associated with higher self-esteem and lower susceptibility to social media addiction and FoMO (Gori et al., 2023). Similarly, research has shown that individuals with stronger identity structures exhibit greater resilience and adaptive coping strategies in digital environments, thereby reducing the likelihood of problematic online behaviors (Moosivand et al., 2021). From a theoretical perspective, identity cohesion enables individuals to prioritize intrinsic goals over external social approval, which diminishes the psychological need to remain constantly connected to others' activities, a core feature of FoMO (Berzonsky & Kuk, 2000).

The positive relationship between identity confusion and FoMO further reinforces the critical role of identity processes in shaping digital behavior. Individuals with identity diffusion often experience uncertainty, indecisiveness, and instability in self-definition, leading them to seek external sources of validation and belonging. This tendency makes them particularly vulnerable to FoMO, as they are more likely to engage in social comparison and fear social exclusion. Previous research has consistently demonstrated that identity disturbances are associated with problematic internet use, emotional distress, and maladaptive coping mechanisms (Chen et al., 2019; Jafari et al., 2021). Moreover, studies have shown that individuals with diffuse identity styles exhibit higher levels of dependency on social networks, as they use these platforms to compensate for their lack of internal identity coherence (Fathi et al., 2013). The present findings extend this literature by demonstrating that identity confusion not only directly predicts FoMO but also exerts its influence through underlying neurobehavioral mechanisms.

The role of behavioral brain systems in mediating these relationships provides important insights into the neuropsychological underpinnings of FoMO. The findings indicated that identity cohesion was negatively associated with behavioral inhibition and positively associated with behavioral activation, whereas identity confusion showed the opposite pattern. These results are consistent with Gray's Reinforcement Sensitivity Theory, which posits that the Behavioral Inhibition System (BIS) is associated with sensitivity to punishment and anxiety, while the Behavioral

Activation System (BAS) is linked to reward sensitivity and approach behavior (Aluja & Blanch, 2011). Individuals with high BIS sensitivity are more likely to experience anxiety, fear of rejection, and heightened vigilance toward social threats, all of which contribute to FoMO. This is supported by research demonstrating that BIS activity predicts problematic smartphone use and FoMO due to increased sensitivity to social exclusion (Jiang & Zhao, 2017; Park et al., 2013). In contrast, BAS-related processes are associated with positive emotional regulation and goal-directed behavior, which may buffer against excessive social comparison and FoMO experiences.

The mediating role of behavioral inhibition in the relationship between identity confusion and FoMO is particularly noteworthy. The findings suggest that individuals with identity confusion are more likely to exhibit heightened BIS activity, which in turn increases their vulnerability to FoMO. This can be explained by the fact that identity confusion is associated with uncertainty and lack of control, which activate anxiety-related processes and sensitivity to social threats. Empirical evidence supports this interpretation, indicating that BIS is linked to negatively biased social cognitions and emotional dysregulation, which exacerbate FoMO experiences (Gomez, Watson, Wynen, et al., 2020). Furthermore, studies have shown that brain-behavioral systems mediate the relationship between psychological traits and digital addiction, highlighting their role as underlying mechanisms in maladaptive online behaviors (Ghaderi & Moeinan, 2024; Pourmohseni Koluri et al., 2023). The present study contributes to this body of research by demonstrating that these mechanisms also operate in the context of FoMO.

The indirect relationship between identity cohesion and FoMO through behavioral activation also provides valuable insights. Individuals with a cohesive identity are more likely to exhibit higher BAS activity, which is associated with positive affect, motivation, and goal-directed behavior. This reduces their reliance on external validation and social comparison, thereby decreasing FoMO. Previous studies have shown that BAS-related processes are associated with adaptive engagement in social and academic activities, which can mitigate the negative effects of digital overuse (Gomez, Watson, & Stavropoulos, 2020). Moreover, research indicates that individuals with strong internal goals and intrinsic motivation are less likely to engage in compulsive social media use, as they derive satisfaction from their own achievements rather than external feedback (Zhang et al., 2018). These findings highlight the importance

of fostering adaptive motivational systems in reducing FoMO.

The overall pattern of results is also consistent with broader research on FoMO as a mediator between emotional distress and problematic digital behaviors. Studies have shown that FoMO plays a central role in linking psychological vulnerabilities such as anxiety and depression to excessive social media use (Stead & Bibby, 2017; Wolniewicz et al., 2020). Additionally, FoMO has been associated with social disconnection, loneliness, and reduced well-being, further emphasizing its role as a key psychological mechanism in digital contexts (Wang et al., 2022). The present findings extend this literature by integrating identity styles and brain-behavioral systems into a unified model, demonstrating that FoMO is not only a consequence of emotional distress but also a product of deeper identity-related and neurobiological processes.

Furthermore, the results are consistent with recent studies highlighting the increasing prevalence and complexity of FoMO in the digital age. Research has shown that FoMO is closely related to social media addiction, phubbing behaviors, and emotional dysregulation, particularly among young adults (Taj et al., 2025; Tandon, 2021). Similarly, studies have emphasized that the constant exposure to curated social content intensifies social comparison processes and perceived social exclusion, thereby increasing FoMO experiences (Türk & Koçyiğit, 2025; Villegas et al., 2025). The present study contributes to this emerging body of research by providing empirical evidence for the interplay between psychological identity processes and neurobehavioral systems in shaping FoMO.

In addition, the findings align with research indicating that FoMO is strongly associated with problematic smartphone use and mental health outcomes among university students (Thomas, 2025). This highlights the importance of considering both individual and contextual factors in understanding FoMO, as students are particularly vulnerable due to their developmental stage and reliance on digital communication. The integration of identity styles and brain-behavioral systems in the present model provides a comprehensive framework for understanding these dynamics and offers valuable insights for intervention and prevention efforts.

The results also underscore the importance of adopting a multidimensional approach to studying FoMO, as it is influenced by a complex interplay of psychological, social, and biological factors. Previous research has often examined these factors in isolation, limiting the ability to capture the

full complexity of FoMO. By integrating identity styles and brain-behavioral systems, the present study provides a more comprehensive understanding of the mechanisms underlying FoMO and highlights the need for interdisciplinary approaches in future research.

The limitations of the present study should be considered when interpreting the findings. First, the use of a cross-sectional design limits the ability to draw causal inferences about the relationships among variables. Second, the sample consisted exclusively of female university students, which restricts the generalizability of the findings to other populations, including males and individuals from different age groups or cultural backgrounds. Third, the reliance on self-report measures may introduce biases such as social desirability and response bias. Additionally, the use of convenience sampling may limit the representativeness of the sample.

Future research is recommended to employ longitudinal and experimental designs to better examine causal relationships and changes in FoMO over time. Expanding the sample to include diverse populations, including different age groups, genders, and cultural contexts, would enhance the generalizability of the findings. Moreover, future studies could explore additional mediating and moderating variables, such as emotional regulation, self-esteem, and social support, to provide a more comprehensive understanding of FoMO. The use of mixed-method approaches and neurobiological measures could also offer deeper insights into the mechanisms underlying FoMO.

From a practical perspective, the findings of this study have important implications for designing interventions aimed at reducing FoMO and promoting psychological well-being among university students. Educational and counseling programs can focus on strengthening identity cohesion, enhancing self-awareness, and promoting intrinsic motivation to reduce reliance on external validation. Interventions targeting emotional regulation and anxiety management may also help reduce the impact of behavioral inhibition on FoMO. Additionally, digital literacy programs can raise awareness about the effects of excessive social media use and encourage healthier patterns of online engagement. Overall, a comprehensive approach that addresses both psychological and behavioral factors can be effective in mitigating FoMO and its associated negative outcomes.

### Authors' Contributions

All authors significantly contributed to this study.

## Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

## Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

## References

- Aluja, A., & Blanch, A. (2011). Neuropsychological behavioral inhibition system (BIS) and behavioral approach system (BAS) assessment: A shortened Sensitivity to Punishment and Sensitivity to Reward Questionnaire version (SPSRQ-20). *Journal of Personality Assessment*, *93*(6), 628-636. <https://doi.org/10.1080/00223891.2011.608760>
- Barry, C. T., Sidoti, C. L., Briggs, S. M., Reiter, S. R., & Lindsay, R. (2017). Adolescents' social media use and mental health: FOMO and depressive symptoms. *Journal of Clinical Child & Adolescent Psychology*, *46*(1), 100-109. <https://doi.org/10.1080/15374416.2015.1079268>
- Berzonsky, M. D., & Kuk, L. (2000). Identity status, identity processing style, and the transition to university. *Journal of Adolescent Research*, *15*(1), 81-98.
- Blackwell, D., Tramosch, R., Leaman, C., & Osborne, C. (2017). Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction. *Personality and individual differences*, *116*, 69-72. <https://doi.org/10.1016/j.paid.2017.04.039>
- Chen, T. H., Hsiao, R. C., Liu, T. L., & Yen, C. F. (2019). Predicting effects of borderline personality symptoms and self-concept and identity disturbances on internet addiction, depression, and suicidality in college students: A prospective study. *Kaohsiung Journal of Medical Sciences*, *35*(8), 508-514.
- Fathi, M., Sohrabi, F., & Saeidian, M. (2013). Comparison of personality characteristics and identity styles in internet addicted and non-addicted students (Persian). *Journal of Research in Behavioural Sciences*, *11*(2).
- Fettes, P., Schulze, L., & Downar, J. (2017). Cortico-striatal-thalamic loop circuits of the orbitofrontal cortex: Promising therapeutic targets in psychiatric illness. *Frontiers in Systems Neuroscience*, *11*, 25. <https://doi.org/10.3389/fnsys.2017.00025>
- Ghaderi, Z., & Moeinan, D. (2024). Presenting a prediction model of internet addiction based on brain-behavioral systems mediated by cognitive flexibility in adolescents (Persian). *Rooyesh-e-Ravanshenasi Journal*, *13*(4), 97.
- Gomez, R., Watson, S., & Stavropoulos, V. (2020). Associations of behavioral inhibition system with negatively biased social cognitions: Moderation by the behavioral approach system. *Personality and individual differences*, *166*, 110164.
- Gomez, R., Watson, S., Wynen, J. V., Trawley, S., Stavropoulos, V., & Corr, P. J. (2020). Reinforcement Sensitivity Theory of Personality Questionnaire: Factor structure based on CFA and ESEM, and associations with ADHD. *Journal of Personality Assessment*, *103*(6), 1-12.
- Gori, A., Topino, E., & Griffiths, M. D. (2023). The associations between attachment, self-esteem, fear of missing out, daily time expenditure, and problematic social media use: A path analysis model. *Addictive behaviors*, *141*, 107633. <https://doi.org/10.1016/j.addbeh.2023.107633>
- Jafari, F., Bahrami, S., & Jafari Harandi, R. (2021). Predicting the amount of virtual social networks usage based on identity styles in students of Qom city (Persian). *Journal of Information Management Science and Technology*, *7*(3).
- Jiang, Z., & Zhao, X. (2017). Brain behavioral systems, self-control and problematic mobile phone use: The moderating role of gender and history of use. *Personality and individual differences*, *106*, 111-116.
- Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: The influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth*, *25*(1), 79-93. <https://doi.org/10.1080/02673843.2019.1590851>
- Moosivand, M., Zarean, M., & Kaboli, M. (2021). Modeling internet addiction based on identity styles and academic performance: The mediating role (Persian). *Journal of Social Psychology Research*, *44*.
- Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. (2017). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of adolescence*, *55*, 51-60. <https://doi.org/10.1016/j.adolescence.2016.12.008>
- Park, S. M., Park, Y. M., Lee, H. W., Jung, H. Y., Lee, J. Y., & Choi, J. S. (2013). The effects of behavioral inhibition/approach system as predictors of Internet addiction in adolescents. *Personality and individual differences*, *54*(1), 7-11. <https://doi.org/10.1016/j.paid.2012.07.033>
- Pourmohseni Koluri, F., Eyni, S., Motahari, M. T., & Ebadi, M. (2023). Causal modeling of mobile phone addiction in students based on alexithymia and communication problems: The mediating role of brain-behavioral systems (Persian). *Journal of School Psychology and Institutions*, *12*(13).
- Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in human Behavior*, *29*(4), 1841-1848. <https://doi.org/10.1016/j.chb.2013.02.014>

- Sainy, M. (2025). A Study on Impact of Smartphone Usage and Fear of Missing Out [FOMO] Among Older Adults of Raipur. *International Scientific Journal of Engineering and Management*, 04(06), 1-9. <https://doi.org/10.55041/isjem03937>
- Stead, H., & Bibby, P. A. (2017). Personality, fear of missing out and problematic internet use and their relationship to subjective well-being. *Computers in human Behavior*, 76, 534-540.
- Taj, S., Abbasi, P. N., & Khan, M. (2025). Impact of Phubbing Behavior on Loneliness: Mediated by Fear of Missing Out among Young Adults. *ACADEMIA International Journal for Social Sciences*, 4(1), 1119-1130. <https://doi.org/10.63056/ACAD.004.01.0159>
- Tandon, A. (2021). Fear of missing out among youth: A review of literature. *Journal of Behavioral Addictions*, 10(1), 50-61.
- Thomas, K. (2025). Fear of Missing Out (FOMO), emotional distress, and problematic social media use among university students. *Journal of Behavioral Sciences*, 10(1), 35-47.
- Türk, F., & Koçyiğit, B. (2025). The Relationship Between Fear of Missing Out and Loneliness Among Adolescents in the Digital Age: The Mediating Roles of Emotion Dysregulation and Social Media Addiction. *Malaysian Online Journal of Educational Technology*, 13(1), 19-36. <https://doi.org/10.52380/mojet.2025.13.1.566>
- Villegas, H. D. T., Sayles, L. A. G., Fernan, C. A. C., Go, M. A., Pilayre-Contreras, L. M. Z., & Manaois, J. O. (2025). Navigating the Fear of Missing Out: A Narrative Analysis of Filipino Adolescents' Experiences of Fear of Missing Out. *Hum. Behav. Dev. Soc.*, 26(1), 91-102. <https://doi.org/10.62370/hbds.v26i1.278202>
- Wahyu, E., & Suhesty, A. (2025). Hubungan Fear Of Missing Out Dengan Perilaku Phubbing Pada Remaja Di Kota Samarinda. *Cendekia: Jurnal Ilmu Pengetahuan*, 5(1), 217-225. <https://doi.org/10.51878/cendekia.v5i1.4281>
- Wang, X., Liu, J., & Yang, Y. (2022). The role of social connectedness in fear of missing out: A cross-sectional study. *International journal of environmental research and public health*, 19(5), 4824.
- Wolniewicz, C. A., Rozgonjuk, D., & Elhai, J. D. (2020). Boredom proneness and fear of missing out mediate relations between depression and anxiety with problematic smartphone use. *Human Behavior and Emerging Technologies*, 2(1), 61-70.
- Zhang, Y., Qin, X., & Ren, P. (2018). Adolescents' academic engagement mediates the association between Internet addiction and academic achievement: The moderating effect of classroom achievement norm. *Computers in human Behavior*. <https://doi.org/10.1016/j.chb.2018.08.018>