

THE ROLE OF TIKTOK ADDICTION ON LONELINESS WITH PARASOCIAL RELATIONSHIPS AS A MODERATING VARIABLE

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Abstract. This study aims to explore the relationship between TikTok addiction and loneliness, by reviewing the role of parasocial relationships as a moderating variable. This study used a quantitative approach involving 221 participants who actively used TikTok. Data were collected through a questionnaire measuring the level of TikTok addiction, loneliness, and parasocial relationships using validated scales. The results of the analysis showed a significant relationship between TikTok addiction and loneliness, where higher levels of TikTok addiction contributed to increased loneliness. In addition, parasocial relationships were found to moderate the relationship between TikTok addiction and loneliness, with the moderating effect being negative. That is, as parasocial relationships increase, the impact of TikTok addiction on loneliness tends to decrease. This study concludes that TikTok addiction can exacerbate loneliness, but the presence of parasocial relationships can reduce this impact. The findings provide theoretical and practical insights into the interaction between social media use, addiction, and individual emotional well-being, and their relevance in the context of digital psychology.

Keywords: TikTok addiction, loneliness, parasocial relationships, Consumer behaviour, social media.

1. INTRODUCTION

Technological advancements have resulted in various social media applications that help individuals develop their creative potential. One of them is TikTok, a music video-based social networking platform launched by ByteDance in 2016. With innovative features such as music, filters, effects, and voice changers, TikTok has rapidly grown into a globally popular platform. By 2024, TikTok is estimated to have 1.8 billion active users, with most of its users coming from teenagers aged 14-24, including in Indonesia. Its popularity is supported by the ability of the algorithm to attract users to continue to engage with existing content.

However, despite its popularity, TikTok can have a negative impact on mental health, especially for teenagers and early adults who often show a lack of self-control in their use. Research shows that TikTok addiction, as a form of non-chemical behavioral dependence, can increase the risk of loneliness and affect individuals' psychological, social and physical well-being. Pathological internet use, including social media addiction, has been recognized as a mental disorder in the DSM-5 and ICD-11, due to its significant impact on quality of life.

Loneliness, defined as a feeling of isolation due to a lack of meaningful interpersonal relationships, is often a key trigger for social media dependence. In this context, TikTok also facilitates the formation of parasocial relationships, which are one-way relationships between users and their idol figures on the platform. Users often feel they know and are emotionally connected to their idols through the content presented. While providing emotional comfort, these parasocial relationships can lead to exaggerated illusions, where users feel like they have a real relationship with their idols, even though the relationship is entirely imaginative.

Parasocial relationships develop gradually, from attraction to the idol to impulsive emotional attachment. Users caught in this phase can lose their minds and start believing unrealistic things about their relationship with the idol. Thus, while TikTok can be a tool for creativity and virtual interaction, it is important to understand the psychological risks involved, including addiction and its impact on mental well-being. Kukreti et al. (2024) found motivation for COVID-19 vaccine uptake was significantly positively correlated with problematic social media use.

Hypotheses Development

Technological advancements have significantly transformed the ways individuals interact, express themselves, and find entertainment. Among various platforms, TikTok has emerged as a globally popular social media application, with an estimated 1.8 billion active users by 2024, especially among younger demographics aged 14-24 (Statista, 2024). TikTok's innovative features, including its algorithm-driven personalized content recommendations, have been instrumental in fostering high levels of user engagement and creativity (Wang et al., 2022). However, while TikTok offers opportunities for self-expression and connection, its excessive use can lead to negative psychological outcomes, particularly TikTok addiction.

Parasocial relationships, one-sided emotional bonds that individuals form with media figures or influencers, are a common phenomenon on social media platforms, particularly TikTok. These relationships can provide emotional comfort and a sense of belonging, potentially alleviating feelings of loneliness (Horton & Wohl, 1956). However, parasocial relationships can also lead to exaggerated illusions of intimacy, where users perceive these connections as real and reciprocal, further blurring the lines between virtual and real-world relationships (Tian & Yoo, 2022). While parasocial relationships may mitigate the negative effects of TikTok addiction by offering an alternative form of emotional connection, their influence can vary depending on the depth of the user's emotional attachment. For some users, stronger parasocial relationships may reduce the impact of TikTok addiction on loneliness by providing a sense of companionship, whereas for others, it may amplify unrealistic expectations of social fulfillment. Thus, we hypothesize:

Hypothesis: Parasocial relationships moderate the effect of TikTok addiction on loneliness

Research Contributions

This study contributes to the literature by addressing a gap in understanding the nuanced role of TikTok addiction and its interplay with parasocial relationships on loneliness. By examining parasocial relationships as a moderating variable, the research provides insights into the dual nature of these relationships, highlighting their potential as both protective and risk factors in the context of social media use.

Understanding the dynamics of TikTok addiction and parasocial relationships can inform strategies for mitigating the adverse effects of excessive social media use. For example, content creators and mental health professionals could emphasize fostering healthy online interactions and promoting awareness of the psychological risks associated with parasocial relationships.

2. METHODS

2.1 Samples

This research is quantitative in nature using non-probability sampling techniques with purposive sampling. Non-probability sampling is a sample selection technique in which each member of the population does not have the same opportunity or opportunity to be selected as a sample (Sugiyono, 2013). Purposive sampling is part of non-probability which is useful in exploratory research, which has a focus on understanding a group.

2.2 Measurement

In this study there are 3 variables, namely TikTok Addiction (dependent variable) and Loneliness (independent variable) and has a parasocial relationship (moderating variable). There are 3 measuring instruments that will be used in this study, namely TikTok Addiction Scale (TTAS), UCLA Loneliness Scale Version 3, and Parasocial Relationship In Social Media (PRISM) Survey.

2.2.1 TikTok Addiction Scale (TTAS)

The TTAS provided in the table below is a measuring instrument with items that have been adapted from The TikTok Addiction Scale research: Development and Validation Galanis, P., Katsiroumpa, A., Moisoglou, I., & Konstantakopoulou, O. (2024). It originally had 20 items, but after conducting correlation tests in the initial development phase of TikTok, 5 items were deleted due to low correlation between items. The dimensions listed in this measurement tool are Salience, Mood modification, Tolerance, Withdrawal symptoms, Conflict, and Relapse.

2.2.2 UCLA Loneliness Scale

This measuring instrument was developed by Russel (1996), the difference with the previous version is the result of the revision of several items and the response format of the R - UCLA loneliness scale. The UCLA loneliness scale version 3 consists of 20 items.

2.2.3 Parasocial Relationship In Social Media (PRISM) Survey

Surveys on parasocial relationships provide a clear structure to underlie the questions on the survey and provide indications on each item. Social media provides new opportunities to develop and strengthen these parasocial relationships.

The Parasocial Relationships in Social Media (PRISM) survey consisting of 22 items presented in the table below has been specifically designed and validated to measure the parasocial relationships that individuals develop with celebrities in the context of social media. This measure reveals four dimensions of parasocial relationships: Interest, Knowledge, Identification, and Interaction.

2.3 Data collection and analysis

Data processing was carried out by entering the collected data into statistical software, namely JASP, and checking the data to ensure there were no missing or invalid values. The analysis techniques used included descriptive analysis to describe the characteristics of participants and research variables. Testing each variable, by testing normality, homoscedasticity and testing hypotheses to see the relationship between TikTok addiction and Loneliness and see the moderating effect of parasocial relationships on other variables.

3. RESULTS AND DISCUSSION

Based on the results of descriptive statistics, this study involved 221 respondents who all had complete data for all three variables: TikTok addiction, loneliness, and parasocial relationships. The mean score for TikTok addiction was 50.43 with a standard deviation of 6.86. This indicates that most respondents had a moderate level of TikTok addiction, Respondents' loneliness level had a mean of 58.17, The standard deviation for the loneliness variable was 14.43, indicating that some respondents reported moderate levels of loneliness. Parasocial relationships had an average score of 34.39 with a standard deviation of 11.55. This shows that respondents' attachment to the social media figures or celebrities they follow also varies, from those with low to moderately high parasocial relationships.

Table 1. Descriptive Statistics

	Kecanduan Tiktok	Kesepian	Relasi Parasosial
Valid	221	221	221
Missing	0	0	0
Mean	50.430	58.172	34.394
Std. Deviation	6.856	14.428	11.547
Minimum	32.000	24.000	15.000
Maximum	72.000	88.000	60.000

Based on 221 respondents, when viewed from gender, there is a significant ratio between men and women. Women have a dominance of filling out questionnaires in this study. The frequency distribution can be seen in the table 2.

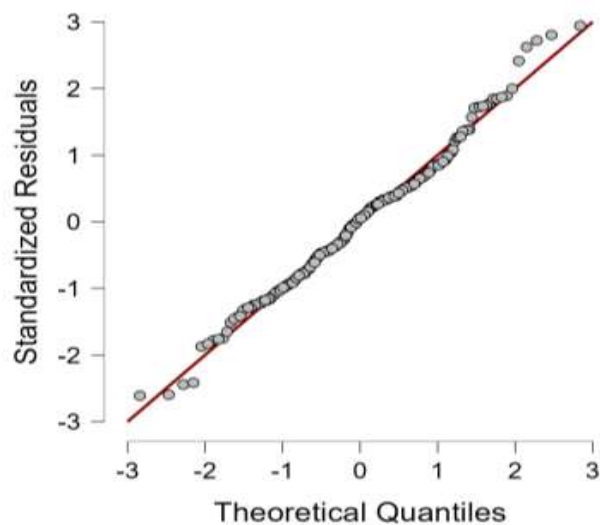
Table 2. Number of Respondents Gender

Gender	Frequency	Percent	Valid Percent
Laki- laki	64	29	29
Perempuan	156	71	71
Total	221	100	100

Based on the Normality Test carried out, there is a conclusion on the Q-Q Plot, it can be seen that the points spread around the linear line and there are no points that deviate from the linear line. So, it is concluded that the residual data follows a normal distribution and the assumption of normality is met.

Table 3. Normality Test

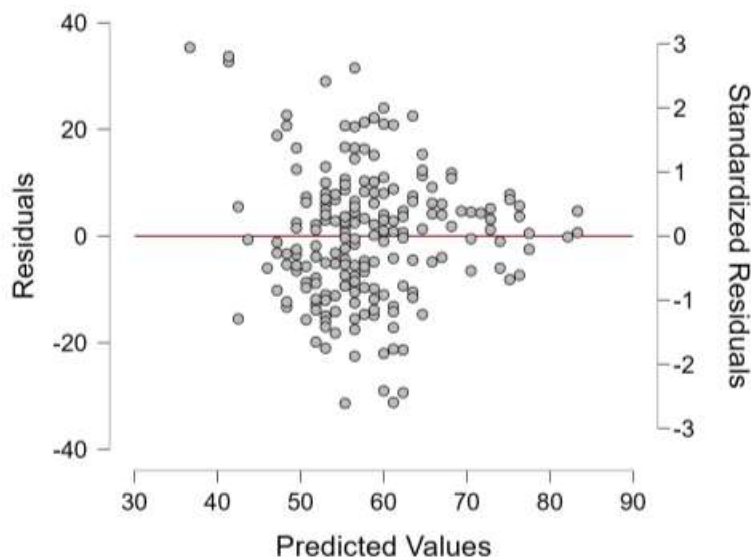
Q-Q Plot Standardized Residuals



Based on the plot image, it can be seen that the points spread without any particular pattern and spread randomly in various places. Thus, it is concluded that there are no symptoms of heteroscedasticity in the regression model and the assumption of homoscedasticity is met. Because homoscedasticity in a regression model where the error variance is constant and in the picture there are many scattered patterns.

Table 4. Homoscedasticity Test

Residuals vs. Predicted



Simple regression analysis test to see the relationship between TikTok addiction and loneliness. The calculated t value was 9.855 with a P-value <0.001. The P-value is clearly smaller than the 5% significant level (α). The decision is to reject H_0 . With the conclusion that there is a significant influence (Table 5).

Table 5. Coefficients TikTok Addiction

Model		Unstandardized	Standard Error	Standardized	t	p
H ₀	(Intercept)	58.172	0.971		59.938	< .001
H ₁	(Intercept)	-0.654	6.024		-0.109	0.914
	Kecanduan Tiktok	1.166	0.118	0.554	9.855	< .001

The test results show a linear regression test to determine the average included in each connected variable (Table 6).

Table 6. Independent Sample Statistical Test T – test

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
H ₁	Regression	14069.775	1	14069.775	97.116	< .001
	Residual	31727.691	219	144.875		
	Total	45797.466	220			

Note. The intercept model is omitted, as no meaningful information can be shown.

In the coefficients table for parasocial relationships with TikTokers, the calculated t value is 5.248 with a P-value <0.001. The P-value is clearly smaller than the 5% significant level (α). It can be concluded that there is a significant effect of parasocial relationships with TikTokers on loneliness.

For the interaction between TikTok addiction and parasocial relationships, the calculated t-value is -3.687 with a P-value <0.001. The P-value is clearly smaller than the 5% significance level (α). The decision is to reject Ho. It is concluded that parasocial relationships moderate the effect between TikTok addiction and loneliness. However, since the direction of the effect is negative, it follows that as parasocial relationships increase, the impact of TikTok addiction on the dependent variable decreases. So, although TikTok addiction increases the value of loneliness, the effect will be weaker if parasocial relationships are higher.

Table 7. Group Statistics

Model		Unstandardized	Standard Error	Standardized	t	p
H ₀	(Intercept)	58.172	0.971		59.938	< .001
H ₁	(Intercept)	-57.907	14.294		-4.051	< .001
	Kecanduan Tiktok	1.885	0.282	0.896	6.694	< .001
	Relasi Parasosial	1.952	0.372	1.562	5.248	< .001
	Kecanduan Tiktok * Relasi Parasosial	-0.026	0.007	-1.291	-3.687	< .001

The interaction between TikTok addiction and parasocial relationships was analyzed to understand its effect on loneliness. The results show a calculated t-value of -3.687 and a P-value less than 0.001, which is significantly smaller than the standard significance level of 5% ($\alpha = 0.05$). This statistical outcome indicates strong evidence against the null hypothesis (Ho), leading to its rejection. In other words, the analysis confirms that parasocial relationships do indeed moderate the relationship between TikTok addiction and loneliness.

A moderation effect means that the strength or direction of the relationship between two variables (TikTok addiction and loneliness) depends on a third variable (parasocial relationships). In this case, the negative t-value indicates that the interaction term has a diminishing effect on the relationship between TikTok addiction and

loneliness. This is consistent with research on the moderating role of social variables in technology use and well-being (Huang, 2022).

The negative direction of the interaction suggests that as the level of parasocial relationships increases, the strength of the positive relationship between TikTok addiction and loneliness decreases. This means that while TikTok addiction is generally associated with higher levels of loneliness (Keles et al., 2020), individuals with stronger parasocial relationships experience a weaker impact of this addiction on their loneliness levels. Parasocial relationships may offer a sense of social connectedness, reducing the psychological burden of loneliness (Tian & Yoo, 2022).

Frequent and excessive use of TikTok is linked to loneliness, potentially due to social comparison, reduced face-to-face interactions, or feelings of isolation stemming from online behaviors (Song et al., 2021). Parasocial relationships are one-sided connections individuals form with media personalities, influencers, or content creators. People feel emotionally attached or involved with these figures, even though the connection is not reciprocated (Horton & Wohl, 1956). Hence, parasocial relationships may act as a buffer or protective factor. Stronger parasocial relationships could provide a sense of companionship or emotional fulfillment, reducing the intensity of loneliness caused by TikTok addiction (Wang et al., 2023).

Practical Implications

This finding has practical significance for understanding and mitigating the adverse effects of TikTok addiction:

1. Mental health strategies: Encouraging positive parasocial relationships might help reduce loneliness for individuals who are heavily engaged in TikTok use (Martins et al., 2021).
2. Content creator influence: Media influencers and creators can be aware of their potential impact on followers, fostering supportive and inclusive content that contributes to feelings of belonging (Hou et al., 2022).
3. Intervention design: Policymakers and psychologists can design interventions that focus on building healthier social interactions online and offline, while acknowledging the role of parasocial relationships in mitigating negative effects (Chen et al., 2020).

In summary, while TikTok addiction contributes to loneliness, fostering meaningful parasocial connections can soften this impact, offering new avenues for addressing mental well-being in the digital age. This aligns with the growing body of research on social media's dual role as both a potential stressor and a source of emotional support (Ellison et al., 2020).

4. CONCLUSION

Based on data processing in this study, it is concluded that the results of the study can answer the formulation of problems and research hypotheses. In the hypothesis, it is concluded that there is a significant effect of TikTok addiction on loneliness and with an average of moderate loneliness, it shows that it can support the first hypothesis. In the conclusion of the second hypothesis, it can also be concluded that parasocial relationships can moderate the influence between TikTok addiction and loneliness. However, because the direction of the effect is negative, it means that when parasocial relationships increase the impact of TikTok addiction on loneliness, and although TikTok addiction increases the value of loneliness, the effect will weaken if parasocial relationships are higher. From these results, the role of each variable and moderating variables can occur in TikTok users.

REFERENCES

5. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (DSM-5). American Psychiatric Pub
6. Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological Reports*, 110(2), 501-517.
7. Caplan, S. E. (2007). Relations among loneliness, social anxiety, and problematic Internet use. *CyberPsychology & Behavior*, 10(2), 234-242.
8. Cerniglia, L., Zoratto, F., Cimino, S., Laviola, G., Ammaniti, M., & Adriani, W. (2017). Internet Addiction in adolescence: Neurobiological, psychosocial and clinical issues. *Neuroscience & Biobehavioral Reviews*, 76, 174-184.
9. Chen, S., Li, X., & Zhao, H. (2020). The impact of social media on adolescents' mental health. *Journal of Adolescence*, 83(4), 12-23.
10. Ellison, N. B., Vitak, J., & Lampe, C. (2020). Social media and loneliness: Pathways to connection. *Current Opinion in Psychology*, 36(3), 68-72.
11. Giles, D. (2003). *The Psychology of the Media Audience*. New Jersey: Lawrence Erlbaum Publisher
12. Hoffner, C.A. (2002). Attachment to media characters. *Encyclopedia of Communication and Information*, 1(1), 60-65.

13. Horton, D., & Wohl, R. R. (1956). Mass communication and parasocial interaction: Observations on intimacy at a distance. *Psychiatry*, 19(3), 215-229.
14. Hou, Y., Xiong, D., & Jiang, T. (2022). Media influencers and emotional support: The double-edged role of parasocial relationships. *Personality and Individual Differences*, 189, 111548.
15. Huang, C. (2022). Social media use and psychological well-being: A meta-analysis. *Cyberpsychology, Behavior, and Social Networking*, 25(2), 93-100.
16. Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: The influence of social media on depression, anxiety, and psychological distress. *Journal of Affective Disorders*, 274(1), 68-81.
17. Kukreti, S., Hsieh, M., Liu, C., Chen, J., Chen, Y., Hsieh, M., Lin, C., & Griffiths, M. D. (2024). Fear, stress, susceptibility, and problematic social media use explain motivation for COVID-19 preventive behaviors among patients with stroke and their caregivers. *INQUIRY the Journal of Health Care Organization Provision and Financing*, 61. <https://doi.org/10.1177/00469580231225030>
18. Martins, N., Davis, J., & Shaheen, L. (2021). Parasocial relationships and mental health: Exploring the benefits of one-sided connections. *Media Psychology*, 24(3), 204-219.
19. Pata, A., & Pambudhi, Y. A. (2021). Kontrol Diri Siswa Terhadap Kecanduan Media Sosial.
20. Rakhmayanti, I. (2020). Pengguna TikTok di Indonesia Didominasi Generasi Z dan Y. *SINDONEWS.Com*. <https://tekno.sindonews.com/berita/1523692/207/pengguna-tiktok-diindonesia-didominasi-generasi-z-dan-y>
21. Rubin, A.M., Perse, E.M., & Powell, R.A. (1985). Loneliness, parasocial interaction, and local television news viewing. *Human Communication Research*, 12(2), 155-180.
22. Russel, D. W. (1996). UCLA Loneliness Scale (version 3) : reliability, validity, and factor structure. *Journal of personality Assessment*, 66, 20-40.
23. Song, H., Zmyslinski-Seelig, A., & Allen, M. (2021). TikTok, loneliness, and its impact on youth mental health. *Journal of Youth Studies*, 24(8), 1103-1121.
24. Statista. (2024). TikTok user growth worldwide 2022-2024. Retrieved from [statista.com](https://www.statista.com).
25. Sugiyono, 2013. *Metode Penelitian Kuantitatif, Kualitatif, dan RD*. Penerbit Alfabeta, Bandung.
26. Tian, Q., & Yoo, J. (2022). The role of parasocial interaction in reducing loneliness through social media engagement. *Computers in Human Behavior*, 133, 107278.
27. Wang, Y., Zhang, M., & Zhou, T. (2022). The addictive use of TikTok and its implications for user mental health. *Journal of Behavioral Addictions*, 11(1), 123-132.
28. Wang, C., Peng, X., & Zhao, Y. (2023). Moderating roles of parasocial relationships in social media addiction. *Psychology of Popular Media*, 12(2), 125-135.
29. Weaver, J. 2002. Are You an Internet Addict? [http:// www.gwsae.org/ excecutiveupdate/2002/ April/ElectronicIssue/InternetAddict. Html](http://www.gwsae.org/excecutiveupdate/2002/April/ElectronicIssue/InternetAddict.Html). (Online) diakses pada 20 April 2021
30. Yurika, M., & Dewi, F. I. (2023). The role of big five personalities on TIKTOK engagement behavior in adolescents. *International Journal of Application on Social Science and Humanities*, 1(1), 390-401. <https://doi.org/10.24912/ijassh.v1i1.25821>