

Research Article

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A Causal Model of the Relationships Between Academic Psychological Capital, Self-Regulated Learning, and Active and Passive Procrastination Among Yarmouk University Students in Jordan

Lina Bilal Abu Hassan , Hamzeh Abdulkarim Al-Rababah

Abstract

Background/purpose. Academic procrastination, prevalent among university students, impacts performance and well-being, yet its dynamics in Arab contexts remain underexplored. This study addresses the research gap by examining the direct and indirect effects of academic psychological capital (PsyCap; self-efficacy, resilience, optimism, hope) on active and passive procrastination, mediated by self-regulated learning (SRL), among Arab university students. The purpose was to develop a causal model to inform interventions in Jordanian higher education settings.

Materials/Methods. A quantitative correlational design was employed, surveying 1,326 students (541 males, 785 females) from Yarmouk University, Jordan, in the 2024/2025 academic year. Validated scales measured PsyCap, SRL, and active/passive procrastination. Path analysis within Structural Equation Modeling (SEM) via AMOS software tested direct and indirect effects, with model fit assessed using Chi-square, CFI, TLI, and RMSEA.

Results. PsyCap dimensions significantly influenced procrastination: self-efficacy ($\beta = 0.233$), resilience ($\beta = 0.119$), and hope ($\beta = 0.067$) positively affected active procrastination, while hope ($\beta = -0.306$) and optimism ($\beta = -0.135$) reduced passive procrastination ($p < 0.05$). All PsyCap dimensions enhanced SRL ($\beta = 0.115\text{--}0.200$, $p < 0.05$). SRL positively impacted active procrastination ($\beta = 0.259$) and negatively affected passive procrastination ($\beta = -0.200$, $p < 0.001$). SRL mediated PsyCap-procrastination relationships, with partial ($\beta = 0.049\text{--}0.062$) and full ($\beta = 0.038\text{--}0.043$) mediation effects ($p < 0.05$).

Conclusion. The validated causal model confirms PsyCap's direct and indirect effects on procrastination via SRL, offering novel insights for interventions to enhance adaptive behaviors and reduce maladaptive procrastination in Arab universities.

1. Introduction

Procrastination is a widespread challenge in higher education, particularly among university students who face competing academic and personal demands within constrained timeframes. Defined as the intentional delay of tasks despite potential negative consequences (Steel, 2007), procrastination contributes to increased academic stress, reduced performance, and diminished well-being. In Arab university contexts, where cultural and educational pressures amplify these challenges, understanding the factors that influence procrastination is essential for fostering student success. This study examines how academic psychological capital and self-regulated learning shape active and passive procrastination among university students, offering insights to enhance academic outcomes in high-pressure educational settings.

Research distinguishes between two forms of procrastination with distinct implications for academic performance. Passive procrastination involves irrational delays, leading to incomplete or low-quality task outcomes, and is associated with lower motivation, self-efficacy, and time management skills (Pychyl et al., 2000; Steel, 2007). Conversely, active procrastination entails deliberate delays that enhance efficiency through strategic planning and motivation, enabling timely task completion (Chu & Choi, 2005; Kim & Seo, 2015). Academic psychological capital, comprising self-efficacy, hope, resilience, and optimism, promotes adaptive academic behaviors, reducing passive procrastination and encouraging active procrastination (Saman & Wirawan, 2021; Martínez et al., 2021). Similarly, self-regulated learning, which involves goal-setting, planning, and self-monitoring (Zimmerman, 2000), is positively associated with active procrastination and negatively linked to passive procrastination (Kim & Seo, 2013; Rahmi & Safitri, 2023). However, the mediating role of self-regulated learning in the relationship between academic psychological capital and procrastination remains underexplored, particularly in non-Western contexts.

Despite these advances, significant gaps remain in the literature. Most studies focus on Western educational settings, with limited research examining how academic psychological capital and self-regulated learning interact to influence procrastination in Arab universities, where socio-cultural and infrastructural factors create unique challenges. Furthermore, the mechanisms through which these factors affect active versus passive procrastination are not fully understood, limiting the development of targeted interventions. Addressing these gaps is critical, as clarifying these relationships can inform strategies to enhance student self-regulation and academic performance in underrepresented contexts.

This study develops a causal model to investigate the direct and indirect effects of academic psychological capital (self-efficacy, hope, resilience, and optimism) on active and passive procrastination among Arab university students, with self-regulated learning as a mediator. By exploring these dynamics, the research aims to provide theoretical insights into procrastination behaviors and practical guidance for designing interventions that reduce passive procrastination while leveraging active procrastination to improve academic achievement in Arab higher education settings.

2. Literature Review

Procrastination is a prevalent issue among university students, significantly affecting academic performance and psychological well-being. Defined as the voluntary delay of tasks despite potential negative consequences (Steel, 2007), procrastination manifests in two forms: passive and active. Passive procrastination involves irrational delays, resulting in incomplete tasks or poor-quality outcomes, and is linked to low motivation, self-efficacy, and time management skills (Pychyl et al., 2000; Bäumle et al., 2021). Active procrastination, conversely, entails deliberate delays that leverage strategic planning and motivation to complete tasks efficiently within deadlines (Chu & Choi, 2005; Kim & Seo, 2015). Research indicates that active procrastination fosters positive academic outcomes,

such as enhanced self-regulation, while passive procrastination correlates with increased stress and reduced achievement (Ajayi, 2020; Cloude et al., 2024).

Academic psychological capital (PsyCap), encompassing self-efficacy, hope, resilience, and optimism, is a key determinant of adaptive academic behaviors. PsyCap strengthens students' confidence, perseverance, and ability to cope with academic challenges, thereby reducing passive procrastination and promoting active procrastination (Luthans et al., 2013; Saman & Wirawan, 2021). For example, Hicks and Wu (2015) found that academic self-efficacy and optimism positively predict active procrastination, while Bombaies et al. (2023) demonstrated a negative correlation between PsyCap and passive procrastination. Similarly, Martínez et al. (2021) reported that students with high PsyCap exhibit greater academic resilience, enabling them to manage deadlines effectively. However, the mechanisms through which PsyCap influences procrastination, particularly via mediating factors, require further exploration.

Self-regulated learning (SRL), defined as the proactive management of cognitive, emotional, and motivational strategies to achieve learning goals (Zimmerman, 2000), plays a critical role in shaping procrastination behaviors. Zimmerman's Cyclical Model of SRL outlines three phases—forethought, performance, and self-reflection—that facilitate goal-setting, self-monitoring, and performance evaluation. High SRL is associated with active procrastination, as students strategically delay tasks to optimize outcomes (Kim & Seo, 2013; Melgaard et al., 2022). In contrast, low SRL contributes to passive procrastination due to poor planning and self-regulation (Umah, 2021). Studies by Rahmi and Safitri (2023) and Cahyani et al. (2022) suggest that SRL mediates the relationship between PsyCap and procrastination, enhancing students' ability to regulate academic tasks and reduce maladaptive delays.

Despite these insights, the literature reveals significant gaps. Most studies on PsyCap, SRL, and procrastination focus on Western educational contexts, with limited research addressing Arab universities, where socio-cultural factors, such as collectivist values and intense academic pressures, may uniquely shape these dynamics (Rahmi & Safitri, 2023). Furthermore, while correlations between PsyCap, SRL, and procrastination are well-documented, few studies have investigated causal pathways or the mediating role of SRL in the relationship between PsyCap and active versus passive procrastination. This gap is particularly pronounced in Arab settings, where cultural and educational contexts may influence students' psychological and behavioral responses. Addressing these gaps, this study develops a causal model to examine the direct and indirect effects of academic psychological capital on active and passive procrastination, mediated by self-regulated learning, among Arab university students, offering insights for tailored educational interventions.

3. Methodology

This study employed a mixed-methods approach, combining a quantitative survey to test hypothesized correlational relationships and a qualitative document analysis to contextualize the relationships between academic psychological capital, self-regulated learning, and active/passive procrastination among Arab university students. The quantitative component used path analysis within Structural Equation Modeling (SEM), while the qualitative component utilized thematic analysis to explore patterns in relevant literature.

3.1. Sample

The quantitative sample comprised 1,326 students (541 males and 785 females) from Yarmouk University in Jordan, recruited via convenience sampling during the first semester of the 2024/2025 academic year. For the qualitative document analysis, no human participants were involved; instead, academic documents were analyzed as described below.

3.2. Study Measures

The quantitative component utilized four validated scales to measure the key constructs:

1. Academic Psychological Capital Scale: The Academic Psychological Capital Questionnaire (APCQ) by Colledani et al. (2023) was adopted, consisting of 20 items across four dimensions: academic self-efficacy, optimism, resilience, and hope. The original scale showed high internal consistency (Cronbach's $\alpha = 0.96$), with dimension reliabilities ranging from 0.83 to 0.90.

2. Self-Regulated Learning Scale: The 36-item scale by Nambiar et al. (2022) was used, covering three dimensions: forethought, performance management, and self-reflection. The original scale had a Cronbach's α of 0.90, with dimension reliabilities from 0.72 to 0.85.

3. Active Procrastination Scale: The 16-item measure by Choi and Moran (2009) was employed, divided into four categories: meeting deadlines, choosing pressure, satisfaction with results, and deliberate decision-making. The original scale had a Cronbach's α of 0.80, with dimension reliabilities from 0.70 to 0.83.

4. Passive Academic Procrastination Scale: The 25-item scale by McCloskey and Scielzo (2015) was used, with a Cronbach's α of 0.94.

3.3. Document Selection

The qualitative component involved analyzing documents to provide contextual insights into academic psychological capital, self-regulated learning, and procrastination. A systematic search was conducted using databases (PubMed, PsycINFO, Scopus, Google Scholar) with keywords such as "academic procrastination," "psychological capital," and "self-regulated learning." The search was restricted to English-language documents published between 2000 and 2024.

Initially, 458 documents were retrieved. After removing duplicates ($n = 112$), 346 documents underwent title and abstract screening. Inclusion criteria were: (1) relevance to academic psychological capital, self-regulated learning, or active/passive procrastination; (2) focus on university students; (3) peer-reviewed articles, empirical reports, or systematic reviews with qualitative insights; and (4) full-text availability. Exclusion criteria included: (1) non-academic sources; (2) studies on non-university populations; (3) purely quantitative studies; and (4) non-English documents. After screening, 132 documents were reviewed in full, with 78 excluded (e.g., insufficient depth or irrelevant focus), resulting in 54 documents for analysis (42 journal articles, 8 systematic reviews, 4 educational reports). The selection process adhered to PRISMA guidelines (Page et al., 2021).

3.4. Data Analysis

Quantitative data were analyzed using path analysis within SEM via AMOS software to test the main hypothesis: "There is a statistically significant direct and indirect effect at the significance level ($\alpha = 0.05$) of academic psychological capital on active and passive academic procrastination through the mediating role of self-regulated learning among university students." The proposed causal model included academic psychological capital dimensions as independent variables, self-regulated learning as a mediator, and active/passive procrastination as dependent variables.

Qualitative data were analyzed using thematic analysis, a flexible method for identifying patterns in qualitative data (Braun & Clarke, 2006, 2022). An inductive coding approach was adopted, allowing themes to emerge from the data while guided by the study's constructs. A coding protocol was developed through iterative steps: Two researchers independently read the documents, generated initial codes for concepts related to procrastination, psychological capital, and self-regulated learning, and collated codes into potential themes using a thematic map. Themes were refined through

constant comparison to ensure saturation, with final themes including “Cultural Influences on Procrastination” and “Self-Regulation Strategies.” Inter-coder reliability was assessed (Cohen’s $\kappa = 0.82$), with discrepancies resolved via discussion. NVivo software facilitated coding and theme organization.

3.5. Reliability

Reliability was assessed using the test-retest method with a two-week interval on a pilot sample of 50 students. Pearson correlation coefficients were calculated between the two administrations. Additionally, Cronbach’s Alpha was computed to assess internal consistency. Table (1) presents the reliability coefficients for all study instruments in their current form.

Table 1. Reliability Coefficients for the Study Scales and Their Dimensions Based on Test-Retest and Internal Consistency

Scale	Test-Retest Reliability	Internal Consistency Reliability
Academic Psychological Capital Scale (Overall)	0.88	0.85
Dimensions of Academic Psychological Capital Scale	0.80 - 0.85	0.75 - 0.83
Self-Regulated Learning Scale (Overall)	0.88	0.83
Dimensions of Self-Regulated Learning Scale	0.79 - 0.86	0.74 - 0.81
Active Procrastination Scale (Overall)	0.85	0.82
Dimensions of Active Procrastination Scale	0.76 - 0.83	0.72 - 0.80
Passive Procrastination Scale (Overall)	0.90	0.85

For the purposes of applying the scales to the current study sample, all reliability coefficients are acceptable, according to table (1). Furthermore, as indicated in Table (2), Pearson correlation coefficients between each item and its corresponding dimension as well as the overall scale were used to compute construct validity indicators.

Table 2. Correlation Coefficients Between Items and Their Respective Scales and Dimensions in Their Current Form

Scale	Item Correlation Coefficients
Academic Psychological Capital Scale (Overall)	0.41 - 0.72*
Dimensions of Academic Psychological Capital Scale	0.45 - 0.80*
Self-Regulated Learning Scale (Overall)	0.38 - 0.74*
Dimensions of Self-Regulated Learning Scale	0.46 - 0.79*
Active Procrastination Scale (Overall)	0.43 - 0.73*
Dimensions of Active Procrastination Scale	0.48 - 0.79*
Passive Procrastination Scale (Overall)	0.38 - 0.75*

Note: The significance level ($\alpha = 0.05$) indicates that all correlation coefficients are statistically significant.

Table (2) demonstrates that all item correlation coefficients with the overall scales and their dimensions are statistically significant at the significance level ($\alpha = 0.05$) and exceed the threshold of 0.30, which was adopted as the criterion for item acceptance. This indicates the suitability of the scales for application to the current study sample.

To address the main hypothesis, a proposed causal model was tested, where the dimensions of academic psychological capital were represented as independent variables, self-regulated learning as a mediating variable, and active and passive academic procrastination as dependent variables, as depicted in Figure (1).

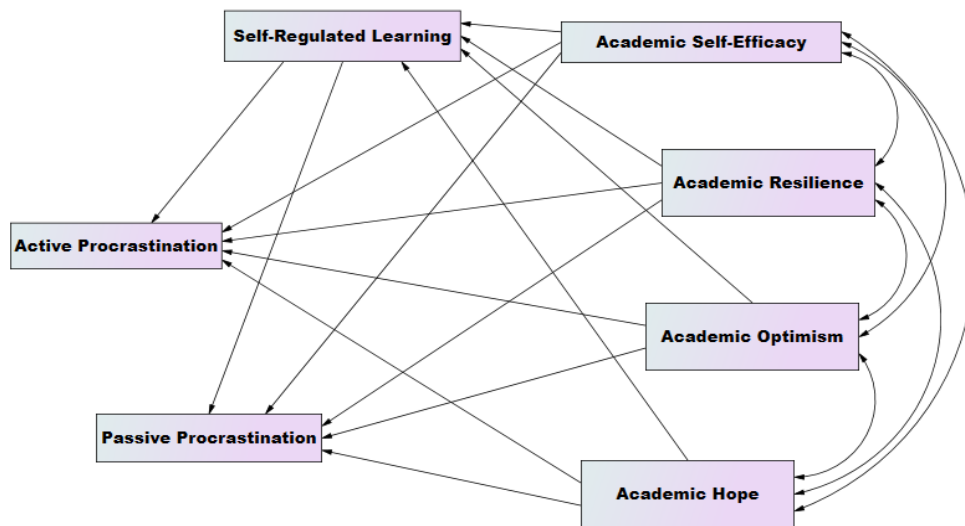


Figure 1. The Study Variables' Suggested Causal Model (MODEL1)

The procedures for verifying the fit of the sample data to the proposed causal model (MODEL1) were conducted using AMOS software (Version 24), resulting in the exclusion of 73 responses. Consequently, the analysis was re-conducted on the revised sample ($n = 1,253$), as illustrated in Figure (2).

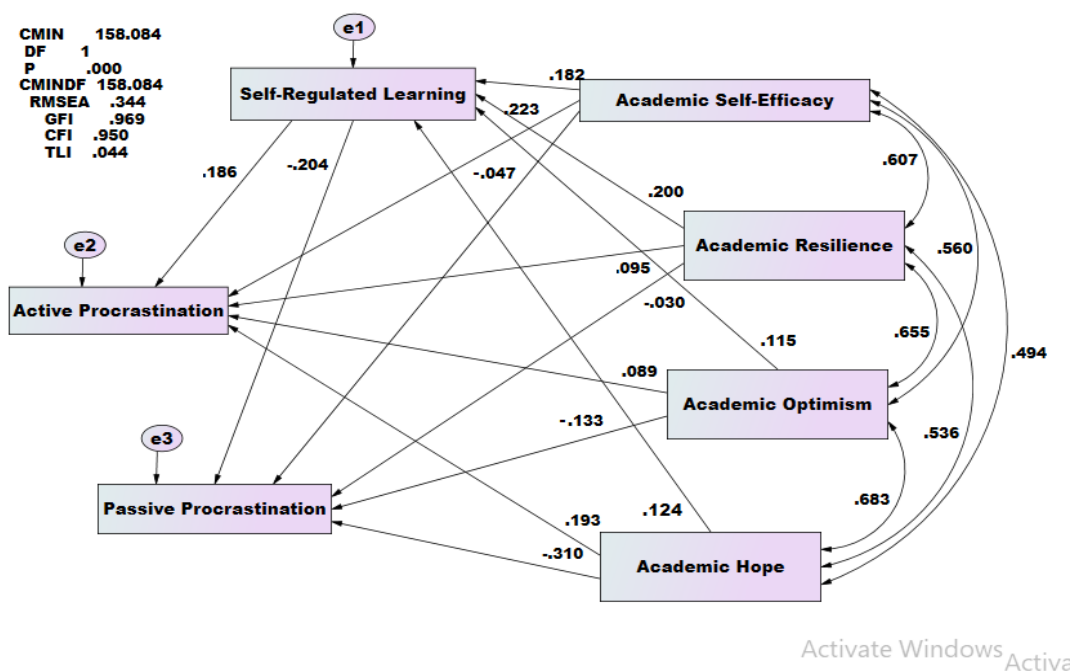


Figure 2. The Proposed Causal Model

According to Figure (2), both the comparative fit index (CFI = 0.950) and the goodness-of-fit index (GFI = 0.969) satisfied the necessary standard values (>0.90). Nevertheless, the Tucker-Lewis index (TLI = 0.044) dropped below the lowest permissible value (0.90), while the root mean square error of approximation (RMSEA = 0.344) beyond the acceptable barrier (0.08). As a result, these indices failed to satisfy the recognized criteria for model fit.

To address this, modification indices suggested by the AMOS software were applied, which involved adding proposed paths to improve model fit and removing relationships that were not statistically significant at the significance level ($\alpha = 0.05$). The analysis was then re-conducted to achieve the optimal causal model, as depicted in Figure (3).

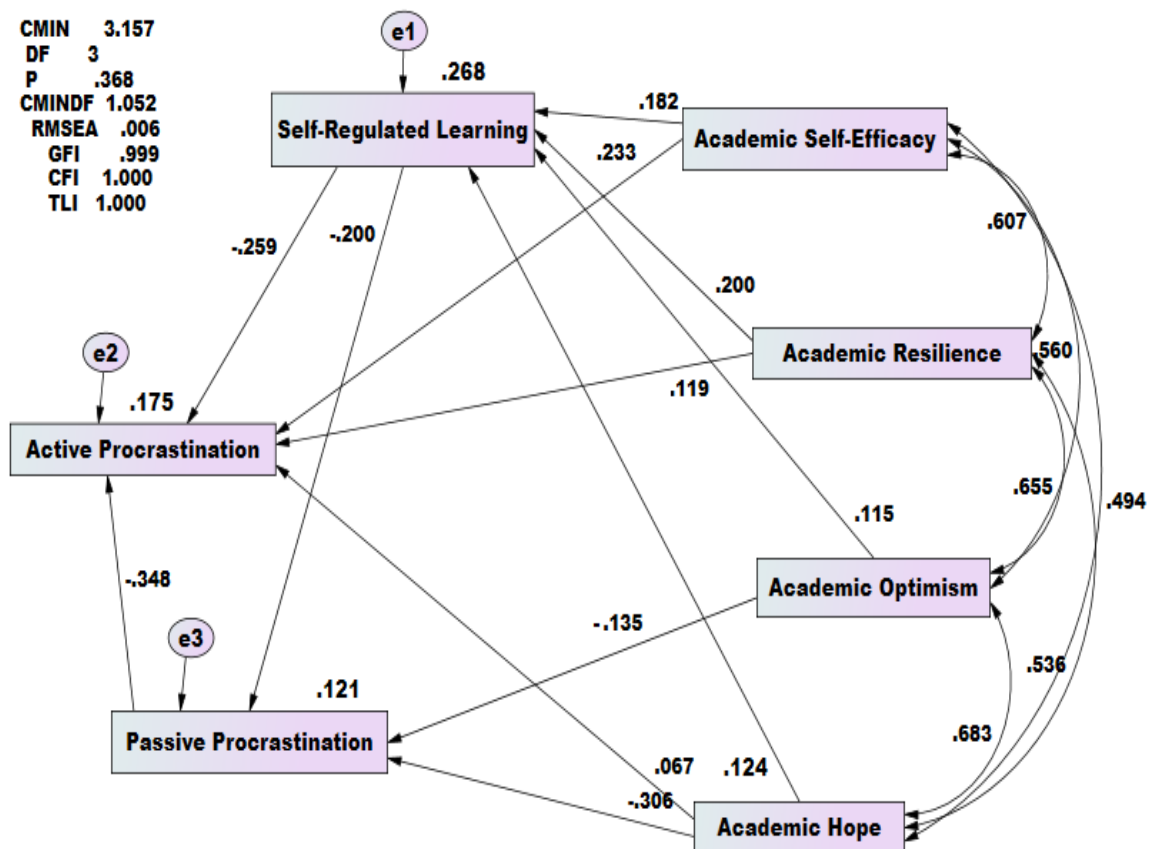


Figure 3. The Relationships Among Academic Psychological Capital, Self-Regulated Learning, Active Procrastination, and Passive Academic Procrastination: An Analysis Using Standardized Estimates for the Optimal Causal Model (MODEL2)

The adjusted causal model (MODEL2) obtained good model fit indices, as shown in Figure (3). The acceptable level (<0.08) was met by the root mean square error of approximation (RMSEA), which was 0.006. The Tucker-Lewis index (TLI), comparative fit index (CFI), and goodness-of-fit index (GFI) all exceeded the necessary standard values (>0.90), with the latter two reaching 1.000 and the former reaching 0.999. According to these findings, the best model for illustrating the connections between the research variables is the modified causal model (MODEL2).

To address the main hypothesis, the standardized (β) and unstandardized (B) regression weights for the optimal causal model (MODEL2) were calculated, as presented in Table (3).

Table 3. Estimates of Unstandardized (B) and Standardized (β) Regression Weights for the Optimal Causal Model (MODEL2)

Relationship	Standardized Regression Coefficient (β)	Unstandardized Regression Coefficient (B)	Standard Error	Critical Ratio	p-value
Academic Self-Efficacy $\leftarrow$ Self-Regulated Learning	0.182	0.159	0.027	5.884	0.000
Academic Resilience $\leftarrow$ Self-Regulated Learning	0.200	0.154	0.026	5.900	0.000
Academic Optimism $\leftarrow$ Self-Regulated Learning	0.115	0.097	0.031	3.099	0.002
Academic Hope $\leftarrow$ Self-Regulated Learning	0.124	0.126	0.033	3.778	0.000
Academic Hope $\leftarrow$ Passive Academic Procrastination	-0.306	-0.418	0.049	-8.575	0.000
Academic Optimism $\leftarrow$ Passive Academic Procrastination	-0.135	-0.153	0.041	-3.718	0.000
Self-Regulated Learning $\leftarrow$ Passive Academic Procrastination	-0.200	-0.269	0.039	-6.919	0.000
Self-Regulated Learning $\leftarrow$ Active Procrastination	0.259	0.389	0.044	8.796	0.000
Academic Self-Efficacy $\leftarrow$ Active Procrastination	0.233	0.304	0.043	7.066	0.000
Academic Resilience $\leftarrow$ Active Procrastination	0.119	0.137	0.039	3.489	0.000
Academic Hope $\leftarrow$ Active Procrastination	0.067	0.102	0.048	2.111	0.035
Passive Academic Procrastination $\leftarrow$ Active Procrastination	-0.348	-0.387	0.030	-13.113	0.000

Table (3) presents the results of the analysis of the modified causal model (MODEL2), revealing twelve statistically significant direct relationships. The standardized (β) and unstandardized (B) regression coefficients were significant at the significance level ($\alpha = 0.05$). These relationships were verified using Structural Equation Modeling (SEM), reflecting the robustness of the modified causal model in providing a strong explanatory structure for the causal relationships among the study variables. This advances our theoretical and practical knowledge of how academic psychological capital affects university students' self-regulated learning, active procrastination, and passive academic procrastination.

4. Results

The first hypothesis states: "There is a statistically significant direct effect at the significance level ($\alpha = 0.05$) of the dimensions of academic psychological capital (academic self-efficacy, academic optimism, academic hope, and academic resilience) on active and passive academic procrastination among university students." To test this hypothesis, the direct correlations between the variables were calculated, as presented in Table (4).

Table 4. Direct Effects of Academic Psychological Capital Dimensions on Active and Passive Academic Procrastination

Relationship	Standardized Regression Coefficient (β)	Unstandardized Regression Coefficient (B)	Standard Error	Critical Ratio	p-value
Academic Self-Efficacy $\leftarrow$ Active Procrastination	0.233	0.304	0.043	7.066	0.000
Academic Resilience $\leftarrow$ Active Procrastination	0.119	0.137	0.039	3.489	0.000
Academic Hope $\leftarrow$ Active Procrastination	0.067	0.102	0.048	2.111	0.035
Academic Hope $\leftarrow$ Passive Academic Procrastination	-0.306	-0.418	0.049	-8.575	0.000
Academic Optimism $\leftarrow$ Passive Academic Procrastination	-0.135	-0.153	0.041	-3.718	0.000

Table (4) indicates significant direct effects of academic psychological capital dimensions on both active and passive academic procrastination. Specifically, academic self-efficacy ($\beta = 0.233$), academic resilience ($\beta = 0.119$), and academic hope ($\beta = 0.067$) demonstrated positive direct effects on active procrastination, suggesting that these dimensions promote adaptive procrastination behaviors. Conversely, academic hope ($\beta = -0.306$) and academic optimism ($\beta = -0.135$) showed negative direct effects on passive academic procrastination, indicating their role in reducing maladaptive procrastination practices. All relationships were statistically significant at the significance level ($\alpha = 0.05$).

The findings show that active procrastination was positively impacted by academic self-efficacy in a statistically significant way ($\beta = 0.233$), indicating that an increase of one unit in academic self-efficacy causes an increase of 0.233 units in active procrastination. This emphasizes how important academic self-efficacy is in encouraging active procrastination habits as part of academic psychological capital. Pupils who have a high level of self-efficacy are confident in their capacity to finish assignments even when time is of the essence. This confidence allows them to purposefully postpone assignments without compromising their ability to manage time and tasks efficiently. As a self-control and academic achievement tactic, this encourages active procrastination (Al-Rababah, 2016; Qureshi, 2023).

Likewise, there was a statistically significant positive direct effect of academic resilience on active procrastination ($\beta = 0.119$), suggesting that active procrastination is positively correlated with academic resilience. This demonstrates how academic resilience helps university students better adjust to academic obstacles and change their approach, which in turn helps them use active

procrastination to rearrange their priorities and effectively handle academic pressures (Waterhouse & Samra, 2024).

Academic hope exhibited two opposing direct effects: a positive effect on active procrastination ($\beta = 0.067$), indicating a direct relationship, and a negative effect on passive academic procrastination ($\beta = -0.306$), suggesting that higher academic hope significantly reduces passive procrastination. This can be attributed to the tendency of students with high academic hope to use active procrastination as an intentional strategy for managing time and tasks, driven by confidence in their ability to complete tasks later. Conversely, high academic hope reduces passive procrastination, which is often associated with feelings of despair and lack of hope (Rahimi et al., 2023).

Academic optimism showed a statistically significant negative direct effect on passive academic procrastination ($\beta = -0.135$), reflecting its protective role in reducing passive procrastination. This is due to academic optimism fostering positive expectations about students' academic future and confidence in achieving their goals, making them less likely to engage in passive procrastination, which is associated with pessimism, anxiety, and poor self-regulation (Serrano Corkin et al., 2021).

These findings suggest that the dimensions of academic psychological capital influence university students' tendencies toward active procrastination while mitigating passive academic procrastination, thereby supporting the acceptance of the first hypothesis.

The second hypothesis states: "There is a statistically significant direct effect at the significance level ($\alpha = 0.05$) of the dimensions of academic psychological capital (academic self-efficacy, academic optimism, academic hope, and academic resilience) on self-regulated learning among university students." To test this hypothesis, the direct correlations between the dimensions of academic psychological capital and self-regulated learning were calculated, as presented in Table (5).

Table 5. Direct Effects of Academic Psychological Capital Dimensions on Self-Regulated Learning

Relationship	Standardized Regression Coefficient (β)	Unstandardized Regression Coefficient (B)	Standard Error	Critical Ratio	p-value
Academic Self-Efficacy ← Self-Regulated Learning	0.182	0.159	0.027	5.884	0.000
Academic Resilience ← Self-Regulated Learning	0.200	0.154	0.026	5.900	0.000
Academic Optimism ← Self-Regulated Learning	0.115	0.097	0.031	3.099	0.002
Academic Hope ← Self-Regulated Learning	0.124	0.126	0.033	3.778	0.000

Table (5) reveals statistically significant positive direct effects at the significance level ($\alpha = 0.05$) of the dimensions of academic psychological capital on self-regulated learning, as detailed below:

Self-regulated learning showed a positive direct relationship with academic self-efficacy ($\beta = 0.182$), meaning that for every unit increase in academic self-efficacy, self-regulated learning increases by 0.182 units. This emphasizes how important academic self-efficacy is as a psychological factor that influences how well self-regulated learning works. It facilitates students' capacity to better control their learning and adjust to the shifting needs of the classroom (Wang, 2023).

Self-regulated learning was positively correlated with academic resilience ($\beta = 0.200$), indicating that students who are more resilient are more likely to use self-regulated learning techniques. This relates to how a student's self-regulatory frameworks and educational outcomes are enhanced by self-regulation techniques, adaptive frameworks, stress management, goal-oriented persistence, resource investment, and general "academic resilience" (Li et al., 2023).

We see here that motivational constructs have an impact on learning—academic optimism positively contributed to self-regulated learning at the rate of ($\beta = 0.115$). This tells us that academic optimism, in conjunction with good attitudes related to learning, strengthens self-regulated learning both in the present and in the future. It also helps motivate students to overcome problems within the educational framework (Kaiser et al., 2025).

Empirical evidence also demonstrates that high academic hope leads to better self-regulation evidenced by the direct effect on self-regulated learning ($\beta = 0.124$). This reinforces the argument that self-regulation is influenced by motivational factors; those with high academic hope tend to respond better to self-regulation. Academically hopeful students are more responsive to educational contexts (Vu et al., 2022).

These results support the acceptance of the second hypothesis by indicating that academic psychological capital directly and significantly improves university students' capacity for self-regulated learning.

The third hypothesis states: "There is a statistically significant direct effect at the significance level ($\alpha = 0.05$) of self-regulated learning on active and passive academic procrastination among university students." To test this hypothesis, the direct correlations between the variables were calculated, as presented in Table (6).

Table 6. Direct Effects of Self-Regulated Learning on Active and Passive Academic Procrastination

Relationship	Standardized Regression Coefficient (β)	Unstandardized Regression Coefficient (B)	Standard Error	Critical Ratio	p-value
Self-Regulated Learning ← Passive Procrastination	-0.200	-0.269	0.039	-6.919	0.000
Self-Regulated Learning ← Active Procrastination	0.259	0.389	0.044	8.796	0.000

According to Table (6), passive academic procrastination is significantly impacted negatively by self-regulated learning ($\beta = -0.200$). According to this, passive academic procrastination will decrease by 0.200 standardized units as self-regulated learning increases. However, there was a substantial positive direct effect ($\beta = 0.259$) between active procrastination and self-regulated learning. Together, these findings illustrate the paradoxical influence of self regulated learning where it aids in alleviating maladaptive passive academic procrastination but encourages adaptive active procrastination – which is strategic in nature involving effective time and task management.

The data indicates that students who practice self regulated learning appear to engage more in active procrastination as a conscious method of delaying work execution, which enhances performance. At the same time, these students show a lower tendency towards passive academic procrastination, which is marked by unproductive waiting (Yamada et al., 2016). This dual effect emphasizes the role of self regulated learning as a tool for reducing maladaptive procrastination while promoting adaptive procrastination based on effective time management principles. These results

validate acceptance of the third hypothesis which suggested a direct effect of self regulated learning on active and passive academic procrastination.

The fourth hypothesis states: "There is a statistically significant indirect effect at the significance level ($\alpha = 0.05$) of the dimensions of academic psychological capital (academic self-efficacy, academic optimism, academic hope, and academic resilience) on active and passive academic procrastination through the mediating role of self-regulated learning among university students." To test this hypothesis, the indirect effects of the dimensions of academic psychological capital on active and passive academic procrastination were analyzed, with self-regulated learning as the mediating variable, as presented in Table (7).

Table 7. Statistical Significance and Confidence Intervals for the Mediating Effect of Self-Regulated Learning in the Relationship Between Dimensions of Academic Psychological Capital and Both Active and Passive Academic Procrastination

Predictor	Mediator	Dependent Variable	Bootstrapping Value	Lower Confidence Interval	Upper Confidence Interval	Statistical Significance	Result
Academic Self-Efficacy	Self-Regulated Learning	Active Procrastination	0.062	0.038	0.083	*0.010	Partial Mediation
Academic Resilience	Self-Regulated Learning	Active Procrastination	0.060	0.044	0.079	*0.010	Partial Mediation
Academic Optimism	Self-Regulated Learning	Active Procrastination	0.038	0.015	0.062	*0.015	Full Mediation
Academic Hope	Self-Regulated Learning	Active Procrastination	0.049	0.023	0.076	*0.010	Partial Mediation
Academic Self-Efficacy	Self-Regulated Learning	Passive Procrastination	-0.043	-0.057	-0.026	*0.010	Full Mediation
Academic Resilience	Self-Regulated Learning	Passive Procrastination	-0.041	-0.060	-0.028	*0.010	Full Mediation
Academic Optimism	Self-Regulated Learning	Passive Procrastination	-0.026	-0.043	-0.010	*0.016	Partial Mediation
Academic Hope	Self-Regulated Learning	Passive Procrastination	-0.034	-0.053	-0.018	*0.010	Partial Mediation

Note: All effects are statistically significant at the significance level ($\alpha = 0.05$).

The link between the components of academic psychological capital and both active and passive academic procrastination is significantly mediated by self-regulated learning, as shown in Table (7).

Partial and full mediation had different mediation effects, illustrating the complex function of self-regulated learning in these connections.

The findings show that the positive link between academic self-efficacy and active procrastination ($\beta = 0.062$), academic resilience and active procrastination ($\beta = 0.060$), and academic hope and active procrastination ($\beta = 0.049$) is partially mediated by self-regulated learning. These results imply that self-regulation techniques, which support active procrastination as a deliberate and adaptive tactic, are improved by academic psychological capital. Pupils that exhibit greater levels of hope, resilience, and self-efficacy are more likely to use self-regulated learning to strategically manage their workloads, which leads to active procrastination that promotes academic success.

The negative correlation between academic optimism and passive academic procrastination ($\beta = -0.026$) and academic hope and passive academic procrastination ($\beta = -0.034$) is also largely mediated by self-regulated learning. This suggests that by utilizing the constructive psychological resources of hope and optimism, self-regulated learning contributes to a decrease in passive procrastination behaviors. Passive academic procrastination is reduced when students with greater academic optimism and hope employ self-regulatory techniques to minimize ineffective delays.

The findings also show full mediation effects, with academic optimism and active procrastination ($\beta = 0.038$), academic self-efficacy and passive academic procrastination ($\beta = -0.043$), and academic resilience and passive academic procrastination ($\beta = -0.041$) all being mediated by self-regulated learning. These results demonstrate that a key psychological mechanism for understanding procrastination behaviors is self-regulated learning. It serves as both a direct cause of better academic achievement and an explanation mechanism that connects psychological characteristics to academic habits like procrastination (Zimmerman & Schunk, 2011).

The variability in the mediating role of self-regulated learning underscores its importance in the relationships between academic psychological capital and procrastination behaviors. The partial and full mediation effects confirm the fourth hypothesis, which posited an indirect effect of academic psychological capital dimensions on active and passive procrastination through self-regulated learning. Consequently, the main hypothesis of the current study is also accepted, affirming the significant direct and indirect effects of academic psychological capital on procrastination behaviors through the mediating role of self-regulated learning.

5. Discussion

This study investigated the direct and indirect effects of academic psychological capital (PsyCap) dimensions—self-efficacy, resilience, optimism, and hope—on active and passive academic procrastination, mediated by self-regulated learning (SRL), among 1,326 students at Yarmouk University in Jordan. The findings, tested via path analysis within Structural Equation Modeling (SEM), confirm all four hypotheses and contribute to the literature by addressing a critical research gap in Arab university contexts. Below, the results are compared with prior studies, highlighting similarities and differences, and the study's contribution is situated within the broader field.

Direct Effects of PsyCap on Procrastination (Hypothesis 1)

The significant positive effects of academic self-efficacy ($\beta = 0.233$), resilience ($\beta = 0.119$), and hope ($\beta = 0.067$) on active procrastination align with prior research showing that PsyCap fosters adaptive academic behaviors (Hicks & Wu, 2015; Saman & Wirawan, 2021). For instance, Al-Rababah (2016) found that self-efficacy enables strategic task delays, enhancing performance under time constraints, similar to the current findings. However, the smaller effect of hope ($\beta = 0.067$) compared to studies like Qureshi (2023) suggests that cultural factors, such as collectivist values in Jordan, may moderate hope's influence on active procrastination. The negative effects of hope ($\beta = -0.306$) and optimism ($\beta = -0.135$) on passive procrastination corroborate Serrano Corkin et al. (2021), who noted

that optimistic and hopeful students avoid maladaptive delays due to positive expectations. Unlike some Western studies (e.g., Steel, 2007), where resilience's effect on procrastination is less pronounced, the current study's findings ($\beta = 0.119$) highlight resilience's role in Arab settings, possibly due to heightened academic pressures (Waterhouse & Samra, 2024).

Direct Effects of PsyCap on SRL (Hypothesis 2)

All PsyCap dimensions positively influenced SRL ($\beta = 0.115\text{--}0.200$), consistent with Wang (2023) and Li et al. (2023), who found that self-efficacy and resilience enhance students' planning and stress management. The strong effect of resilience ($\beta = 0.200$) aligns with studies emphasizing adaptive frameworks in high-pressure contexts (Li et al., 2023). However, the relatively modest effect of optimism ($\beta = 0.115$) differs from Kaiser et al. (2025), who reported stronger effects in Western settings, possibly reflecting cultural differences in how optimism translates to self-regulation in Arab universities. Hope's effect ($\beta = 0.124$) supports Vu et al. (2022), reinforcing that goal-directed energy drives SRL, particularly in collectivist cultures where academic success is socially valued.

Direct Effects of SRL on Procrastination (Hypothesis 3)

SRL's positive effect on active procrastination ($\beta = 0.259$) and negative effect on passive procrastination ($\beta = -0.200$) align with Kim and Seo (2013) and Yamada et al. (2016), who found that self-regulated learners strategically delay tasks to optimize performance while avoiding unproductive delays. The stronger effect on active procrastination compared to Western studies (e.g., Melgaard et al., 2022) may reflect Arab students' reliance on SRL to navigate resource constraints and academic demands, highlighting a context-specific adaptation.

Indirect Effects via SRL (Hypothesis 4)

The partial and full mediation effects of SRL (e.g., $\beta = 0.038\text{--}0.062$ for active procrastination; $\beta = -0.026$ to -0.043 for passive procrastination) confirm SRL's role as a key mechanism, supporting Zimmerman and Schunk (2011). Partial mediation for self-efficacy, resilience, and hope on active procrastination aligns with Rahmi and Safitri (2023), who noted SRL's enhancement of strategic delays. Full mediation for optimism on active procrastination and self-efficacy/resilience on passive procrastination is a novel finding, differing from Cahyani et al. (2022), where partial mediation was more common. This suggests that in Arab contexts, SRL fully accounts for certain PsyCap-procrastination relationships, possibly due to cultural emphasis on structured learning strategies.

5.1. Research Gap and Contribution

Prior research on PsyCap, SRL, and procrastination has largely focused on Western contexts, with limited attention to Arab universities where socio-cultural factors (e.g., collectivism, academic pressures) shape academic behaviors (Rahmi & Safitri, 2023). This study addresses this gap by developing a causal model that clarifies direct and indirect effects of PsyCap on procrastination via SRL in a Jordanian university setting. The findings extend the literature by:

- Demonstrating stronger effects of resilience and SRL on active procrastination compared to Western studies, highlighting cultural influences.
- Confirming SRL's full mediation in specific PsyCap-procrastination pathways, a novel insight for Arab contexts.
- Providing a validated causal model applicable to intervention design in underrepresented settings.

6. Conclusion

This study investigated the relationships between academic psychological capital (PsyCap), self-regulated learning (SRL), and active/passive academic procrastination among 1,326 students at

Yarmouk University in Jordan, using path analysis within Structural Equation Modeling (SEM). The findings directly address the research questions, providing insights into academic behaviors in an Arab university context.

RQ1: What are the direct effects of PsyCap dimensions on active and passive academic procrastination?

The results confirmed significant direct effects of PsyCap dimensions on procrastination. Academic self-efficacy ($\beta = 0.233$, $p < 0.001$), resilience ($\beta = 0.119$, $p < 0.001$), and hope ($\beta = 0.067$, $p = 0.035$) positively influenced active procrastination, indicating that these dimensions foster strategic task delays that enhance performance. Conversely, hope ($\beta = -0.306$, $p < 0.001$) and optimism ($\beta = -0.135$, $p < 0.001$) negatively affected passive procrastination, reducing maladaptive delays. These findings align with prior studies (e.g., Hicks & Wu, 2015; Serrano Corkin et al., 2021) and highlight PsyCap's role in promoting adaptive behaviors while mitigating unproductive procrastination in Arab students.

RQ2: What are the direct effects of PsyCap dimensions on self-regulated learning?

All PsyCap dimensions significantly enhanced SRL: self-efficacy ($\beta = 0.182$, $p < 0.001$), resilience ($\beta = 0.200$, $p < 0.001$), optimism ($\beta = 0.115$, $p = 0.002$), and hope ($\beta = 0.124$, $p < 0.001$). These results indicate that confident, resilient, optimistic, and hopeful students are better equipped to plan, monitor, and adapt their learning strategies, supporting prior research (Wang, 2023; Li et al., 2023). The strong effect of resilience, particularly in this Jordanian sample, underscores its importance in high-pressure academic contexts.

RQ3: What are the direct effects of SRL on active and passive academic procrastination?

SRL exhibited a positive effect on active procrastination ($\beta = 0.259$, $p < 0.001$) and a negative effect on passive procrastination ($\beta = -0.200$, $p < 0.001$). These findings suggest that students with strong self-regulatory skills strategically delay tasks to optimize performance while avoiding unproductive delays, consistent with Yamada et al. (2016). This dual effect highlights SRL's pivotal role in shaping adaptive academic behaviors among Arab students.

RQ4: What are the indirect effects of PsyCap dimensions on active and passive procrastination through SRL?

SRL mediated the relationships between PsyCap dimensions and procrastination, with partial mediation for self-efficacy ($\beta = 0.062$, $p = 0.010$), resilience ($\beta = 0.060$, $p = 0.010$), and hope ($\beta = 0.049$, $p = 0.010$) on active procrastination, and optimism ($\beta = -0.026$, $p = 0.016$) and hope ($\beta = -0.034$, $p = 0.010$) on passive procrastination. Full mediation was observed for optimism on active procrastination ($\beta = 0.038$, $p = 0.015$), and self-efficacy ($\beta = -0.043$, $p = 0.010$) and resilience ($\beta = -0.041$, $p = 0.010$) on passive procrastination. These results, aligning with Zimmerman and Schunk (2011), confirm SRL as a critical mechanism linking psychological resources to procrastination behaviors.

This study addresses a key research gap by examining these relationships in an Arab university context, where socio-cultural factors like collectivism amplify the impact of PsyCap and SRL. By developing a validated causal model, it contributes novel insights into full mediation effects and context-specific influences, offering practical implications for interventions to enhance SRL and reduce passive procrastination among Arab students. Future research should explore longitudinal designs and additional cultural mediators to further refine these findings.

6.1. Implications and Limitations

Practically, these findings suggest that interventions enhancing PsyCap (e.g., self-efficacy workshops) and SRL (e.g., time management training) could reduce passive procrastination and

leverage active procrastination for academic success in Arab universities. Theoretically, the study enriches procrastination research by integrating cultural context into causal models. Limitations include the cross-sectional design, which limits causal inferences, and the convenience sample, which may not generalize to all Arab universities. Future research should employ longitudinal designs and explore additional mediators, such as cultural values, across diverse Arab populations.

7. Suggestion

Based on the study's findings, educational institutions should develop training programs and academic counseling interventions to improve the type of procrastination practiced by university students. These programs should leverage academic psychological capital and self-regulated learning, which demonstrated direct and indirect positive effects on active procrastination and negative effects on passive academic procrastination.

University students should be guided to increase awareness of their academic procrastination behaviors, encouraging active modification and improvement of these practices while avoiding passive academic procrastination to promote academic success.

Future studies should explore the current variables across different educational stages, such as school students, using qualitative methodologies to provide a more comprehensive and in-depth understanding of the phenomenon of academic procrastination.

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References

- Ajayi, O. S. (2020). Academic self-efficacy, gender and academic procrastination. Epiphany. *Journal of Transdisciplinary Studies*, 13(1), 75-84.
- Al-Rababah, H. (2016). Predictive Ability of Thinking Styles on Academic Delay of Gratification among Yarmouk University Students. *An-Najah University Journal for Research-B (Humanities)*, 31(5), 751-778.
- Balkis, M., & Duru, E. (2016). Procrastination, self-regulation failure, academic life satisfaction, and affective well-being: Underregulation or misregulation form. *European Journal of Psychology of Education*, 31, 439–459.
- Bäulke, L., Daumiller, M., & Dresel, M. (2021). How conscientiousness and neuroticism affect academic procrastination. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie*.
- Boekaerts, M. (1997). Self-regulated learning: Where we are today. *International journal of educational research*, 31(6), 445-457.
- Bombaes, A., Cosico, M. T., Pimentel Jr, F., Cabig, M. A., Leron, A., Hoñez, S., ... & Laguna, M. J. (2023). College Student's cognitive absorption, cyberloafing, psychological capital and academic procrastination: An empirical perspective from Capiz Province. *Psychology and Education: A Multidisciplinary Journal*, 13(3), 1-1.

- Cahyani LM, Kristiani, Sabandi M (2022). Phenomenon of Academic Procrastination during the Covid-19 Pandemic Influenced by Academic Resilience and Social Support. *Pegem Journal of Education and Instruction*, 13 (1), 41-49.
- Cheng, S.-L., & Xie, K. (2021). Why college students procrastinate in online courses: A self-regulated learning perspective. *The Internet and Higher Education*, 50, 1–17. <https://doi.org/10.1016/j.iheduc.2021.100807>
- Choi, J. N., & Moran, S. V. (2009). Why not procrastinate? Development and validation of a new active procrastination scale. *The Journal of social psychology*, 149(2), 195-212.
- Chu, A. H. C., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of “active” procrastination behavior on attitudes and performance. *The Journal of Social Psychology*, 145(3), 245–264.
- Cloude, E. B., Zhang, J., Baker, R. S., & Fouh, E. (2024). Procrastination vs. Active Delay: How Students Prepare to Code in Introductory Programming. In B. Stephenson, J. A. Stone, L. Battestilli, S. A. Rebelsky, & L. Shoop (Eds.), *SIGCSE 2024 - Proceedings of the 55th ACM Technical Symposium on Computer Science Education*, (214-220).
- Colledani, D., Anselmi, P., Fabbris, L., & Robusto, E. (2023). A bifactor-based Academic PsyCap Questionnaire for students and fresh graduates. *Electronic Journal of Research in Education Psychology*, 21(60), 421–442. <https://doi.org/10.25115/ejrep.v21i60.7205>.
- Ferrari, J. R., O'Callaghan, J., & Newbegin, I. (2005). Prevalence of procrastination in the United States, United Kingdom, and Australia: arousal and avoidance delays among adults. *North American Journal of Psychology*, 7(1).
- Gendorn, A. L. (2011). *Active procrastination, self-regulated learning and academic achievement in university undergraduates* (Unpublished master's thesis). University of Victoria.
- Goroshit, M., & Hen, M. (2021). Academic procrastination and academic performance: Do learning disabilities matter?. *Current Psychology*, 40, 2490-2498.
- Hicks, R., & Wu, F. (2015). Psychological capital as mediator between adaptive perfectionism and academic procrastination. *GSTF Journal of Psychology*, 2(6), 1–6.
- Kaiser, V., Calvetti, P. Ü., Waskow, M. H., Wolfart, A., Diaz, G. B., Magalhães, C. R., Casanova, J. R., Almeida, L., & Reppold, C. T. (2025). Self-regulation of learning and positive psychology in University students. *Current Psychology*. 1-11.
- Kandemir, M., & Palancı, M. (2014). Academic functional procrastination: Validity and reliability study. *Procedia-Social and Behavioral Sciences*, 152, 194-198.
- Kim, E. Y., & Seo, E. H. (2013). The relationship of flow and self-regulated learning to active procrastination. *Social Behavior and Personality*, 41(7), 1099–1114.
- Kim, K. R., & Seo, E. H. (2015). The relationship between procrastination and academic performance: A meta-analysis. *Personality and Individual Differences*, 82, 26–33.
- Li, R., Che Hassan, N., & Saharuddin, N. (2023). Psychological capital related to academic outcomes among university students: a systematic literature review. *Psychology research and behavior management*, 3739-3763.
- Limone P, Sinatra M, Ceglie F, Monacis L. Examining Procrastination among University Students through the Lens of the Self-Regulated Learning Model. *Behavioral Sciences*. 2020; 10(12):184.

- Luthans, F., & Youssef, C. M. (2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. *Organizational Dynamics*, 33(2), 143–160.
- Luthans, B. C., Luthans, K. W., & Avey, J. B. (2013). Building the leaders of tomorrow: The development of academic psychological capital. *Journal of leadership & organizational studies*, 21(2), 191-199.
- Martínez, I. M., Youssef-Morgan, C. M., Chambel, M. J., & Marques-Pinto, A. (2021). Antecedents of academic performance of university students: academic engagement and psychological capital resources. *Educational Psychology*, 39(8), 1047-1067.
- McCloskey, J., & Scielzo, S. (2015). *Finally!: The development and validation of the Academic Procrastination Scale*.
- Medrano, L. A., & Jaime M, F. (2020). An Integrative Model of Self-Regulated Learning for University Students: The Contributions of Social Cognitive Theory of Carriers. (Boston University Article, *Journal of Educathon*, 12, 125-138.
- Melgaard, J., Monir, R., Lasrado, L. A., & Fagerström, A. (2022). Academic procrastination and online learning during the COVID-19 pandemic. *Procedia Computer Science*, 117–124.
- Naderi, K., NeshatDoost, H. T., & Talebi, H. (2021). Evaluating the effectiveness of self-regulation strategy training on procrastination, happiness, and academic achievement. *Journal of Clinical Research in Paramedical Sciences*, 10 (1), 1–7..
- Nambiar, D., Alex, J., & Pothiyil, D. (2022). Development and Validation of Academic Self-regulated Learning Questionnaire (ASLQ). *International Journal of Behavioral Sciences*, 16(2), 89-95.
- Oxford English Dictionary Online. (n.d.). Procrastination. In *Oxford English Dictionary*. Retrieved July 4, 2024, from <https://www.oxfordlearnersdictionaries.com/definition/english/procrastination>
- Ozer, B. U., & Ferrari, J. R. (2011). Gender orientation and academic procrastination: Exploring Turkish high school students. *Individual Differences Research*, 9(1), 33-40.
- Peña-Contreras, E. K., Lima-Castro, S. E., Arias-Medina, W. P., Bueno-Pacheco, G. A., Aguilar-Sizer, M. E., & Cabrera-Vélez, M. M. (2020). Propiedades psicométricas de la Escala Breve de Resiliencia (BRS) en el contexto ecuatoriano. *Revista Evaluar*, 20(3), 83-98.
- Pychyl, T. A., Lee, J. M., Thibodeau, R., & Blunt, A. (2000). Five days of emotion: an experience sampling study of undergraduate student procrastination. *Journal of Social Behavior & Personality*, 15(5), 12- 23.
- Qureshi, Z. Q. Z. (2023). Relationship between Academic Self-Efficacy and Academic Procrastination: Understanding How Academic Self Efficacy affect Academic Procrastination in Undergraduate Students. *Journal of Applied Research and Multidisciplinary Studies*.
- Rahimi, S., Hall, N. C., & Sticca, F. (2023). Understanding academic procrastination: A longitudinal analysis of procrastination and emotions in undergraduate and graduate students. *Motivation and Emotion*, 47(4), 554-574.
- Rahmi, T. N., & Safitri, S. (2023). Psychological capital and academic procrastination: The mediating role of self-regulated learning among college students. *Journal of Educational, Health & Community Psychology (JEHCP)*, 12(2), 1-12.
- Ren, W. (2020). Cross-National Generalizability of Student and School Effects on Science Achievement (Doctoral dissertation, University of Pennsylvania).

- Saman, A., & Wirawan, H. (2021). Examining the impact of psychological capital on academic achievement and work performance: The roles of procrastination and conscientiousness. *Cogent Psychology*, 8 (1), 1–20.
- Saman, H. (2024). Unlocking Psychological Capital: Investigating Its Influence on Academic Achievement and Procrastination among University Students. *European International Journal of Pedagogics*, 4(02), 01-06.
- Simona, S., Virga, D., & Palos, R. (2020). The role of teacher support, students' need satisfaction, and their psychological capital in enhancing students' self-regulated learning. *Studia Psychologica*, 62(1), 44–57.
- Scher, S. J., & Ferrari, J. R. (2000). The recall of completed and noncompleted tasks through daily logs to measure procrastination. *Journal of Social Behavior and Personality*, 255, 16-36.
- Schraw, G., Wadkins, T., & Olafson, L. (2007). Doing the things we do: a grounded theory of academic procrastination. *Journal of Educational psychology*, 99(1), 12-22.
- Schunk, D. H., & Zimmerman, B. J. (2013). Self-regulation and learning. In W. M. Reynolds, G. E. Miller, & I. B. Weiner (Eds.), *Handbook of psychology: Educational psychology* (2nd ed., pp. 45–68). John Wiley & Sons, Inc.
- Serrano Corkin, D. M., Lindt, S. F., & Williams, P. S. (2021). Effects of positive college classroom motivational environments on procrastination and achievement. *Learning Environments Research*, 24(2), 299-313.
- Sheikhi, S., & Shahmorady, M. (2016). The relationship between psychological capital, educational self-regulatory and intelligence beliefs with students' academic performance in the University of Applied Sciences in Abdanan County. *European Online Journal of Natural and Social Sciences*, 4(1), 1705–1713.
- Snyder, C. R., Shorey, H. S., Cheavens, J., Pulvers, K. M., Adams III, V. H., & Wiklund, C. (2002). Hope and academic success in college. *Journal of Educational Psychology*, 94, 820–826.
- Steel P. (2007). The nature of procrastination: a meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychol. Bull.* 133, 65–94.
- Taura, A. A., Abdullah, M. C., Roslan, S., & Omar, Z. (2015). Self-regulation as a mediator in the relationship between self-efficacy, task value and active procrastination. *Journal of Educational Psychology*.
- Umah, R. Y. H. (2021). Memodifikasi prokrastinasi akademik mahasiswa dengan mengoptimalkan self-regulated learning. *Edukasia: Jurnal Pendidikan dan Pembelajaran*, 2(1), 27-40.
- Verleysen, B., Lambrechts, F. (2015). Building psychological capital with appreciative inquiry: Investigating the mediating role of basic psychological need satisfaction. *The Journal of Applied Behavioral Science*, 51(1), 10-35.
- Vincent, I. J., Law, M. Y., Chew, Z. L. K., & Lai, C. S. (2024). Self-regulation and resilience: the role on active procrastination of young adults. *International Journal of Public Health*, 13(4), 1538-1547.
- Vu, T., Magis-Weinberg, L., Jansen, B. R., van Atteveldt, N., Janssen, T. W., Lee, N. C., ... & Meeter, M. (2022). Motivation-achievement cycles in learning: A literature review and research agenda. *Educational Psychology Review*, 34(1), 39-71.
- Wang, C. J. (2023). Learning and academic self-efficacy in self-regulated learning: validation study with the BOPPPS model and IRS methods. *The Asia-Pacific Education Researcher*, 32(1), 37-51.

- Wang, J., Bu, L., Li, Y., Song, J., & Li, N. (2021). The mediating effect of academic engagement between psychological capital and academic burnout among nursing students during the COVID-19 pandemic: A cross-sectional study. *Nurse education today*, 102, 104938.
- Waterhouse, P., & Samra, R. (2024). University Students' Coping Strategies to Manage Stress: A Scoping Review. *Educational Review*, 1-41.
- Wulandari, I., Fatimah, S., & Suherman, M. M. (2021). An overview of the factors causing academic procrastination for XI class high school students at SMAN 1 Batujajar during the Covid-19 pandemic. *FOCUS (Study of Guidance & Counseling in Education)*, 4(3), 200–212.
- Yamada, M., Goda, Y., Matsuda, T., Saito, Y., Kato, H., & Miyagawa, H. (2016). How does self-regulated learning relate to active procrastination and other learning behaviors?. *Journal of Computing in Higher Education*, 28, 326-343.
- You, J. W. (2016). The relationship among college students' psychological capital, learning engagement, and academic achievement: Evidence from South Korea. *Asia Pacific Education Review*, 17(4), 635–645.
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–39). Academic Press
- Zimmerman, B. J., & Schunk, D. H. (Eds.). (2011). *Handbook of self-regulation of learning and performance*. Routledge.

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