



Impact of Teacher Support, Learning Motivation, Emotional Intelligence on Academic Procrastination and Self-Regulation: Exploring Mediating Role of Educational Self-Efficacy

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ABSTRACT

Purpose: Students must exercise self-regulation to enhance their academic performance, while concurrently addressing academic procrastination is imperative. Thus, this research endeavours to explore the influence of teacher support, learning motivation, and emotional intelligence on educational self-efficacy, educational self-regulation, and Academic Procrastination. Additionally, this study examines the mediating role of educational self-efficacy.

Methodology: Employing a cross-sectional research design, data were collected from students enrolled in universities located in KSA via simple random sampling, yielding a usable response rate of 70.28%. Analysis of the gathered data was conducted using Smart PLS 4. Findings: The findings suggest that teacher support, learning motivation, and emotional intelligence significantly impact educational self-efficacy. Furthermore, educational self-efficacy strongly influences procrastination and self-regulation.

The study confirms the statistically significant mediating effect of educational self-efficacy. Implications: The insights gleaned from this study can inform policymakers and academics in their decision-making processes.

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Introduction

Education plays a pivotal role in fostering the professional growth and attainment of success among students. Through education, students acquire the essential skill of self-regulated learning, enabling them to effectively manage their emotions, behaviours, and cognitive processes. This facilitation significantly enhances the overall learning experience. As Brenner (2022) notes, self-regulated learning fosters a proactive rather than reactive approach among students. It is important to underscore that self-regulated learning is not an innate trait but rather a skill that can be cultivated over time. Students proficient in self-regulated learning exhibit a heightened ability to establish realistic goals and demonstrate increased efficacy in goal achievement. Furthermore, they exhibit enhanced monitoring of strategies and goals, thereby optimizing their learning outcomes (Akyidiz et al., 2023). Consequently, students can augment their capacity for self-regulation, enabling them to effectively manage various tasks concurrently during the learning process. Conversely, students with deficient self-regulation often encounter challenges in overcoming negative thoughts and emotions, leading to feelings of embarrassment and disappointment (Francois, 2023).

Another critical aspect influencing student development is academic procrastination, defined as the deliberate postponement or deferral of tasks deemed non-essential to academic pursuits (Rostania et al., 2023). Students tend to engage in academic procrastination particularly when they perceive their academic responsibilities as burdensome. Research indicates that a significant majority of students, more than three-quarters, habitually delay tasks such as writing and reading (Kuftyak, 2022). The repercussions of procrastination are multifaceted, encompassing social anxiety, last-minute exam preparation, heightened stress levels, and tardy completion of assignments. Furthermore, in professional settings, academic procrastination can engender adverse outcomes including diminished life satisfaction, compromised health, and suboptimal performance (Ren et al., 2021). Consequently, institutions of higher education must prioritize interventions aimed at mitigating procrastination tendencies among students.

Teacher support emerges as a pivotal factor contributing to the cultivation of positive student-teacher relationships within educational settings. The provision of teacher support has been found to foster a range of positive emotions among students, including feelings of relief, hope, interest, and enjoyment. Conversely, the absence of inadequacy of teacher support may exacerbate negative emotions such as hopelessness, boredom, worry, anger, shame, depression, and anxiety. Moreover, teachers play an indispensable role in facilitating students' academic success. Demonstrating support towards students signifies a genuine concern and care for their well-being, with the underlying expectation that students reciprocate respect within the classroom milieu (Osterman, 2023).

Motivation emerges as a significant determinant of student learning, acknowledged by researchers as a fundamental prerequisite for academic achievement (Hosseini et al., 2022). The level of motivation exhibited by students directly influences their academic performance, as motivated students are more likely to excel in their educational pursuits. Scholars underscore the pivotal role of motivation in sustaining, guiding, and invigorating student behaviour, highlighting its impact on goal orientation and activity engagement (Narca & Caballes, 2021). Goals provide students with a sense of direction, while effort serves as the driving force behind their endeavours, collectively fostering sustained commitment to academic endeavours. Within the classroom environment, teachers wield significant influence in fostering student motivation.

In recent years, considerable scholarly attention has been directed towards the concept of emotional intelligence (Dugué et al., 2021). Rooted in the broader framework of social intelligence, emotional intelligence pertains to an individual's capacity to comprehend and navigate interpersonal dynamics within societal contexts. It encompasses the skills, aptitudes, and competencies required to perceive, assess, and regulate both one's own and others' emotions, thereby facilitating problem-solving, relationship management, and emotional regulation among students (Rivers et al., 2020). Emotional intelligence serves as a psychological construct essential for addressing environmental demands and fostering adaptive behavioural and cognitive adjustments.

Concurrently, self-efficacy has emerged as a central focus within educational research over the past three decades, with scholars endeavouring to delineate factors conducive to cultivating a positive learning environment (Malmi et al., 2020). This environment is integral to enhancing students' educational experiences, and self-efficacy stands out as a critical determinant thereof. Serving as a foundational element of human functioning, self-efficacy transcends mere acquisition of requisite skills and knowledge, significantly influencing individuals' choices regarding persistence, effort expenditure, and engagement in academic activities (Omari et al., 2020). Students possessing a strong sense of self-efficacy are inclined to exert greater effort towards goal attainment.

Against this backdrop, the present study aims to investigate the interplay between teacher support, learning motivation, emotional intelligence, and educational self-efficacy vis-à-vis educational self-regulation and Academic Procrastination within the context of college students in KSA.

Literature Review and Hypothesis

Educational Self-Efficacy: Relationship with Educational Self-Regulation and Academic Procrastination

Educational self-regulation stands as a fundamental construct within student learning paradigms. Scholarly discourse characterizes it as the cognitive process through which students autonomously modulate their mental faculties into task-relevant skills (El-Henawy, Dadour, Salem, & El-Bassuony, 2010). This process empowers students to regulate and oversee their behaviour, motivation, and cognitive processes, thereby facilitating goal attainment. The efficacy of educational self-regulation profoundly influences student success, with those possessing heightened levels thereof demonstrating superior academic performance throughout their educational endeavours (Payan-Carreira et al., 2022).

Within the academic literature, procrastination is conceptualized as the deliberate postponement of planned actions by students, despite anticipating adverse consequences from such delay. This phenomenon entails deferring essential tasks until discomfort prompts action, signifying an unnecessary delay in task engagement. Procrastination is often compounded by a combination of task aversion and a lack of confidence in one's abilities (Roster & Ferrari, 2020). Moreover, the academic attainment of students is significantly influenced by the construct of educational self-efficacy. Described in literature as an individual's belief in their capacity to effectively execute and coordinate actions necessary for goal attainment, self-efficacy plays a

pivotal role in academic performance (Cıtlı & Yurdakul, 2020). A positive correlation exists between academic achievement and students' self-efficacy levels. Students with low self-efficacy are prone to disengagement in the face of challenges, while those with high self-efficacy demonstrate a willingness to confront challenges eagerly (Luther, 2022).

Scholars posit that self-efficacy plays a crucial role in facilitating both social and academic coordination among students, enabling them to effectively confront life's challenges and adversities. The impact of self-efficacy on student behaviour manifests through selective, affective, motivational, and cognitive pathways (Teng & Wu, 2024). Moreover, scholars argue that self-efficacy significantly influences the acquisition of skills necessary for academic achievement. Individuals lacking confidence in their self-efficacy are less likely to navigate both simple and complex tasks successfully, potentially resulting in consistent underperformance. Conversely, students' motivation levels are also influenced by self-efficacy (Fakhrou & Habib, 2022).

Furthermore, high expectations regarding students' performance outcomes exhibit a strong correlation with elevated levels of self-efficacy, concurrently diminishing negative experiences associated with task engagement, thereby mitigating procrastination tendencies (Hursen, 2021). Numerous studies have explored the relationship between academic self-efficacy and procrastination, consistently demonstrating a negative association between low self-efficacy levels and procrastination (Arias-Chávez et al., 2020). However, conflicting findings have also been reported, suggesting a nuanced interplay between these variables (Wu & Fan, 2017). Conversely, some studies have highlighted the positive influence of self-efficacy on procrastination (L. Li et al., 2020).

Regarding the impact of educational self-efficacy on student self-regulation, a study by (Lee et al., 2021) observed a positive relationship between educational self-efficacy and educational self-regulation. Thus, it is hypothesized that,

H1: Educational self-efficacy has a significant effect on educational self-regulation.

H2: Educational self-efficacy has a significant impact on procrastination.

Teacher Support and Educational Self-Efficacy

In academic discourse, the provision of academic support emerges as a cornerstone of student success. Academic support, as delineated in literature, encompasses the student's belief in the teacher's capacity to facilitate learning and address academic challenges encountered during the learning process (Hursen, 2021). This support extends beyond academic realms to include emotional support, characterized by trust, warmth, respect, acceptance, and encouragement from the teacher. Moreover, certain studies have identified instances of competence support provided by teachers to students, particularly concerning extracurricular competencies and activities (Ginosyan et al., 2020).

Teacher support, as construed in literature, pertains to students' perceptions of the teacher's readiness to offer assistance and demonstrate concern for their academic well-being (Hoi & Mu, 2021). Various dimensions of teacher support have been elucidated, encompassing autonomy support, instrumental support, emotional support, and academic support. Researchers are particularly interested in delineating the diverse forms of support that teachers can extend to students. Studies within the Chinese educational context have underscored the importance of

teacher support, specifically emphasizing competence support, emotional support, and academic support (Kalkan & Cemaloglu, 2023).

The self-efficacy levels of students are influenced by the support they receive from their teachers. When students perceive positive evaluation from their teachers, it enhances their self-efficacy, whereas negative emotions expressed by teachers can have counterproductive effects (W. Li et al., 2020; Liu et al., 2021). Research conducted among college students indicates that positive support from teachers contributes to enhanced self-efficacy levels (Syamsuddin & Pd, 2021). Consequently, students' positive self-evaluation is bolstered, thereby positively impacting their academic self-efficacy. In essence, teacher support exerts a compelling influence on students' self-efficacy, as evidenced by the findings of (W. Li et al., 2020), who observed a positive correlation between teacher support and students' academic self-efficacy. Thus, it is hypothesized that,

H3: *Teacher support has a significant influence on educational self-efficacy.*

Learning Motivation and Educational Self-Efficacy

The drive towards academic achievement among students is fostered by learning motivation. Within the educational discourse, motivation is construed as fulfilling students' needs (Filgona et al., 2020). Learning motivation entails sustained engagement in goal-directed learning activities, with researchers focusing on student behaviour within educational contexts and its impact on performance and learning outcomes. Studies in educational psychology aim to predict, explain, and describe the persistence, intensity, initiation, and direction of learning behaviour concerning motivation (Herpratiwi & Ahmad, 2021). Realizing learning outcomes hinges significantly on understanding and harnessing motivational factors. Hence, individuals must identify and cultivate motivators crucial for attaining academic objectives. Motivation serves as the cognitive impetus driving individuals' attitudes and actions towards learning (Syamsuddin & Pd, 2021).

A reciprocal relationship exists between self-efficacy and motivation, both of which are influenced by academic socialization. Educational self-efficacy, also referred to as academic self-efficacy, stands as a significant predictor of learners' behaviour and motivation. Scholars have identified a positive correlation between learning motivation and academic self-efficacy, indicating that students' self-efficacy is positively impacted by their motivation to learn (Wu & Fan, 2017). Strong learning motivation enhances students' ability to evaluate and judge tasks, with their willpower, interests, and beliefs playing pivotal roles in this process. Consequently, Shao and Kang (2022) reported a positive association between academic self-efficacy and learning motivation. When students perceive improvements in their learning, their motivation is heightened, leading to enhanced skill levels and self-efficacy maintenance. Personal expectancy and learning motivation are conducive to bolstering individual self-efficacy levels. A highly motivated student, driven by a thirst for education and learning, is more likely to achieve academic goals and experience improvements in self-efficacy (Voica et al., 2020). Thus, it is hypothesized that,

H4: *Learning motivation has a significant effect on educational self-efficacy.*

Emotional Intelligence and Educational Self-Efficacy

Emotional intelligence, as defined by Zhoc et al. (2020), pertains to a student's ability to monitor

the emotions of oneself and others, discerning between various feelings and integrating them into thoughts and actions. It enables active processing of students' emotions, fostering improvements in factors such as job satisfaction and marital quality (Ngui & Lay, 2020). Individuals with heightened emotional intelligence exhibit control over both positive and negative emotions, sensitively navigating their own and others' feelings while purposefully regulating them to maximize their goals (Aparisi et al., 2020). Various strategies are employed to regulate emotions effectively. Emotional intelligence is considered instrumental in enabling individuals to manage their emotions effectively, fostering positive emotions among students during study. Moreover, it plays a pivotal role in stress reduction within work environments (Sun & Lyu, 2022). In challenging circumstances, individuals with lower emotional intelligence may struggle, experiencing confusion and disappointment, making it difficult for them to be effective problem solvers (Ökmen et al., 2022).

Researchers have highlighted the significance of self-efficacy and emotional intelligence within the educational context, emphasizing their crucial roles in determining students' success or failure. Kostić-Bobanović (2020) revealed a significant and positive correlation between emotional intelligence and self-efficacy, a finding corroborated by (Wang & Wang, 2022), who observed a notable positive impact of emotional intelligence on self-efficacy. These studies collectively suggest that emotional intelligence plays a pivotal role in predicting self-efficacy levels. Additionally, research indicates that high emotional intelligence not only fosters greater adaptability and achievement but also aids in effectively addressing challenges, ultimately contributing to the attainment of self-efficacy (Tang & He, 2023). Therefore, it is hypothesized that,

H5: Emotional intelligence have significant effect on educational self-efficacy

H6: Educational self-efficacy mediates among teacher support and educational self-regulation.

H7: Educational self-efficacy mediates among teacher emotional intelligence and educational self-regulation.

H8: Educational self-efficacy mediates among learning motivation and educational self-regulation.

H9: Educational self-efficacy mediates among teacher support and procrastination.

H10: Educational self-efficacy mediates among emotional intelligence and procrastination.

H11: Educational self-efficacy mediates among learning motivation and procrastination.

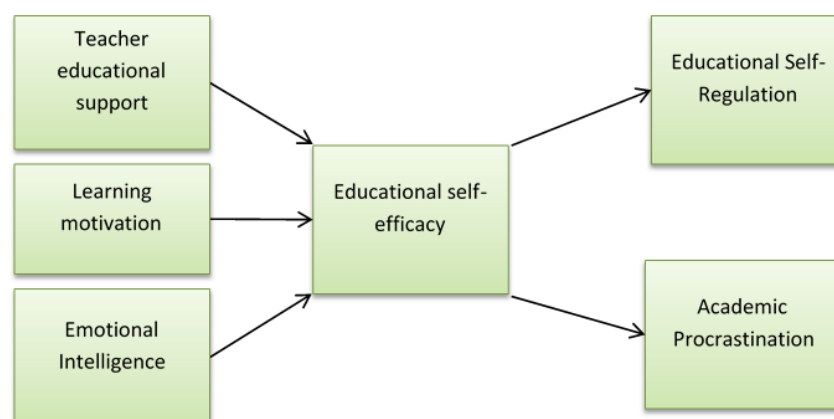


Figure 1: Research Framework

Methodology

This paper investigates the impact of teacher educational support, learning motivation, emotional intelligence, and emotional self-efficacy on educational self-regulation and academic procrastination, with a focus on examining the mediating role of academic self-efficacy. The study was conducted among students enrolled in public sector universities in KSA. Three predictor variables—teacher educational support, learning motivation, and emotional intelligence—were examined alongside three outcome variables: emotional self-efficacy, educational self-regulation, and academic procrastination. A quantitative research approach was adopted to scrutinize the proposed model and hypotheses. Data were gathered through a questionnaire comprising two sections: one addressing respondents' demographic information and the other concerning the study variables. Questionnaire items were sourced from various validated scales, including those by (Erss et al., 2024) for educational support, (Lingappa et al., 2020) for learning motivation, (Halimi et al., 2021) for emotional intelligence, (Fatima et al., 2022) for emotional self-efficacy, (Fatima et al., 2022) for educational self-regulation, and (Yockey, 2016) for academic procrastination. The questionnaires were distributed among 350 students using simple random sampling, yielding a response rate of 70.28%, with 246 completed questionnaires deemed analysable after discarding incomplete responses. Initial data analysis was conducted using SPSS 26, followed by further analysis utilizing Smart PLS 4.

Results

The initial examination of the data was performed using SPSS software. The preliminary findings indicate that 21.27% of the participants were pursuing a bachelor's degree, 48.76% were enrolled in a Master's program, and the remainder were pursuing a PhD. Furthermore, 70.14% of the respondents identified as male, with the remaining participants identifying as female. Additionally, 65.12% of the respondents reported being married, while the remainder indicated being unmarried. Subsequently, Smart PLS 4 was employed for more in-depth analysis of the data.

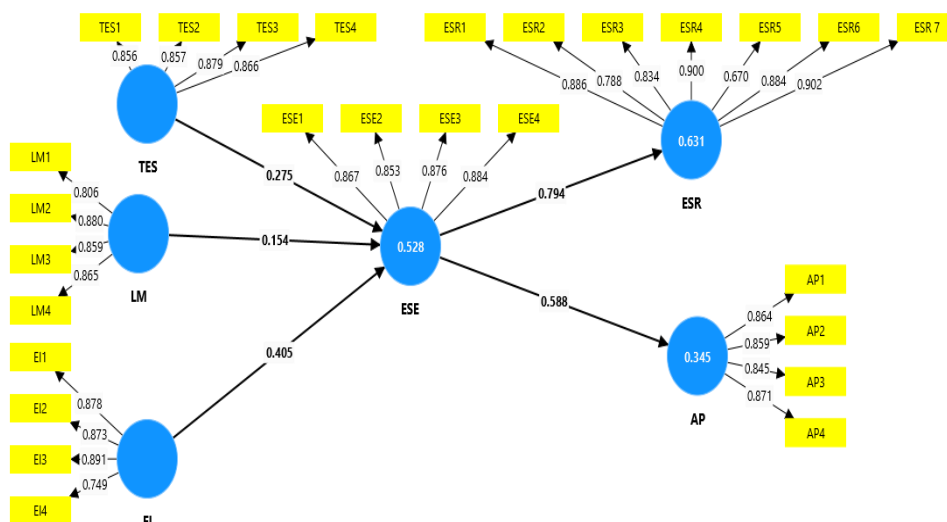


Figure 2: Measurement Model

Note: LM=Learning Motivation; TES= Teacher Educational Support; EI= Emotional Intelligence; ESR= Educational Self-Regulation; AP= Academic Procrastination; ESE= Educational Self-Efficacy

According to research, Smart PLS is considered one of the most suitable tools for analysing complex models (Hair et al., 2019). Given the complexity of the proposed model in this study, Smart PLS 4 was deemed appropriate for analysis. Smart PLS aids in assessing the reliability and validity of the measurement model. Convergent validity was evaluated through the Average Variance Extracted (AVE), while composite reliability and Cronbach's Alpha were also examined. The analysis using Smart PLS is divided into two sections. The first section pertains to the measurement model, which commences with the assessment of factor loading. According to Hair et al. (2017), factor loading values above 0.60 are considered acceptable. In Table 1, all retained items in the study exhibited factor loadings exceeding 0.70, thus meeting the criterion. Items with factor loadings below 0.60 were subsequently removed.

Table 1

Factor Loading	AP	EI	ESE	ESR	LM	TES
AP1	0.864					
AP2	0.859					
AP3	0.845					
AP4	0.871					
EI1		0.878				
EI2		0.873				
EI3		0.891				
EI4		0.749				
ESE1			0.867			

ESE2	0.853		
ESE3	0.876		
ESE4	0.884		
ESR 7		0.902	
ESR1		0.886	
ESR2		0.788	
ESR3		0.834	
ESR4		0.900	
ESR5		0.670	
ESR6		0.884	
LM1			0.806
LM2			0.880
LM3			0.859
LM4			0.865
TES1			0.856
TES2			0.857
TES3			0.879
TES4			0.866

Subsequently, this study delved into composite reliability (CR) and Cronbach's Alpha. (F. Hair Jr et al., 2014) suggested that values exceeding 0.70 for both CR and Cronbach's Alpha are indicative of reliability and validity. Table 2 displays that all variables attained Cronbach's Alpha and CR values surpassing 0.70. Moreover, the AVE was scrutinized based on the criteria proposed by (Fornell & Larcker, 1981). Table 2 reveals that all AVE values meet these criteria, with each figure exceeding 0.50.

Table 2.

Reliability and Validity

	Cronbach's alpha	CR	AVE
AP	0.882	0.919	0.739
EI	0.870	0.912	0.722
ESE	0.893	0.926	0.758
ESR	0.930	0.944	0.708
LM	0.875	0.914	0.728
TES	0.888	0.922	0.748

Additionally, the Heterotrait-Monotrait (HTMT) technique was employed to ascertain discriminant validity. As per Henseler et al. (2015), HTMT values below 0.90 are considered acceptable to confirm convergent validity. The values presented in the matrix in Table 3 are all below 0.90, thereby meeting the criteria outlined by (Henseler et al., 2015).

Table 3.

HTMT

	AP	EI	ESE	ESR	LM	TES
AP						

EI	0.671				
ESE	0.660	0.758			
ESR	0.674	0.746	0.871		
LM	0.746	0.768	0.672	0.673	
TES	0.593	0.664	0.678	0.698	0.699

Table 4.

Direct Results

	Beta	SD	T Value	P Values	Decision
EI -> ESE	0.405	0.074	5.437	0.000	Supported
ESE -> AP	0.588	0.048	12.225	0.000	Supported
ESE -> ESR	0.794	0.026	30.628	0.000	Supported
LM -> ESE	0.154	0.078	1.969	0.049	Supported
TES -> ESE	0.275	0.070	3.956	0.000	Supported

The study's outcomes are detailed in Tables 4 and 5. Table 4 presents the direct results of the study. According to the statistical analysis, EI demonstrates a direct effect on ESE, thereby supporting the hypothesis (Beta=0.405, t=5.437). Furthermore, ESE exhibits a significant effect on AP, validating the proposed hypothesis (Beta=0.588, t=12.225). The findings substantiate the assertion that ESE significantly influences ESR, supporting the hypothesis (Beta=0.794, t=30.628). Likewise, LM demonstrates a positive effect on ESE (Beta=0.154, t=0.049), thus corroborating the hypothesis. Lastly, TES is shown to have a positive effect on ESE, further supporting the hypothesis (Beta=0.275, t=3.956).

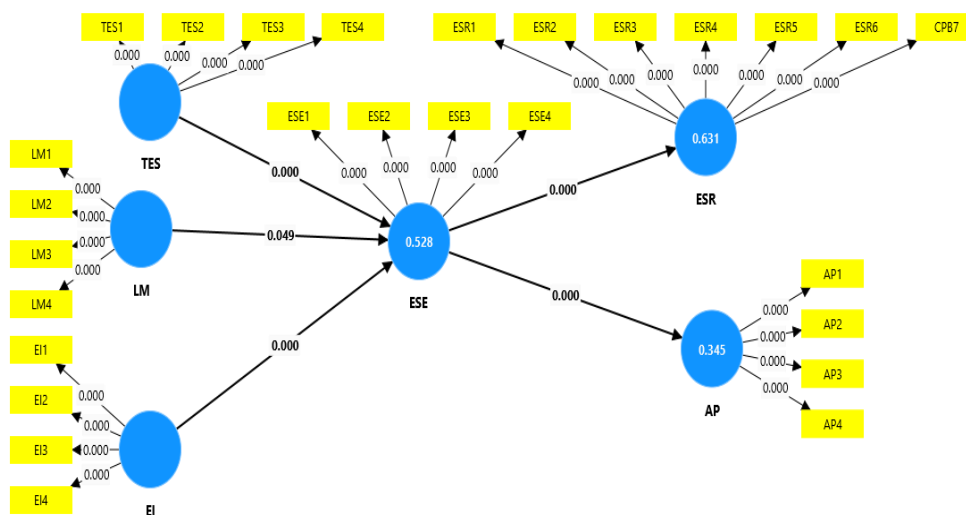


Figure 3: Structural Model

Table 5

Indirect Results

	Beta	SD	T Value	P Values	
EI -> ESE -> ESR	0.321	0.061	5.244	0.000	Significant
LM -> ESE -> AP	0.090	0.049	1.847	0.065	Insignificant
TES -> ESE -> AP	0.162	0.042	3.882	0.000	Significant
LM -> ESE -> ESR	0.122	0.063	1.954	0.051	Insignificant
TES -> ESE -> ESR	0.218	0.055	3.955	0.000	Significant
EI -> ESE -> AP	0.238	0.049	4.884	0.000	Significant

The study's indirect findings are delineated in Table 5. The mediating function of ESE is validated between TES and ESR (Beta=0.218, t=3.955), EI and AP (Beta= 0.238, t=4.884), as well as TES and AP (Beta= 0.162, 3.882), thus confirming the hypothesis.

Discussion

This research aimed to investigate the influence of factors such as learning motivation, teacher educational support, and emotional intelligence on educational self-efficacy, educational self-regulation, and academic procrastination. The findings of the study indicate a positive relationship between learning motivation and educational self-efficacy, consistent with those reported by (Shao & Kang, 2022). The participants of the study, students themselves, suggest that multiple factors contribute to these findings. One possible explanation is that the respondents are motivated to engage in learning within their classroom environment, which includes interactions with teachers and peers. In the presence of their classmates, the respondents are inclined to enhance their skills and maximize their learning opportunities. They perceive the lessons taught during class sessions as crucial for their professional development.

Furthermore, the findings indicate that emotional intelligence has a significantly positive impact on educational self-efficacy. The participants perceive themselves as self-motivated individuals who take initiative in their studies and other academic endeavours. They also view themselves as competent students and are driven by this perception to exert effort towards achieving their academic objectives. According to their self-perceived competence, they autonomously set academic goals and diligently strive to attain them. Additionally, the participants express self-encouragement to consistently strive for academic excellence, emphasizing the importance of achieving good grades and performing well in class. These findings align with those reported by (Wang & Wang, 2022) in their study.

The results also affirm the significance of teacher support as a determinant of educational self-efficacy. This finding is consistent with the research of W. Li et al. (2020), who identified a noteworthy impact of teacher educational support on educational self-efficacy. One potential explanation for these findings is that respondents perceive their teachers as empowering them to make academic decisions. Additionally, teachers offer students choices regarding their subjects and academic pursuits. Those instructing various subjects demonstrate a willingness to listen to students' opinions and value their ideas. Some students noted that teachers actively encourage participation in question-and-answer sessions. Moreover, teachers extend support through university or institute initiatives, facilitating access to courses vital for professional growth. These elective courses provide students with a range of options for study. Additionally, teachers assist students with academic projects and play a crucial role in bridging academia with industry to provide students with exposure to professional environments. Furthermore, teachers and

students in securing internships, which serve as pivotal pathways to their professional careers. Moreover, teachers facilitate the organization of workshops and conferences, offering students valuable opportunities to cultivate academic connections and gain exposure. Such comprehensive support from teachers plays a pivotal role in fostering students' confidence and self-esteem, which are indispensable for achieving academic goals.

The findings of the study also underscore the role of educational self-efficacy in fostering self-regulation among students, as well as in mitigating academic procrastination. These findings are consistent with those reported by (Lee et al., 2021) and (L. Li et al., 2020). Educational self-efficacy emerges as a critical factor in curbing procrastination tendencies among students, who often find themselves inclined to postpone essential academic tasks until the eleventh hour. Respondents acknowledged the importance of their academic responsibilities but admitted to succumbing to the allure of leisure activities, which frequently divert their attention away from academic obligations and deadlines. Consequently, addressing these tendencies becomes imperative. In this regard, emotional intelligence assumes significance. Respondents expressed confidence in mastering the skills taught to them and displayed a readiness to intensify their efforts in their studies. They also expressed assurance in their ability to manage challenges and mitigate obstacles. Respondents asserted their capacity to grasp the intricacies of their coursework and evinced a determination not to shirk from tasks assigned by their instructors. As a consequence of their academic self-efficacy, students exhibit enhanced academic self-regulation, enabling them to fulfil their assignments punctually, plan their assessments and assignments alongside their examinations, and navigate classroom learning more adeptly. Respondents indicated their ability to structure their time effectively for lectures and classes and articulated a clear understanding of their learning objectives and desired problem-solving approaches. They also expressed a keen interest in understanding the solutions to their academic challenges, demonstrating a proactive stance in organizing tasks and striving to rectify errors identified in their academic assignments and examinations.

Contribution, Limitations and Future Directions

As with any research endeavour, this study is not without its limitations. One such limitation pertains to the utilization of a cross-sectional research design in the methodology section. Future investigations could employ a longitudinal research design to longitudinally track and assess the respondents over time, offering a more comprehensive understanding of their experiences. Additionally, given that this study adopts a quantitative approach, future inquiries might consider integrating a mixed-methods methodology to glean deeper insights into the perspectives of the respondents. Moreover, the data for this study were sourced exclusively from students enrolled in universities within the KSA. It would be advantageous for subsequent studies to expand the scope of data collection to encompass students from various universities, facilitating a comparative analysis across different educational contexts. Furthermore, the R-square values obtained in this study suggest the potential inclusion of additional variables to further elucidate the factors influencing procrastination and the cultivation of self-regulation among students.

Previous research has extensively discussed the theoretical and practical contributions of studies. From a theoretical standpoint, this research delves into the elucidation of factors that play a pivotal role in mitigating academic procrastination. Moreover, it stands out among a limited pool of studies by comprehensively examining the influence of various factors on academic

procrastination and the fostering of academic regulation within a unified framework. Notably, whereas prior research predominantly treats educational self-efficacy as an independent variable, this study addresses the gap by exploring its mediating role, thus enriching the literature. Furthermore, this study represents a unique endeavour as it investigates the effects of emotional intelligence, teacher support, and learning motivation as independent variables within a singular framework. In terms of analytical methodologies, this research contributes to the existing literature by employing Smart PLS-4 as the analysis tool, thus diverging from the conventional use of AMOS or process macros observed in previous studies. Regarding the managerial implications of the study, it offers guidance to university decision-makers on prioritizing factors conducive to mitigating academic procrastination. Concurrently, these factors facilitate the cultivation of academic self-regulation among students. By focusing on these factors, universities can foster student engagement and interest in their studies, consequently enhancing academic performance and bolstering the institution's positive reputation among students. Furthermore, these findings hold potential utility for researchers as they chart their course for future investigations.

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References

- AKYILDIZ, S. T., Oğuzcan, Ç., & ÇELİK, V. (2023). Self-Regulated Learning Skills of ELT Pre-Service Teachers during Post-Earthquake Emergency Remote Education in Türkiye. *Uluslararası Türk Eğitim Bilimleri Dergisi*, 2023(21), 733-764. <https://doi.org/10.46778/goputeb.1318751>
- Aparisi, D., Granados, L., Sanmartin, R., Martínez-Monteagudo, M. C., & García-Fernández, J. M. (2020). Relationship between emotional intelligence, generativity and self-efficacy in secondary school teachers. *Sustainability*, 12(10), 3950. <https://doi.org/10.3390/su12103950>
- Arias-Chávez, D., Ramos-Quispe, T., Villalba-Condori, K., & Cangalaya-Sevillano, L. (2020). Self-efficacy and academic procrastination: a study conducted in university students of Metropolitan Lima. *International Journal of Innovation, Creativity and Change*. <https://hdl.handle.net/20.500.12394/7616>
- Brenner, C. A. (2022). Self-regulated learning, self-determination theory and teacher candidates' development of competency-based teaching practices. *Smart Learning Environments*, 9(1), 3. <https://doi.org/10.1186/s40561-021-00184-5>
- Cıtlı, C., & Yurdakul, B. (2020). Examining English Self-Efficacy Beliefs of University Preparatory Class Students [Üniversite Hazırlık Sınıfı Öğrencilerinin İngilizce Öz-Yeterlik Algularının İncelenmesi]. *Eurasian Journal of Educational Research*, 20(86), 39-60. <https://dergipark.org.tr/en/pub/ejer/issue/54088/729792>
- Dugué, M., Sirost, O., & Dosseville, F. (2021). A literature review of emotional intelligence and nursing education. *Nurse Education in Practice*, 54, 103124. <https://doi.org/10.1016/j.nepr.2021.103124>
- Erss, M., Loogma, K., & Jõgi, A.-L. (2024). The effect of teacher agency support, students' personal perseverance and work experience on student agency in secondary

- schools with Estonian and Russian instructional language. *Cogent Education*, 11(1), 2314515. <https://doi.org/10.1080/2331186X.2024.2314515>
- El-Henawy, W. M., Dadour, E., Salem, M. M., & El-Bassuony, J. M. (2010). Self-regulated learning in English language instruction. Paper presented at the The First International Conference, College of Education Held by Port Said University. <https://www.researchgate.net/profile/Walaa-El-Henawy/publication/274311342>
- F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European business review*, 26(2), 106-121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Fakhrou, A., & Habib, L. H. (2022). The Relationship between Academic Self-efficacy and Academic Achievement in Students of the Department of Special Education. *International Journal of Higher Education*, 11(2). <https://econpapers.repec.org/RePEc:jfr:ijhe11:v:11:y:2022:i:2:p:1>
- Fatima, S., Ali, M., & Saad, M. I. (2022). The effect of students' conceptions of feedback on academic self-efficacy and self-regulation: evidence from higher education in Pakistan. *Journal of Applied Research in Higher Education*, 14(1), 180-199. <https://doi.org/10.1108/JARHE-07-2020-0209>
- Filgona, J., Sakiyo, J., Gwany, D., & Okoronka, A. (2020). Motivation in learning. *Asian Journal of Education and social studies*, 10(4), 16-37. <https://doi.org/10.9734/ajess/2020/v10i430273>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
- Francois, A. L. (2023). Self-Regulation Strategies for African Americans Who Experience Negative Stereotype Automation: Best Practices From Clinicians. The Chicago School of Professional Psychology.
- Ginosyan, H., Tuzlukova, V., & Ahmed, F. (2020). An investigation into the role of extracurricular activities in supporting and enhancing students' academic performance in tertiary foundation programs in Oman. *Theory and Practice in Language Studies*, 10(12), 1528-1534. <http://dx.doi.org/10.17507/tpls.1012.03>
- Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial management & data systems*, 117(3), 442-458. <https://doi.org/10.1108/IMDS-04-2016-0130>
- Hair, J. F., Sarstedt, M., & Ringle, C. M. (2019). Rethinking some of the rethinking of partial least squares. *European journal of marketing*, 53(4), 566-584. <https://doi.org/10.1108/EJM-10-2018-0665>
- Halimi, F., AlShammari, I., & Navarro, C. (2021). Emotional intelligence and academic achievement in higher education. *Journal of Applied Research in Higher Education*, 13(2), 485-503. <https://doi.org/10.1108/JARHE-11-2019-0286>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43, 115-135. <https://doi.org/10.1007/s11747-014-0403-8>

- Herpratiwi, H., & Ahmad, T. (2021). Learning interest and discipline on learning motivation. *International Journal of Education in Mathematics, Science and Technology*. <https://doi.org/10.46328/ijemst.2290>
- Hoi, V. N., & Mu, G. M. (2021). Perceived teacher support and students' acceptance of mobile-assisted language learning: Evidence from Vietnamese higher education context. *British Journal of Educational Technology*, 52(2), 879-898. <https://doi.org/10.1111/bjet.13044>
- Hosseini, L. J., Rafiemanesh, H., & Bahrami, S. (2022). Levels of motivation and basic psychological need satisfaction in nursing students: In perspective of self-determination theory. *Nurse Education Today*, 119, 105538. <https://doi.org/10.1016/j.nedt.2022.105538>
- Hursen, C. (2021). The effect of problem-based learning method supported by web 2.0 tools on academic achievement and critical thinking skills in teacher education. *Technology, Knowledge and Learning*, 26(3), 515-533. <https://doi.org/10.1007/s10758-020-09458-2>
- Kalkan, F., & Cemaloğlu, N. (2023). Development of Teacher Support Scale for Secondary School Students (TSSSSS): A Validity and Reliability Study. *International Journal of Contemporary Educational Research*, 10(2), 293-311. <https://doi.org/10.52380/ijcer.2023.10.2.485>
- Kostić-Bobanović, M. (2020). Perceived emotional intelligence and self-efficacy among novice and experienced foreign language teachers. *Economic research-Ekonomska istraživanja*, 33(1), 1200-1213. <https://doi.org/10.1080/1331677X.2019.1710232>
- Kuftyak, E. (2022). Procrastination, stress and academic performance in students. *Alpha Proceedings*, 5, 965-974. <https://doi.org/10.3897/ap.5.e0965>
- Lee, D., Allen, M., Cheng, L., Watson, S., & Watson, W. (2021). Exploring relationships between self-efficacy and self-regulated learning strategies of English language learners in a college setting. *Journal of international students*, 11(3), 567-585. <https://doi.org/10.32674/jis.v11i3.2145>
- Li, L., Gao, H., & Xu, Y. (2020). The mediating and buffering effect of academic self-efficacy on the relationship between smartphone addiction and academic procrastination. *Computers & Education*, 159, 104001. <https://doi.org/10.1016/j.compedu.2020.104001>
- Li, W., Gao, W., & Sha, J. (2020). Perceived teacher autonomy support and school engagement of Tibetan students in elementary and middle schools: Mediating effect of self-efficacy and academic emotions. *Frontiers in psychology*, 11, 50. <https://doi.org/10.3389/fpsyg.2020.00050>
- Lingappa, A. K., Kiran K, K., & Oommen Mathew, A. (2020). Safety training transfer in chemical manufacturing: The role of personality traits and learning motivation. *Cogent Business & Management*, 7(1), 1835335. <https://doi.org/10.1080/23311975.2020.1835335>
- Liu, X.-x., Gong, S.-Y., Zhang, H.-p., Yu, Q.-l., & Zhou, Z.-j. (2021). Perceived teacher support and creative self-efficacy: The mediating roles of autonomous motivation and achievement emotions in Chinese junior high school students. *Thinking Skills and Creativity*, 39, 100752. <https://doi.org/10.1016/j.tsc.2020.100752>

- Luther, V. L. (2022). The Impacts of Self-Efficacy and Intrinsic Motivation: Mentoring Students to Be Motivated Readers. *The Language and Literacy Spectrum*, 32(1), 2. <https://digitalcommons.buffalostate.edu/lls/vol32/iss1/2>
- Malmi, L., Sheard, J., Kinnunen, P., Simon, & Sinclair, J. (2020). Theories and models of emotions, attitudes, and self-efficacy in the context of programming education. Proceedings of the 2020 ACM conference on international computing education research, <https://doi.org/10.1145/3372782.3406279>
- Narca, M. L., & Caballes, D. G. (2021). Learning Motivation: Strategies to Increase Students' Engagement in Online Learning at San Sebastian College-Recoletos, Manila. *International Journal of Asian Education*, 2(4), 573-580. <https://dx.doi.org/10.46966/ijae.v2i4.217>
- Ngui, G. K., & Lay, Y. F. (2020). The Effect of Emotional Intelligence, Self-Efficacy, Subjective Well-Being and Resilience on Student Teachers' Perceived Practicum Stress: A Malaysian Case Study. *The Effect of Emotional Intelligence, Self-Efficacy, Subjective Well-Being and Resilience on Student Teachers' Perceived Practicum Stress: A Malaysian Case Study*, 9(1), 277-291. <https://doi.org/10.12973/eu-jer.9.1.277>
- Ökmen, M. Ş., Koroğlu, Y., & Sarikaya, M. (2022). Investigation of the Effect of Using Surgical Face Masks on Aerobic and Anaerobic Performance of Children During Educational Games. *Pakistan Journal of Medical & Health Sciences*, 16(05), 438-438. <https://doi.org/10.53350/pjmhs22165438>
- Omari, O., Moubtassime, M., & Ridouani, D. (2020). Factors Affecting Students' Self-Efficacy Beliefs in Moroccan Higher Education. *Journal of Language & Education Volume*, 6(3). <https://doi.org/10.17323/jle.2020.9911>
- Osterman, K. F. (2023). Teacher practice and students' sense of belonging. In *Second International Research Handbook on Values Education and Student Wellbeing* (pp. 971-993). Springer. https://doi.org/10.1007/978-3-031-24420-9_54
- Payan-Carreira, R., Sebastião, L., Cristóvão, A. M., & Rebelo, H. (2022). How to enhance students' self-regulation. <http://hdl.handle.net/10174/35303>
- Ren, K., Liu, X., Feng, Y., Li, C., Sun, D., & Qiu, K. (2021). The relationship between physical activity and academic procrastination in Chinese college students: the mediating role of self-efficacy. *International journal of environmental research and public health*, 18(21), 11468. <https://doi.org/10.3390/ijerph182111468>
- Rivers, S. E., Handley-Miner, I. J., Mayer, J. D., & Caruso, D. R. (2020). 29. Emotional Intelligence. by RJ Stenberg. 2nd Edition. Cambridge: Cambridge University Press, XXII, 1250, 709-735. <https://doi.org/10.1017/9781108770422.030>
- Rostania, W. N., Zulaihati, S., & Fauzi, A. (2023). The Influence of Self-Efficacy and Self-Control on Academic Procrastination at North Jakarta State Vocational Schools. *Reflection: Education and Pedagogical Insights*, 1(2), 40-50. <https://firstcierapublisher.com/index.php/reflection/article/view/21>
- Roster, C. A., & Ferrari, J. R. (2020). Time is on my side—Or is it? Assessing how perceived control of time and procrastination influence emotional exhaustion on the job. *Behavioral Sciences*, 10(6), 98. <https://doi.org/10.3390/bs10060098>
- Shao, Y., & Kang, S. (2022). The link between parent-child relationship and learning engagement among adolescents: The chain mediating roles of learning motivation and academic self-efficacy. *Frontiers in Education*, <https://doi.org/10.3389/educ.2022.854549>

- Sun, G., & Lyu, B. (2022). Relationship between emotional intelligence and self-efficacy among college students: the mediating role of coping styles. *Discover Psychology*, 2(1), 42. <https://doi.org/10.1007/s44202-022-00055-1>
- Syamsuddin, R., & Pd. (2021). LEARNING MOTIVATION MOTIVATION OF LEARNING. In (pp. 1-32). https://www.researchgate.net/publication/353437453_LEARNING_MOTIVATION_MOTIVATION_OF_LEARNING
- Tang, Y., & He, W. (2023). Relationship between emotional intelligence and learning motivation among college students during the COVID-19 pandemic: A serial mediation model. *Frontiers in psychology*, 14, 1109569. <https://doi.org/10.3389/fpsyg.2023.1109569>
- Teng, M. F., & Wu, J. G. (2024). An investigation of learners' perceived progress during online education: Do self-efficacy belief, language learning motivation, and metacognitive strategies matter? *The Asia-Pacific Education Researcher*, 33(2), 283-295. <https://doi.org/10.1007/s40299-023-00727-z>
- Voica, C., Singer, F. M., & Stan, E. (2020). How are motivation and self-efficacy interacting in problem-solving and problem-posing? *Educational Studies in Mathematics*, 105(3), 487-517. <https://doi.org/10.1007/s10649-020-10005-0>
- Wang, Y., & Wang, Y. (2022). The interrelationship between emotional intelligence, self-efficacy, and burnout among foreign language teachers: a meta-analytic review. *Frontiers in psychology*, 13, 913638. <https://doi.org/10.3389/fpsyg.2022.913638>
- Wu, F., & Fan, W. (2017). Academic procrastination in linking motivation and achievement-related behaviours: A perspective of expectancy-value theory. *Educational Psychology*, 37(6), 695-711. <https://doi.org/10.1080/01443410.2016.1202901>
- Yockey, R. D. (2016). Validation of the short form of the academic procrastination scale. *Psychological reports*, 118(1), 171-179. <https://doi.org/10.1177/0033294115626825>
- Zhoc, K. C., King, R. B., Chung, T. S., & Chen, J. (2020). Emotionally intelligent students are more engaged and successful: examining the role of emotional intelligence in higher education. *European Journal of Psychology of Education*, 35(4), 839-863. <https://doi.org/10.1007/s10212-019-00458-0>