



OPEN ACCESS

EDITED BY
Jose Manuel Martinez-Vicente,
University of Almeria, Spain

REVIEWED BY
Isaias Martin-Ruiz,
Universidad de Málaga, Spain
Nieves-Fátima Oropesa-Ruiz,
University of Almeria, Spain

*CORRESPONDENCE
Ofra Walter
✉ ofraw60@gmail.com

RECEIVED 29 January 2025
ACCEPTED 20 May 2025
PUBLISHED 16 July 2025

CITATION
Walter O and Hazan-Liran B (2025)
Psychological capital and procrastination
among mothers in higher education.
Front. Educ. 10:1568392.
doi: 10.3389/feduc.2025.1568392

COPYRIGHT
© 2025 Walter and Hazan-Liran. This is an
open-access article distributed under the
terms of the [Creative Commons Attribution
License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or
reproduction in other forums is permitted,
provided the original author(s) and the
copyright owner(s) are credited and that the
original publication in this journal is cited, in
accordance with accepted academic practice.
No use, distribution or reproduction is
permitted which does not comply with these
terms.

Psychological capital and procrastination among mothers in higher education

Ofra Walter * and Batel Hazan-Liran

Tel Hai College, Upper Galilee, Kiryat Shemona, Israel

Introduction: Student mothers often face distinct challenges as they juggle academic demands and family responsibilities, which can negatively affect their academic performance. Psychological capital (PsyCap)—encompassing hope, efficacy, resilience, and optimism—has been shown to support positive academic outcomes. This study explores the role of PsyCap in academic adjustment, examining academic procrastination as a potential mediator, and comparing experiences of student mothers to those of non-mothers.

Methods: A cross-sectional design was utilized, involving 216 students from Israeli higher education institutions (156 mothers, 60 non-mothers). Participants completed a demographic questionnaire, the Psychological Capital Questionnaire, the Academic Adjustment Questionnaire (AAQ), and the Academic Procrastination Questionnaire. Statistical analyses included correlational tests and mediation analysis.

Results: PsyCap was positively correlated with academic adjustment and negatively correlated with academic procrastination in both groups. No significant differences were found between mothers and non-mothers in levels of PsyCap, procrastination, or adjustment. Mediation analysis confirmed that academic procrastination significantly mediated the relationship between PsyCap and academic adjustment for both student mothers and non-mothers.

Discussion: Findings underscore the protective role of PsyCap in academic contexts, suggesting that it enhances adjustment by reducing procrastination. The absence of group differences points to the universal relevance of PsyCap across diverse student populations. These insights highlight the importance of cultivating psychological strengths and developing institutional supports tailored to the needs of student mothers.

KEYWORDS

academic adjustment, academic procrastination, higher education, mothers, psychological capital, student mothers

Introduction

In academic environments, psychological resources are crucial for non-traditional student groups, such as mothers pursuing higher education. Caregiving duties are still disproportionately handled by women (Craig and Mullan, 2010; Nomaguchi and Milkie, 2020), and for student mothers, the dual demands of caregiving and academic achievement can result in heightened stress, time constraints, and role conflict—factors that make them especially susceptible to academic procrastination (Bustillo et al., 2024), a common problem among students, with negative implications for learning (Tan and Prihadi, 2022; Zacks and Hen, 2018). Student mothers offer a privileged context for studying procrastination, as their unique life circumstances bring into sharp relief the interplay between psychological resources and academic functioning.

Psychological capital (PsyCap), encompassing resilience, optimism, hope, and self-efficacy, is a critical factor influencing academic success. A substantial body of research in the field of positive organizational behavior demonstrates PsyCap contributes significantly to enhanced performance and satisfaction across various settings (Luthans et al., 2004; Luthans and Youssef, 2004). We built on this literature by examining how PsyCap functions in the academic experiences of student mothers, particularly its role in academic adjustment and the tendency to procrastinate, comparing their experiences to those of non-mothers. We expected the enhanced time management, prioritization skills, and emotional resilience fostered by PsyCap would be key enablers in reducing procrastination and improving academic engagement among student mothers (Tamannaefar and Babaahmadi-Rezaei, 2020). PsyCap has been linked to enhanced academic adjustment and performance (Hazan-Liran, 2023). However, student mothers encounter unique challenges as they juggle caregiving responsibilities alongside their academic commitments, making them a particularly compelling group for exploring these dynamics (Sánchez-Cardona et al., 2021; Ingel-Champion, 2021). Despite this relevance, there is a scarcity of studies investigating how PsyCap specifically influences procrastination and academic adjustment in this population compared to their non-mother counterparts. This gap in the literature underscores the necessity of the present study, which seeks to enrich our understanding of how psychological assets assist mothers in reaching their educational goals. The findings could contribute to the ongoing discourse on enhancing support mechanisms within academic institutions (Masten, 2001; Snyder et al., 2002).

PsyCap

The concept of PsyCap is derived from the field of positive organizational behavior (Luthans et al., 2004; Luthans and Youssef, 2004). This resource encompasses four components: resilience, optimism, hope, and self-efficacy. Their integration can foster a positive attitude and motivation toward the organization, in this case, the academic institution (Tamannaefar and Babaahmadi-Rezaei, 2020). Resilience is a dynamic process of coping with crises and distress. Optimism represents a self-belief in future and present success. Self-efficacy is an individual's confidence in the ability to take on and exert the effort required to complete challenging tasks. Hope reflects persistence toward achieving goals and objectives for future success (Avey et al., 2011a; Carmona-Halty et al., 2021). Among students, a high level of PsyCap can manifest in students' dedication to various tasks, their engagement with their place of study, and their academic performance levels (Virgá et al., 2022).

A study by Martínez et al. (2019) found PsyCap was a full mediator in the relationship between academic engagement and academic performance. Academically engaged students were likely to have higher psychological resources, and this positively impacted their academic performance. Exploration of alternative models yielded a superior fit for the proposed model. The results suggest the importance of considering psychological predictors, rather than relying on traditional predictors of academic performance.

Mothers in higher education face numerous challenges, including family, career, financial issues, etc., and these can impact their PsyCap (Ingel-Champion, 2021). A study examining mothers' PsyCap found a positive correlation between PsyCap and social support and parenting skills; the higher a mother's PsyCap, the more social support she received and the better her parenting skills were (Sarwar et al., 2022). Another study found student mothers with high PsyCap had broad social support networks that enabled them to maximize their capabilities within the educational framework (Yue et al., 2023). Moreover, PsyCap as a personal resource was found to enable mothers to pursue their goals, such as studying and persevering in their achievements, even when problems arose (Machín-Rincón et al., 2020).

Academic adjustment

Academic adjustment refers to the significant emotional experience an individual has with respect to a place of study. There are four components of academic adjustment: academic achievement, social, personal-emotional, and institutional (Wang et al., 2021). The first component, academic achievement, relates to the student's adjustment to academic demands, as well as the level of motivation for learning. The social component reflects the extent of the student's integration into the social context, for example, participating in campus activities, meeting new people, and forming friendships. The personal-emotional component expresses the student's psychological and physiological feelings and the extent of stress and anxiety or physical reactions (such as lack of sleep). The institutional component pertains to the emotional identification of the student with the academic community and its environment (Credé and Niehorster, 2012).

Studies have shown there is a link between these four components; a positive approach and positive emotion toward the place are expressed in an attraction to the place and a desire to stay there for a long time (Credé and Niehorster, 2012; Ganotice et al., 2016). A study conducted in the United States on how academic adjustment is linked to academic success found students with high academic adjustment had higher grade averages and were more motivated to learn than students with low academic adjustment (Karaman et al., 2022). Another study examined the academic success of first-year university students and the importance of their academic adjustment. It found the likelihood of students continuing their studies after their first-year was not related to their ability to cope with academic demands but to their level of academic adjustment. That is, students with low academic adjustment were at higher risk of dropping out of the academic framework than students with high academic adjustment (van Rooij E. C. M. et al., 2018).

An extensive literature demonstrates PsyCap is crucial to academic adjustment across diverse populations, including those with special needs and mothers (Geremias, 2021; Sánchez-Cardona et al., 2021). High PsyCap leads to a greater investment in academic activities. By measuring PsyCap, it is possible to predict students' academic achievements and their adjustment to the academic system (Hazan-Liran, 2023). Students with high PsyCap are not

only motivated to accumulate academic knowledge but are also more satisfied with their chosen degree programs. Consequently, they typically exhibit better academic adjustment and are more capable of meeting the academic demands of their educational institutions than those with lower PsyCap (Geremias, 2021).

It is important to acknowledge that PsyCap is not a singular resource influencing academic adjustment but is affected by a myriad of internal and external factors. These include life events, sleep quality, physical effort, and psychological and emotional states, all of which can modify one's PsyCap (Li et al., 2023). Students with better academic adjustment and high PsyCap are characterized by higher grade averages and more credits earned in their degree programs, and they are more likely to complete their chosen degrees than students with low academic adjustment and PsyCap (Raza et al., 2021).

In the context of higher education, mothers represent a unique population facing additional challenges that can impact their PsyCap and academic adjustment. Balancing academic responsibilities with family duties and possibly a career demands substantial psychological resources. Research indicates supportive measures, such as flexible scheduling and access to childcare, can significantly enhance the academic adjustment of student mothers, allowing them to maintain or increase their PsyCap, and this, in turn, improves their academic performance (Sánchez-Cardona et al., 2021).

Academic adjustment among mothers

Mothers who choose to study need to cope with the demands of home, raising children, and couplehood, in addition to the academic demands (Crabb and Ekberg, 2014). If student mothers do not have an extensive support network, they could suffer from stress, tension, and anxiety, harming their grades and causing a higher dropout rate than among their non-mother peers (Parkes et al., 2015). A study in the United States (Navarro-Cruz et al., 2021) found student mothers with a broad support network experienced academia more positively than those without such support. They were more successful in their studies and coped successfully with multiple demands. Another study found collaborative and informal support helped student mothers manage their responsibilities and promote self-care, contributing to their academic success and personal wellbeing (Cohen-Miller and Demers, 2019). Social networks provide significant advantages in navigating the complexities of educational systems and supporting academic and personal growth (Jo, 2022).

Academic procrastination

Academic procrastination is an extensively studied phenomenon, defined as a deliberate delay of an action or course of action despite the procrastinator's awareness that the results will mostly lead to negative outcomes (Steel and Klingsieck, 2016). Procrastination has a variety of causes, including a lack of desire, a lack of readiness in time management,

a faulty cognitive assessment of the situation, laziness, and various motivational reasons (Webb and Rosenbaum, 2019). One study found a direct negative relationship between procrastination and the absence of executive functions such as organizational ability, self-regulation, task planning, and monitoring of the individual's performance (Hazan-Liran and Miller, 2023). The study also found a low level of self-efficacy, low motivation, and poor self-regulation significantly predicted procrastination; when these capabilities decreased, procrastination levels rose.

A study in the United States found many students have a very high frequency of procrastination, whether in writing papers or learning for exams (Rahimi and Hall, 2021). Particularly high levels of procrastination were found to correlate with lower academic performance and lower overall wellbeing (Hen and Goroshit, 2018). A study on student procrastination reported a negative relationship between high PsyCap and procrastination whereby students with high PsyCap had low levels of procrastination (Saman and Wirawan, 2021). The same study discovered PsyCap can help students develop strategies to reduce procrastination. Another study found people characterized with high PsyCap made more efforts with more tools to fight procrastination (Akhoundi and Aerab Sheibani, 2017).

Entering academic life requires significant adjustment; students need to cope with many demands, including tasks and proper time management, along with adjustment to the emotional, social, and institutional learning space. In addition, entering academia can cause significant stress, with negative psychological effects, such as memory depletion, anxiety, and procrastination (Sumarsono et al., 2020). A study found procrastination adversely affected students' emotional wellbeing and academic adjustment (Balkis and Duru, 2016). However, higher levels of self-regulation reduced procrastination and negative feelings about academia and enhanced satisfaction with academic life and academic adjustment.

Academic procrastination among student mothers

Balancing work, study, and motherhood is challenging. Studies show mothers struggle to cope within the academic framework because they attempt to be successful in both roles (Mazerolle and Barrett, 2018). Mothers' self-efficacy is linked in the literature to procrastination; mothers with low self-efficacy will procrastinate more in areas where they feel less capable. Mothers' academic procrastination, for example, can be linked to the overload they experience when they have to combine academics with their work and personal lives (Hen and Goroshit, 2018). Previous research has primarily examined how academic mothers adapt to the pressures of academia rather than their propensity for procrastination. A study by Hazan-Liran (2023) found environments fostering autonomy, including partners and academic institutions, significantly reduced procrastination and enhanced self-regulated learning, thereby improving academic adjustment for student mothers. Titania and Djamhoer (2023) found well-adjusted academic mothers tended to procrastinate

less, particularly in structured settings with clear expectations and support.

The present study

Building on these findings, we explored student mothers' PsyCap, procrastination levels, and academic adjustment, comparing these attributes to those of their non-mother counterparts. The objective was to ascertain whether student mothers have distinct characteristics influencing their academic performance and adjustment.

The first research question investigated a possible relationship among the three study variables. We hypothesized a positive correlation between PsyCap and academic adjustment and negative correlations between them and procrastination. The second research question targeted possible differences between student mothers and non-mothers in their PsyCap, procrastination, and academic adjustment. We hypothesized student mothers would have higher levels of academic procrastination than non-mothers but the same level of PsyCap and academic adjustment. The third research question asked if procrastination is a mediator in the relationship between PsyCap and academic adjustment for both mothers and non-mothers. We hypothesized procrastination would mediate the relationship between PsyCap and academic adjustment in both groups. That is, the higher the PsyCap, the lower the student's procrastination, and consequently, the higher the student's academic adjustment.

Method

Participants

The research included 216 Israeli students from higher education institutions governed by the Council for Higher Education. In Israel, the Council for Higher Education is responsible for supervising and advancing higher education policies, accrediting institutions, approving new programs, and maintaining quality standards. As a result, the institutions involved in our study adhere to comparable academic and operational criteria. This consistency was crucial in ensuring the variations in institutional attributes did not disproportionately impact our results.

To recruit students, we sent a general email through the academic email system to all students across institutions. The study sample encompassed diverse demographic and academic characteristics. Participants' academic status varied; majorities were in BA degree programs (60.6%); others were in MA (26.4%) and PhD programs (13.0%). The distribution across academic years included first-year students (34.7%), second-year students (21.3%), third-year students (35.2%), and fourth-year students (8.8%). The age of participants ranged from 20 to 55 years, with a mean age of 31.5 years. Marital status varied: single (18.1%), married (75.5%), and divorced (6.4%). Among the participants who were mothers, the number of children ranged from 1 to 9, with a mean of 2. The ages of the children were categorized as follows: 0–6 years (66.7%),

TABLE 1 Demographic information.

Variables	Subscale	Mother (<i>n</i> = 156)	Non-mother (<i>n</i> = 60)
Academic degree	BA	75 (47%)	56 (93%)
	MA	53 (35%)	4 (7%)
	PhD	28 (18%)	–
Academic year	1	61 (38%)	14 (23%)
	2	34 (22%)	12 (20%)
	3	46 (30%)	30 (50%)
	4	15 (10%)	4 (7%)
Age	Age Range	22–55 (<i>M</i> = 34)	20–37 (<i>M</i> = 25)
Child number	Range (<i>M</i>)	1–9 (<i>M</i> = 2)	–
Marital status	Single	–	39 (65%)
	Married	143 (92%)	21 (35%)
	Divorced	13 (8%)	–
Children's Ages	0–6	104 (66%)	–
	6–11	32 (21%)	–
	11–18	14 (9%)	–
	18 and up	6 (4%)	–

BA, Bachelor of Arts degree; MA, Master of Arts degree; PhD, Doctor of Philosophy.

6–11 years (20.5%), 11–18 years (8.9%), and 18 years and above (3.8%). Demographic details are presented in [Table 1](#).

Instruments

We used four questionnaires to test the research hypotheses.

Demographic and academic information

The demographic questionnaire was specifically developed for the study to characterize mothers in academia. The questionnaire gathered comprehensive demographic data to understand the diverse backgrounds and experiences of these individuals. It provided valuable insights into the unique challenges and circumstances faced by mothers pursuing academic careers. This tailored approach ensured the data would be relevant and informative. Although designed for this research, the questionnaire was based on common demographic indicators used in academic studies. It included closed-ended items assessing the following variables: academic degree (BA, MA, and PhD), year of study (1st, 2nd, 3rd, or 4th year), age (exact age and age range), parental status (mother or non-mother); number of children (for mothers only); marital status (single, married, divorced); children's age range (0–6, 6–11, 11–18, over 18; for mothers only). These variables were selected to provide a comprehensive profile of participants and to explore potential contextual differences affecting academic functioning. The data allowed comparisons between mothers and non-mothers on relevant demographic and academic dimensions. The questionnaire was pilot tested for clarity before distribution.

TABLE 2 Division and reliability of PCQ subscales.

Scales	α	Sample item
Self-efficacy	0.78	I feel confident analysing a study-related long-term problem to find a solution.
Hope	0.77	There are lots of ways around any study-related problem.
Optimism	0.63	When things are uncertain for me as a student, I usually expect the best.
Resilience	0.54	I can deal with study-related difficulties because I've experienced difficulty before.
Overall	0.87	

PsyCap questionnaire

Participants' PsyCap was determined using an academic shortened version of the 24-item PsyCap Questionnaire (PCQ-24; Luthans et al., 2007), in which four positive psychological capacities (self-efficacy, hope, resilience, and optimism) are applied to academic outcomes. The 12-item version of the PCQ-24 was validated by Avey et al. (2011b). The PCQ-12 comprises 12 items rated on a 5-point Likert scale, from 1 = strongly disagree, to 5 = strongly agree. The score range of the PCQ is 12–60, with higher scores indicating higher levels of PsyCap. Avey et al. (2011a) found the self-efficacy subscale had an alpha of 0.85, the hope subscale had an alpha of 0.85, the resilience subscale had an alpha of 0.87, and the optimism subscale had an alpha of 0.86. Additionally, the overall internal consistency for the 12-item version was $\alpha = 0.88$, indicating high consistency. Table 2 shows the division of the subscales, including their reliability in this study.

Academic adjustment questionnaire (AAQ)

Students' adjustment to post-secondary education was assessed with a shortened version of the Students' Adaptation to College Questionnaire (SACQ; Baker and Siryk, 1989), hereafter AAQ (Hazan-Liran and Miller, 2019). The AAQ has 30 items and comprises four subscales. Items' appropriateness is rated on a 9-point Likert scale, from 1 = suits me very much, to 9 = doesn't suit me at all. The score range of the AAQ is 30–270, with higher scores indicating better academic adjustment. Hazan-Liran and Miller (2019) reported the following alpha values for the subscales: academic adjustment had an alpha of 0.92, social adjustment had an alpha of 0.89, personal-emotional adjustment had an alpha of 0.90, and attachment to the institution had an alpha of 0.87. The overall internal consistency of the AAQ was $\alpha = 0.91$, indicating high consistency. Table 3 shows the division of the subscales and their reliability in this study.

Academic procrastination questionnaire

The Procrastination Assessment Scale-Student (PASS; Solomon and Rothblum, 1984) measures and characterizes the degree of an individual's academic procrastination and the desire to stop this maladaptive behavior. The PASS has 44 items and is divided into two parts. The first part examines the participant's level of procrastination, and the second looks at the reasons for procrastination. We used the first part only;

TABLE 3 Division and reliability of AAQ subscales.

Scales	α	Sample item
Achievement	0.68	I find academic studies difficult.
Social	0.75	I have difficulty feeling comfortable in connecting with other students.
Emotional	0.86	Lately I've been feeling downcast and moody.
Institutional	0.79	I am happy with my decision to study at my institution.
Overall	0.87	

it consists of 18 items measuring the level of procrastination in six academic areas: writing a term paper; studying for an exam; completing weekly reading assignments; performing administrative tasks; attending meetings; completing academic tasks in general. Each of the six areas contains sections whose items participants are asked to rate on a 5-point Likert scale. The first section measures the frequency of procrastination in academic tasks ("To what extent do you postpone this task?"). The second measures the degree to which the procrastination of the task causes problems ("To what extent is the procrastination of this task a problem for you?"). The third measures the participant's willingness to reduce procrastination ("How much would you like to reduce your tendency to procrastinate in this task?"). The sum of all the sections indicates the participant's level of procrastination, with a higher score indicating higher procrastination, and a lower score suggesting lower procrastination. Solomon and Rothblum (1984) reported an overall alpha of $\alpha = 0.90$ for the procrastination score, reflecting high internal consistency across the various subscales. The reliability of the questionnaire for all items in the present study was $\alpha = 0.90$.

Study design

We used a cross-sectional design, with data collected from each participant at a single point in time to explore relationships between PsyCap, academic procrastination, and academic adjustment among students and to examine potential group differences between student mothers and non-mothers.

Procedure

The study received ethical approval from the Tel-Hai Academic College Research Ethics Committee (Approval No. 011223). Data were collected over a 2-month period using convenience sampling. Participation requests, along with links to the study questionnaires, were distributed electronically via the academic institution's email system. Participants first reviewed an informed consent form outlining the purpose of the study, confidentiality assurances, and their right to withdraw at any time. After providing consent, they completed a demographic questionnaire followed by the main study questionnaires, which required ~10 min to complete. The introductory text provided information about the

researchers and their contact details. Participation was voluntary and uncompensated.

Statistical analysis

Internal consistency for all measurement scales was assessed using reliability (Cronbach's alpha) analysis. Pearson correlation analyses were conducted to examine associations among PsyCap, academic procrastination, and academic adjustment, both overall and within the student mother/non-mother subgroups (first research question). Independent-sample *t*-tests including Cohen's alpha were then used to compare mean scores of the three main variables for the two groups (second research question). Finally, we performed a mediation analysis using the PROCESS macro for SPSS. PsyCap was specified as the independent variable, academic adjustment as the dependent variable, and procrastination as the mediator (third research question). The significance of the indirect effect was tested using a bootstrapping method with 5,000 resamples, generating 95% confidence intervals (CIs). Indirect effects in which zero is not included in the 95% CI indicate a significant effect at $\alpha < 0.05$.

Results

Correlations between study variables

Our first hypothesis postulated a positive correlation between PsyCap and academic adjustment and negative correlations between these two variables and procrastination. We conducted Pearson correlation analyses to examine associations among PsyCap, academic procrastination, and academic adjustment, both overall and within the student mother/non-mother subgroups. Tables 4, 5 show the intra- and inter-correlations for PsyCap, procrastination, and academic adjustment and correlations by participant group (mother/non-mother).

Table 4 presents the overall correlations between the study variables and their subscales. The analysis revealed significant positive correlations between the components of PsyCap (self-efficacy, hope, optimism, resilience) and academic adjustment. The highest correlations were observed between resilience and academic adjustment ($r = 0.79, p < 0.001$) and hope and academic adjustment ($r = 0.68, p < 0.001$). Additional moderate to strong positive correlations were found between these variables and other aspects of academic adjustment, particularly in the social and emotional domains.

Mild negative correlations were found between procrastination and several components of academic adjustment, especially resilience ($r = -0.49, p < 0.001$) and self-efficacy ($r = -0.47, p < 0.001$). Weaker negative correlations were observed between procrastination and hope ($r = -0.30, p < 0.001$) and optimism ($r = -0.33, p < 0.001$). Resilience emerged as a central variable, showing the strongest correlations, positive with academic adjustment and negative with procrastination. The findings in Table 4 fully corroborated our first hypothesis, demonstrating significant positive high correlations between PsyCap and academic adjustment ($r = 0.54, p < 0.001$) and significant negative

mild correlations between PsyCap and academic adjustment to procrastination ($r = -0.36, p < 0.001$; $r = -0.47, p < 0.001$, respectively).

Table 5 shows the Pearson correlations between PsyCap, procrastination, and academic adjustment, comparing non-mothers and mothers. Significant positive mild to high correlations were found between academic adjustment and PsyCap for both groups (non-mothers: $r = 0.46$, mothers: $r = 0.57$, both $p < 0.001$), while significant negative mild correlations were observed between procrastination and both academic adjustment and PsyCap for both groups (non-mothers: $r = -0.31, p < 0.01$; mothers: $r = -0.49, p < 0.001$).

Differences between student mothers and non-mothers

Our second hypothesis argued student mothers would have higher levels of academic procrastination but the same level of PsyCap and academic adjustment as non-mothers. We used three *t*-test analyses to test this hypothesis. To check for homogeneity of variances between groups, we used test Levene's (1960); the results showed no significant deviation from equal variances ($p > 0.05$). Results partially confirmed the second hypothesis. No significant differences were found between student mothers and non-mothers in terms of PsyCap and academic adjustment, nor were there significant differences between the groups in their levels of procrastination (Table 6).

Mediation analysis

Our third hypothesis assumed procrastination would mediate the relationship between PsyCap and academic adjustment for both mothers and non-mothers. To test this hypothesis, we used PROCESS model 4 (Hayes, 2022). PsyCap was the independent variable, academic adjustment the dependent variable, and procrastination the mediator (Figure 1).

Results showed a direct, negative, and statistically significant relationship between PsyCap and procrastination, $B = -0.474$, S.E. = 0.083, CI: -0.639 to -0.309 , and a direct, negative, and statistically significant relationship between procrastination and academic adjustment, $B = -0.444$, S.E. = 0.080, CI: -0.603 to -0.286 . The direct effect of PsyCap on academic adjustment was statistically significant, $B = 0.775$, S.E. = 0.105, CI: 0.567 – 0.983 .

To test the significance of the indirect effect in the analysis, we employed a bootstrapping technique. Tests of the indirect effect of PsyCap on academic adjustment via procrastination were significant, $B = 0.211$, S.E. = 0.058, CI: 0.109 – 0.334 .

Discussion

We examined how PsyCap, academic procrastination, and academic adjustment interacted in a sample of student mothers and non-mothers. The first research question explored potential relationships among the three variables. We hypothesized PsyCap would positively correlate with academic adjustment and negatively

TABLE 4 Intra and inter Pearson correlations of PsyCap, procrastination, and academic adjustment.

Scales	1	2	3	4	5	6	7	8	9	10
Academic adjustment	1. Achievement	1	–	–	–	–	–	–	–	–
	2. Social	0.34***	1	–	–	–	–	–	–	–
	3. Emotional	0.60***	0.27***	1	–	–	–	–	–	–
	4. Institutional	0.43***	0.30***	0.13***	1	–	–	–	–	–
	5. Total	0.81***	0.66***	0.77***	0.68***	1	–	–	–	–
PsyCap	6. Self-efficacy	0.31***	0.25***	0.24***	0.11	0.31***	1	–	–	–
	7. Hope	0.56***	0.33***	0.34***	0.30***	0.53***	0.51***	1	–	–
	8. Optimism	0.50***	0.28***	0.41***	0.36***	0.53***	0.45***	0.68***	–	–
	9. Resilience	0.43***	0.19**	0.30***	0.24***	0.40***	0.46***	0.57***	0.58***	–
	10. Total	0.56***	0.33***	0.39***	0.30***	0.54***	0.77***	0.87***	0.80***	0.79***
11. Procrastination		–0.49***	–0.29***	–0.37***	–0.22***	–0.47***	–0.21**	–0.41***	–0.30***	–0.22***
										–0.36***

***p < 0.001, **p < 0.01.

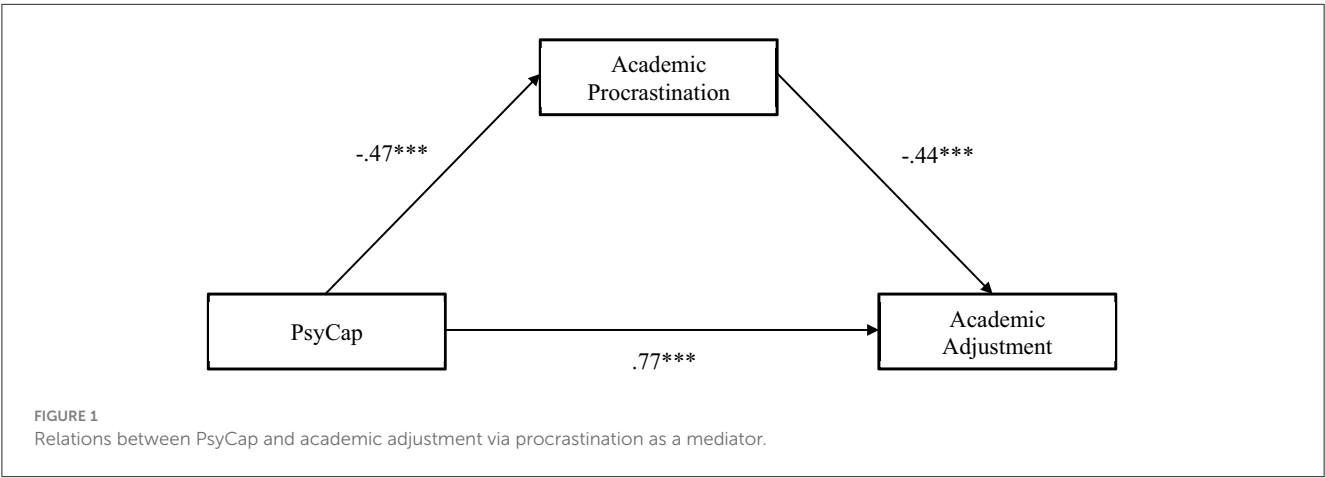
TABLE 5 Pearson correlations of PsyCap, procrastination, and academic adjustment by participant group.

Scales	Mother			Non-mother		
	1	2	3	1	2	3
1. Academic adjustment	1	–	–	1	–	–
2. PsyCap	0.57***	1	–	0.46***	1	–
3. Procrastination	–0.49***	–0.39***	1	–0.44***	–0.31**	1

***p < 0.001, **p < 0.01.

TABLE 6 Differences between mothers and non-mothers (N = 216).

Variables	Mother (<i>n</i> = 156)	Non-mother (<i>n</i> = 60)	<i>t</i> ₍₂₁₄₎ , <i>p</i>	Cohen's <i>d</i>
	M (SD)			
PsyCap	3.72 (0.60)	3.65 (0.55)	−0.745, <i>p</i> = 0.213	0.59
Procrastination	2.97 (0.78)	2.90 (0.78)	−0.601, <i>p</i> = 0.774	0.78
Academic adjustment	5.96 (1.10)	5.77 (1.01)	−1.14, <i>p</i> = 0.250	1.08



correlate with procrastination. The findings confirmed this hypothesis, revealing significant positive correlations between PsyCap and academic adjustment, as well as significant negative correlations between PsyCap and procrastination across the entire student sample. These results align with prior research indicating higher levels of PsyCap contribute to improved academic

functioning and reduced procrastinatory behaviors among students (Balkis and Duru, 2016). Specifically, self-regulatory components of PsyCap such as hope and self-efficacy have been linked to greater academic satisfaction and adjustment. While we did not aim to compare groups, previous studies have shown student mothers with higher PsyCap are better equipped to manage both academic and personal demands, despite facing unique challenges (Machín-Rincón et al., 2020; Navarro-Cruz et al., 2021). Overall, the observed correlations underscore the role of psychological resources in supporting students' academic success and emotional wellbeing.

The second research question explored potential differences between student mothers and non-mothers in their levels of PsyCap, academic adjustment, and procrastination. Although we hypothesized student mothers would demonstrate higher levels of academic procrastination than non-mothers while showing similar levels of PsyCap and academic adjustment, the results did not reveal any statistically significant differences between the two groups. Given the absence of significant differences, it is important to interpret these findings with caution. However, we propose several contextual considerations that may shed light on this outcome. One is that most participants who were mothers were studying for advanced degrees (MA and PhD). The structure of these studies is more organized and defined, possibly making it easier for mothers to organize and balance home and family life with academic requirements. These students are also better acquainted with academic life and the academic framework than students in a BA program. This facilitates adjustment, the tendency not to postpone tasks, and the connection to the academic framework. Another possible explanation is that mothers in higher education, especially those in advanced programs, can establish and maintain substantial social support systems. This support may help them procrastinate less, enhances their PsyCap, and improves their academic adjustment. Previous studies found mothers cope better with the demands of home, raising children, and couplehood, in addition to academic demands, if they have an extensive support network (Crabb and Ekberg, 2014). These mothers are more successful in their studies and cope successfully with the multiple demands, contributing to their academic success and personal wellbeing (Cohen-Miller and Demers, 2019; Navarro-Cruz et al., 2021). Social networks also provide significant benefits in navigating the complexities of educational systems and supporting both academic and personal growth (Jo, 2022). Titania and Djamhoer (2023) found well-adjusted academic mothers tend to procrastinate less, particularly in structured environments with clear expectations and support.

We found student mothers and non-mothers had similar levels of PsyCap, academic adjustment, and procrastination. We suggest this can be explained by several interrelated factors. Both groups benefit from social support systems, which provide essential emotional and practical assistance, helping them to manage academic responsibilities effectively (Saman and Wirawan, 2021). Additionally, high levels of PsyCap, including self-efficacy, optimism, hope, and resilience, are crucial for maintaining motivation and overcoming challenges, and these traits are found in mothers and non-mothers alike (Luthans et al., 2007). Despite initial expectations of significant differences between mothers and non-mothers, the findings revealed comparable patterns in levels

of academic adjustment and procrastination across groups. This outcome suggests student mothers may employ effective coping strategies or access support systems that mitigate the potential challenges associated with balancing caregiving and academic responsibilities. It may also indicate that academic stressors and psychological demands are prevalent across the broader student population, affecting students similarly regardless of parental status. These findings align with prior research emphasizing that while caregiving introduces unique demands, shared academic pressures often exert a unifying influence on students' psychological experiences (Nomaguchi and Milkie, 2020). The structured nature of academic programs, with clear goals and deadlines, helps all students reduce procrastination and improve time management (Schunk and Zimmerman, 2012). Finally, effective work-life balance strategies and strong self-regulation skills have been found to contribute equally to the academic success of all learners (Zimmerman, 2002). These factors collectively ensure mothers in academia do not differ significantly from their peers in terms of procrastination, PsyCap, and academic adjustment.

Our third research question considered procrastination as a possible mediator in the relationship between PsyCap and academic adjustment. We hypothesized procrastination would mediate the relationship between PsyCap and academic adjustment in both groups. The results fully confirmed this hypothesis. Participants with higher PsyCap had lower levels of academic procrastination, which, in turn, positively influenced their academic adjustment. This aligns with previous findings that PsyCap contributes to an improved academic experience (Saman and Wirawan, 2021), higher academic achievement (Luthans et al., 2012), and more successful academic adjustment (Hazan-Liran, 2023; Hazan-Liran and Miller, 2019).

PsyCap's influence on academic outcomes can be attributed to its ability to encourage students to adopt more effective coping styles (Saman and Wirawan, 2021). Among these adaptive coping styles is the tendency to avoid academic procrastination (Hicks and Wu, 2015). Avoiding procrastination fosters persistence, motivation, and enhanced feelings of wellbeing and satisfaction with one's field of study, thereby contributing to successful academic adaptation (McKenzie and Schweitzer, 2001; van Rooij A. J. et al., 2018). Mishra (2020) found social support significantly influenced academic success and reduced procrastination among student mothers. Webber and Dismore (2021) found effective work-life balance strategies and self-regulation skills contributed equally to the academic success of both mothers and non-mothers. Our research suggests procrastination is a mediator in the relationship between PsyCap and academic adjustment for student mothers and non-mothers alike. Higher PsyCap leads to lower procrastination, which enhances academic adjustment. This underscores the importance of developing PsyCap to improve academic outcomes.

Implications

The study highlights the critical role of PsyCap in enhancing academic adjustment. High PsyCap fosters effective coping styles,

reducing procrastination and improving academic adjustment. The findings suggest institutions should consider implementing programs that enhance PsyCap among students, particularly mothers, to support their academic journey. Providing social support systems and structured academic environments can further aid in reducing procrastination and improving overall academic outcomes for all students. Finally, the study showed procrastination is a mediator in the relationship between PsyCap and academic adjustment, underlining the importance of addressing procrastination to improve academic success.

Limitations and future research

The study's limitations include its reliance on self-reported data, which may be subject to biases such as social desirability. In addition, the sample size and demographic diversity originating from our sampling method may limit the generalizability of the findings. Specifically, we did not collect data on sociocultural factors, social support networks, economic status, or family dynamics, all of which could potentially influence the outcomes measured in the study. To deepen understanding of the observed similarities between mothers and non-mothers in academic settings, future research should incorporate additional variables such as perceived social support, time management, and institutional accommodations. These factors may serve as moderators or mediators, shedding light on the mechanisms that enable student mothers to perform comparably to their non-mother peers.

Future research should consider longitudinal studies to examine the long-term effects of PsyCap on academic adjustment and procrastination. Expanding the research to include diverse populations and different educational contexts may provide a more comprehensive understanding of these relationships. Furthermore, investigating the impact of specific interventions aimed at enhancing PsyCap could yield practical insights into improving academic outcomes for student mothers and other groups. It would also be beneficial to explore the specific mechanisms through which PsyCap influences procrastination and academic adjustment in different demographic groups.

Conclusions

We examined the relationships among PsyCap, academic adjustment, and procrastination in a sample of Israeli student mothers and non-mothers. We hypothesized PsyCap would positively correlate with academic adjustment and negatively correlate with procrastination in both groups. The findings supported this hypothesis, revealing significant positive correlations between PsyCap and academic adjustment and significant negative correlations between PsyCap and procrastination. Mothers and non-mothers in academic settings had similar levels of PsyCap, academic adjustment, and procrastination. Those with higher PsyCap exhibited lower levels of academic procrastination, which, in turn, positively influenced their academic adjustment. These findings suggest interventions aimed at increasing PsyCap could improve academic

outcomes and adjustment while reducing procrastination. Such interventions might be particularly useful for student mothers, given their unique challenges.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by Tel Hai Academic Ethical Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

OW: Conceptualization, Formal analysis, Methodology, Writing – original draft, Writing – review & editing. BH-L: Conceptualization, Data curation, Methodology, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

- Akhoundi, N., and Aerab Sheibani, K. (2017). Effectiveness of the psychological capital intervention model on organizational procrastination of skill workers in Iran Khodro Diesel company, Iran. *Int. J. High Risk Behav. Addict.* 6:e63206. doi: 10.5812/ijhrba.63206
- Avey, J. B., Avolio, B. J., and Luthans, F. (2011a). Experimentally analyzing the impact of leader positivity on follower positivity and performance. *Leadersh. Quart.* 22, 282–294. doi: 10.1016/j.leaqua.2011.02.004
- Avey, J. B., Reichard, R. J., Luthans, F., and Mhatre, K. H. (2011b). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resour. Dev. Quart.* 22, 127–152. doi: 10.1002/hrdq.20070
- Baker, R. W., and Siryk, B. (1989). *SACQ Student Adaptation to College Questionnaire Manual*. Western Psychological Services.
- Balkis, M., and Duru, E. (2016). Procrastination, self-regulation failure, academic life satisfaction, and affective well-being: underregulation or misregulation form. *Eur. J. Psychol. Educ.* 31, 439–459. doi: 10.1007/s10212-015-0266-5
- Bustillo, R. C. T., Bustillo, R. C. T., and Sayson, J. A. V. (2024). Navigating the dual roles: understanding the unique challenges of student-mothers in pursuit of higher education. *Ign. Int. J. Multidiscip. Res.* 2, 58–69. doi: 10.5281/zenodo.10634332
- Carmona-Halty, M., Salanova, M., Llorens, S., and Schaufeli, W. B. (2021). Linking positive emotions and academic performance: the mediated role of academic psychological capital and academic engagement. *Curr. Psychol.* 40, 2938–2947. doi: 10.1007/s12144-019-00227-8
- Cohen-Miller, A., and Demers, D. (2019). Conflicting roles of mother and academic? Exploring the use of arts-based self-care activities to encourage wellbeing. *Art Res. Int.* 4, 611–645. doi: 10.18432/ari29391
- Crabb, S., and Ekberg, S. (2014). Retaining female postgraduates in academia: the role of gender and prospective parenthood. *High. Educ. Res. Dev.* 33, 1099–1112. doi: 10.1080/07294360.2014.911251
- Craig, L., and Mullan, K. (2010). Parenthood, gender and work-family time in the United States, Australia, Italy, France, and Denmark. *J. Marriage Fam.* 72, 1344–1361. doi: 10.1111/j.1741-3737.2010.00769.x
- Credé, M., and Niehorster, S. (2012). Adjustment to college as measured by the student adaptation to college questionnaire: a quantitative review of its structure and relationships with correlates and outcomes. *Educ. Psychol. Rev.* 24, 133–165. doi: 10.1007/s10648-011-9184-5
- Ganotice, F. A. Jr., Datu, J. A. D., and King, R. B. (2016). Which emotional profiles exhibit the best learning outcomes? A person-centered analysis of students' academic emotions. *Sch. Psychol. Int.* 37, 498–518. doi: 10.1177/0143034316660147
- Geremias, R. H. L. (2021). *Psychological capital as a learning facilitator* (Doctoral Dissertation). Universidade de Lisboa, Lisbon, Portugal.
- Hayes, A. F. (2022). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, 3rd Edn. Guilford Press.
- Hazan-Liran, B. (2023). Does procrastination have a cultural or a neurological source? Evidence of its mediating role in the relationship between psychological capital and academic adjustment. *Am. J. Health Behav.* 47, 306–320. doi: 10.5993/AJHB.47.2.11
- Hazan-Liran, B., and Miller, P. (2019). The role of psychological capital in academic adjustment among university students. *J. Happiness Stud.* 20, 51–65. doi: 10.1007/s10902-017-9933-3
- Hazan-Liran, B., and Miller, P. (2023). Psychological capital's mediation of anxiety-related patterns of thinking and academic adjustment among university students. *J. Am. Coll. Health* 73, 1–11. doi: 10.1080/07448481.2023.2232867
- Hen, M., and Goroshit, M. (2018). General and life-domain procrastination in highly educated adults in Israel. *Front. Psychol.* 9:1173. doi: 10.3389/fpsyg.2018.01173
- Hicks, R. E., and Wu, F. M. Y. (2015). Psychological capital as mediator between adaptive perfectionism and academic procrastination. *GSTF J. Psychol.* 2, 1–7. doi: 10.7603/s40790-015-0006-y
- Ingel-Champion, R. (2021). *Opting in or out: the moderating and mediating effects of psychological capital and family-supportive organization perceptions on work-family conflict and turnover intentions among working mothers* (Doctoral dissertation). Alliant International University, Alhambra, CA, United States.
- Jo, H. (2022). Market-based parental involvement: impact of networks of middle-class mothers in the education marketplace. *Camb. J. Educ.* 52, 759–774. doi: 10.1080/0305764X.2022.2049209
- Karaman, E., Sayin Kasar, K., and Yildirim, Y. (2022). Nursing students' spiritual caregiving status: comparison of Western and Central Anatolia regions of Turkey. *Perspect. Psychiat. Care* 58, 9–16. doi: 10.1111/ppc.12790
- Levene, H. (1960). "Robust tests for equality of variances," in *Contributions to Probability and Statistics: Essays in Honor of Harold Hotelling*, eds. I. Olkin and H. Hotelling (Palo Alto: Stanford University Press), 278–292.
- Li, R., Hassan, N. C., and Saharuddin, N. (2023). Psychological capital related to academic outcomes among university students: a systematic literature review. *Psychol. Res. Behav. Manag.* 16, 3739–3763. doi: 10.2147/PRBM.S421549
- Luthans, B. C., Luthans, K. W., and Jensen, S. M. (2012). The impact of business school students' psychological capital on academic performance. *J. Educ. Bus.* 87, 253–259. doi: 10.1080/08832323.2011.609844
- Luthans, F., Luthans, K. W., and Luthans, B. C. (2004). Positive psychological capital: beyond human and social capital. *Bus. Horiz.* 47, 45–50. doi: 10.1016/j.bushor.2003.11.007
- Luthans, F., and Youssef, C. M. (2004). Human, social, and now positive psychological capital management: investing in people for competitive advantage. *Organiz. Dyn.* 33, 143–160. doi: 10.1016/j.orgdyn.2004.01.003
- Luthans, F., Youssef, C. M., and Avolio, B. J. (2007). *Psychological Capital: Developing the Human Competitive Edge*. Oxford: Oxford University Press.
- Machín-Rincón, L., Cifre, E., Domínguez-Castillo, P., and Segovia-Pérez, M. (2020). I am a leader, I am a mother, I can do this! The moderated mediation of psychological capital, work-family conflict, and having children on well-being of women leaders. *Sustain.* 12:2100. doi: 10.3390/su12052100
- Martinez, I. C., Youssef-Morgan, C. M., Chambel, M. J., and Pinto, A. M. (2019). Antecedents of academic performance of university students: academic engagement and psychological capital resources. *Educ. Psychol.* 39, 1047–1067. doi: 10.1080/01443410.2019.1623382
- Masten, A. S. (2001). Ordinary magic: resilience processes in development. *Am. Psychol.* 56, 227–238. doi: 10.1037/0003-066X.56.3.227
- Mazerolle, S. M., and Barrett, J. L. (2018). Work-life balance in higher education for women: perspectives of athletic training faculty. *Athl. Train. Educ. J.* 13, 248–258. doi: 10.4085/1303248
- McKenzie, K., and Schweitzer, R. (2001). Who succeeds at university? Factors predicting academic performance in first year Australian university students. *High. Educ. Res. Dev.* 20, 21–33. doi: 10.1080/07924360120043621
- Mishra, S. (2020). Social networks, social capital, social support and academic success in higher education: a systematic review with a special focus on 'underrepresented' students. *Educ. Res. Rev.* 29:100307. doi: 10.1016/j.edurev.2019.100307
- Navarro-Cruz, G. E., Dávila, B. A., and Kouyoumdjian, C. (2021). From teen parent to student parent: Latina mothers' persistence in higher education. *J. Hispanic High. Educ.* 20, 466–480. doi: 10.1177/1538192720980308
- Nomaguchi, K., and Milkie, M. A. (2020). Parenthood and well-being: a decade in review. *J. Marriage Fam.* 82, 198–223. doi: 10.1111/jomf.12646
- Parkes, A., Sweeting, H., and Wight, D. (2015). Parenting stress and parent support among mothers with high and low education. *J. Fam. Psychol.* 29, 907–918. doi: 10.1037/fam0000129
- Rahimi, S., and Hall, N. C. (2021). Why are you waiting? Procrastination on academic tasks among undergraduate and graduate students. *Innov. High. Educ.* 46, 575–592. doi: 10.1007/s10755-021-09563-9
- Raza, S. A., Qazi, W., and Yousufi, S. Q. (2021). The influence of psychological, motivational, and behavioral factors on university students' achievements: the mediating effect of academic adjustment. *J. Appl. Res. High. Educ.* 13, 849–870. doi: 10.1108/JARHE-03-2020-0065
- Saman, A., and Wirawan, H. (2021). Examining the impact of psychological capital on academic achievement and work performance: the roles of procrastination and conscientiousness. *Cogent Psychol.* 8:1938853. doi: 10.1080/23311908.2021.1938853
- Sánchez-Cardona, I., Ortega-Maldonado, A., Salanova, M., and Martínez, I. M. (2021). Learning goal orientation and psychological capital among students: a pathway to academic satisfaction and performance. *Psychol. Sch.* 58, 1432–1445. doi: 10.1002/pits.22505
- Sarwar, F., Panatik, S. A., Jameel, H. T., Wan Mohd Yunus, W. M. A., and Muhamad, S. N. (2022). Psychological capital, social support and wellbeing in mothers of children with autism spectrum disorder. *Sage Open* 12:21582440221121773. doi: 10.1177/21582440221121773
- Schunk, D. H., and Zimmerman, B. J. (2012). *Motivation and Self-Regulated Learning: Theory, Research, and Applications*. Routledge.
- Snyder, C. R., Rand, K. L., and Sigmon, D. R. (2002). "Hope theory: a member of the positive psychology family," in *Handbook of Positive Psychology*, eds. C. R. Snyder and S. J. Lopez (Oxford University Press), 257–276.
- Solomon, L. J., and Rothblum, E. D. (1984). Academic procrastination: frequency and cognitive-behavioral correlates. *J. Couns. Psychol.* 31, 503–509. doi: 10.1037/0022-0167.31.4.503
- Steel, P., and Klingsieck, K. B. (2016). Academic procrastination: psychological antecedents revisited. *Aust. Psychol.* 51, 36–46. doi: 10.1111/ap.12173

- Sumarsono, D., Muliani, M., and Bagis, A. K. (2020). The forecasting power of task-based language teaching and self-efficacy on students' speaking performance. *J. Lang. Lang. Teach.* 8, 412–421. doi: 10.33394/jollt.v8i4.2848
- Tamannaefar, M., and Babaahmadi-Rezaei, H. (2020). Predicting academic adjustment based on personality traits and psychological capital. *Pract. Clin. Psychol.* 8, 27–38. doi: 10.32598/jpcp.8.1.29
- Tan, E. W. Y., and Prihadi, K. D. (2022). Fear of failure and academic procrastination among university students: the role of achievement expectancy and year of study. *Int. J. Eval. Res. Educ.* 11, 200–210. doi: 10.11591/ijere.v11i1.22201
- Titania, M. D., and Djamhoer, T. D. (2023). Pengaruh college adjustment terhadap prokrastinasi akademik pada mahasiswa baru di masa pandemi. *Bandung Conf. Series Psychol. Sci.* 3. doi: 10.29313/bcsp.v3i1.5435
- van Rooij, A. J., Ferguson, C. J., Colder Carras, M., Kardefelt-Winther, D., Shi, J., Aarseth, E., et al. (2018). A weak scientific basis for gaming disorder: let us err on the side of caution. *J. Behav. Addict.* 7, 1–9. doi: 10.1556/2006.7.2018.19
- van Rooij, E. C. M., Jansen, E. P. W. A., and van de Grift, W. J. C. M. (2018). First-year university students' academic success: the importance of academic adjustment. *Educ. Psychol.* 38, 258–277. doi: 10.1007/s10212-017-0347-8
- Virgá, D., Pattusamy, M., and Kumar, D. P. (2022). How psychological capital is related to academic performance, burnout, and boredom? The mediating role of study engagement. *Curr. Psychol.* 41, 572–583. doi: 10.1007/s12144-020-01162-9
- Wang, H., Xu, M., Xie, X., Dong, Y., and Wang, W. (2021). Relationships between achievement goal orientations, learning engagement, and academic adjustment in freshmen: variable-centered and person-centered approaches. *Front. Psychol.* 12:767886. doi: 10.3389/fpsyg.2021.767886
- Webb, R. E., and Rosenbaum, P. J. (2019). The varieties of procrastination: with different existential positions different reasons for it. *Integr. Psychol. Behav. Sci.* 53, 69–90. doi: 10.1007/s12124-018-9467-1
- Webber, L., and Dismore, H. (2021). Mothers and higher education: balancing time, study and space. *J. Further High. Educ.* 45, 1–15. doi: 10.1080/0309877X.2020.1820458
- Yue, Y., Yuan, H., Tan, B., and Wu, D. (2023). The mediating role of maternal psychological capital on the relationship between social support and parenting competence: evidence from Chinese mothers. *Early Educ. Dev.* 34, 1274–1288. doi: 10.1080/10409289.2022.2098761
- Zacks, S., and Hen, M. (2018). Academic interventions for academic procrastination: a review of the literature. *J. Prevent. Interv. Commun.* 46, 117–130. doi: 10.1080/10852352.2016.1198154
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: an overview. *Theory Pract.* 41, 64–70. doi: 10.1207/s1543042