Understanding happiness in higher education: Psychosocial model of positivity, personality traits, and friends' support

Fani Eka Nurtjahjo[1*], *Ahmad* Rusdi[1]

[1] Departement of Psychology, Universitas Islam Indonesia, Indonesia

Abstract. Happiness in university life emerges from a complex interplay between internal strengths and social connections. This study examined the relationships among positivity, extraversion, resilience, friends' support, and happiness using Structural Equation Modeling–Path (SEM-Path). Participants were 325 undergraduate students (male and female) recruited through an online survey. The path analysis produced a well-fitting model (GFI = 0.987; RMSEA = 0.061; CFI = 0.990). Results showed that positivity exerted multiple effects on extraversion, friends' support, resilience, and happiness. More specifically, two distinct pathways were identified: an interpersonal pathway, where extraversion facilitated stronger peer support that enhanced happiness, and an intrapersonal pathway, where extraversion promoted resilience that sustained well-being. Although extraversion did not directly predict happiness, it acted as a pivotal factor linking positivity with resilience and peer support. Interpreted through the lens of Self-Determination Theory, the findings suggest that positivity nurtures competence, while friends' support strengthens relatedness—two essential needs for fostering happiness in higher education. Taken together, this study concludes that students' happiness is shaped by the synergy of intrapersonal strengths (positivity and resilience) and interpersonal resources (friends' support and extraversion). These insights highlight the need for integrated interventions that simultaneously cultivate internal capacities and supportive peer environments to enhance student well-being.

1 Introduction

Understanding the dynamics of happiness in higher education is increasingly critical, given its profound impact on academic achievement, resilience, and personal growth. A study provides statistical evidence that positive expectations and happiness, reflected in factors such as career outlook, alignment between expectations and reality, belief in others' kindness, language proficiency, and perceived fairness, are closely linked to academic achievement [1]. This suggests that fostering positivity and happiness in higher education not only benefits academic outcomes but also plays a vital role in supporting students' overall psychological development. Thus, analyzing happiness and its underlying factors in a university setting is

* Corresponding author: fani.eka@uii.ac.id

fundamental for developing effective interventions, promoting student engagement, and fostering long-term well-being.

Personality traits, particularly extraversion, have long been identified as strong predictors of subjective well-being and happiness. Extraversion enhances happiness primarily through self-esteem and social support, with self-esteem exerting the strongest effect [2]. Moreover, student begins their university journey with distinct characteristics, such as personality, habits, coping strategies, and personal circumstances, that influence how they manage stress and adapt to academic life [3]. This underscores the importance of examining positivity alongside resilience and personality traits, such as extraversion, within higher education settings, where stress and transition can challenge students' mental well-being. Some factors such as economics and social also plays an important role in regulate the happiness degree experienced by undergraduate students [4]. In this context, resilience emerges as a central mechanism that enables students to navigate both personal and contextual challenges, with evidence showing that fostering academic resilience, particularly perseverance, and managing negative emotions plays a crucial role in enhancing students' happiness, well-being, and academic success [5].

However, despite the growing evidence on the roles of positivity, personality, and resilience, the psychosocial interplay among positivity, extraversion, resilience, and peer support in shaping students' happiness remains underexplored in higher education contexts. Existing studies often examine these factors in isolation, while limited research has investigated their direct, indirect, and serial effects in an integrated model [2]. This gap is important to address, as clarifying these pathways can provide both theoretical contributions to positive psychology research and practical implications for designing campus-based interventions to strengthen student well-being.

To address this gap, the present study proposes and tests a theoretical model that integrates positivity, extraversion, resilience, and friends' support to better understand happiness among university students. Path analysis within the Structural Equation Modeling (SEM-Path) framework is employed, as this method enables the simultaneous testing of direct, indirect, and mediating effects among variables. Such an approach provides a more nuanced understanding of the mechanisms through which positivity and personality traits contribute to happiness. By clarifying these relationships, the study not only advances the literature but also offers evidence-based insights to inform student development programs, psychological counseling services, and institutional policies aimed at fostering resilience and social connectedness in higher education. Undergraduate students were specifically chosen because this developmental stage represents a critical transition from adolescence to young adulthood, during which individuals face heightened academic stress, identity exploration, and social adjustment, making their well-being particularly vulnerable and important to study.

2 Method

2.1 Participants

The participants in this study consisted of 325 undergraduate students enrolled in bachelor's degree (S1) programs across various majors. The sample included both male and female students, with ages ranging from 17 to 24 years. Participants were recruited using a convenience sampling strategy through an online survey distributed via university networks and student organizations.

2.2 Research Instrument

The research employed a set of validated instruments to measure the key psychological constructs under study. Positivity was assessed using the scale developed by Caprara [6], which captures individuals' general tendency to hold favorable views about life and the future ($\alpha = 0.846$). Extraversion was measured through the NEO Five-Factor Inventory (NEO-FFI) by Costa and McCrae [7], representing one of the core personality traits associated with sociability and energetic engagement with the external world ($\alpha = 0.723$). To assess the social dimension, friends support was measured using the instrument developed by Kim and Kim [8], designed to evaluate perceived emotional and instrumental support from peers ($\alpha = 0.946$), while happiness was also measured with a scale from Kim and Kim [8], which captures subjective well-being in a higher education context ($\alpha = 0.976$). Finally, resilience was measured using the scale by Connor et al. [9], which evaluates individuals' capacity to adapt, recover, and thrive in the face of adversity ($\alpha = 0.931$). These instruments collectively provided a comprehensive framework to examine the psychosocial model of happiness in higher education.

2.3 Data Analysis Techniques

The data in this study were analyzed using JASP version 0.19.3, employing Structural Equation Modeling (SEM) with Path Analysis techniques.

3 Result

To examine both the direct and indirect relationships among the study variables, Structural Equation Modeling with Path Analysis was employed, providing statistical evidence on how positivity, extraversion, resilience, and friends' support contribute to students' happiness. This approach allowed for testing both the direct and indirect effects among the core variables—positivity, extraversion, resilience, friends' support, and happiness—within a comprehensive model. The following section presents the main findings of the analysis, highlighting the significant pathways and the relative contributions of each construct to student happiness.

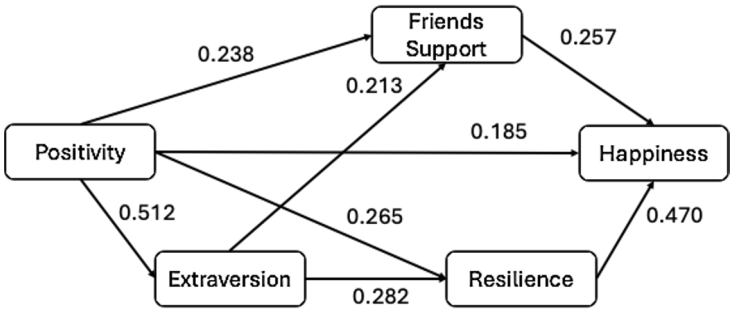

Fig 1. Path Analysis of five variables

The participants of this study were 325 undergraduate students from various faculties. Based on the analysis using Structural Equation Model-Path Analysis, it was found that

positivity had significant effects on several other variables, namely extraversion ($\beta = 0.512$, $p < 0.001$), resilience ($\beta = 0.265$, $p = 0.002$), friends support ($\beta = 0.238$, $p = 0.004$), and happiness ($\beta = 0.185$, $p = 0.004$). Meanwhile, extraversion as a personality trait also influenced other variables, including resilience ($\beta = 0.282$, $p < 0.001$) and friends support ($\beta = 0.213$, $p < 0.001$). However, extraversion did not show a significant effect on happiness. Furthermore, three variables were found to have direct effects on happiness, namely resilience ($\beta = 0.470$, $p < 0.001$), friends support ($\beta = 0.257$, $p < 0.001$), and positivity ($\beta = 0.185$, $p = 0.004$).

Table 1. Fit Measures

Index	Value
Comparative Fit Index (CFI)	0.986
Tucker-Lewis Index (TLI)	0.917
Root mean square error of approximation (RMSEA)	0.071
Goodness of Fit Index (GFI)	0.981

The results of the path analysis for all relationships indicated a well-fitting model. The CFI value of 0.990 demonstrates a high level of fit between the model and the empirical data, as shown in table 1. The TLI value of 0.951 is also considered acceptable and adequate. The RMSEA value of 0.061 suggests that the model has a reasonable (good) fit. Lastly, the GFI value of 0.987 indicates a very strong structural fit of the model. All indicators exceeding the cut-off thresholds provide evidence that the proposed model is representative of the empirical data. In other words, the relationships among positivity, extraversion, friends support, resilience, and happiness proposed in this study are both statistically and theoretically acceptable.

4 Discussion

First, this study found that positivity exerts both direct and indirect effects on happiness through resilience and friends' support. The data analysis provides evidence that an individual's positive outlook enables them to perceive the world through a lens of hope, optimism, and meaning. This result is consistent with previous findings from Gloria and Steinhardt's (2014), showing that positive emotions contribute to greater well-being not only directly but also by fostering adaptive coping strategies and social resources [10]. Although the direct effect of positivity on happiness is smaller compared to its indirect effects through other variables, this should not be underestimated. Positivity often works synergistically with resilience and social support, forming a robust protective factor that contributes to psychological well-being. Recent evidence also supports this view, showing that positivity, resilience, and social support are positively interrelated and serve as significant predictors of perceived stress among university students across different cultural contexts [11]. This suggests that while positivity alone may have a modest direct effect, its impact becomes more pronounced when combined with other psychosocial resources.

Second, the analysis revealed that extraversion plays a mediating role between resilience, friends' support, and happiness. This aligns with earlier studies reporting that extraversion enhances happiness mainly through self-esteem and social support [2]. However, while prior research emphasized self-esteem as the primary mediator, the current study highlights resilience as an equally important pathway, suggesting a possible cultural or contextual distinction. As a personality trait, extraversion plays a multifaceted role by promoting both external/ interpersonal resources (friends' support) and internal/ intrapersonal strengths (resilience), all of which ultimately contribute to a significant increase in happiness.

Third, this study demonstrated that resilience itself has a strong direct effect on happiness, particularly in academic settings. This finding is also in line with Daniilidou et al. (2025), students' happiness and resilience are strongly linked to their sense of belonging and academic engagement [12]. These two distinct pathways suggest that positivity alone is not sufficient to foster happiness. When processed intra-personally, positivity equips individuals with the strength to recover from pressure and trauma, allowing them to endure adversity in healthy and adaptive ways, consistent with Gloria and Steinhardt's (2014) findings that positive emotions enhance resilience both directly and indirectly through adaptive coping strategies [10]. At the same time, positivity also fosters openness and optimism that extend toward interpersonal contexts, making individuals more likely to perceive their friendships as supportive and warm. This emotional support provides a sense of psychological safety, which in turn contributes significantly to long-term happiness. These findings resonate with Song et al. (2023), who demonstrated that although social contact in general enhances happiness, frequent interactions with close friends become increasingly important with age, surpassing the role of family and neighbor contacts in later life [13].

Furthermore, the results emphasize that students' happiness cannot be reduced to a single determinant but is shaped by a constellation of internal and external factors. This partly diverges from earlier studies that tended to focus on isolated constructs, thereby offering a more integrated perspective on the psychosocial dynamics of happiness in higher education. This study reveals two major dynamics at play: the interpersonal dynamic (positivity → friends' support → happiness) and the intrapersonal dynamic (positivity → resilience → happiness). The path analysis also revealed three variables that exert a direct effect on happiness: positivity, resilience, and friends' support, as shown by Daniilidou et al. (2025) [12]. University students' happiness is shaped by diverse factors, such as academic stress, coping mechanisms, and the overall quality of their social interactions. These findings further underscore that the promotion of happiness is inherently complex and cannot be reduced to a single factor.

This study also highlights that happiness can be enhanced through both social dimensions and internal capacities. Viewed more broadly, such a pattern aligns with established psychological theories that emphasize the role of basic psychological needs in fostering well-being. In particular, the interplay between intrapersonal strengths (e.g., positivity, resilience) and interpersonal resources (e.g., social support, extraversion-related connectedness) resonates strongly with the assumptions of Self-Determination Theory. The findings of this study can be meaningfully interpreted through the lens of Self-Determination Theory (SDT) proposed by Deci and Ryan (2008) [14]. According to SDT, human well-being and optimal functioning are sustained by three fundamental psychological needs: autonomy, competence, and relatedness. The present results suggest that positivity may serve as an internal resource that nurtures students' sense of competence, enhancing their belief in their own capability and effectiveness in dealing with challenges. Meanwhile, social support from peers appears to strengthen the sense of relatedness, fostering feelings of connection and belonging within the academic and social environment. Taken together, these findings lend empirical support to two of the three dimensions of SDT, namely competence and relatedness, while also underscoring the importance of both intrapersonal and interpersonal factors in shaping students' well-being.

5 Conclusion

This study demonstrates that happiness among university students is best understood as the outcome of interconnected intrapersonal and interpersonal processes. While positivity alone contributes modestly to happiness, its effects become substantially stronger when channeled through resilience and friends' support, highlighting two complementary pathways of well-

being. Extraversion further strengthens these mechanisms by enhancing both internal capacities and external resources, positioning it as a pivotal personality trait in sustaining happiness. Overall, the findings underscore that student happiness cannot be explained by a single factor but rather emerges from the interplay of cognitive orientations, personal strengths, and social interactions. Interpreted through Self-Determination Theory [14], positivity enhances competence, whereas peer support reinforces relatedness, thereby aligning with two key psychological needs. These results emphasize the importance of fostering both individual resilience and supportive peer relationships in higher education, offering actionable insights for promoting sustainable happiness and psychological well-being among students.

6 Implication

This study highlights the need for universities to view student happiness as a product of both personal strengths and social connections. Efforts to improve well-being should not only focus on building individual resilience through programs that help students manage stress and challenges, but also on creating opportunities for genuine peer support and connection within the campus environment. Policies that promote a supportive social climate, such as peer mentoring, collaborative learning, or inclusive student communities, can make a meaningful difference. At the same time, future research should explore how broader factors, including cultural context and the growing role of digital interactions, may shape the links between positivity, resilience, and happiness in university life.

Acknowledgements: We sincerely thank all the students from various faculties at Universitas Islam Indonesia who participated in this study. Your valuable contributions made this research possible and are greatly appreciated. Also, to the Department of Psychology UII for the full support for this research.
Funding: This research was funded by the Department of Psychology, Faculty of Psychology, Universitas Islam Indonesia.
Data Availability Statement: No data availability statement
Authors' Contributions Statement: FEN was responsible for developing the research idea, writing the background, discussion, and preparing the manuscript. AR contributed to the data analysis and discussion. Both authors have read and approved the final manuscript.
Competing Interest: The authors declare no competing interest.

References

1. S. Alteneiji, N. M. Alsharari, R. M. AbouSamra, and R. Houjeir, Happiness and positivity in the higher education context: an empirical study, International Journal of Educational Management **37**, 207 (2023) https://doi.org/10.1108/IJEM-02-2022-0077
2. C.-S. Tan, S. A. Krishnan, and Q.-W. Lee, The Role of Self-Esteem and Social Support in the Relationship between Extraversion and Happiness: a Serial Mediation Model, Curr Psychol **36**, 556 (2017) https://doi.org/10.1007/s12144-016-9444-0
3. H. Li, Students' wellbeing in positive higher education: conceptual frameworks and influencing factors, Front. Educ. **10**, 1607364 (2025) https://doi.org/10.3389/feduc.2025.1607364
4. G. Chan, P. W. Miller, and M. Tcha, Happiness In University Education, International Review of Economics Education **4**, 20 (2005) https://doi.org/10.1016/S1477-3880(15)30139-0
5. D. A. Klutsey and I. Mahama, Academic resilience as a mediator between meaning in life and subjective happiness among undergraduate students at the university of

education, Winneba, BMC Psychol **13**, 673 (2025) https://doi.org/10.1186/s40359-025-02989-2
6. G. V. Caprara, G. Alessandri, N. Eisenberg, A. Kupfer, P. Steca, M. G. Caprara, S. Yamaguchi, A. Fukuzawa, and J. Abela, The Positivity Scale, Psychological Assessment **24**, 701 (2012) https://doi.org/10.1037/a0026681
7. R. R. McCrae and P. T. Costa, A contemplated revision of the NEO Five-Factor Inventory, Personality and Individual Differences **36**, 587 (2004) https://doi.org/10.1016/S0191-8869(03)00118-1
8. U. Kim and J. Kim, Economic Development, Sociocultural Change and Quality of Life in Korea: Analysis of Three Generations Growing up in Colonial, Industrial and Digital Age, Psychology and Developing Societies **34**, 200 (2022) https://doi.org/10.1177/09713336221115550
9. K. M. Connor and J. R. T. Davidson, Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC), Depress. Anxiety **18**, 76 (2003) https://doi.org/10.1002/da.10113
10. C. T. Gloria and M. A. Steinhardt, Relationships Among Positive Emotions, Coping, Resilience and Mental Health, Stress and Health **32**, 145 (2016) https://doi.org/10.1002/smi.2589
11. K. Litwic-Kaminska et al., Resilience, Positivity and Social Support as Perceived Stress Predictors among University Students, IJERPH **20**, 6892 (2023) https://doi.org/10.3390/ijerph20196892
12. A. Daniilidou, K. Nerantzaki, and G. Stavropoulou, Pathways to Happiness and Resilience Among University Students: Understanding the Role of Belongingness and Academic Engagement, Int J Appl Posit Psychol **10**, 30 (2025) https://doi.org/10.1007/s41042-025-00223-3
13. I. Song, J.-W. Kwon, and S. M. Jeon, The relative importance of friendship to happiness increases with age, PLOS ONE **18**, e0288095 (2023) https://doi.org/10.1371/journal.pone.0288095
14. E. L. Deci and R. M. Ryan, Self-determination theory: A macrotheory of human motivation, development, and health., Canadian Psychology / Psychologie Canadienne **49**, 182 (2008) https://doi.org/10.1037/a0012801