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Predictive Role of Academic Procrastination, Locus of Control and Self-Efficacy on Academic Performance of Pre-service Teachers

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Abstract

Investigating the factors that influence academic performance is essential for improving student learning outcomes, particularly for pre-service teachers. This study examined the influence of gender, age and academic stream on academic procrastination, locus of control and self-efficacy; and it investigates the predictive role of academic procrastination, locus of control and self-efficacy towards academic performance of pre-service teachers. Ex-post facto research design is used in the study. Data were collected from 348 subjects enrolled in teacher education programme. Three measures of academic procrastination, locus of control and s elf-efficacy were completed by the participants; and the GPA scores was self-reported. Independent t-test, Analysis of variance and Multiple regression were used to examine study hypotheses. Result indicate gender has significant effect on pre-service teacher' locus of control. There are no significant differences in academic procrastination, locus of control and self-efficacy according to age and academic stream. According to multiple regression analysis, academic procrastination had negative influence on performance scores and locus of control had no effect on academic performance. Moreover, self-efficacy found to have a significant positive role to facilitate academic performance of pre-service teachers. Result implies the need to develop efficacy belief of pre-service teachers as it has positive contribution to academic performance. Studying demographic differences in key variables investigated and understanding developmental delay behaviour of pre-service teachers could yield considerable implications to the field of teacher education.

Keywords: Academic performance; Academic procrastination; Locus of control; Self-efficacy; Pre-service teachers

1. Introduction

Academic performance indicates achievement of curricular goals. It is desirable to investigate the factors affecting student's academic outcomes (e.g., performance scores, grades). Academic achievement is not confined to acquisition of professional knowledge rather, it incorporates the abilit ies of the students for crit ical thinking, ability to solve problems, to innovate, and to apply knowledge across varying contexts (Wang et al., 2018). In this regard, measuring the factors affecting academic performance of students in pre -service teacher education might have considerable implications. According to existing body of knowledge, procrastination, locus of control and self -efficacy significantly influences the educational achievement of students. These behavioural and cognitive factors might have heterogeneous and complex relations with academic performance.

1.1. Academic Procrastination

A deliberate delay in executing academic task is considered as academic procrastination. It refers to putting off academic responsibilities till the last moment or deadline. It is related to purposeful delay in completion of academic tasks. When someone procrastinates, they are aware of the potentia l consequences (Steel, 2007). Those who procrastinate usually lack motivation and believe that their academic work is less essential than that of non-procrastinators (Pintrich, 2000; Schraw et al., 2007; Steel, 2007). Research examined that procrastination leads to

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depression, low self-esteem and poor study habit on the part of students (Tice and Baumeister, 1997; as cited in Joubert, 2015).

1.2. Locus of Control

The concept locus of control was introduced by J.B. Rotter (1966). According to social learning theory, locus of control refers to how an individual perceive about the result of his own action. It has been stated that the locus of control is a dimension with two opposing differences (Lee-Kelley, 2006). Locus of control can be internal and external. Locus of control as described by Rotter, is "*a belief about the extent to which life events are due to own actions—characterizing people with an internal locus of control—rather than outside forces beyond one's control—characterizing people with an external locus of control* " (Rotter, 1966). Individuals with internal locus of control are directed towards success, self-confident, determined, planned and organized in their behaviour. In contrary, an individual with external locus of control avoid failure, insecure and anxious (Yeşilyaprak , 2004). The theoretical foundation for locus of control is deeply rooted in B.F. Skinner's reinforcement theory of behaviorism, which posits that behaviour is shaped and maintained by its consequences—specifically, through reinforcement and punishment (Skinner, 1953). Skinner argued that organisms learn to repeat behaviours that are followed by positive reinforcement and to avoid those followed by punishment. From this perspective , locus of control can be seen as a generalized expectancy shaped by patterns of reinforcement . For example, individuals who are consistently reinforced for their actions may develop an internal locus of control, coming to believe that they can influence outcomes through effort and behaviour. Conversely, those who experience inconsistent or uncontrollable reinforcement may learn that outcomes are unrelated to their actions, fostering an external locus of control (Lefcourt, 1976). Skinner himself emphasized the role of the environment in shaping behaviour, suggesting that perceived control (or lack thereof) is a learned response to reinforcement history. Thus, locus of control is not innate , but develops over time through an individual's interaction with their environment and the reinforcement contingencies they experience.

1.3. Self-Efficacy

According to Bandura, self-efficacy was described as "*beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations*" (Bandura, 1995). It is concerned with the question of "*how an individual holds belief in his or her abilities to execute a task* " rather than "*what skills and abilities a person possesses*". It is considered as "*one's determination to encounter challenges and difficulties in life* " (Choudary, 2010). The social learning theory, four sources contribute to self-efficacy beliefs: emotional and physiological states, social persuasion, vicarious experiences, and mastery experiences. The most influential of these is mastery experiences, which involve successfully completing tasks. Each success builds a stronger sense of competence and reinforces the belief in one's abilities, while repeated failures—especially early in the learning process—can diminish self-efficacy. The second source is vicarious experiences, where individuals observe others, particularly those similar to themselves, succeed through effort and perseverance. Watching others overcome challenges can enhance one's belief that they too can achieve similar outcomes. Social persuasion is the third source, referring to verbal encouragement and positive feedback from others. When people are told they have the capability to succeed — especially by credible and supportive figures such as teachers, coaches, or peers—they are more likely to believe in themselves and stay motivated. Lastly, physiological and emotional states also play a role. People interpret their physical and emotional reactions—like stress, anxiety, or excitement—as signals about their abilit ies. Positive interpretations, such as feeling energized and focused, can boost self -efficacy, while negative feelings may lower it. Together, these four sources shape how confident individuals feel about taking on challenges and persisting in the face of obstacles (Bandura, 1995). Studies reported that self-efficacy is positively linked to student's academic success. Academic self-efficacy as defined in literature, is a self-perception of students regarding their ability to successfully execute an academic task. It is considered as the ability of the students to complete assignments and achieve their goals in academic (Baird et al., 2009).

2. Related Literature

2.1. Academic Procrastination, Locus of Control, Self-Efficacy and Academic Performance

Research conducted on college and university students, has shown that procrastination have negative correlation with academic performance (Johal, 2017). Similarly, a significant negative correlation of procrastination with students' academic performance have been reported in past studies (Joubert, 2015; Kifayat et al., 2024; Gayary and Kalita, 2025). From regression analysis, it is observed that procrastination negatively predicted the performance of students (Üztemur, 2020; Ucar et al., 2021; Tisocco and Liporace, 2022; Farooq et al., 2024). Furthermore, some meta-analytical research identified the negative influence and prediction of procrastination on students' performance (Kim and Seo, 2015; Kooren et al., 2024). In the context of deaf secondary school students, correlational studies examined a positive correlation between locus of control and academic performance. It suggests that an increase in locus of control is correlated with improvement in academic performance (Alhassan et al., 2025). Similarly, a strong positive and significant correlation have been revealed in the past research (Chinedu and Nwizuzu, 2021). Students having internal locus of control found to have high academic achievement than external locus students (Arsini et al., 2023). In other studies, researchers agree that external locus of control significantly predicted the academic performance in nursing foundation (Ebe et al., 2022). However, studies conducted on medical students, described that locus of control is not significantly correlated with academic Grade Point Average (GPA) score (Althubaiti et al., 2025).
One of the key factors influencing students' academic performance is self-efficacy. It is identified as a key determinant of academic success in university students (Kolo et al., 2017). A few studies in China investigated on the self-efficacy belief. While examining other studies reported that academic self-efficacy has significant positive influence on academic achievement of Chinese master students. Similarly, academic performance, academic engagement, and academic self-efficacy were found to be strongly correlated in Chinese context (Meng and Zhang, 2023). For high self-efficacy belief, universities may focus on fostering students' academic confidence and implementing proactive learning strategies (Zhang, 2025).

2.2. Academic Procrastination, Locus of Control, Self-Efficacy and Gender

Procrastination of Turkish pre-service teachers vary significantly by gender (Pala et al., 2011). Male students demonstrated high procrastination in academics than their female counterpart (Farooq et al., 2024). However, contradictory findings were reported in other studies (Kifayat et al., 2024), indicating that female students demonstrated high academic procrastination compared to male students. In Indian context, study reported no significant difference in procrastination, locus of control and self-efficacy of students across gender (Madan and Soni, 2023; Gayary and Kalita, 2025). In consistence with aforementioned studies, no gender differences are observed in academic procrastination of students (Joubert, 2015; Johal, 2017; Ucar et al., 2021; Farooq et al., 2024).
While investigating difference in locus of control across gender, some studies reported statically significant differences in locus of control between boys and girl students (Akhtar and Saxena, 2014). Female medical students had lower locus of control than male medical students (Althubaiti et al., 2025). In contrast, it is found that male and female do not differ significantly with respect to their locus of control (Choudhury and Borooah, 2017; Mohanty, 2021; Jaiswal, 2021). In line with these findings, no significant gender difference is observed in individual and chance of control sub-scale of locus of control (Kumar, 2021). Although studies have investigated demographic difference in self-efficacy, the influence of gender on self-efficacy of pre-service teachers has been a main focus. In overall sense of self-efficacy and self-efficacy towards classroom management, male and female pre-service teachers were differed significantly (Sak, 2015). Similarly, the fact that compared to men, women pre-service teachers statistically have higher levels of self-efficacy beliefs (Muega-Geronimo and Carlos, 2023). Whereas literature also shows that gender has no significant impact on pre-service teachers' self-efficacy beliefs (Arslantas, 2021). It is studied that male and female pre-service teachers do not differ statistically with respect to their self-efficacy scores (Isiksal, 2005).

2.3. Academic Procrastination, Locus of Control, Self-Efficacy and Age

Prior studies have demonstrated a significant difference in academic procrastination of high school and postgraduate students of different age group. Compared to older students (postgraduates, adult age), younger students (adolescents, early age) are more likely to procrastinate (Jha, 2025). In this regard, procrastination can be considered as a

developmental delay behaviour. However, research targeting university students at Moscow revealed that level of procrastination among students from different academic years was not different (Barabanshchikova et al., 2018). Similarly, in another study conducted on high school student population, academic procrastination does not vary significantly across their age (Joubert, 2015). In past research, age difference was found in locus of control in college students (Lachman,1986). Furthermore, a significant difference in locus of control among four age group i.e., 20-25, 26-30, 60-69, and 70 above was reported by past studies conducted in Indian context (Jaiswal, 2021). The systematic review analysis indicated the effect of age on self-efficacy belief (Priyadharsan and Saravanabawan, 2021). According to correlation test, academic self-efficacy has a significant positive relationship with age indicating that self-efficacy increases with age (Abusalehi et al., 2019). However, according to certain statistical findings, there was no significant effect of age on secondary school teachers' self-efficacy (Odanga and Aloka, 2024).

2.4. Academic Procrastination, Locus of Control, Self-Efficacy and Academic Stream

Research conducted on college going students concluded a considerable difference in level of academic procrastination with regard to three academic streams i.e., arts, science and commerce (Pradhan and Behera, 2024) and science, humanities and commerce (Kaur, 2023). In contrast, result of statistical analysis indicated no significant differences in academic procrastination of postgraduate students with respect to their academic stream (Gayary and Kalita, 2025). Studies investigating the influence of academic stream on internal-external locus of control examined no statistically significant difference between arts and science stream students (Variya and Parikh, 2023). Students studying science, math, and English did not significantly differ in external locus of control (Kumaravelu, 2018), whereas significant influence of stream on internal locus of control was identified in the sample of undergraduate students (Kaur and Singh, 2021) and between arts and science secondary school students (Siddiquah, 2019). Previous research highlighted no significant variation in self-efficacy of students by stream of education i.e., arts, commerce and science discipline (Pai and Sekhar, 2023) and between arts and science stream (Chouhan, 2019; Dumnar, 2025). However, studies reported that self-efficacy construct of humanities, science and commerce college students (Jan and Maqbool, 2022); and between science and non-science students vary significantly (Ismail et al, 2019).

Although many factors affect academic performance of students, procrastination, locus of control and self-efficacy belief are most significant ones. Studies investigating the influence of academic procrastination, locus of control and self-efficacy on academic performance of trainee-teacher population are less in number. This study aimed to investigate influence of gender, age and academic stream on academic procrastination, locus of control and self-efficacy; explored the predictive role of academic procrastination, locus of control and self-efficacy towards academic performance of pre-service teachers. Furthermore, influence of gender, age and academic stream on academic procrastination, locus of control and self-efficacy of pre-service teachers is investigated. In line with the objectives, the following hypotheses have been formulated: -

3. Gender does not influence pre-service teachers' academic procrastination, locus of control and self-efficacy belief
4. Age does not influence pre-service teachers' academic procrastination, locus of control and self-efficacy belief
5. Academic stream does not influence pre-service teachers' academic procrastination, locus of control and self-efficacy belief
6. Academic procrastination would negatively predict academic performance of pre-service teachers.
7. Locus of control would positively predict academic performance of pre-service teachers.
8. Self-efficacy would positively predict academic performance of pre-service teachers.

3. Materials and Methods

The research design used in the study was *Ex-post facto*. The subjects of the study consist of 348 teachers with its target population of 4300. The study was carried out on pre-service teachers enrolled in two-year Bachelor of Education (B.Ed.) course. As the population was heterogeneous in terms of gender, age, and academic stream, participants were selected using stratified random sampling without proportional representation. Table -1 depicts the sample characteristics in terms of gender, age and academic stream.

Table-1. Sample Characteristics

Variables		Frequency	Percentage
Gender	Male	140	44.22%
	Female	208	59.77%
Age	21-24 Years	179	51.43%
	25-28 Years	101	29.02%
	29-32 Years	68	19.54%
Academic Stream	Arts	171	49.13%
	Science	177	50.86%
Total		348	100%

As seen in Table-1, 140 (40.22 %) number of participants were male and 208 (59.77%) number of participants were female. With regard to the age, 179 (51.43%) participants were in 21-24 age group, 101 (29.02 %) participants were in 25-28 age group and 68 (19.54%) participants were in 29-32 age group. As shown in Table-1, the stream distribution of sample is relatively balanced with 171 (49.13 %) number of participants from arts stream and 177 (50.86 %) participants from science stream. This heterogeneity of sample aligns with the pre-service teacher population of Odisha, India. For data collection, three instruments were employed. Academic Procrastination Scale was designed and standardized by the investigators. The scale is used to evaluate delay behaviour of pre-service teachers in four academic domains i.e., lesson planning and assignment completion, examination, delay due to self-motivation and peer influence. The measure is containing 19 items which participants evaluate on a 5-point Likert rating ranging from 5 (Strongly Agree) to 1 (Strongly Disagree). This scale demonstrated a Cronbach relatability alpha value of .76. Rotter's Locus of Control inventory was utilized to evaluate internal and external locus of control. The measure features 29 forced choice items having two alternatives indicating either internal or external locus of control. This instrument has a Cronbach reliability alpha reliability value of .79, indicating a high internal consistency between test items. Self-efficacy scale was developed by the investigators conducting Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The scale consists of 15 Likert rating items ranging from 5 (Strongly Agree) to 1 (Strongly Disagree). All items of the scale were based on four factors i.e., academics (4-items), internship teaching (5-items), assistance to students (3-items), and classroom management (3-items). The measure achieved a Cronbach reliability alpha of .81. Academic Performance: Data on academic performance was collected through self-reported GPA score card. Prior to data collection, participants were informed that their responses will be kept private and will not affect to their academic grades.

4. Results and Discussion

The data analysis was carried out in SPSS version-31. As the data meets the assumptions of parametric statistics, t-test, Analysis of Variance and Multiple Regression Analysis Model etc. were used for data analysis.

4.1. Gender difference in academic procrastination, locus of control and self-efficacy

Table-2. Influence of gender on academic procrastination, locus of control and self-efficacy

	Gender	N	Mean	Std. Deviation	t-value	df	Sig.	Result
Academic Procrastination	Male	140	69.66	8.01	.262	346	.794	NS
	Female	208	69.43	8.06				

Locus of Control	Male	140	10.03	3.34	2.10	346	.036	S
	Female	208	10.75	2.80				
Self-Efficacy	Male	140	62.12	7.26	.188	346	.851	NS
	Female	208	62.26	6.13				

Table-2 describes the results of independent t-test on academic procrastination, locus of control and self-efficacy of pre-service teachers. For procrastination, p-value of .794 was found to be higher than chosen level of significance i.e., .05 (p>.05). The analysis indicated no significant difference in academic procrastination between male (M=69.6643, SD=8.01492) and female (M=69.4341, SD=8.06630); t (346) =.262, p=.794. While examining gender difference in locus of control, a significant difference (p<.05) was found between pre-service male (M=10.03, SD=3.34) and female teachers (M=10.75, SD=2.80); t (346)=-2.10, p=.036. In self-efficacy, result indicate that p-value (.851) was higher than the alpha level (p>.05). Hence, it can be concluded that there was no statistically significant gender difference in self-efficacy of male (M=62.12, SD=7.26) and female (M=62.26, SD=6.13) pre-service teachers; *t* (346) =-.188, *p*=.851. According to independent t-test analysis, the formulated hypotheses i.e., "*gender does not influence pre-service teachers' academic procrastination, locus of control and self-efficacy belief*" is not accepted at .05 significance level.

4.2. Age difference in academic procrastination, locus of control and self-efficacy

While assessing differences in key variables (i.e., academic procrastination, locus of control and self-efficacy) according age, it was noted that the age of pre-service teachers involved in present study, was ranged from 21 to 32. Hence, the participants were classified into three age groups (21-24 age, 25-28 age and 29-32 age).

Table-3. Influence of age on academic procrastination, locus of control and self-efficacy

	Age	**N**	**Mean**	**Std. Deviation**	**F-value**	**df**	**Sig.**	**Result**
Academic Procrastination	21-24 Years	179	69.57	8.06	.025	345	.975	NS
	25-28 Years	101	69.38	8.09				
	29-32 Years	68	70	5.56				
Locus of Control	21-24 Years	179	10.39	2.96	.148	345	.863	NS
	25-28 Years	101	10.58	3.24				
	29-32 Years	68	10.66	1.52				
Self-Efficacy	21-24 Years	179	62.51	6.55	1.60	345	.203	NS
	25-28 Years	101	61.62	6.73				
	29-32 Years	68	57	2				

Table-3 yields the result of *one-way Anova*. From the above table, it can be seen that academic procrastination (F (2, 345) =.025, p>.05), locus of control (F (2, 345) =.148, p>.05) and self-efficacy (F (2, 345) =1.60, p>.05) mean scores of pre-service teachers do not differ significantly with respect to their age groups Hence, the formulated hypothesis i.e., "*age does not influence pre-service teachers' academic procrastination, locus of control and self-efficacy belief*" is accepted at 0.05 significance level indicating no mean difference.

4.3. Academic stream difference in academic procrastination, locus of control and self-efficacy

In present study, pre-service teachers were enrolled in arts and science academic stream. Table-4, indicates stream-wise mean scores on academic procrastination, locus of control and self-efficacy.

Table-4. Influence of academic stream on academic procrastination, locus of control and self-efficacy

	Academic Stream	**N**	**Mean**	**Std. Deviation**	**t-value**	**df**	**Sig.**	**Result**
Academic Procrastination	Arts	171	68.95	7.79	1.31	346	.191	NS
	Science	177	70.08	8.24				
Locus of Control	Arts	171	10.45	3.30	.109	346	.914	NS
	Science	177	10.48	2.78				
Self-Efficacy	Arts	171	61.91	6.45	.810	346	.419	NS
	Science	177	62.49	6.74				

Table-4 indicated that pre-service teachers from science stream exhibited high procrastination in relation to their academic domains such as course completion, studying for the examination, assignment and project work etc. Result shows no statistically significant mean differences (p>.05) in academic procrastination between arts (M= 68.95, SD= 7.79) and science (M=70.08, SD=8.24) pre-service teachers, t (346)=1.31, p=.191. In terms of locus of control, mean score of arts pre-service teachers was less than the mean of science pre-service teachers. However, no significant difference (p>.05) between arts (M=10.45, SD=3.30) and science (M=10.48, SD=2.78) pre-service teachers' locus of control was found, resulting t (346) =.109, p=.914. In self-efficacy, pre-service teachers from arts stream reported lower mean score than the mean of pre-service teachers from science stream. It revealed that arts (M=61.91, SD= 6.45) and science (M=62.49, SD=6.74) pre-service teachers do not differ significantly (p>.05) with respect to their self-efficacy belief, t (346) =810, p=.419. Accordingly, formulated hypothesis i.e., "*Academic stream does not influence pre-service teachers' academic procrastination, locus of control and self-efficacy belief*" is sustained at 0.05 level of significance.

4.4. Predictive role of academic procrastination, locus of control and self-efficacy on academic performance

To determine the predictive role of academic procrastination, locus of control, self-efficacy (independent variables) towards academic performance (outcome variable) of pre-service teachers, multiple regression was carried out.

Table-5. Regression Model Summary

R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
.091[a]	.694	.000	4.21464	1.939

a. **Predictors:** (Constant), Self-Efficacy, Locus of Control, Academic Procrastination

b. **Dependent Variable:** Academic Performance

An evaluation of regression model summary in Table-5 indicated that Durbin-Watson Test value is 1.939, which is between 1.5 and 2.5 (Field, 2005). It revealed autocorrelation between variables is likely not a cause for concern. It was found that 69.4% variance in academic performance of pre-service teachers was explained by the academic procrastination, locus of control and self-efficacy. The standard error is the average distance of the observed values from the regression line was 4.21464.

Table-6. Anova summary of regression analysis

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Regression	50.816	3	16.939	.954	.014
Residual	6110.548	344	17.763		
Total	6161.363	347			

As seen in Table-6, p-value (Sig.) associated with overall F-statistics found to be significant (F (3, 344) =.954, P<.05, R^2=.694). It means that the three explanatory variables (academic procrastination, locus of control and self-efficacy) have a statistically significant relationship with the response variable i.e., academic performance.

Table-7. Coefficients summary of regression model

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	4.691	2.745		1.709	.017
Academic Procrastination	.024	.032	-.46	.741	.29
Locus of Control	-.017	.076	-.13	-.228	. 553
Self-Efficacy	.036	.039	.56	.912	.047
a. Dependent Variable: Academic Performance					

In Table-7. coefficients were analyzed to ascertain the influence of each predictor variable (academic procrastination, locus of control and self-efficacy) on the criterion variable i.e ., academic performance. It is observed that academic procrastination has a significantly negative influence on pre-service teachers' academic performance (B= -.24, t=.741, p<.05). It revealed that one unit increase in academic procrastination, is associated with an average change (decrease) in academic performance, assuming locus of control and self-efficacy taken is held constant. The contribution of academic procrastination to the total variance of pre-service teachers' academic performance was 24% (R2=.24). The hypothesis "*academic procrastination would negatively predict academic performance of pre-service teachers*" is accepted at .05 level of significance. Locus of control do not have a significant influence on academic performance (B=-.17, t= -.228, p>.05), indicating average change in locus of control is associated with a decrease in academic performance assuming academic procrastination and self-efficacy taken is held constant. The contribution of locus of control to the total variance of academic performance was 17% (R2=.17). Hence, formulated hypothesis "*locus of control would positively predict academic performance of pre-service teachers*" is failed to be accepted. The contribution of academic procrastination and internal-external locus of control to total variance of academic performance is 41% (R2=.41). Further, regression analysis indicated that both academic procrastination (β=-.46) and locus of control (β=-.13) have negative contribution to academic performance. Self-efficacy has a significantly positive influence on pre-service teachers' academic performance (B=.36, t=.912, p<.05), indicating average change in academic performance is associated with an increase in self-efficacy belief assuming academic procrastination and locus of control taken is held constant. Self-efficacy (β=.56) made a positive contribution to academic performance explaining 36% of variance to the regression model. Based on the result of regression model, it can be concluded that academic procrastination and locus of control found to be not a significant predictor of pre-service teacher' academic performance. Moreover, self-efficacy has meaningful explanation for the prediction of academic performance. Considering the statistical analysis on multiple regression model, the formulated null hypotheses i.e., "*Self-efficacy would positively predict academic performance of pre-service teachers*" is accepted at 0.05 significance level.

In this study, no gender differences were found in pre -service teachers' academic procrastination and self-efficacy. It indicates that both procrastination behavior and self -efficacy construct is independent of gender influence. This finding is supported by previous studies (Joubert, 2015; Johal, 2017; Ucar et al., 2021; Madan and Soni, 2023; Farooq et al., 2024; Ga yary and Kalita, 2025). While examining pre-service teachers' locus of control, a significant effect of gender was observed. These results are inconsistent past researches indicating no gender difference in locus of control personality (Choudhury and Borooah, 2017; Mohanty, 2021; Jaiswal, 2021; Kumar, 2021). The study found no difference in academic procrastination, locus of control and self -efficacy by age. This result aligns with existing body of knowledge (Joubert, 2015; Barabanshchikova et al., 2018, Odanga and Aloka, 2024). However, findings demonstrates that the extent to which pre-service teachers of different ages procrastinate academically is a developmental problem, as 29-32 year aged pre-service teachers reported high procrastination than their counterpart in the age group of 21-24 and 25-28 year. This result does not match with previous researches reporting that younger students (adolescents, early age) are more likely to procrastinate than older students (postgraduates, adult age) (Jha, 2025). In relation academic stream of pre-service teachers, no statistical differences were found in their procrastination behaviour, locus of control, self -efficacy. However, some studies differentiated academic procrastination (Kaur, 2023; Pradhan and Behera, 2024), locus of control (Siddiquah, 2019; Kaur and Singh, 2021) and self-efficacy belief (Ismail et al, 2019; Jan and Maqbool, 2022) across academic stream. According to multiple regression analysis, academic procrastination had a significant negative effect on performance scores of pre -service teachers. It indicates high procrastination in academics leads to low academic success. This finding supports the past investigation (Kim and Seo, 2015; Joubert, 2015; Johal, 2017; Üztemur, 2020; Ucar et al., 2021; Tisocco and Liporace, 2022; Farooq et al., 2024; Kooren et al., 2024; Kifayat et al., 2024; Gayary and Kalita, 2025). It is found that locus of control had no effect on academic performance. This finding differs from existing literatures, indicating positive influence of locus of control on academic performance (Chinedu and Nwizuzu, 2021; Ebe et al., 2022; Arsini et al., 2023; Alhassan et al., 2025). Moreover, self-efficacy found to have a significant positive role to facilitate academic performance of pre-service teachers. This result goes along with empirical investigation (Kolo et al., 2017; Meng and Zhang, 2023; Zhang, 2025).

5. Conclusion

These results allow us to draw the conclusion that future research can design intervention to reduce procrastination behaviour pre-service teacher as it has negative contribution towards academic performance. The findings highlight the importance of helping students to strengthen their internal locus of control, as it plays a key role in achieving academic success. Educators should focus on encouraging this internal orientation rather than promoting dependence on external factors. The results suggest that pre-service teachers who have higher levels of self-efficacy believe are more likely to exhibits improvements in their academic performance. It can be inferred that educators can develop high self-efficacy belief of trainee-teachers by providing verbal encouragement and positive feedback in academics. We acknowledge several limitations of the study. First, data on academic procrastination, locus of control and self -efficacy were collected by administering self-reported instruments. Second, the study examined the differences in academic procrastination, locus of control and self-efficacy of trainee teachers according to their gender, age and academic stream. In line with study limitations, it is recommended to conduct further research investigating other factors of socioeconomic status to understand how they influence academic procrastination, locus of control, and self -efficacy of teachers at undergraduate stage.

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