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General Self-efficacy and Other Predictors of Grade Point Average (GPA) in College Students of Kathmandu, Nepal

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Financial sources

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Grade point average

Students

ABSTRACT

General self-efficacy refers to individuals' belief in their ability to manage their functioning and influence life events. It can be influenced by various factors such as personal achievements, observed experiences, encouragement, and emotional states. We aimed this study to examine the relationship between general self-efficacy and other demographic factors in predicting Grade Point Average (GPA) among college students. The power analysis indicated minimum of 385 data points for unknown population, however we followed the rules of thumb that more data equals better results. This cross-sectional survey involved 527 college students from the Kathmandu Valley, representing various age groups, genders, ethnicities, religious affiliations, marital statuses, residential locations, education levels, faculties, and years of study. We targeted only two colleges to collect the data; however, the online portal of data collection allowed students to provide the data from other institutions as well. Students were selected through opportunity sampling, and data were collected using the General Self-Efficacy Scale between September 8 and November 2, 2022. Our findings indicate no significant relationship between general self-efficacy and GPA. Ethnicity (Janajati), religion (Buddhists), education level (high school), faculty (management), and institution type (private) were identified as significant predictors of GPA, while gender, age, marital status, and residential location did not predict GPA. The study provides valuable insights into how demographic factors, rather than self-efficacy, influence academic performance, offering useful information for educational strategies aimed at improving student outcomes.

1. INTRODUCTION

Individuals affect their psychological well-being through personal agency, believing in their ability to accomplish tasks being a central driver that shapes their actions and decisions in life (Bandura, 1997). Self-efficacy views are subjective and often hidden, posing challenges for external

observation or measurement (Ritchie, 2016). Self-efficacy sizes individuals' actions and success across diverse domains, empowering them to overcome fears, achieve lifelong success, and excel academically (Zajacova et al., 2005). Self-efficacy theory and research are concerned with people's ability to engage in successful self-regulation (Maddux, 2016).

Self-efficacy is essential in developing student personalities to facilitate their studying process (Fan & Williams, 2010). Many studies show that self-efficacy assist students in their academic performance. However, the current state of research in Nepal examining the relationship between self-efficacy and academic factors reveals notable gaps that warrant further investigation. Among the existing studies, three relevant works were found. Mahat and Pradhan (2012) explored self-efficacy in relation to HIV/AIDS knowledge, but the study's main limitation lies in its exclusive focus on genders and academic levels. Shrestha & Tuladhar (2021) reported that most nursing students exhibited an average level of self-efficacy; however, the generalizability of the findings is limited due to the small sample size of 209 participants from a singular academic institution and a specific academic stream. Bhusal (2023) highlighted the crucial roles of self-efficacy, self-regulation, and self-efficacy for self-regulation as determinants affecting academic procrastination among undergraduate students in Kathmandu Valley. Nevertheless, this study lacks essential information, such as the potential contribution of self-efficacy to academic performance such as grade point average (GPA).

Addressing research gaps is crucial in enhancing our understanding of the intricate relationship between self-efficacy and academic outcomes among diverse student populations in Nepal. Firstly, current studies lack inclusivity in demographic characteristics, such as faculties, types of institutions, academic years, and working status. Secondly, there is a significant gap in exploring the interactions between self-efficacy and other factors beyond self-efficacy in predicting academic performance, including GPA, to enhance understanding of their influence on educational outcomes. Thirdly, the reliability and validity of self-efficacy measurement tools has not been systematically assessed, posing concerns about knowledge reliability and validity.

This research aims to address gaps by examining self-efficacy variations among Nepalese students based on demographics. We also explore the relationship between self-efficacy and GPA, identifying predictors influencing educational outcomes. Additionally, we plan to systematically assess the reliability and convergent validity of a commonly used generalized self-efficacy measurement tool in the context of Nepalese academic research.

This study, exploring demographics' impact on self-efficacy and GPA, holds promise for understanding academic dynamics. By identifying prevalent high self-efficacy levels and revealing the non-significant role of general self-efficacy in predicting GPA, the research offers valuable insights into the complex interplay between personal beliefs and academic performance. The examination of demographic influences, ranging from age and gender to ethnicity and religion, contributes nuanced findings that could guide tailored educational interventions. Additionally, the study signals the importance of further exploring the mechanisms shaping self-efficacy among diverse student groups, suggesting avenues for future research that integrates longitudinal and qualitative approaches.

This study's generalizability is limited by its sample size and specific context. The cross-sectional design restricts causal inference, and self-reported data may introduce bias. Focusing solely on GPA oversimplifies academic success, and cultural factors or unexamined variables may influence the findings. Opportunity sampling could introduce selection bias, and future research should explore causal relationships and additional predictors for broader implications.

2. METHODS

2.1 PARTICIPANTS

A total of 527 participants, aged between 18 and 24 (M = 21.46, SD = 3.72), were included in this study. The sample included 296 females (56.17%) and 231 males (43.83%). The ethnic distribution was as follows: Brahmin/Kshetri (48.77%), Janajati (31.69%), Newar (12.14%), and unspecified (7.40%). Regarding religious affiliation, Hindu participants constituted the majority (75.52%), followed by Buddhist (14.99%) and unspecified (9.49%). Marital status revealed that single participants formed the largest group (88.24%), while married participants accounted for 9.30%. In terms of residence location, non-valley residents (55.98%) outnumbered valley residents (38.90%). Educational levels included high school degree (33.02%), bachelor's degree (58.44%), and master's degree (6.26%). The faculties represented were arts (28.65%), management (55.79%), and natural science (6.45%). Institution types comprised community college (25.24%), governmental college (33.97%), and private college (37.19%). The majority of participants were pure students (70.21%), with employed students accounting for 29.41%. Academic years were distributed across first year (39.28%), second year (29.03%), third year (8.54%), fourth year (14.61%), and session completed (back paper) (7.02%).

2.2 MATERIALS

2.2.1 GENERAL SELF-EFFICACY SCALE (GES)

Reliability: Previous studies confirmed high reliability, stability, and construct validity of the GSE scale (Schwarzer & Greenglass, 1999). Internal consistencies typically ranged between alpha = 0.75 and 0.91 (Scholz, Doña, Sud, & Schwarzer, 2002). The Cronbach alphas (α), showing internal consistency, diversified across different groups: .94 for patients with cardiovascular diseases in Germany, .89 for patients with cancer in Germany, .90 for students in Poland, .87 for patients with gastrointestinal diseases in Poland, .87 for swimmers in Poland, and .86 for participants from South Korea. (Luszczynska, Scholz, & Schwarzer (2005).

Validity: In Germany, a large-scale study including 3514 high-school students and 302 teachers found evidence supporting the validity of the GSE scale (Schwarzer & Jerusalem, 1999, as cited in (Scholz, Doña, Sud, & Schwarzer, 2002). The GSE scale revealed correlations of 0.49 with optimism and 0.45 with the perception of challenge in stressful situations for students whereas for teachers, strong correlations were observed with proactive coping (0.55), self-regulation (0.58), and negative correlations with procrastination (-0.56). Moreover, significant relationships were observed with all three dimensions of teacher burnout: emotional exhaustion (- 0.47), depersonalization (- 0.44), and lack of accomplishment (-0.75). Validity evidence was found alike for teachers in Hong Kong (Schwarzer, Schmitz, & Tang, 2000).

Cross-cultural Relevance: The GSE scale was observed to demonstrate equivalence across 28 nations, constituting a single global dimension (Leganger, Kraft, & Røysamb, 2000).

2.3 PROCEDURE

The study employed an online cross-sectional design and utilized a customized Google form questionnaire. The questionnaire consisted of three sections – the first section addressed informed consent with information concerning privacy, confidentiality, participant rights, task duration, data security, commitments, and study benefits; the second section included demographic information, and the third section included the Generalized Self-Efficacy Scale. An opportunity sampling was employed for reaching out to individuals from different colleges. The participants were invited via various online platforms (Facebook, LinkedIn, Instagram, and email) between June 26 and October 24, 2023.

The online survey design tried to minimize biases by ensuring comprehensiveness of the questionnaire by providing clarifications. A reliable and valid

tool was employed in the study. The tool was translated into Nepali backing tool translation protocols (forward translation, back translation, and expert consultation). The translation procedure also involved the Think-Aloud protocol, where five different language experts commented on the translated version before its administration to minimize language bias. The tool was examined within the context of Nepal to mitigate cross-cultural biases. Reliability and validity assessments were conducted as part of this process. To alleviate the response biases, participants were requested to carefully read the questionnaire and choose the best options provided.

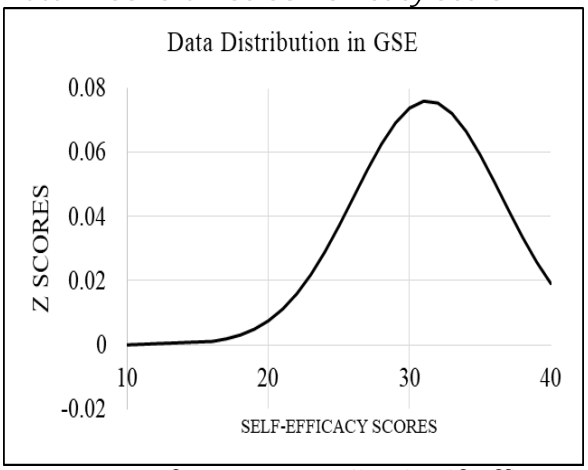
We employed Welch's t-test and Welch's ANOVA where data were normally distributed or homogeneity of variance was observed. However, we utilized nonparametric tests (e.g., Mann-Whitney U and Kruskal-Wallis) due to violations of normality (Shapiro-Wilk test) and homogeneity of variance (Levene's test) assumptions in our data when comparing means between or among groups. For post hoc analysis, James-Howell test was applied. Pearson's correlation was calculated to observe the relationship between variables. Regression analysis was utilized to identify the predictors on GPA. For effect size, Fisher's z, Cohen's d were used and for analyzing the distribution of variance, R2 was used. Cronbach's alpha was calculated to observe the reliability of the scale and its indicators. The subgroups with fewer than 30 participants were either merged into the "others" category or excluded from the analysis.

Data cleaning and analysis were conducted using Google Sheets and Jeffreys's Amazing Statistics Program (JASP) (an open source software). The table, charts and graphs were designed by using JASP and MS Excel (online 365 version).

3. RESULTS

We conducted the analysis using the JASP version 0.18.1.0 for PCs. We also screened the data for the normality of the distributions and for outliers. We found the skewness value -0.59 with a standard error of 0.11 and the Kurtosis value 0.66 with a standard error of 0.21. The score ranged from 10 to 40 (M = 31.28, SD = 5.25).

Figure 1: *Normality Distribution Curve of the Data in Generalized Self-efficacy Scale*



Note: *GSE refers to generalized self-efficacy*

3.1 DEMOGRAPHIC COMPOSITION

We identified 527 participants after data cleaning. The participants' ages ranged from 18 -49 years. In sex category, 56.17% were female particapants, while 43.83% were male. The study consisted of different ethnicities, including 48.77% Brahmin/Kshetri, 31.69% Janajati, 12.14% Newar, and 7.4% Unspecified ethnic group. Religious groups comprised 14.99% Buddhists, 75.52% Hindus, and 9.49% unspecified. In terms of marital status, 49.30% participants were married, while 88.24% were single. Based on residential location, 55.98% were non-valley residents, and 38.90% were valley residents. The educational background of participants comprised 58.44% with bachelor's degree, 33.02% with high school degree, and 6.26% with master's degree. Participants were distributed across educational faculties, including 28.65% in Arts, 55.79% in mgmt., 6.45% in science, and 8.73% in an unspecified faculty. Regarding the type of educational institutions, 25.24% were from community colleges, 33.97% from governmental colleges, and 37.19% from private colleges. Among the participants, 29.41% were employed students, while 70.21% were pure students. In terms of

academic year distribution, 39.28% were in the first year, 29.03% in the second year, 8.54% in the third year, 14.61% in the fourth year, and 7.02% had retake (back paper).

3.2 CUT-OFF SCORES

Cut-off scores were determined based on percentiles to classify participants' general self-efficacy levels: 27 (20th percentile), 30 (40th percentile), 33 (60th percentile), and 36 (80th percentile). Participants were grouped accordingly.

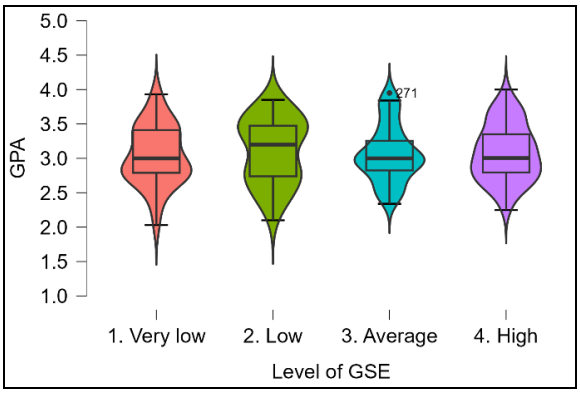
Those scoring below the 20th percentile were classified as 'very low self-efficacy,' while those between the 20th and 40th percentiles were labeled 'low self-efficacy.' Individuals scoring between the 40th and 60th percentiles were considered to have 'average self-efficacy.' Those between the 60th and 80th percentiles were categorized as 'high self-efficacy,' and those above the 80th percentile were labeled 'very high self-efficacy.'

We identified 82 (15.56%) participants with very low self-efficacy, 92 (18.41%) with low self-efficacy, 119 (22.58%) with high self-efficacy, and 108 (20.49%) with very high self-efficacy. The remaining 121 (22.96%) participants demonstrated average self-efficacy. Overall, our study found that college students in our context tended to have higher levels of self-efficacy.

3.3 GENERAL SELF-EFFICACY AND GRADE POINT AVERAGE

Since very high self-efficacy group had insufficient data points, we merged high and very high self efficacy groups into high self efficacy groups. The Shapiro-Wilk test indicated normality in all the groups: very low self-efficacay group ($W = 0.97$, $p = .486$), low self-efficacay group ($W = 0.95$, $p = .118$), average self-efficacay group ($W = 0.95$, $p = .151$) and high self-efficacy group ($W = 0.97$, $p = .270$). Assumption checks (Levene's test for equility of variance) also recvealed non-significant results among self-efficacy groups, $F(3,164) = 1.08$, $p = .358$. Gigen the unequal distribution of the data, we employed welch's ANOVA. The test revealed non-significant difference among very low self-efficacy group ($M = 3.04$, $SD = 0.43$), low self-efficacy group ($M = 3.10$, $SD = 0.48$), average self-efficacy group ($M = 3.06$, $SD = 0.42$) and high self-efficacy low self-efficacy group ($M = 3.08$, $SD = 0.41$), $F(3, 79.2) = 0.131$, $p = .924$.

Figure 2: *Descriptive Values of GPA in Self-Efficacy groups*



We cross validated the fact through regression analusis, again we found the general self-efficacy ($N = 527$) did not significantly predict of GPA, $\beta = .003$, $t(166) = .62$, $p = .615$. General self-efficacy non-significantly explained 0.2 % of variance in GPA scores, $R^2 = .002$, $F(1, 166) = 0.38$, $p = .539$. We found the the inclusion of general self-efficacy total did not significantly improve the GPA scores.

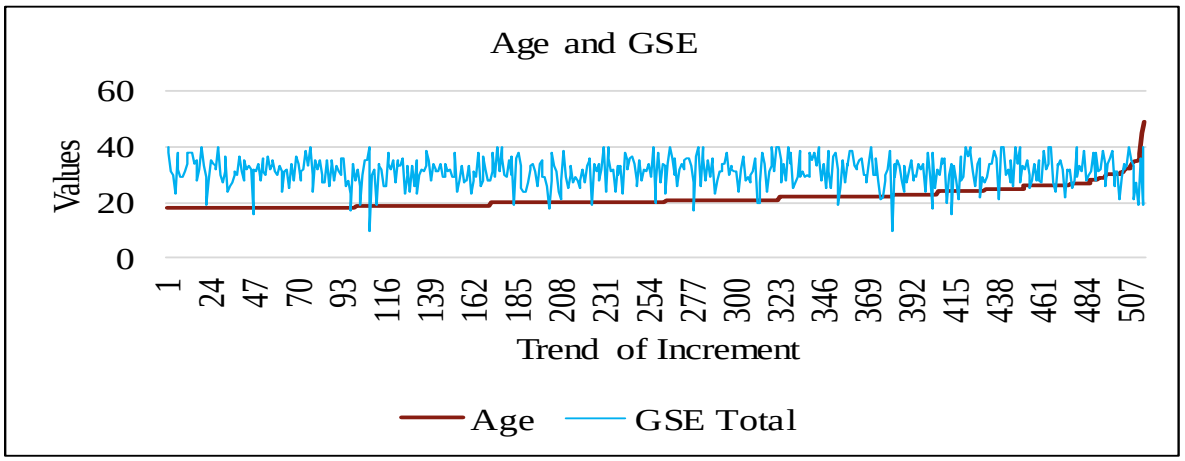
In the following sections, we have not observed moderational effect of general self-efficacy because of its minimal impact carried out from prior analysis.

3.4 AGE

We found non-significant relationship between age and general self-efficacy, $r(525) = .02$, $p = .66$. No relationship between age and GPA, $r(162) = .12$, $p = .14$ was observed. However, significant weak negative relationship was observed between age and percentage ($N = 47$), $r(45) = -.46$, $p = .001$, Fisher's $(z) = -.50$, 95 % CI [-0.66, -0.20]. The regression analysis further explored the relationship between percentage and age, statistically significant, $R^2 = .212$, $F(1, 45) = 12.09$, $p = .001$, explaining 21.2% of the variance,

indicating that age was a significant predictor of percentage, β = -1.32, t (45) = -3.48, p = .001. Figure 1 shows the trend of general self-efficacy increment in relation to age.

Figure 3: *Trend of Increment in GSE with Increasing Age*



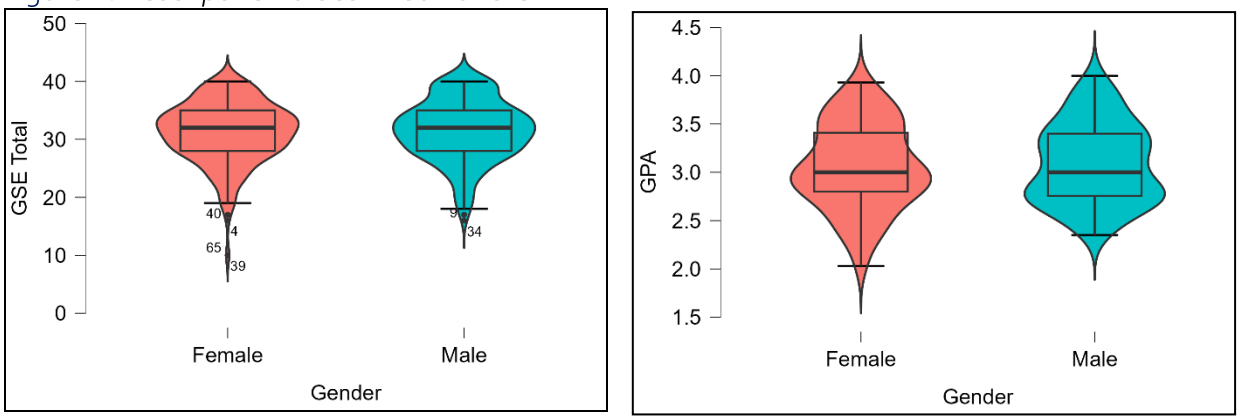
Note: *GSE refers to generalized self-efficacy*

3.5 GENDER

The Shapiro-Wilk test indicated non-normality in both female (W = 0.96, p < .001) and male (W = 0.97, p < .001) groups. However, Levene's test for equality of variances was non-significant, F (1, 525) = .025, p = .875. Given the large sample size, Welch's t-test was conducted. No significant difference in GSE was found between females (N = 296, M = 31.16, SD = 5.26) and males (N = 231, M = 31.45, SD = 5.24), F (1, 525) = .025, p = .875.

In this study, we analysed a large sample of male (N = 83) and female (N = 85). We observed that male as a gender did not significantly predict the GPA, β = .034, t (166) = 0.51, p = .612. Gender as a whole explained only 0.2% of the variance in GPA scores, R^2 = .002, F (1, 166) = 0.26, p = .612. Figure 2 shows some of the other significant descriptive statistics in gender variables.

Figure 4: *Descriptive Values in GSE and GPA*



Note: *Boxplot showing five different parameters in gender variables, where GSE refers to generalized self-efficacy and GPA refers to grade point average*

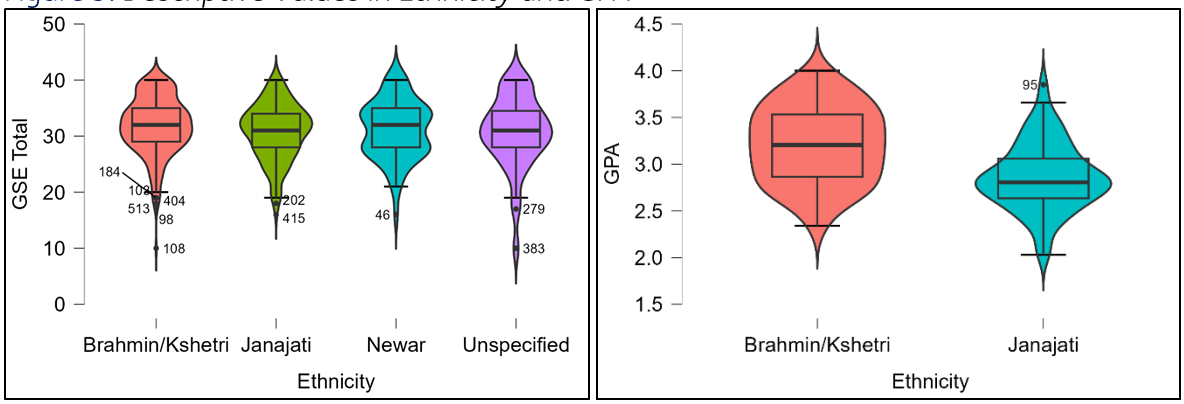
3.6 ETHNICITY

The Shapiro-Wilk test indicated non-normality in Brahmin/Kshetri (W = 0.96, p < .001), Janajati (W = 98, p = .006) and other (W = 0.96, p = .002) groups. Levene's test for equality of variances showed non-significant results, F (2, 524) = 0.83, p = .437. Due to violation of normality

assumptions, a non-parametric Kruskal-Wallis H test was used to compare GSE scores across ethnicity. The test showed non-significant difference in general self-efficacy among Brahmin/Kshetri (N = 257, Mdn = 32), Janajati (N = 167, Mdn = 31), Newar (N = 64, Mdn = 32), and unspecified (N = 39, Mdn = 31), H (2) = 4.27, p = .234.

Due to data not meeting assumptions for GPA in other ethnic groups, only Brahmin/Kshetri (N = 84) and Janajati groups (N = 85) were analysed in the regression analysis. Janajati emerged as a significant predictor of GPA, β = -.342, t (140) = - 5.08 p < .001. Overll ethnicity explained 15.6% of the variance, R^2 = .156, F (1, 140) = 25.84, p < .001, indicating a significant negative relationship between being Janajati and GPA.

Figure 5: *Descriptive Values in Ethnicity and GPA*



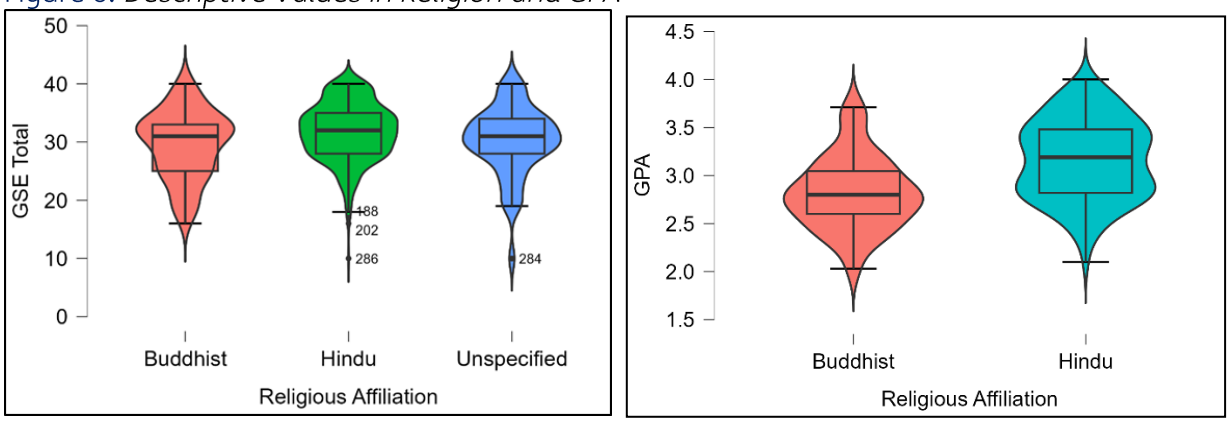
Note: *Boxplot showing five different parameters in ethnicity variables, where GSE refers to generalized self-efficacy and GPA refers to grade point average*

3.7 RELIGION

The Shapiro-Wilk test indicated non-normality in Buddhist (W = 0.97, p = .028), Hindu (W = 97, p < .001) and Unspecified (W = 0.94, p = .018) groups. Levene's test for equality of variances showed non-significant results, F (2, 524) = 2.52, p = .082. Due to violation of normality assumptions, a non-parametric Kruskal-Wallis H test was used to compare general self-efficacy scores across ethnicity. Subsequent Kruskal-Wallis H test revealed a statistically significant difference in compare general self-efficacy among Buddhist (N = 79, Mdn = 31), Hindu (N = 398, Mdn = 32, and unspecified religious groups (N = 50, Mdn = 31), H (2) = 9.88, p = .007, η^2 = .026. Further post-hoc analysis (Tukey's HSD) identified a significant difference between Buddhists and Hindus groups (p = .002, 95% CI [-3.68, -0.68] in compare general self-efficacy, with a medium effect size, Cohen's d = -0.42, 95 % CI [-0.72, -0.12], suggesting that the Hindu have significantly higher level of general self-efficacy compared to Buddhist.

We included only Buddhist (N = 34) and Hindu (N = 121). Hindu as a religious group was found as a significant predictor of GPA, β = .345, t (153) = 4.38, p < .001. Overall model accounted for 11.1% of variance in GPA scores, R^2 = 0.111, F (2, 153) = 19.14, p < .001.

Figure 6: *Descriptive Values in Religion and GPA*

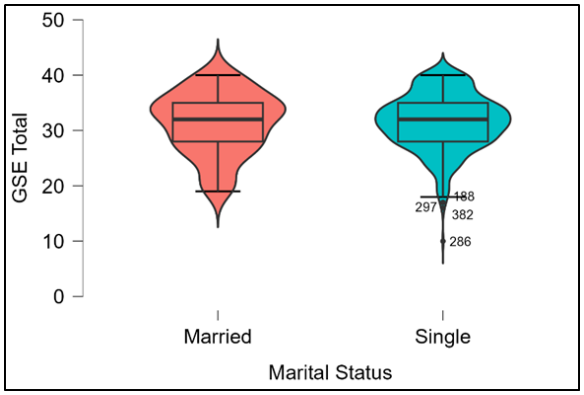


Note: *Boxplot showing five different parameters in religion variables, where GSE refers to generalized self-efficacy and GPA refers to grade point average*

3.8 MARITAL STATUS

The Shapiro-Wilk test indicated normality in married (W = 0.96, p = .06) and non-normality in single (W = 0.97, p < .001) groups. Levene's test for equality of variances was non-significant, F (1, 512) = 0.025, p = .182. Given the large sample size, Welch's t-test was conducted. No significant difference in GSE was found between married (N = 49, M = 31.25, SD = 5.6) and single (N = 465, M = 31.48, SD = 5.04), t (56.52) = - 0. 28, p = .781. We did not observed GPA scores based on marital status due to very limited observations.

Figure 7: *Descriptive Values in Marital Status and GSE*



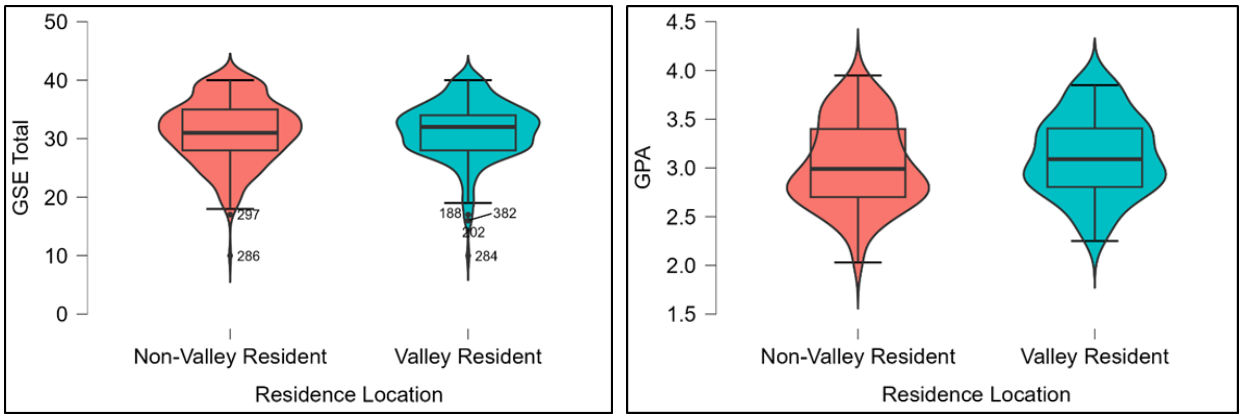
Note: *Boxplot showing five different parameters in marital status, where GSE refers to generalized self-efficacy*

3.9 VALLEY VERSUS NON-VALLEY RESIDENTS

The Shapiro-Wilk test indicated non-normality in both groups: non-valley residents (W = 0.98, p < .001) and valley residents (W = 0.95, p < .001). Levene's test for equality of variances revealed a non-significant difference, F (1, 498) = 3.80, p = .052. Due to non-normality in both groups, a Mann-Whitney U test was conducted to compare general self-efficacy between non-valley residents (N = 295, Mdn = 31) and valley residents (N = 205, Mdn = 32). The test revealed no significant difference in general self-efficacy, U = 29684.50, p = 728.

We included both valley residence (N = 63) and non-valley residence (N = 93) in our study. The valley residence as a member of participant's residence was not found to be significant predictor of GPA scores, β = .088, t (154) = 1.27, p = .205. It explained only 1% of variance, R^2 = .01, F (1, 154) = 1.62, p = .205.

Figure 8: *Descriptive Values in Residence and GPA*



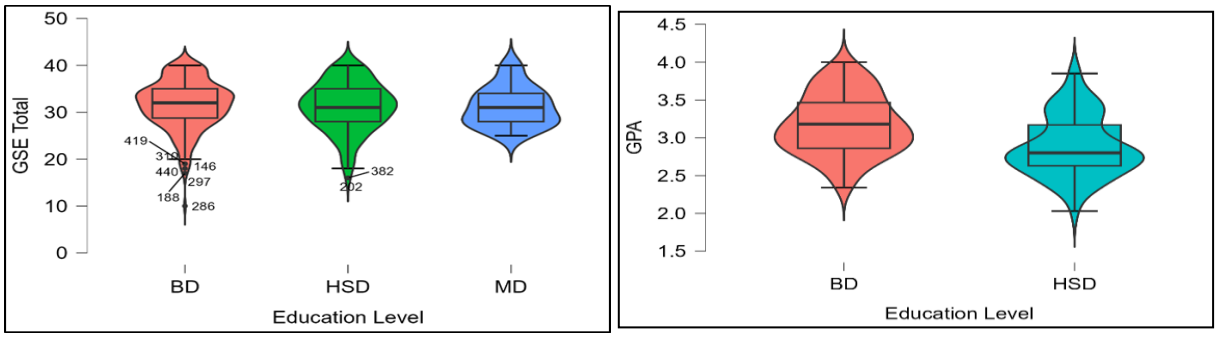
Note: *Boxplot showing five different parameters in residence variables, where GSE refers to generalized self-efficacy and GPA refers to grade point average*

3.10 EDUCATION LEVEL

The Shapiro-Wilk test revealed significant deviations from normality in all three education level groups: bachelor's degree ($W = 0.97$, $p < .001$), high school degree ($W = 0.97$, $p = .002$), and master's degree ($W = 0.95$, $p = .100$). Levene's test indicated no statistically significant difference in variances between the groups, $F(2, 512) = 0.71$, $p = .491$. Due to violation of normality assumptions, a non-parametric Kruskal-Wallis H test was used to compare general self-efficacy scores across education levels. The test did not reveal a statistically significant difference between the groups: bachelor's degree ($N = 308$, $M = 31.56$, $SD = 5.19$), high school degree ($N = 174$, $M = 31.11$, $SD = 5.29$) and master's degree ($N = 33$, $M = 31.15$, $SD = 4.18$), $H(2) = 1.60$, $p = .450$, suggesting no meaningful differences in general self-efficacy among bachelor's degree, high school degree, and master's degree groups.

We analysed only bachelor's degree ($N = 91$) and high school degree ($N = 61$) in regression analysis because master degree had insufficient data points. High school degree significantly predicated GPA scores, $\beta = -.289$, $t(150) = -4.40$, $p < .001$. Academic level accounted for 11.4% of variance in GPA scores, $R^2 = .114$, $F(1, 150) = 19.33$, $p < .001$. It indicates that higher education level were associated with lower overall GPAs by 0.289 units, on average, after controlling for other variables in the model.

Figure 9: *Descriptive Values in Education Level and GPA*



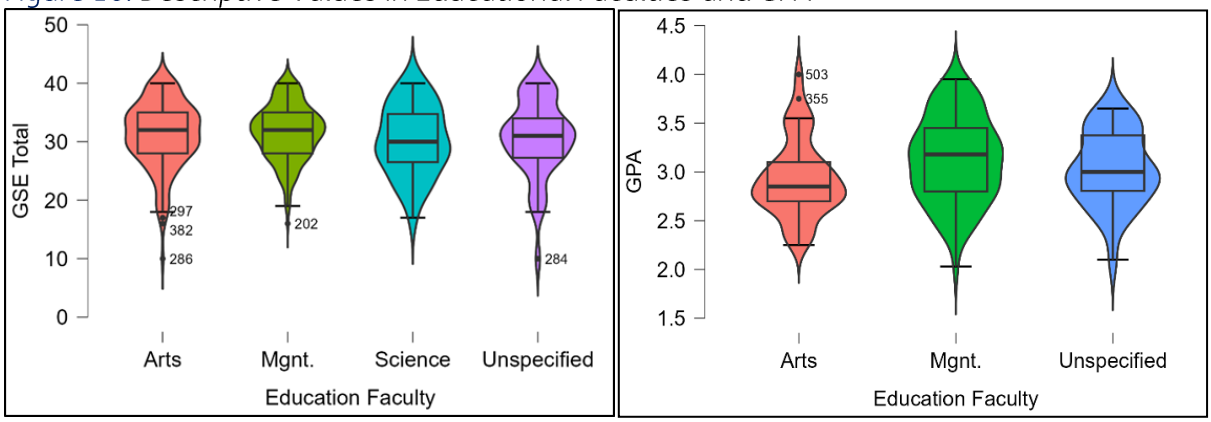
Note: *Boxplot showing five different parameters in educational levels, where GSE refers to generalized self-efficacy; GPA refers to grade point average; BD refers to bachelor's degree and HSD refers to high school degree*

3.11 FACULTIES OF EDUCATION

The Shapiro-Wilk test indicated non-normality arts (W = 0.96, p < .001), management (W = 98, p < .001) and other (W = 0.94, p = .022) groups, but non-normality in science (W = 0.97, p = .541). The homogeneity test for equality of variance (Levene's test) showed significant result, F(3, 521) = 3.43 , p = .017. Therefore, we employed a non-parametric test (e.g., Kruskal-Wallis test) to compare the medians. We found statistically a non-significant difference in the level of general self-efficacy among arts (N = 151, Mdn = 32), mgnt. (N = 294, Mdn = 32), science (N = 34, Mdn = 30) and unspecified (N = 46, Mdn = 31), H (3) = 2.16, p = .54.

We excluded science due to limited data points and analysed arts (N = 39), management (N = 79) and unspecified (N = 30) in regression analysis. Our study found that the management faculty significantly predicted GPA scores. The faculty of management had statistically significant effect on GPA, β = .194, t (145) = 2.39, p = .018, whereas unspecified faculty did not (β = .097, t (145) = 0.96, p = .338). The overall model accounted for 3.9% of the variance in GPA scores, R^2 = .039, F (2, 145) = 2.918, p = .057.

Figure 10: *Descriptive Values in Educational Faculties and GPA*



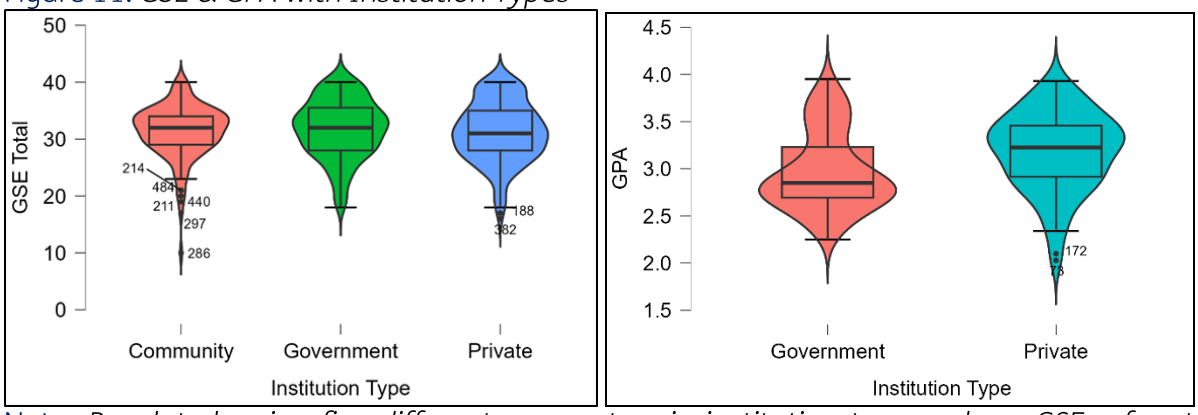
Note: *Boxplot showing five different parameters in educational fields, where GSE refers to generalized self-efficacy and GPA refers to grade point average*

3.12 VARIETIES OF INSTITUTION

The Shapiro-Wilk test revealed significant deviations from normality in all three institutional type groups: community (W = 0.93, p < .001), government (W = 0.97, p < .001), and private (W = 0.97, p = .001). Levene's test indicated no statistically significant difference in variances between the groups, F (2, 505) = 2.36, p = .095. Due to non-normality, a non-parametric Kruskal-Wallis H test compared general self-efficacy scores across institution types. The test did not reveal a statistically significant difference between community college (N = 133, Mdn = 31.33, SD = 4.71), government college (N = 179, Mdn = 31.78, SD = 5.14), and private college (N = 196, Mdn = 31.20, SD = 5.30), H (2) = 1.71, p = .425. This suggests no meaningful differences in general self-efficacy among the groups.

Further analysis focused on private (N = 72) and government colleges (N = 70) due to the limited data for community colleges. Our study revealed revealed private college as a significant predictor of GPA, β = .209, t (121) = 2.41, p = .003. The overall institution type contributed 6% of the variance in GPA, R^2 = .06, F (1, 121) = 8.957, p = .003. This finding suggests that students attending private colleges tend to have higher GPAs compared to students from government colleges.

Figure 11: *GSE & GPA with Institution Types*



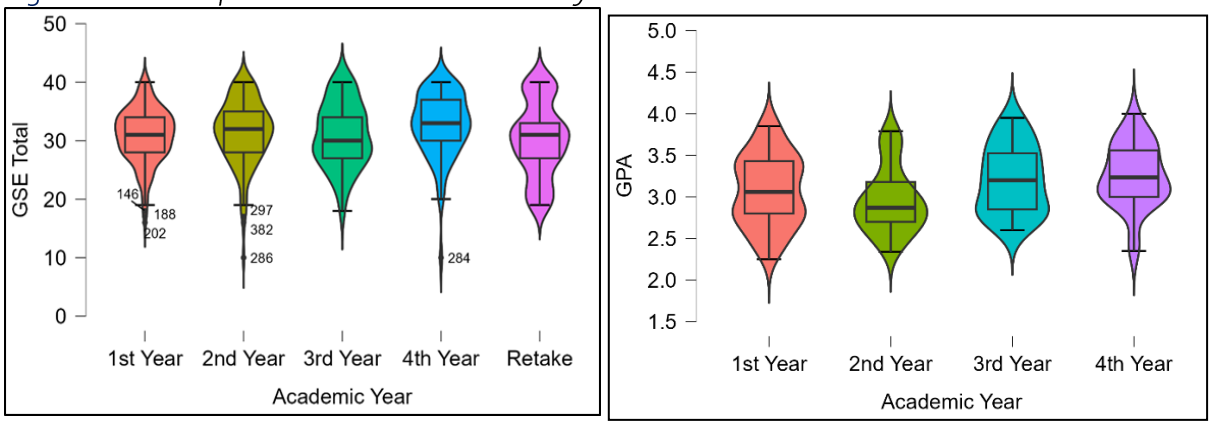
Note: *Boxplot showing five different parameters in institution types, where GSE refers to generalized self-efficacy and GPA refers to grade point average*

3.13 YEAR OF STUDY

The Shapiro-Wilk test indicated non-normality first year (W = 0.98, p = .001), second year (W = 96, p < .001), fourth year (W = 0.92, p < .001), but non-normality in third year (W = 0.97, p = .290) and retake (W = 0.95, p = .088). The equality of variance susing (Levene's test) found statistically non-significant results, F (4, 514) = 2.15, p = .074. Therefore, we employed Kruskal-Wallis Test. The test showed significant difference among first year (N = 207, Mdn = 31), second year (N = 153, Mdn = 32), third year (N = 45, Mdn = 30) and fourth year (N = 77, Mdn = 33) and Retake (N = 37, Mdn = 31), H (4) = 10.44, p = .034. in general self-efficacy level. However, we did not observe any pariwise difference in post-hoc analysis, except that first year and fourth year had significance level appraoacing to the significance level, p = .86, 95 % CI [- 3.76, 0. 15], Cohen's d = - 0. 344.

We analysed first year (N = 51), second year (N = 33), third year (N = 35) and fourth year (N = 28, nearly 30). We observed an interesting result here. The result found at least one variable being significant predictor of GPA as explained by over all model; however, the coefficients for academic year (2nd year), β = -.12, t (143) = - 1.32, p = .188, academic year (3rd year), β = .129, t(143) = 1.45, p = .15), and academic year (4th year), β = .18, t(143) = 1.88, p = .062, did not reach statistical significance. The overall model accounted for 6.9% of variance in GPA scores, R^2 = .069, F (3, 143) = 3.537, p = .016.

Figure 12: *Descriptive Values in Year of Study and GPA*



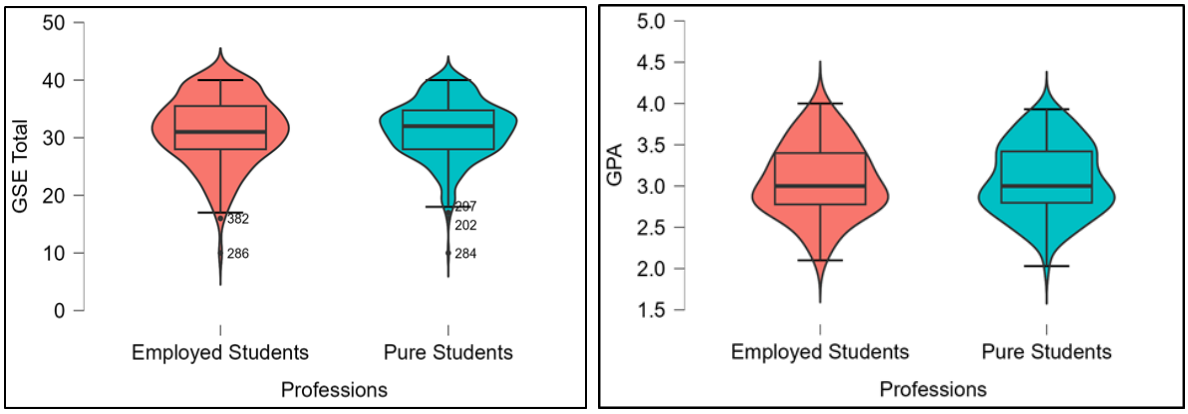
Note: *Boxplot showing five different parameters in year of study, where GSE refers to generalized self-efficacy and GPA refers to grade point average*

3.13 EMPLOYED VERSUS PURE STUDENTS

We evaluated the assumption of normality using the Shapiro-Wilk test. It indicated significant deviations from normality for both groups: employed students ($W = 0.97$, $p < .001$) and pure students ($W = 0.97$, $p < .001$). Mann-Whitney U test compared employed students ($N = 155$, $Mdn = 31$) with pure students ($N = 370$, $Mdn = 32$) concerning their general self-efficacy level. The analysis revealed a statistically non-significant difference between the groups, $U = 57350$, $p = .835$.

We analysed a large sample for pure student ($N = 104$) and employed student ($N = 64$) the linear regression explored that the group of pure student was not a significant predictor of GPA scores, $R^2 = .00$, $\beta = .013$, $t(166) = 0.19$, $p = .848$. The overall model accounting for 0% of variance in GPA scores.

Figure 13: *Descriptive Values in Employment Status and GPA*



Note: *Boxplot showing five different parameters in employment status, where GSE refers to generalized self-efficacy and GPA refers to grade point average*

3.14 RELIABILITY AND VALIDITY OF THE TOOL

Since the tool was properly translated in the Nepalese language with proper consideration of translation protocols, we onserved reliability and corelations of items to find convergent validity. There was found to be reliable with higher cronbach alpha ($\alpha = .78$). Frequentist individual item reliability statistics showed reliability score over than required, ($\alpha = .75$ to $\alpha = .77$), indiating the tool as an acceptable measure. Similarly, the corelation of individual item with total scale item was found to range from $r(525) = .53$ (item 1) to $r(525) = .67$ (item 10), indicating moderate level of convergent validity.

4. DISCUSSION

The demographic characteristics of the 527 participants encompassed various factors such as age, gender, ethnicity, religion, marital status, residential location, academic level, educational background, institution types, academic year and students' types (i.e., employed vs pure studetns).

Cut-off scores were established to categorize participants' self-efficacy levels, ranging from 'very low' to 'very high,' providing valuable insights into the distribution of self-efficacy within the sample. In our sample, we found a very low self efficacy (15.56%), low self-efficacy (18.41%), and average self-efficacy (22.96%), high level of self efficacy (22.58%) and very high level of self efficacy (20.49%). Notably, a substantial proportion of participants exhibited 'high' and 'very high' levels of self-efficacy, indicating a predominantly positive perception of one's abilities among college students in our study context.

In our study, general self-efficacy served as a non-significant predictor of GPA, indicating minimal contribution to academic achievements. Consistently, in

another study with college students. Fenning and May (2013) found no significant interrelationships between general self-efficacy and college GPA. However, they found that general self-efficacay was associated with high school GPA. Similarly, another study also revealed no significant relationship between self efficacy and GPA in university students (Ramos-sánchez & Nichols, 2007). Conversely, Yip (2012) found the self efficacy as a significant predictor of students' GPA, indicating that high academic achievers differed significantly from low academic achievers in the level of self-efficacy. Galyon et al. (2012) found that academic self-efficacy was the second strongest factor explaining college GPA following closely behind standardized test scores, while combining predictors. Self-efficacy demonstrated a positive correlation with academic motivation, suggesting that higher self-efficacy is associated with elevated levels of academic motivation (Shrestha et.al, 2021). In a study, motivation was found to be significant predictor of academic performance (Yip, 2012). This suggests that self-efficacy can generate academic motivation which in tern contributes to academic performance. Furthermore, students with elevated levels of self-regulation, self-efficacy, and self-efficacy for self-regulation were less likely to displaying procastination in academic behavior; however, this relationship is very weak (Bhusal, 2023).

We found no significant relationship between age and general self-efficacy. The correlation between age and GPA was also non-significant. However, a significant weak negative relationship was observed between age and percentage. The regression analysis confirmed the significance and identified age as a predictor of percentage. However, the casual factor in this relationship was unknown.

Our study revealed no significant difference in general self-efficacy between male and female participants. In line with our findings, other studies also found the difference was not statistically significant between male female (Lindley & Borgen, 2002; Mahat & Pradhan, 2012). Consistently, D'Lima et al. (2014) also reported that there was no significant gender-by-ethnicity interaction observed for academic self-efficacy.

We observed gender as non-predictor of GPA which was consistent with finding that no significant gender differences were observed in academic performance (Busch, 2006). According to Busch (2006), female students outperform their male counterparts except for statistics. They also reported that the gender differences in self-efficacy, a construct central to the study of business administration, were found to be small. They further explained that female students exhibited significantly lower self-efficacy in computing and marketing, while demonstrating higher self-efficacy in statistics compared to their male counterparts (Busch, 2006). It is noteworthy that possessing higher self-efficacy in statistics does not seem to be correlated with obtaining higher scores compared to males. Inconsistently, a main effect for gender was observed, indicating that female university students had higher GPAs than male students (D'Lima et al., 2014).

We observed ethnicity showing no significant influence on self-efficacy levels. DeFreitas (2012) also found that there was no significant relation between ethnicity and self-efficacy. However, D'Lima et al. (2014) mentioned that African Americans and Caucasians reported significantly higher levels of self-efficacy compared to Asian American students.

Our study revealed Janajati ethnicity as a significant predictor of GPA which is consistent again with the finding that ethnicity had significant effect on GPA (DeFreitas, 2012). Furthermore, they demonstrated that individuals with higher self-efficacy, particularly among European Americans, exhibited higher GPAs (DeFreitas, 2012).

We discovered that religion was as potential predictors of both general self-efficacy and GPA. Religion exhibited a significant association with both general

self-efficacy and GPA, implying a potential link between religious affiliation, self-efficacy, and academic achievement.

Marital status did not significantly influence either general self-efficacy or GPA, suggesting its limited role in determining self-efficacy or academic performance among college students.

Residential location comparison between valley and non-valley residents revealed no significant difference in the level of general self-efficacy or GPA scores, indicating geographical location's negligible impact on both general self-efficacy and academic performance.

Analysis of education levels showed no significant differences in general self-efficacy level. However, a significant predictive relationship was found between education level and overall GPA, suggesting that academic performance in higher education level were associated with lower overall GPAs. A study in college student found that the high school GPA was best predicted by general self-efficacy, while college GPA was most strongly associated with self-efficacy for learning, but not with general self efficacy (Fenning & May, 2013). The correlation results revealed a significant positive correlation between general self-efficacy and high school GPA. However, no significant interrelationships were observed between general self-efficacy and college GPA (Fenning & May, 2013).

Furthermore, no significant differences were observed in the level of general self-efficacy among students in various educational faculties, although faculty of management showed a significant association with higher GPA.

Lastly, no significant differences in the level of general self-efficacy was observed among students attending different types of institutions, while students attending private colleges tended to have higher GPAs compared to those in government colleges.

We found statistically non-significant difference among year of studies in the level of general self-efficacy. In line with our findings, a study reported that each ethnic group showed consistent self-efficacy across the semester (D'Lima et al., 2014). Similarly, we also found that academic year distribution did not significantly predict GPA. Consistently, a study reported that self-efficacy did not significantly change over time (Ramos-sánchez & Nichols, 2007).

We observed being employed or a pure student did not influence on general self-efficacy. A study found no significant differences in self-efficacy levels based on the income (Ramos-sánchez & Nichols, 2007). We also found income as a non-predictor of GPA outcomes significantly. However, a study found that individuals with higher income levels exhibited higher SAT math scores (DeFreitas, 2012).

The reliability analysis demonstrated a robust internal consistency with a high Cronbach's alpha coefficient ($\alpha = 0.78$). Schwarzer et al. (1995) reported the internal consistency ratings for each of the five samples examined indicated high reliability, with alpha values ranging from 0.82 to 0.93. In a sample of 991 migrants from what was then Germany, the retest reliability over a two-year period was 0.47 for men and 0.63 for women (Schwarzer et al., 1995). The generalised self efficacy scale demonstrated strong internal consistency with a Cronbach's alpha of 0.83 in a Colombian Sample (Juarez & Torres, 2008).

Additionally, the correlation of individual items with the total scale ranged from $r = 0.53$ to $r = 0.67$, indicating a moderate level of convergent validity. Schwarzer et al. (1995) assert that concurrent validity is supported by significant correlations with other tests. Positive correlations were observed with self-esteem (0.52), internal control belief (0.40), and optimism (0.49). Conversely, negative correlations were identified with general anxiety (-0.54), performance anxiety (- 0.42), shyness (- 0.58), and pessimism (- 0.28). Predictive validity was assessed in a one-year follow-up of East German migrants. For women, self-efficacy positively correlated with later self-esteem (0.40) and optimism (0.56). However, men showed less impressive correlations (0.20 and 0.30) over a two-year period

(Schwarzer et al., 1995). Additionally, a study reported correlations between items and the total scale ranging from 0.3 to 0.66 (Juarez & Torres, 2008).

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5. CONCLUSION

In conclusion, cut-off scores categorized self-efficacy levels, revealing predominance of high and very high self-efficacy. No direct, moderational and mediational effect of general self-efficacy on demographic variables and GPA was observed. Age, gender, ethnicity, marital status, location of residence, educational levels, faculties, institution types, and employment status of the students were not found to be related to self-efficacy. Religion, and year of study were associated to differential self-efficacy. GPA was not associated with self-efficacy. Ethnicity, religion, academic level, faculties, institution types, year of study were associated with differential GPA where Brahmin/Kshetri, Hindu, high school degree, management, private college and fourth year had higher GPA than their comparision groups, while age, gender and location of residence, and employment status had no effect on GPA. Interestingly, age was found to be negatively associated with percentage. The overall scale showed its reliability and validity in our cross-cultural context of Nepal with potential questions for further tool validation study.

6. FUTURE RESEARCH

These research avenues aim to enhance our comprehensive understanding of the interplay between self-efficacy, demographic variables, and academic performance, providing practical implications for education. Future research is needed to investigate specific factors within demographic categories affecting self-efficacy. The reason behid the higher self-efficacy in Hindu compared to Buddhist should be explored. Understanding the reasons behind GPA disparities based on ethnicities, religions, academic levels, faculties, institution types, and year of studies is crucial. Examining the dynamic relationship between self-efficacy and GPA over time through longitudinal studies is necessary. Contextual factors influencing the negative association between age and percentage need further exploration. The validation of self-efficacy measurement tools in diverse educational settings is necessary. Additionally, exploring non-demographic variables that impact self-efficacy levels will contribute valuable insights.

Finally, incorporating qualitative methods such as interviews or focus groups could offer a deeper understanding of students' experiences and perceptions, thereby enhancing the effectiveness of educational interventions aimed at improving self-efficacy and academic performance. Longitudinal studies tracking self-efficacy levels over time throughout students' academic journeys could provide valuable insights into the development and fluctuation of self-efficacy beliefs.

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