

# The Impact of Students' Psychological Well-being on Academic Achievement: A Comprehensive Analysis

Mirna Koričan Lajtman<sup>1</sup>, Rea Andrić<sup>2</sup> and Mato Njavro<sup>3</sup>

<sup>1</sup>Luxembourg School of Business/Zagreb School of Economics and Management, Luxembourg/Zagreb, Luxembourg/Croatia, mirna.korican@luxsb.lu

<sup>2</sup>Zagreb School of Economics and Management, Zagreb, Croatia, rea.andric@zsem.hr

<sup>3</sup>Zagreb School of Economics and Management, Zagreb, Croatia, mato.njavro@zsem.hr

## Abstract

Emerging evidence shows that students' mental health greatly affects their learning outcomes, although the exact mechanisms are still being studied. Previous research reveals a small to moderate positive link between students' psychological well-being and GPA, with resilience consistently helping academic achievement during stressful times. Building on this, we analyzed survey data from N=202 Croatian undergraduates. A latent-variable mediation model indicated that psychological well-being influences GPA mainly indirectly through students' subjective academic achievement (indirect  $\beta=.31$ ,  $p<.001$ ; direct  $\beta=-.09$ ; total  $\beta=.22$ ,  $p=.06$ ). This suggests that feeling mentally healthy improves actual performance by increasing students' sense of academic competence. Hierarchical regression showed that the four variables explain 57% of the variation in psychological well-being: self-esteem ( $\beta=.25$ ,  $p<.01$ ), resilience ( $\beta=.31$ ,  $p<.001$ ), resilience-promoting behaviors ( $\beta=.28$ ,  $p<.001$ ), and depression ( $\beta=-.12$ ,  $p<.05$ ). These results support the idea of incorporating well-being strategies into university plans. First, GPA improvements are unlikely unless interventions also boost students' perceptions. Monitoring subjective academic achievement alongside grades can help identify students at risk earlier. Second, resilience skills training and self-care programs directly target key attributes that statistically influence academic success indirectly. However, these findings should be interpreted with caution given the cross-sectional, self-reported data from a single university sample. Future research should adopt longitudinal and cross-national designs, incorporate objective indicators, and evaluate intervention effects to strengthen applicability.

**Keywords:** Psychological Well-being, Subjective Academic Achievement, Grade Point Average, Resilience, Higher Education

## 1. Introduction

Since student well-being is directly related to academic achievement, learning engagement, and positive long-term life outcomes, it has been recognised as a top priority in higher education [1, 2]. Recent changes in the world have further underscored this need in higher education, transforming both the ways in which students learn and their university experience. The COVID-19 pandemic drastically changed how students engage with their professors, peers, and academic environments, leading to a significant increase in stress, loneliness, and uncertainty [3]. At the same time, the rapid development of generative AI has introduced new expectations and challenges, such as concerns about academic integrity and a substantial reconfiguration of learning, assessment, and students' roles within digital learning contexts [4]. In this dynamic environment, one of the most significant challenges for educational institutions is maintaining academic engagement. Generally accepted as a crucial determinant of student achievement and institutional efficacy, academic engagement is defined as active and dedicated participation in learning [5].

Our objective is to synthesize existing knowledge with empirical data to present a compelling case for the proactive role of universities in fostering student well-being as a direct pathway to improved academic outcomes. Specifically, we aim to explore the relationship between psychological well-being (PWB) and GPA, with a focus on the mediating role of subjective academic achievement (SAA). We also investigate the key predictors of PWB, namely self-esteem, resilience, resilience-promoting behaviors, and absence of depression. By understanding these relationships, we can provide actionable insights for universities to develop targeted interventions that support student well-being and, consequently, academic success. To explore these mechanisms, we next review the relevant theoretical and empirical literature.

## 2. Literature Review

### 2.1 Psychological Well-being and Academic Achievement: The Mediating Role of Subjective Academic Achievement

The link between PWB and academic achievement is a well-established research area, but the exact mechanisms through which they influence each other are still being investigated. While a direct causal link between PWB and GPA may not always be immediately obvious, increasing evidence suggests that how students feel about their academic success (SAA) plays a crucial mediating role [6,7]. SAA reflects how individuals perceive their own academic achievements, skills, and their level of satisfaction with their learning journey. This self-view can significantly shape their motivation, participation, and even their academic results.

Research indicates that when students experience higher PWB, they tend to feel more positively about themselves academically and exhibit more positive emotions related to their studies,

which are important aspects of SAA [8, 9]. For example, a meta-analysis by Bücker et al. (2018) found a small to medium, but statistically significant, correlation between subjective well-being and academic achievement, indicating that while well-being is not a strong direct predictor, it is consistently linked to better academic outcomes [10]. Additional research indicates that when students exhibit positive PWB, characterized by effective emotional regulation and resilience, they tend to engage more effectively in their studies. This, in turn, helps them feel more positive about their academic progress [11]. This increased SAA, in turn, can create a positive feedback loop where perceived success boosts well-being and encourages further academic effort, ultimately influencing GPA.

Conversely, having poor psychological well-being, such as experiencing anxiety, depression, or stress, can significantly impact SAA. It may hinder concentration, reduce motivation, or undermine self-confidence. [12, 13]. This can lead to a decline in academic performance, even if the student possesses the cognitive skills necessary to succeed. Therefore, viewing SAA as a mediator offers a more detailed understanding of how supporting students' PWB can indirectly, yet significantly, enhance their academic success. This emphasizes the importance of building a positive academic self-concept and sense of achievement among students, as these internal views can connect their emotional well-being with their actual academic performance.

## 2.2 Predictors of Psychological Well-being

Understanding the factors that contribute to PWB is crucial for developing effective interventions that enhance student mental health. Among the numerous potential predictors, self-esteem, resilience, and resilience-promoting behaviors, as well as the absence of depression, have consistently emerged as significant contributors to an individual's overall PWB [14, 15].

**Self-esteem**, defined as an individual's overall subjective evaluation of their own worth, plays a fundamental role in PWB. High self-esteem is generally associated with increased life satisfaction, happiness, and a reduced susceptibility to mental health issues such as depression and anxiety [16]. In the academic setting, self-esteem can significantly impact a student's confidence in their capabilities, readiness to undertake challenging tasks, and ability to manage academic setbacks. Although the relationship is complex and influenced by cultural and contextual factors, a healthy sense of self-worth remains a crucial element of robust PWB.

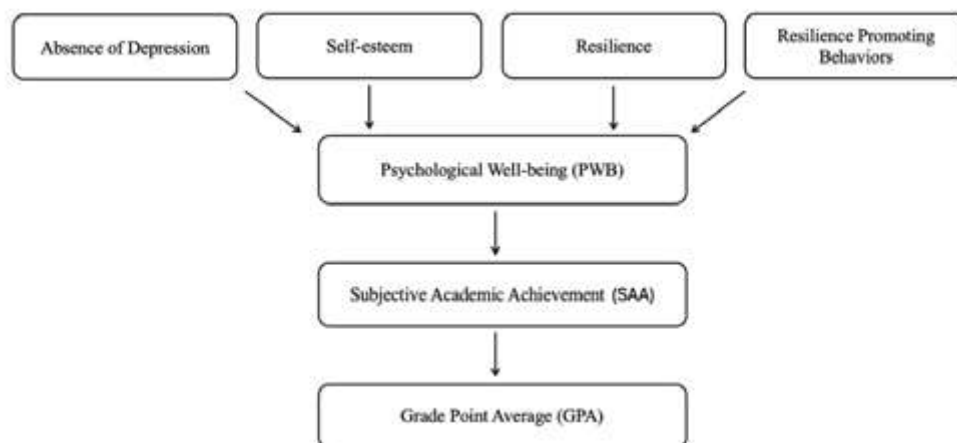
Another important variable to examine in terms of PWB is resilience. **Resilience** is the ability to adapt and recover from adversity, stress, or trauma [17]. Resilient individuals are better equipped to manage the challenges of college life, including academic stress, social changes, and personal issues. They typically employ effective coping strategies, maintain an optimistic outlook, and seek support, when necessary, all of which contribute to sustaining well-being even during periods of stress. Research consistently shows that higher resilience is associated with fewer mental health issues and improved overall PWB among students [18].

**Resilience-promoting behaviors** include a range of actions and strategies that individuals use to build and maintain their resilience. These behaviors might involve practicing self-care

routines, seeking social support, improving problem-solving skills, practicing mindfulness, and setting practical goals [19]. These proactive behaviors not only help individuals cope with current stressors but also build their capacity to handle future challenges more effectively. For instance, students who regularly engage in stress-reducing activities, maintain healthy sleep patterns, and seek academic or personal counseling when needed are more likely to exhibit higher levels of PWB [20]. These behaviors are often teachable and can be fostered through educational programs and institutional support, providing a tangible pathway for universities to enhance student well-being.

**Depression** is a common and serious mood disorder that affects how individuals feel, think, and function daily. It is typically associated with persistent sadness, a lack of energy, reduced interest in everyday activities, and difficulties in maintaining focus or motivation [21]. Among university students, depression is one of the most prevalent and concerning mental health challenges. Research shows that more than 30 percent of students report symptoms that meet clinical thresholds for depression, which is significantly higher than the estimated 5 to 6 percent in the general population [22, 23]. This high prevalence underscores the importance of identifying protective psychological factors that promote well-being and mitigate the risk of mental health deterioration in academic settings.

In summary, self-esteem, resilience, active participation in resilience-building behaviors, and absence of depression are connected concepts that work together to support a student's PWB (as presented in Figure 1). By understanding and addressing these factors, universities can create comprehensive strategies to promote student mental health, which can also positively influence their academic experience.



**Figure 1** Conceptual Model of Predictors of Academic Achievement

### 3. Research Question and Hypotheses

This study aims to investigate the relationships between PWB, SSA, and GPA, as well as the key predictors of PWB. Based on these objectives, the following research question and hypotheses are proposed:

**RQ:** How does PWB influence students' GPA, and what is the mediating role of SAA in this relationship? Furthermore, what psychological constructs, such as self-esteem, resilience, and resilience-promoting behaviors, as well as perception of depression, significantly predict PWB?

**H1:** The relationship between PWB and GPA is mediated by students' SAA.

**H2:** Self-esteem, resilience, and resilience-promoting behaviors significantly predict students' PWB.

### 4. Methodology

This study utilized data collected from a quantitative cross-sectional survey designed to investigate the PWB and academic outcomes of undergraduate students.

The original study included 202 undergraduate students from a business school in Croatia, representing 40% of the total population in the academic year. The sample consisted of students from various academic programs and at different stages of their studies, aiming to capture a representative cross-section of the university's undergraduate population. The sample included students of all genders, with 51.5% identifying as male (N=104), 46.0% as female (N=93), and 2.5% as other (N=5). Participants ranged in age from 18 to 25 years and older, with the largest age group being 20-year-olds (23.3%, N=47), followed by 21-year-olds (21.3%, N=43), 19-year-olds (20.3%, N=41), 18-year-olds (15.3%, N=31), and 22-year-olds (12.4%, N=25); smaller groups included those aged 23 (3.5%, N=7), 24 (0.5%, N=1), and 25 or older (3.5%, N=7). All four undergraduate years were represented, with 38.6% (N=78) in the first year, 26.2% (N=53) in the third year, 18.3% (N=37) in the second year, and 16.8% (N=34) in the fourth year. Most participants were Croatian nationals (84.7%, N=171), while 15.3% (N=31) were international students. Most respondents (98.5%, N=199) were enrolled in the Economics and Management program, and 1.5% (N=3) in the Business Mathematics and Economics program. Participants were recruited through an online survey platform, ensuring voluntary participation and anonymity.

#### 4.1 Key Variables

Various aspects of mental health and emotional functioning were assessed using validated psychological instruments, including the Rosenberg Self-Esteem Scale, the Brief Resilience Scale, a scale of Resilience- Promoting Behaviors, the Subjective Academic Achievement Scale, and Ryff's Psychological Well-being scale. These instruments are widely recognized in psychological research for their robust psychometric properties and relevance in assessing distinct dimensions of student well-being and functioning [24–26].

- **Psychological Well-being (PWB):** PWB was measured using the 18-item version of Ryff's Psychological Well-being Scale [27], which captures six core dimensions of well-being: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Items were rated on a 5-point Likert scale (1=Strongly disagree to 5=Strongly agree), with several reverse-coded. Exploratory factor analysis supported a multidimensional structure (KMO=0.83, Bartlett's test  $p<.001$ ), and the internal consistency was high (Cronbach's  $\alpha=0.82$ ).
- **Subjective Academic Achievement (SAA):** This variable reflects students' self-perceived academic success and satisfaction. It was measured using the 5-item Subjective Academic Achievement Scale [28], with responses on a 5-point Likert scale (1=Very dissatisfied to 5=Very satisfied). One item was reverse-coded. Factor analysis supported one-dimensionality (KMO=0.79, Bartlett's test  $p<.001$ ), and the scale showed high internal consistency (Cronbach's  $\alpha=0.84$ ).
- **Resilience:** Resilience was measured using the Brief Resilience Scale [29], a 6-item self-report measure designed to capture an individual's ability to recover from stress. Responses were given on a 5-point Likert scale from 1 (Strongly disagree) to 5 (Strongly agree), with negatively worded items reverse-coded. The scale demonstrated acceptable reliability (Cronbach's  $\alpha=0.76$ ), and factor analysis confirmed a unidimensional structure (KMO=0.78, Bartlett's test  $p<.001$ ).
- **Resilience-Promoting Behaviors (RPB):** Resilience-promoting behaviors were assessed using a 9-item scale developed from the work of [30], encompassing everyday actions that enhance individuals' capacity to cope with stress and adversity. The items capture behaviors such as engaging in regular physical activity, practicing mindfulness, maintaining adequate sleep, seeking support, and avoiding harmful substances. Participants indicated how frequently they engaged in each behavior using a 5-point Likert scale (1=Never to 5=Always). Exploratory factor analysis supported a unidimensional structure (KMO=0.77; Bartlett's test of sphericity  $p<.001$ ), and the scale demonstrated acceptable internal consistency (Cronbach's  $\alpha=0.72$ ).
- **Grade Point Average (GPA):** GPA served as an objective measure of academic achievement. Students self-reported their cumulative GPA, providing a quantitative indicator of their academic performance
- **Depression:** Depression was assessed using a 5-item scale adapted from the ACHA Well-being Assessment [28], measuring how frequently respondents experienced

common depressive symptoms over the past two weeks. The items included: feeling depressed, feeling sad, feeling like nothing can make you happy, thinking that others would be better off without you, and feeling like you have let yourself, friends, or family down. Responses were provided on a 5-point Likert scale (1=Never to 5=Always). Exploratory factor analysis supported a unidimensional structure (KMO=0.773, Bartlett’s test  $p<.001$ ), and the internal consistency was high (Cronbach’s  $\alpha=0.875$ ).

Data were collected via a self-reported online questionnaire. The survey was available from November 6th, 2024, to November 14th, 2024. To promote participation and ensure accessibility, it was distributed to 14 groups of undergraduate students. The use of self-report measures enabled the direct collection of students’ subjective experiences and perceptions.

5. Results

This section presents empirical findings related to the proposed hypotheses, utilizing statistical analyses to examine the relationships between PWB, SAA, and GPA, as well as the predictors of PWB.

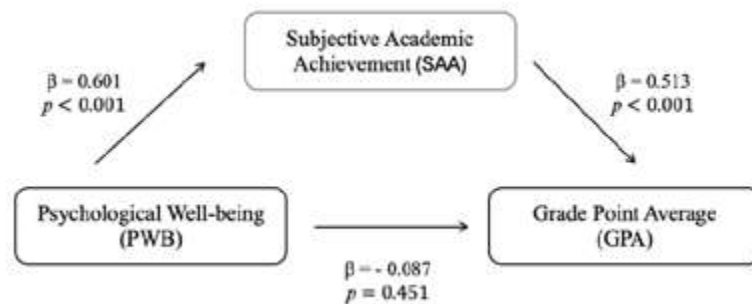
5.1 Hypothesis 1

To test Hypothesis 1, a mediation analysis was conducted to examine whether SAA mediates the relationship between PWB and GPA. The results of the mediation analysis are presented in Table 1.

| Path $\beta$      | Std. Error | Std. Error | z- value | p     | 95% Con.Int. (Lower) | 95% Con.Int. (Upper) |
|-------------------|------------|------------|----------|-------|----------------------|----------------------|
| Direct effects    |            |            |          |       |                      |                      |
| PWB * GPA         | -0.087     | 0.115      | -0.754   | 0.451 | -0.311               | 0.138                |
| Indirect effects  |            |            |          |       |                      |                      |
| PWB * SAA * GPA   | 0.309      | 0.068      | 4.519    | <.001 | 0.175                | 0.442                |
| Total effects     |            |            |          |       |                      |                      |
| PWB * GPA         | 0.222      | 0.119      | 1.872    | 0.061 | -0.010               | 0.455                |
| Path coefficients |            |            |          |       |                      |                      |
| SAA *GPA          | 0.513      | 0.076      | 6.763    | <.001 | 0.365                | 0.662                |
| PWB *SAA          | 0.601      | 0.099      | 6.073    | <.001 | 0.407                | 0.795                |

Table 1 Mediation Analysis of SAA Between PWB and GPA

The direct effect of PWB on GPA was not statistically significant ( $\beta = -0.087$ ,  $p = 0.451$ ). However, the indirect effect of PWB on GPA through SAA was statistically significant ( $\beta = 0.309$ ,  $p < 0.001$ ). This suggests that PWB influences GPA primarily through students' perceptions of their academic performance. The path coefficients further indicate a significant positive association between PWB and SAA ( $\beta = 0.601$ ,  $p < 0.001$ ), as well as between SAA and GPA ( $\beta = 0.513$ ,  $p < 0.001$ ).



**Figure 2** Mediation Model of Academic Achievement

Visual of the tested model is presented in Figure 2. Based on these results, Hypothesis 1, stating that the relationship between PWB and GPA is mediated by students' SAA, is accepted.

## 5.2 Hypothesis 2

To test Hypothesis 2, a hierarchical regression analysis was conducted to identify the significant predictors of PWB. The final model (Table 2) from the regression analysis, which included Self-esteem, Resilience, Resilience-Promoting Behaviors, and Depression, explained a substantial portion of the variance in PWB (Adjusted  $R^2 = 0.578$ ).

The results indicate that all specified predictors in Hypothesis 2 significantly predict students' PWB. Results of self-esteem impact PWB ( $\beta = 0.531$ ,  $p < 0.001$ ). Resilience also had a significant positive impact on PWB ( $\beta = 0.187$ ,  $p < 0.001$ ) as well as resilience-promoting behaviors ( $\beta = 0.149$ ,  $p < 0.001$ ) and depression ( $\beta = -0.084$ ,  $p < 0.05$ ). Given the significant predictive power of self-esteem, resilience, and resilience-promoting behaviors on PWB, Hypothesis 2 is accepted.

| Independent Variables            | R <sup>2</sup> | ΔR <sup>2</sup> | R <sup>2</sup> change | B      | Beta   | T          |
|----------------------------------|----------------|-----------------|-----------------------|--------|--------|------------|
| MODEL 1                          | 0.727          | 0.528           | 0.727                 |        |        | 218.117*** |
| 1. Self-esteem                   |                |                 |                       | 0.701  | 0.047  | 14.769***  |
| MODEL 2                          | 0.747          | 0.558           | 0.200                 |        |        | 122.500*** |
| 2. Self-esteem                   |                |                 |                       | 0.590  | 0.612  | 0.612***   |
| 3. Resilience                    |                |                 |                       | 0.159  | 0.208  | 0.208***   |
| MODEL 3                          | 0.759          | 0.576           | 0.120                 |        |        | 87.316***  |
| 4. Self-esteem                   |                |                 |                       | 0.572  | 0.593  | 10.464***  |
| 5. Resilience                    |                |                 |                       | 0.150  | 0.196  | 3.482***   |
| 6. Resilience-promoting behavior |                |                 |                       | 0.095  | 0.136  | 2.837***   |
| MODEL 4                          | 0.766          | 0.587           | .007                  |        |        | 68.211***  |
| 7. Self-esteem                   |                |                 |                       | 0.513  | 0.531  | 8.554***   |
| 8. Resilience                    |                |                 |                       | 0.143  | 0.187  | 3.348***   |
| 9. Resilience-promoting behavior |                |                 |                       | 0.104  | 0.149  | 3.116***   |
| 10. Depression                   |                |                 |                       | -0.084 | -0.124 | -2.280*    |
| *p<.05 **p<.01 ***p<.001         |                |                 |                       |        |        |            |

Table 2 Coefficients for Predicting PWB

6. Discussion

This study aimed to clarify the complex relationships between PWB, SAA, and GPA, and to identify key predictors of PWB. The findings offer valuable insights into how universities can promote academic success by prioritizing student well-being.

6.1 Psychological Well-being, Subjective Academic Achievement, and GPA

The results strongly support Hypothesis 1, demonstrating that the relationship between PWB and GPA is indeed mediated by students’ SAA. While the direct effect of PWB on GPA was not statistically significant, the significant indirect effect through SAA highlights a crucial pathway. This finding aligns with existing literature that emphasizes the importance of students’ perceptions of their academic competence and success [6, 7].

When students experience higher PWB, they are more likely to perceive their academic performance positively, which in turn contributes to better objective academic outcomes (e.g.

GPA). This suggests that interventions aimed at enhancing students' PWB can indirectly improve their GPA by fostering a stronger sense of academic self-efficacy and accomplishment. For universities, this implies that efforts to improve GPA should not focus solely on traditional academic support but also integrate strategies that enhance students' PWB and their confidence in their own academic abilities.

## 6.2 Predictors of Psychological Well-being

Hypothesis 2, which posited that self-esteem, resilience, resilience-promoting behaviors, and absence of depression significantly predict students' PWB, was also accepted. The regression analysis confirmed the significant contributions of resilience and resilience-promoting behaviors to PWB. This is consistent with a broad body of research highlighting the protective role of resilience in mental health and its importance in navigating academic and life stressors [14, 17, 18].

Universities can leverage this understanding by designing and implementing programs that explicitly teach and encourage resilience-promoting behaviors, such as stress management techniques, coping strategies, and help-seeking behaviors. These interventions can equip students with the tools necessary to maintain their well-being, even in challenging academic environments. As confirmed by our research, self-esteem is generally regarded as a positive contributor to overall well-being [24].

## 6.3 Implications for Stakeholders

The findings of this study carry significant implications for university deans and professors. Firstly, the mediation effect of SAA underscores that improving GPA is not solely about teaching harder; it necessitates supporting student well-being. By focusing on students' PWB, universities can indirectly foster academic success through enhanced self-awareness and confidence.

Secondly, the identification of self-esteem, resilience, resilience-promoting behaviors and low levels of depression as significant predictors of PWB provides concrete targets for intervention. These are measurable and trainable traits, meaning universities can design and implement programs to develop these behaviors institutionally. This could include workshops on stress management, resilience-building exercises, and fostering a campus culture that encourages help-seeking and emotional intelligence. Investing in such initiatives can lead to a more supportive learning environment, ultimately benefiting both student well-being and academic outcomes.

## 7. Conclusion

This paper explains the primary ways in which PWB influences academic success among college students. It has been demonstrated that SAA functions as a crucial mediator between PWB

and GPA, underscoring the importance of students' perceptions of their academic success for their actual performance. Furthermore, it has been confirmed that self-esteem, resilience, resilience-promoting behaviors, and absence of depression are significant predictors of PWB, thereby providing explicit targets for university interventions.

The implications for higher education institutions are significant. To genuinely enhance academic success, universities must adopt a holistic approach that prioritizes student well-being. This approach encompasses not only the provision of traditional academic support but also actively fostering PWB through programs designed to cultivate resilience, promote positive self-perception, and encourage healthy coping mechanisms [32–34]. By investing in these measurable and trainable traits, universities can create a supportive environment that empowers students to thrive both academically and personally.

This paper, while providing valuable insights, is subject to several limitations that should be considered when interpreting the findings and designing future research:

- **Cross-Sectional Design:** The data utilized in this study were collected at a single point in time. The cross-sectional nature of this study limits the ability to establish definitive cause-and-effect relationships between variables. While mediation analysis suggests pathways, longitudinal studies are needed to confirm causal directions and observe changes over time.
- **Self-Reported Data:** The reliance on self-reported measures for PWB, SAA, and GPA introduces potential biases, such as social desirability bias, recall bias, or misinterpretation of questions. Future research could benefit from incorporating objective measures (e.g., official university GPA records, physiological indicators of stress) to triangulate findings and reduce reliance on self-report.
- **Sample Characteristics and Generalizability:** The data were collected from undergraduate students at a single university in Zagreb, Croatia. This limits the generalizability of the findings to broader student populations in different geographic, cultural, or institutional contexts. Future studies should aim for larger and more diverse samples, encompassing students from various universities, countries, and socioeconomic backgrounds, to enhance external validity.
- **Lack of Direct Intervention Data:** This study did not directly measure the impact of specific university-led well-being interventions. While the findings suggest the importance of well-being support, future research should focus on intervention-based studies to evaluate the effectiveness of concrete programs and policies implemented by universities.

Future research should address these limitations by employing longitudinal designs, incorporating diverse methodologies (e.g., mixed methods approach combining quantitative and qualitative data), utilizing objective measures, and conducting studies across varied student populations and institutional settings. Such efforts will contribute to a more comprehensive and robust understanding of the complex interplay between student well-being and academic achievement.

## 8. References

- [1] E. Govorova, I. Benítez, and J. Muñiz, "How Schools Affect Student Well-Being: A Cross-Cultural Approach in 35 OECD countries," *Frontiers in Psychology*, vol. 11, 2020.
- [2] D. Cárdenas, F. Lattimore, D. Steinberg, and K. J. Reynolds, "Youth well-being predicts later academic success," *Scientific Reports*, vol. 12, no. 1, 2022.
- [3] R. Mahajan, W. M. Lim, S. Kumar, and M. Sareen, "COVID-19 and management education: From pandemic to endemic," *The International Journal of Management Education*, vol. 21, no. 2, p. 100801, 2023.
- [4] W. M. Lim, A. Gunasekara, J. L. Pallant, J. I. Pallant, and E. Pechenkina, "Generative AI and the future of education: Ragnarök or reformation? A paradoxical perspective from management educators," *The International Journal of Management Education*, vol. 21, no. 2, p. 100790, 2023.
- [5] W. B. Schaufeli, M. Salanova, V. González-Romá, and A. B. Bakker, "The Measurement of Engagement and Burnout: A two-sample confirmatory Factor analytic approach," *Journal of Happiness Studies*, vol. 3, no. 1, pp. 71–92, 2002.
- [6] S. Bückner, S. Nuraydin, B. A. Simonsmeier, M. Schneider, and M. Luhmann, "Subjective well-being and academic achievement: A meta-analysis," *Journal of Research in Personality*, vol. 74, pp. 83–94, 2018.
- [7] R. Long, M. Kennedy, K. M. Spink, and L. J. Lengua, "Evaluation of the implementation of a well-being promotion program for college students," *Frontiers in Psychiatry*, vol. 12, 2021.
- [8] X. Dong, K. Yang, R. Zhang, and Y. Lv, "The Mental Health and Grade Point Average among College Students from Lower Socioeconomic Status Based on Healthcare Data Analysis," *Journal of Healthcare Engineering*, vol. 2021, pp. 1–8, 2021.
- [9] Mediat, "The ROI of investing in student well-being programs," *Mediat*, Jul. 22, 2025.
- [10] A. Mowreader, "The role of higher ed in students' lasting well-being," *Inside Higher Ed | Higher Education News, Events and Jobs*, Oct. 04, 2024.
- [11] M. B. Mustafa, N. H. M. Rani, M. N. Bistaman, S. S. S. Salim, A. Ahmad, N. H. Zakaria, and N. A. A. Safian, "The Relationship between Psychological Well-Being and University Students Academic Achievement," *International Journal of Academic Research in Business and Social Sciences*, vol. 10, no. 7, 2020.
- [12] S. M. Suldo, K. N. Riley, and E. J. Shaffer, "Academic correlates of children and adolescents' life satisfaction," *School Psychology International*, vol. 27, no. 5, pp. 567–582, 2006.
- [13] R. M. Ryan and E. L. Deci, "On Happiness and Human Potentials: A review of Research on Hedonic and Eudaimonic Well-Being," *Annual Review of Psychology*, vol. 52, no. 1, pp. 141–166, 2001.
- [14] C. D. Ryff, "Happiness is everything, or is it? Explorations on the meaning of psychological well-being," *Journal of Personality and Social Psychology*, vol. 57, no. 6, pp. 1069–1081, 1989.
- [15] B. L. Fredrickson, "The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions," *American Psychologist*, vol. 56, no. 3, pp. 218–226, 2001.
- [16] M. Rosenberg, *Society and the adolescent Self-Image*. 1965.
- [17] A. S. Masten, "Ordinary magic: Resilience processes in development," *American Psychologist*, vol. 56, no. 3, pp. 227–238, 2001.
- [18] M. Rutter, "Resilience as a dynamic concept," *Development and Psychopathology*, vol. 24, no. 2, pp. 335–344, 2012.
- [19] S. M. Southwick, G. A. Bonanno, A. S. Masten, C. Panter-Brick, and R. Yehuda, "Resilience definitions, theory, and challenges: interdisciplinary perspectives," *European Journal of Psychotraumatology*, vol. 5, no. 1, 2014.
- [20] American Psychological Association, "Building your resilience", 2020.
- [21] A. Lolk, "Diagnostic and Statistical Manual of Mental Disorders", 2013.

- [22] X. Liu, S. Ping, and W. Gao, "Changes in Undergraduate Students' Psychological Well-Being as they experience University life," *International Journal of Environmental Research and Public Health*, vol. 16, no. 16, p. 2864, 2019.
- [23] C. Wang, R. Pan, X. Wan, Y. Tan, L. Xu, R. S. McIntyre, F. N. Choo, B. Tran, R. Ho., V. K. Sharma, and C. Ho., "A longitudinal study on the mental health of general population during the COVID-19 epidemic in China," *Brain Behavior and Immunity*, vol. 87, pp. 40–48, 2020.
- [24] [24] Diener, R. A. Emmons, R. J. Larsen, and S. Griffin, "The satisfaction with life scale," *Journal of Personality Assessment*, vol. 49, no. 1, pp. 71–75, 1985.
- [25] K. M. Connor and J. R. T. Davidson, "Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC)," *Depression and Anxiety*, vol. 18, no. 2, pp. 76–82, 2003.
- [26] A. T. Beck, "An inventory for measuring depression," *Archives of General Psychiatry*, vol. 4, no. 6, p. 561, 1961.
- [27] C. D. Ryff, D. M. Almeida, J. S. Ayanian, D. S. Carr, P. D. Cleary, C. Coe, and D. Williams, *National Survey of Midlife Development in the United States (MIDUS II), 2004–2006: Documentation of the Psychosocial Constructs and Composite Variables in MIDUS II Project 1*. Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 2007.
- [28] M. Stadler, C. J. Kemper, and S. Greiff, "Assessing subjective university success with the Subjective Academic Achievement Scale (SAAS)," *The European Educational Researcher*, vol. 4, no. 3, pp. 283–290, 2021.
- [29] B. W. Smith, J. Dalen, K. Wiggins, E. Tooley, P. Christopher, and J. Bernard, "The brief resilience scale: Assessing the ability to bounce back," *International Journal of Behavioral Medicine*, vol. 15, no. 3, pp. 194–200, 2008.
- [30] S. Sha, K. Heller, K. R. Hartson, and L. Hall, "College students' resilience-promoting behaviors and psychological well-being: A latent class analysis," *Open Health*, vol. 5, no. 1, 2024.
- [31] American College Health Association, *American College Health Association–National College Health Assessment (ACHA–NCHA III): Reference Group Data Report – Fall 2024*. Silver Spring, MD: American College Health Association, 2024.
- [32] S. Zhou, H. A. Weiss, B. McCuskey, and L. Tay, "College Student Well-Being: Explaining Academic and Behavioral Outcomes from a Representative College Student Sample," *Journal of Happiness Studies*, vol. 26, no. 5, 2025.
- [33] Z. Yan, E. Zakaria, N. M. Akhir, and N. Hassan, "Resilience, Dispositional Hope, and Psychological Well-Being among College Students: A Systematic review," *The Open Psychology Journal*, vol. 17, no. 1, 2024.
- [34] P. Khatri, H. K. Duggal, W. M. Lim, A. Thomas, and A. Shiva, "Student well-being in higher education: Scale development and validation with implications for management education," *The International Journal of Management Education*, vol. 22, no. 1, p. 100933, 2024.