

Academic Achievement of Adolescent Students in Relation to Their Self-Concept

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Abstract. Academic achievement remains one of the central goals of the educational process, and a growing body of research suggests that how a student thinks and feels about themselves — their self-concept — is closely bound up with how well they perform in school. The present paper reports a study undertaken to examine the academic achievement and self-concept of adolescent students studying in secondary schools of Yamuna Nagar district, Haryana, and to determine whether these two variables differ significantly by gender and by locale (rural/urban), and whether they are related to one another. A sample of one hundred and twenty secondary school students was drawn through stratified random sampling from four schools, equally balanced across gender and locale. Self-concept was measured using the standardised Self-Concept Questionnaire developed by P. K. Saraswat, while academic achievement was recorded as students' percentage of marks in the Class 10 board examination. Data were analysed using descriptive statistics, the independent samples t-test, and Pearson's coefficient of correlation. Results showed a highly significant locale-wise difference in academic achievement favouring urban students, no significant gender difference in either academic achievement or self-concept, and a low but positive correlation between academic achievement and self-concept. The paper discusses these findings against existing literature and offers implications for schools and educators.

keywords: Academic Achievement, Self-Concept, Adolescents, Secondary School, Locale, Gender.

I. Introduction

Academic achievement has long occupied a central place in educational psychology, serving as one of the principal criteria by which the success of schooling is judged, both by students themselves and by the parents, teachers, and institutions who invest in their growth. Yet achievement in the classroom does not occur in a psychological vacuum: how a student performs is shaped, in part, by how that student perceives their own

abilities, worth, and place in the social and academic world around them — a perception generally termed self-concept.

Self-concept is now widely understood as a multidimensional construct rather than a single, unitary trait. Adolescents hold distinct, if related, beliefs about their academic capability, their social standing among peers, and their physical or emotional selves, and these beliefs are built up gradually through a continuous process of self-assessment — comparing one's own performance against personal standards and against the performance of others. As students move through secondary school, their sense of academic self-worth becomes an increasingly influential factor in how confidently they approach schoolwork, examinations, and future educational choices.

The present study was undertaken to examine this relationship among adolescent students of Yamuna Nagar district, Haryana, and to determine whether academic achievement and self-concept differ significantly by gender and by rural or urban locale.

The choice of locale as a comparison variable is itself significant in the Indian context, where rural and urban schools often differ markedly in infrastructure, teacher availability, and exposure to enrichment activities, all of which plausibly shape both a student's objective academic performance and the subjective confidence that student brings to the classroom.

II. Review of Related Literature

A substantial body of research has examined the link between self-concept and academic achievement among school students. Jaiswal and Choudhuri (2017) studied over six hundred secondary school students in Varanasi and examined the relationship between academic self-concept and CGPA alongside gender differences, finding academic self-concept to be a meaningful correlate of school performance. Iyengar, Gouri, Kumar and Yanjana (2021) reported similar findings among CBSE-affiliated secondary students, reinforcing the relevance of self-concept within the Indian schooling context specifically.

Closer to the present study's own setting, Rani, Anjali, Usha and Sudesh (2023) examined one hundred secondary school students of Sonipat district, Haryana, and reported a positive correlation between self-concept and academic achievement, along with no significant gender or school-type difference — a pattern the present study tests afresh in a different district of the same state. Möller et al. (2020) and Wu et al. (2021), through large-scale meta-analyses, established that academic self-concept and academic achievement are reciprocally related, each influencing the other over time, rather than one simply causing the other.

Not all findings are uniform, however: Kour and Bhatia (2024) found no significant difference in achievement across levels of self-concept among senior secondary students, illustrating that the strength of this relationship can vary across samples and contexts. This inconsistency in the wider literature is one of the reasons the present, regionally grounded study remains worthwhile.

Cooper, Krieg and Brownell (2018) further observed that academic self-concept develops partly through comparison with classmates, while Huang's (2018) large meta-analysis of the Big-Fish-Little-Pond effect found that average classroom or school achievement can negatively affect an individual student's self-concept, independent of the student's own ability. Findings of this kind suggest that self-concept in the present study's rural and urban samples may be shaped not only by personal achievement but by the achievement context of the school itself, a possibility discussed further in Section XIII.

III. Self-Concept and Academic Achievement: A Conceptual Link

Shavelson, Hubner and Stanton's multifaceted, hierarchical model conceptualises the general self-concept as composed of academic, social, emotional, and physical domains, with the academic domain further dividing into subject-specific self-perceptions. This model supports treating academic self-concept as a distinct, measurable psychological construct capable of being related empirically to actual academic performance, rather than as an abstract or immeasurable idea.

Hamachek's review of the self-concept literature concluded that the relationship between self-concept and achievement is best understood as reciprocal: succeeding at school-related tasks reinforces a student's academic self-confidence, while a stronger academic self-concept in turn encourages the student to approach further tasks with greater confidence and persistence. It is this reciprocal, mutually reinforcing relationship that anchors the present study's central hypothesis concerning the two variables.

Objectives of the Study

- To assess the academic achievement of students studying in secondary schools.
- To examine the self-concept of students studying in secondary schools.
- To compare the academic achievement of students on the basis of gender and locale (rural/urban).
- To compare the self-concept of students on the basis of gender and locale (rural/urban).
- To study the relationship between academic achievement and self-concept of secondary school students.

IV. Hypotheses of the Study

- H01: There exists no significant difference in the academic achievement of students on the basis of gender.
- H02: There exists no significant difference in the academic achievement of students studying in rural and urban schools.
- H03: There exists no significant difference in the self-concept of students on the basis of gender.
- H04: There exists no significant difference in the self-concept of students studying in rural and urban schools.
- H05: There exists no significant relationship between academic achievement and self-concept of secondary school students.

Delimitations

The study is confined to District Yamuna Nagar of Haryana State, and is delimited to a sample of one hundred and twenty secondary school students drawn from two rural and two urban schools. The study is further delimited to the study of academic achievement and self-concept alone; other related variables fall outside its scope.

V. Method

The Descriptive Survey Method was adopted for the present study, being well suited to describing the naturally occurring levels of, and relationship between, academic achievement and self-concept among an already-enrolled student population, without requiring experimental manipulation of either variable.

Sample

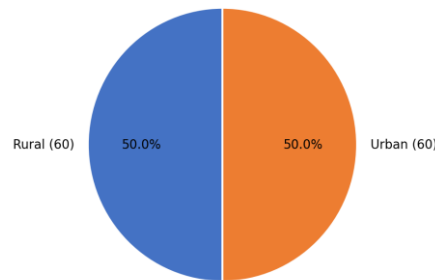
A sample of one hundred and twenty secondary school students was selected through stratified random sampling from four schools of Yamuna Nagar district, two situated in rural areas and two in urban areas, with thirty students — fifteen boys and fifteen girls — drawn from each school, yielding a sample evenly balanced at sixty rural and sixty urban students, and sixty male and sixty female students overall.

This balanced, four-way stratification (locale $\times$ gender) was adopted specifically so that the comparisons reported in Section XI — by gender and by locale independently — would each rest on equally sized, non-confounded groups, allowing any difference detected to be attributed to the variable actually being tested rather than to an accidental imbalance in the underlying sample.

Table No. 1: Distribution of the Sample across Schools and Locale

School	Rural	Urban	Total
Govt. Sr. Sec. School, Buria	15	15	30
Govt. Sr. Sec. School, Jagadhri	15	15	30
Govt. Sr. Sec. School, Khadri	15	15	30
Saraswati Vidya Mandir Sr. Sec. School	15	15	30
Total	60	60	120

Graph No. 1: Locale-wise Distribution of the Sample



Graph No. 1: Locale-wise Distribution of the Sample

Tools Used and Collection Of Data

Self-concept was measured using the standardised Self-Concept Questionnaire developed by P. K. Saraswat. Academic achievement was operationalised as each student's percentage of marks obtained in the Class 10 board examination, providing an objective, externally verified index of scholastic performance rather than a further self-report measure. Data collection was carried out with the cooperation of the sampled schools, and responses were scored according to the standard manual accompanying the Self-Concept Questionnaire.

The decision to use board-examination percentage, rather than a teacher-assigned or classroom test score, was made deliberately to minimise the possibility that achievement scores were influenced by the same teachers or raters who might also, consciously or not, have shaped students' self-perceptions — keeping the two measures independent of one another at the point of data collection.

Statistics Used

Descriptive statistics (Mean, Median, Mode, Standard Deviation, Variance, Skewness, and Kurtosis) were used to describe the distribution of scores on both variables. The independent samples t-test, $t = (\bar{X}_1 - \bar{X}_2) / \sqrt{[(SD_1^2/n_1) + (SD_2^2/n_2)]}$, was used to compare groups by gender and locale, and Karl Pearson's coefficient of correlation, $r =$

$\frac{\Sigma(X-\bar{X})(Y-\bar{Y})}{\sqrt{[\Sigma(X-\bar{X})^2 \times \Sigma(Y-\bar{Y})^2]}}$, was used to examine the relationship between academic achievement and self-concept.

VI. Analysis of Data

Table 2 presents the descriptive statistics obtained on both variables for the sample as a whole.

Table No. 2: Descriptive Statistics of Academic Achievement and Self-Concept (N = 120)

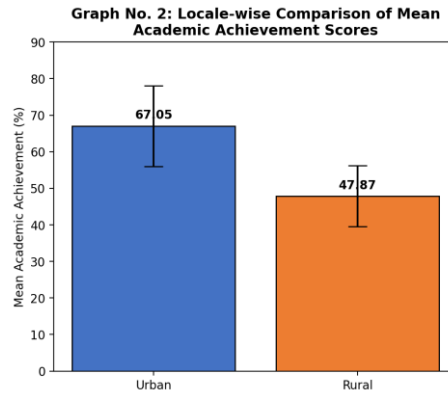
Statistic	Acad. Achv.	Self-Concept
N	120	120
Mean	57.46	51.50
Median	56	52
Mode	50	57
SD	13.69	7.02
Variance	187.63	49.28
Skewness	0.190	-0.160
Kurtosis	-0.820	-0.761

The near-zero skewness and kurtosis values for both variables indicate distributions reasonably close to normal, supporting the use of parametric statistics for further analysis.

Table 3 presents the comparison of urban and rural students on academic achievement, testing Hypothesis H02.

Table No. 3: Locale-wise Comparison of Academic Achievement (*Sig. at 0.01, df=118)

Group	N	Mean	SD	t
Urban	60	67.05	11.05	10.74*
Rural	60	47.87	8.31	

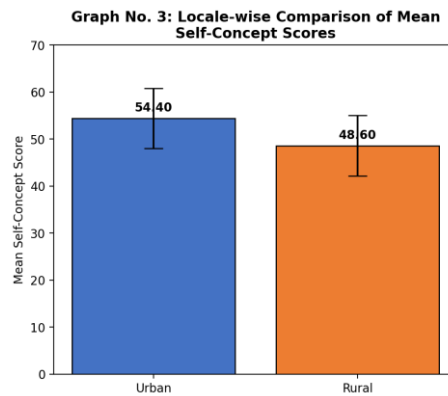


Graph No. 2: Locale-wise Comparison of Mean Academic Achievement Scores

Table 4 presents the comparison of urban and rural students on self-concept, testing Hypothesis H04.

Table No. 4: Locale-wise Comparison of Self-Concept (*Sig. at 0.01, df=118)

Group	N	Mean	SD	t
Urban	60	54.40	6.37	4.96*
Rural	60	48.60	6.45	

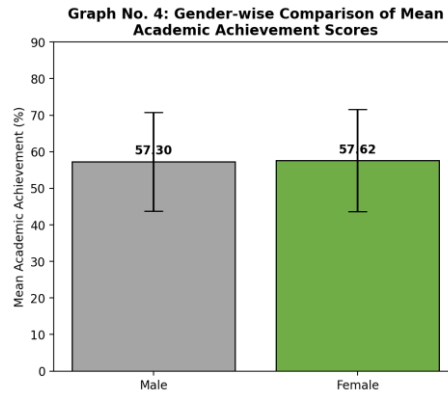


Graph No. 3: Locale-wise Comparison of Mean Self-Concept Scores

Table 5 presents the comparison of male and female students on academic achievement, testing Hypothesis H01.

Table No. 5: Gender-wise Comparison of Academic Achievement (NS = Not Significant, df=118)

Group	N	Mean	SD	t
Male	60	57.30	13.50	0.13
Female	60	57.62	13.96	(NS)

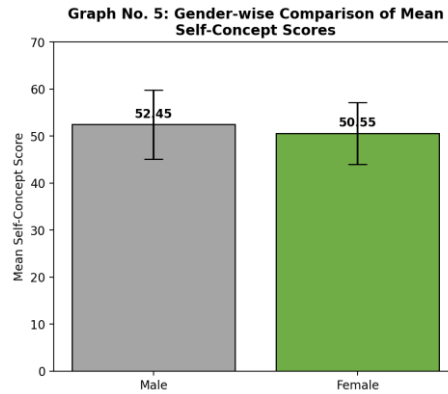


Graph No. 4: Gender-wise Comparison of Mean Academic Achievement Scores

Table 6 presents the comparison of male and female students on self-concept, testing Hypothesis H03.

Table No. 6: Gender-wise Comparison of Self-Concept (NS = Not Significant, df=118)

Group	N	Mean	SD	t
Male	60	52.45	7.38	1.49
Female	60	50.55	6.56	(NS)

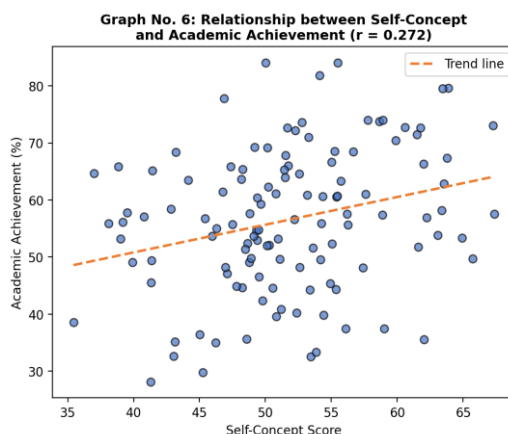


Graph No. 5: Gender-wise Comparison of Mean Self-Concept Scores

Table 7 presents the correlation obtained between academic achievement and self-concept, testing Hypothesis H05.

Table No. 7: Correlation between Academic Achievement and Self-Concept

Variables	N	r
Academic Achievement & Self-Concept	120	0.256 (Low, positive)



Graph No. 6: Relationship between Self-Concept and Academic Achievement

Findings Based on Hypotheses

- There is no significant difference in academic achievement between male ($M = 57.30$) and female ($M = 57.62$) students ($t = 0.13$, $df = 118$). H_{01} is accepted.
- There is a highly significant difference in academic achievement between urban ($M = 67.05$) and rural ($M = 47.87$) students ($t = 10.74$, $df = 118$, significant at 0.01 level), with urban students scoring substantially higher. H_{02} is rejected.
- There is no significant difference in self-concept between male ($M = 52.45$) and female ($M = 50.55$) students ($t = 1.49$, $df = 118$). H_{03} is accepted.
- There is a significant difference in self-concept between urban ($M = 54.40$) and rural ($M = 48.60$) students ($t = 4.96$, $df = 118$, significant at 0.01 level), with urban students reporting a more favourable self-concept. H_{04} is rejected.
- There is a low but positive correlation between academic achievement and self-concept ($r = 0.256$, $N = 120$), indicating a real, if modest, association between the two variables. H_{05} is rejected.

VII. Discussion

The pronounced locale-wise difference obtained on both academic achievement and self-concept, both favouring urban students, points toward the influence of unequal access to educational infrastructure, exposure, and resources between rural and urban schools of the district — a pattern consistent with Varghese (1989), who similarly reported significant rural–urban differences in academic achievement linked to attitudinal and motivational variables.

The absence of a significant gender difference on either variable is consistent with Begum and Phukan (2005) for academic achievement and with Marsh and Craven (2006) for self-concept, both of whom reported comparable findings among school-going adolescents, suggesting that within this sample, gender per se is a weaker predictor of academic and self-perceptual outcomes than locale.

The low positive correlation between academic achievement and self-concept, while modest in magnitude, is consistent with the reciprocal relationship proposed by Hamachek (1995) and empirically supported by the large-scale meta-analytic work of Möller et al. (2020) and Wu et al. (2021); it indicates that while self-concept is not the dominant determinant of achievement in this sample, a genuine, non-trivial association exists between how a student performs and how that student perceives their own ability.

Educational Implications

The pronounced rural–urban gap in both variables suggests that rural schools in the district may benefit disproportionately from targeted investment in teaching resources, remedial support, and confidence-building classroom practice. Since self-concept and academic achievement are positively related, teachers can support achievement indirectly by fostering a classroom climate in which students feel safe to explore their abilities without excessive fear of failure. Given the absence of a gender gap on either variable, interventions addressing academic self-concept can reasonably be designed for boys and girls together, without the need for gender-differentiated content.

Limitations and Suggestions for Further Research

The study is limited by its confinement to a single district and by its reliance on Class 10 board percentage as the sole index of academic achievement, which does not capture achievement in specific subjects or non-scholastic domains. Future research could extend the present design to other districts, incorporate subject-wise achievement scores, and examine additional psychological variables such as academic motivation or locus of control alongside self-concept.

VII. Conclusion

The present study concludes that academic achievement and self-concept differ significantly by locale but not by gender among secondary school students of Yamuna Nagar district, and that the two variables are positively, if modestly, related. These findings underline the importance of addressing rural–urban disparity in educational support while affirming that a supportive, confidence-building school environment can benefit boys and girls alike in developing both stronger self-concept and stronger academic outcomes.

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