Exploring the Price of Postponement: Structural Equation Modelling of the Linkages between Procrastination and Mental Wellbeing among University Students.

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Abstract

One major self-regulation issue that is common among students and has a serious negative impact on their mental health is procrastination. This study tests the hypothesis that procrastination is a significant negative determinant by examining the direct relationship between procrastination and mental wellbeing. Data were gathered from 150 students at the University of Kashmir in India using a cross-sectional design. The hypothesis was confirmed by structural equation modeling (SEM), which showed a strong, significant negative path (b=-0.46, P= 0.01) from procrastination to mental wellbeing. A good fit was shown by the model (CFI = 0.967, TLI = 0.963). These results support theoretical frameworks such as Self-Determination Theory by showing that procrastination actively depletes psychological resources and compromises wellbeing. According to the study's findings, procrastination is a significant psychological barrier to students' success rather than just a time management problem. In order to protect and improve students' mental health, university support systems must go beyond discrete academic skills training and instead employ integrated interventions that address the underlying emotional and self-regulatory deficiencies causing procrastination.

Key Words: Postponement, Procrastination, Mental Wellbeing, University Students.

Introduction

Procrastination is the delay of an intended course of action that becomes problematic. Formally, it is defined as a failure of self-regulation (Pychyl & Flett, 2012) or as inadequate conscious self-control over one's actions (Steel & Ferrari, 2013). Procrastination, frequently regarded as a trivial failure in time management, has profound adverse consequences that transcend mere task postponement. As deadlines get closer and closer, it can cause a vicious cycle of stress and anxiety. This delay can cause people to rush their work, which can hurt their grades or job performance and even cause them to miss out on opportunities. Chronic procrastination can also lower self-esteem and make people feel guilty and inadequate because they keep failing to meet their own expectations. The combined effects of these pressures have a negative effect on overall well-being, raising stress levels, making people more likely to have mental health problems like anxiety and depression, and lowering their sense of accomplishment and life satisfaction. More and more research points to a strong, cyclical link between procrastination and poor mental health, in which each factor aggravates the other, resulting in a negative feedback loop that can seriously harm both academic achievement and personal growth. A thorough theoretical foundation for the connections between procrastination and wellbeing is offered by the self-regulatory failure framework. According to this model, the main cause of procrastination is an inability to control one's emotions, impulses, and thoughts (Steel, 2007). Sometimes, people prioritize short-term mood repair by avoiding unpleasant tasks. This delay has immediate negative

effects on wellbeing, leading to a great deal of stress and guilt. According to Self-Determination Theory, this pattern undermines the fundamental psychological needs for competence and autonomy, which over time erodes eudaimonic wellbeing (Ryan & Deci, 2012). This leads to a vicious, self-reinforcing cycle that reinforces the negative relationship between procrastination and wellbeing. In the end, the resulting poor wellbeing exhausts the psychological resources required for effective self-regulation.

In summary, university students' procrastination is a serious psychological problem that is inextricably linked to their mental health. While definitions of mental wellbeing emphasize the significance of flourishing across multiple domains, theoretical explanations emphasize its roots in motivation, emotion regulation, and self-regulatory failure.

Rationale:

Given the well-established inverse relationship between procrastination and mental health, there is still a significant research gap concerning the underlying mechanisms and particular dynamics in university settings. Although the association is strongly supported by the literature currently in publication, it is primarily correlational and Western-centric. This study bridges a major geographic and cultural divide by investigating this connection in a non-Western context using the more advanced methodological procedures in the form of Structural Equation Modelling. The results will offer a useful regional viewpoint that could guide the creation of focused, culturally aware interventions to improve students' academic performance and mental health by lessening the negative consequences of procrastination.

Objectives:

1. To assess Procrastination and Mental Wellbeing among University Students.
2. To check linkages of Procrastination with Mental Wellbeing among University Students.

Hypothesis:

H_1 Procrastination will emerge as significant negative determinant of Mental Wellbeing among University Students.

Literature Review

The literature review pertaining to the theme of the study is presented in Table 1.

Table 1. Literature Review

Author	Date	Sample	Method	Results
Johansson et al.	2023	3525 Swedish university students	Regression Analysis	Procrastination is linked to worse psychosocial health factors.
Ferrari et al.	2014	104 Spanish University Students	Correlation Analysis	Procrastinators report lower mental wellbeing.
Dardara et al.	2022	886 Saudi undergraduate students	Regression Analysis	Procrastination is related to poorer mental well-being.

Vhatkar	2023	100 Indian College Students	Correlation Analysis	Procrastination and mental health are negatively correlated.
Boncales	2019	280 High school students from Philippines.	Correlation Analysis	Procrastinating tendency is negatively associated with mental health.
Abdullah	2017	268 School Students from Allepo	Correlation Analysis	Procrastination and mental health are negatively correlated.
James et al.	2025	938 Medical Students Worldwide	Descriptive Analysis	Students' academic performance, overall quality of life, and mental health can all be enhanced by effectively managing stress and procrastination.
Pérez-Jorge et al.	2024	13 Studies	Systematic Review	Adolescents' physical and mental development suffers when they procrastinate.
Stead et al.	2010	200 undergraduates from the University of Western Ontario	Canonical Correlation	The findings confirm the predicted link between worse mental health and higher procrastination scores.
Sirois	2014	674 Students and 94 community adults from South-western Ontario	Mediation Analysis	Indirect effect of Procrastination impact on stress perception via self-compassion is significant.
Jochmann et al.	2024	392 German university students	Autoregressive time-lagged panel models.	Mental health may suffer as a result of procrastination. Future research should examine additional health outcomes and potential mediators.
Gutić	2023	658 Serbian Students	Correlation analysis	Procrastination is significantly predicted by depression in the female subsample.
Munda	2025	1311 students from Mumbai and its suburbs	Descriptive Analysis	Students who significantly put off studying until right before an exam are engaging in exam-related procrastination, which can lead to negative outcomes like increased stress, poor academic performance, and low self-esteem.

Bibire	2024	800 students from Nigeria	Descriptive Analysis	The majority of respondents firmly agreed that academic procrastination and school climate have a positive impact on college nursing and midwifery students' mental health.
Ahmed et al.	2023	110 students from RAK College of Medical Sciences	Descriptive Analysis	Research is crucial to comprehend the procrastination patterns of students, particularly those in fields like medicine that directly affect hundreds of people. This can have a direct effect on the student's future professional path as well as patient care and results.

It is clear from the large body of research that procrastination and mental health are significantly correlated negatively across a range of international student populations. Procrastination is consistently linked to and predictive of lower mental health, higher levels of stress, depression, and other detrimental psychosocial outcomes, according to studies. Nonetheless, cross-sectional and correlational designs (e.g., Ferrari et al., 2014; Vhatkar, 2023) dominate the field's methodology, preventing conclusive causal inferences even though they robustly establish a relationship. It is still unclear if procrastination worsens mental health, if procrastination is a result of pre-existing mental health conditions, or if there is a vicious cycle of exacerbation. While longitudinal research by Jochmann et al. (2024) and Johansson et al. (2023) starts to address temporality, there is still a critical research gap in understanding the psychological mechanisms at play and possible bidirectional causality. Furthermore, comprehensive models underinvest in the mediating roles of variables like perceived stress and self-compassion (Sirois, 2014). The findings' applicability to other professional and demographic groups is further constrained by the strong dependence on student samples. In order to completely understand the intricate, dynamic relationship between procrastination and mental health, there is a clear need for longitudinal and experimental research that can outline causal pathways, pinpoint important mediators and moderators, and expand investigation outside of academic settings. However, in the present study, we confine to using the more advanced methodological procedures in the form of Structural Equation Modelling to explore the construct relationships. The results will offer a useful regional viewpoint that could guide the creation of focused, culturally aware interventions to improve students' academic performance and mental health by lessening the negative consequences of procrastination.

Methodology:
Sampling: The data was collected from 150 university students (57 Male & 93 Female) from University of Kashmir, Srinagar, J&K, India using purposive sampling technique.

Tools used: Procrastination was assessed using concerned items from Melbourne decision making scale (Mann et al, 1997) and mental wellbeing was assessed using Warwick- Edinburgh mental wellbeing scale (Stewart-Brown et al, 2008).

Data Analysis:
Descriptive, reliability analysis, factor analysis and prediction analysis (Structural Equation Modelling) was carried out using the JAMOVI Software.

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Results & Interpretation:

The results & their interpretation is presented in the form of tables & figures that follow.

Normality Indices:

Table 2: Normality Indices

Statistic	Value
Mean	4.87
Standard Deviation	1.16
Skewness	-1.01
Kurtosis	1.58
Trimmed Mean (10%)	4.97

As reflected in table 1, normality indices revealed acceptable values of skewness and kurtosis thereby improving scope of data for further analysis.

Reliability Analysis:

Table 3. Reliability indices

Variable	α	Ordinal α	ω_1	ω_2	ω_3	AVE
Procastination	0.651	0.655	0.621	0.621	0.589	0.308
Wellbeing	0.915	0.928	0.919	0.919	0.935	0.502

As per table 2, For both constructs, reliability analyses were performed. With a McDonald's Omega (ω) coefficient above 0.919 and a Cronbach's Alpha (α) of 0.915, the Wellbeing scale showed excellent internal consistency. A convergent validity threshold of 0.50 was met by the Average Variance Extracted (AVE) for Wellbeing, which was 0.502. The Procrastination scale, on the other hand, had marginal internal consistency ($\alpha = 0.651$, $\omega \approx 0.62$). Additionally, its AVE was found to be 0.308.

Table 4. Measurement Model Indices

Label	Latent	β	Lower	Upper	z	β 95% Confidence Intervals p
p1	Procastination	0.305	0.1202	0.490		
p2		0.831	0.6864	0.975	3.06	0.002
p3		0.213	0.0420	0.384	2.03	0.043
p4		0.576	0.4140	0.737	2.82	0.005
p5		0.615	0.4357	0.794	2.92	0.004
p6	Wellbeing	0.568	0.4752	0.660		
p7		0.688	0.6098	0.766	14.96	<.001
p8		0.722	0.6547	0.789	14.81	<.001
p9		0.667	0.5932	0.741	13.24	<.001
p10		0.459	0.3584	0.559	9.26	<.001
p11		0.554	0.4581	0.649	8.93	<.001
p12		0.675	0.5867	0.763	9.82	<.001
p13		0.806	0.7492	0.863	12.28	<.001
p14		0.669	0.5934	0.744	11.91	<.001
p15		0.814	0.7573	0.871	11.99	<.001
p16		0.824	0.7710	0.876	12.26	<.001
p17		0.738	0.6745	0.802	13.50	<.001
p18		0.822	0.7691	0.875	12.00	<.001
p19		0.794	0.7382	0.850	12.33	<.001

As per table 3, All of the measured items (p1–p19) loaded significantly onto their corresponding latent constructs (wellbeing and procrastination), according to the confirmatory factor analysis (CFA) results. The majority of the standardized factor loadings (β) showed strong magnitudes (e.g., p2, p13, p15, p16, p18, p19 > 0.79 for Wellbeing), and all were statistically significant ($p < .05$). This confirms that the indicators accurately reflect the constructs for which they were designed and supports the measurement model's convergent validity.

Table 5: Frequency Distribution on Procastination

Category	Count	Percentage	Mean	SD
Low	23	15.3%		
Average	101	67.3%	3.86	1.22
High	26	17.3%		

Table 6: Frequency Distribution on MentalWellbeing

Category	Count	Percentage	Mean	SD
Low	20	13.3%		
Average	111	74.0%	4.87	1.15
High	19	12.7%		

As inferred from table 5 and table 6, according to the frequency distributions for mental wellbeing and procrastination, most participants scored "Average" (67.3% and 74.0%, respectively). The percentage of participants who fell into the "Low" (15.3%, 13.3%) and "High" (17.3%, 12.7%) categories was lower. The overall sample mean was 4.87 (SD = 1.15) for mental wellbeing and 3.86 (SD = 1.22) for procrastination.

Prediction Analysis:

 Figure 1. Structural Equation Modelling of the relation between procrastination and Mental Wellbeing.
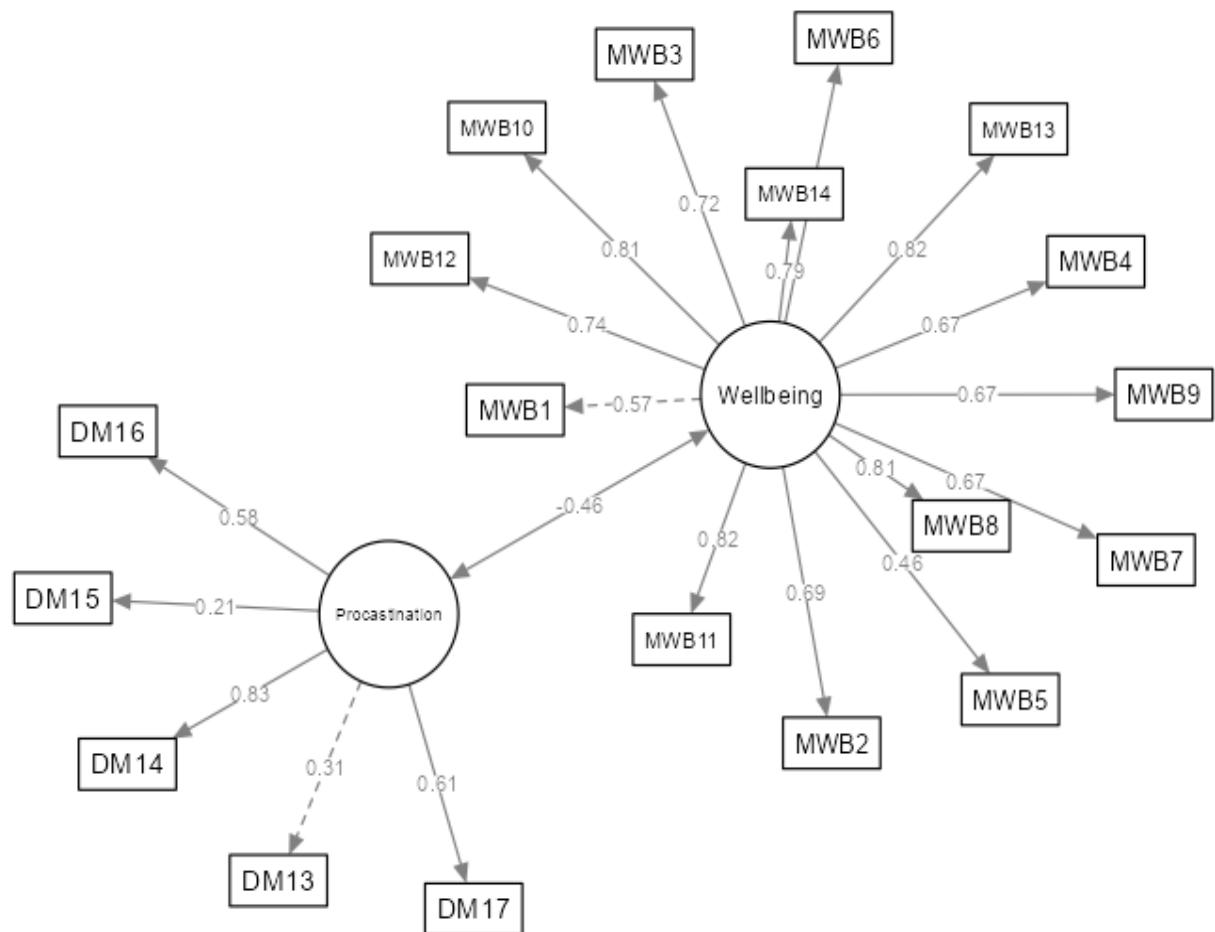
As reflected in figure 1, the hypothesis " H_1 Procrastination will emerge as significant negative determinant of Mental Wellbeing among University Students" stands accepted. Structural equation modeling (SEM), showed a strong, significant negative path (b=-0.46, P= 0.01) from procrastination to mental wellbeing.

Table 7. Model Fit Indices

Comparative Fit Index (CFI)	0.967
Tucker-Lewis Index (TLI)	0.963
Bentler-Bonett Non-normed Fit Index (NNFI)	0.963
Relative Noncentrality Index (RNI)	0.967
Bentler-Bonett Normed Fit Index (NFI)	0.953
Bollen's Relative Fit Index (RFI)	0.947
CMIN/df	3.2
RMSEA	0.12

As reflected in table 7, Several incremental fit indices showed that the proposed model fit the data very well. A better model fit than a baseline model was indicated by the Comparative Fit Index (CFI = 0.967), Tucker-Lewis Index (TLI = 0.963), and Normed Fit Index (NFI = 0.953), all of which were higher than the suggested cutoff of 0.90. There may be space for model improvement, though, as the RMSEA value of 0.12 is higher than the traditional cutoff of 0.08 for a good fit. A reasonable fit is indicated by the CMIN/df ratio of 3.2, which is above the optimal value of less than three but falls within the frequently mentioned acceptable range of five.

Discussion & Conclusion

According to the data, most respondents' procrastination (67.3%) and mental wellbeing (74.0%) are classified as "Average." This implies that both constructs are present in the sampled population at a moderate level. While slightly more people report high procrastination, the distributions for the "Low" and "High" categories are comparatively similar for each variable. While carrying out the structural equation modelling, procrastination was found to be a significant negative determinant of mental wellbeing which is in line with Self-Determination Theory, in consonance with which this pattern undermines the fundamental psychological needs for competence and autonomy, which over time erodes eudaimonic wellbeing (Ryan & Deci, 2012). This leads to a vicious, self-reinforcing cycle that reinforces the negative relationship between procrastination and wellbeing. In the end, the resulting poor wellbeing exhausts the psychological resources required for effective self-regulation. The results are also in line with the Conservation of Resources (COR) Theory (Hobfoll, 1989) which holds that people work to acquire and preserve valuable resources, is based on this relationship. As a chronic stressor, procrastination drains important resources like time, energy, and self-efficacy, which raises psychological distress and lowers wellbeing.

Therefore according to the findings of the study, procrastination seriously impairs mental wellbeing, which is consistent with accepted psychological theories. COR Theory explains this as a depletion of key resources like time and self-efficacy, while SDT frames it as a thwarting of basic psychological needs. The findings underscore that procrastination is a substantial psychological barrier, not merely a time-management flaw, thereby highlighting the critical need for targeted interventions to mitigate its negative impact on mental health and wellbeing.

As such**,** effective procrastination management requires a multifaceted strategy that includes institutional, societal, and individual interventions. Individuals can lessen overwhelm and increase competence by implementing evidence-based strategies, such as using focus techniques like the Pomodoro method, self-compassion exercises, and breaking tasks into manageable steps. Organizations and academic institutions must simultaneously offer proactive support by putting in place workshops that develop self-motivation, creating atmospheres that lessen undue pressure, and making sure that mental health resources are easily accessible and stigma-free. On a larger scale, educational curricula should incorporate psychological self-management skills from an early age, and public health campaigns should reframe procrastination as a serious wellbeing issue rather than a moral failing. In the end, we can preserve mental resources and create environments that are more supportive of mental health and long-term productivity by integrating these individual, organizational, and governmental interventions.

Limitations:

One of the study's limitations is its small sample size (N=150) from only one university, which restricts its generalizability. Selection bias may also be introduced by the use of purposive sampling.

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