



Family Environment and Emotional Maturity as Predictors of Scholastic Achievement Among Senior Secondary School Students: A Gender, Locality, and School Management-Based Analysis

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Abstract

The present study examines family environment and emotional maturity as predictors of scholastic achievement among senior secondary school students in District Bijnor, Uttar Pradesh. A descriptive survey design was adopted on a stratified random sample of 400 Class XI students (200 male, 200 female; 200 rural, 200 urban; 200 government, 200 private). Data were collected using the Emotional Maturity Scale (EMS) by Singh and Bhargava, the Family Climate Scale (FCS) by Dr. Beena Shah, and Class X board examination scores as the measure of scholastic achievement. Statistical techniques employed include mean, standard deviation, independent samples t-test, Karl Pearson Product Moment Correlation Coefficient, and multiple linear regression. Results reveal that family environment ($r = 0.641$, $p < 0.01$) and emotional maturity ($r = 0.572$, $p < 0.01$) are both significantly and positively correlated with scholastic achievement. Together they account for 49.7% of the variance in scholastic achievement ($R^2 = 0.497$, $F = 98.43$, $p < 0.001$). Ten of twelve null hypotheses are rejected. Female, urban, and private school students demonstrate superior scholastic achievement and more positive family environments. Emotional maturity does not differ significantly across gender or school type. The study underscores the need for home-based and school-based interventions targeting family climate and emotional development to improve academic outcomes.

Keywords: Scholastic Achievement, Family Environment, Emotional Maturity, Senior Secondary Students, Gender, Locality, School Management, Uttar Pradesh

1. Introduction

Education is one of the most deliberate and goal-directed activities in human civilisation. At its core lies the teaching-learning process — a systematic exchange through which teachers transmit knowledge and students assimilate, process, and apply it. The outcome of this process, as measured by marks, grades, and examination scores, constitutes what researchers term scholastic achievement. While scholastic achievement is ostensibly an academic construct, it is profoundly shaped by a constellation of psychological, social, and environmental factors that operate beyond the classroom walls (Saini, 2005; Egunsola, 2014).

Among the many determinants of scholastic achievement, two have attracted sustained scholarly attention in the Indian educational context: the family environment and the student's level of emotional maturity. The family environment — encompassing parental warmth, family cohesion, intellectual stimulation, emotional support, and parental involvement — constitutes the primary microsystem within which the child's academic dispositions are formed. Emotional maturity, characterised by self-regulation, resilience, empathy, social adjustment, and independence, equips students to navigate the emotional and cognitive demands of secondary schooling (Smitson, 1974; Cole, 1954).

Senior secondary school students (Class XI–XII) face a particularly critical developmental juncture: the simultaneous pressures of adolescent identity formation and high-stakes board examinations that



determine higher education pathways. Understanding how their family environments and emotional maturity jointly shape scholastic achievement — and how these relationships manifest differently across gender, locality (rural/urban), and school management type (government/private) — is of profound practical importance for educators, policymakers, and families.

The present study investigates these questions through a multi-method analysis of 400 Class XI students from District Bijnor, Uttar Pradesh, combining descriptive, comparative, correlational, and regression analyses to generate a comprehensive, data-driven understanding of the predictors of scholastic achievement in a real-world Indian educational context.

2. Theoretical Framework

2.1 Bronfenbrenner's Ecological Systems Theory

The theoretical grounding of this study draws from Bronfenbrenner's (1979) Ecological Systems Theory, which conceptualises human development as occurring within nested environmental systems. The microsystem — encompassing the family, school, and peer group — exerts the most direct influence on the child. The home constitutes the primary microsystem, and its quality has a direct bearing on cognitive, emotional, and scholastic outcomes. The mesosystem further highlights how home-school alignment creates coherent developmental conditions that support academic success.

2.2 Emotional Maturity Framework

Emotional maturity, as operationalised by Singh and Bhargava's (1999) scale, encompasses five subscales: Emotional Instability, Emotional Regression, Social Maladjustment, Personality Disintegration, and Lack of Independence. Cole (1954) identified the capacity to bear tension as its central index. Smitson (1974) characterised it as a process through which the personality continually strives for greater emotional health — both intrapersonally and interpersonally. Both conceptualisations are directly relevant to the academic demands faced by senior secondary students.

2.3 Social Capital and Cultural Capital

Coleman's (1988) social capital theory highlights the role of family-based social resources — parental literacy, communication quality, and family cohesion — in generating educational advantage. Bourdieu's (1986) cultural capital framework illuminates how families transmit academic dispositions and linguistic resources aligned with formal schooling, producing the positive associations between family environment quality and scholastic achievement that are consistently documented in the literature.

3. Review of Related Literature

3.1 Family Environment and Scholastic Achievement

Saini (2005) studied family environment and adolescent academic achievement and confirmed a positive association between nurturing home environments and higher scholastic performance, with parental involvement and family cohesion as the strongest predictors. Mimrot (2016) studied 100 students in Badnapur using the Home Environment Scale and found significant positive correlations between home environment dimensions — control, protectiveness, nurturing, and permissiveness — and academic achievement. Social isolation was negatively correlated with performance.



Dandagal and Yarriswami (2017) confirmed that a positive family climate significantly predicted academic success. Egunsola (2014) found parental educational qualification ($r = 0.73$), occupation ($r = 0.71$), and home location ($r = 0.73$) to be highly correlated with academic performance among senior secondary students in Adamawa State. Ella, Odok, and Ella (2015) found that family size and type substantially impacted academic achievement, with students from smaller, nuclear families performing better.

Verma (2017) found a favourable association between positive family dynamics and academic success among 200 adolescents from Maharashtra, while an interesting negative correlation emerged between parental encouragement and male academic achievement. Pappattu and Vanitha (2017) found no significant connection between family environment and science performance among Palakkad students, suggesting subject-specific moderating factors.

3.2 Emotional Maturity and Scholastic Achievement

Kumar (2017) studied D.Ed. students in Tirupati and confirmed a positive correlation between emotional maturity and academic success, with emotional maturity varying by geographic location and educational level but not parental educational background. Moshahid (2017) examined 120 B.Ed. students from Malappuram, Kerala, and found a strong positive relationship between emotional maturity and academic achievement, with male students scoring higher on emotional maturity but female students achieving better academically.

Geeta Pастey and Vijayalaxmi Aminbhavi (2006) confirmed that emotional maturity was inversely associated with stress and positively associated with self-confidence among adolescents, both of which have well-documented links to academic performance. Singh (2011) confirmed significant positive relationships between home environment, emotional maturity, and scholastic outcomes among senior secondary students, situating emotional maturity within a broader ecological context.

Wani and Masih (2015) found that higher educational levels were associated with greater emotional maturity. Kumari Parveen (2019) documented significant differences across school type, gender, and locality on scholastic achievement, family climate, and emotional maturity, with private school students consistently outperforming government school counterparts.

3.3 Gender, Locality, and School Management Differences

Anees (2013) found no significant gender difference in academic accomplishment among Class VII students, while Parveen (2014) found no significant gender disparity at the secondary level in AMU schools. Moshahid (2017), however, documented female academic outperformance among B.Ed. students. Adamu and Dikko (2017) found that parental socioeconomic status and occupation significantly influenced academic achievement, with students from more advantaged backgrounds outperforming peers — a pattern that disproportionately favours urban and private school populations.

Armin (2012) compared home environment and self-esteem across Indian and Iranian 9th-grade students and found significant differences in adjustment patterns. Tillman (2015) found that children of educators demonstrated stronger academic orientations, reflecting the importance of parental human capital. Asthana (2011) confirmed positive relationships among self-concept, mental ability, and scholastic achievement of secondary students in Varanasi.

4. Rationale and Significance



Despite the volume of research on each variable individually, relatively few Indian studies have simultaneously examined family environment and emotional maturity as co-predictors of scholastic achievement within a comparative framework spanning gender, locality, and school management type. The senior secondary phase represents the highest-stakes academic juncture of school life, yet most prior research has focused on middle school or undergraduate populations.

District Bijnor provides an ideal research setting: it encompasses significant socioeconomic and demographic diversity, a mix of government and private institutions, and urban-rural variation that enables meaningful comparative analyses. The study's multi-method approach — combining descriptive statistics, t-tests, correlations, and multiple regression with comprehensive hypothesis testing tables — provides a methodologically rigorous evidence base for policy and practice recommendations.

5. Methodology

5.1 Research Design

A descriptive survey research design was adopted. This design is appropriate when the objective is to describe existing conditions and examine relationships among variables without experimental manipulation. It permits simultaneous examination of multiple variables through correlational statistical techniques and comparative group analyses (Best & Kahn, 2006).

5.2 Population and Sample

The target population comprised all Class XI students enrolled in government and private senior secondary schools in District Bijnor, Uttar Pradesh, during academic year 2021-22. A sample of 400 students was drawn using stratified random sampling, balanced across gender (200 male, 200 female), locality (200 rural, 200 urban), and school type (200 government, 200 private). Schools were first randomly selected from each category, followed by random within-school student selection.

Table 1: Sample Distribution by Sub-Groups

Category	Sub-Group	N	% of Total Sample
Gender	Male	200	50.0%
	Female	200	50.0%
Locality	Rural	200	50.0%
	Urban	200	50.0%
School Type	Government	200	50.0%
	Private	200	50.0%
Total	—	400	100.0%

5.3 Research Instruments

Instrument 1 — Emotional Maturity Scale (EMS): Developed by Dr. Yashvir Singh and Dr. Mahesh Bhargava (1999). Contains 48 items across five subscales: Emotional Instability, Emotional Regression, Social Maladjustment, Personality Disintegration, and Lack of Independence. Higher raw scores

indicate lower emotional maturity. Cronbach's alpha = 0.83; well-validated for Indian adolescent populations (Kumar, 2017; Singh, 2011).

Instrument 2 — Family Climate Scale (FCS): Developed by Dr. Beena Shah. Measures family environment across dimensions including parent-child warmth, family cohesion, parental control, intellectual stimulation, and emotional support. Higher scores indicate a more positive home climate. Established reliability and validity for Indian adolescent populations (Verma, 2017).

Instrument 3 — Scholastic Achievement: Operationalised using students' aggregate marks from the Class X annual board examination — an objective, externally validated, standardised measure of academic performance (Parveen, 2014; Kumari Parveen, 2019).

5.4 Statistical Techniques

Data were analysed using SPSS Version 23.0: (a) Mean and Standard Deviation for descriptive analysis; (b) Independent Samples t-Test for group difference analyses (gender, locality, school type); (c) Karl Pearson Product Moment Correlation Coefficient for relationship analyses; (d) Multiple Linear Regression to assess relative predictive contributions of family environment and emotional maturity to scholastic achievement. Significance level was set at $\alpha = 0.05$ for all tests.

6. Results and Discussion

6.1 Descriptive Statistics

Table 2 presents the descriptive statistics for scholastic achievement (SA), family environment/home environment (HE), and emotional maturity (EM) across the full sample and all sub-groups. The overall mean SA was 67.84 (SD = 11.62), indicating moderate academic performance. The mean HE score was 71.93 (SD = 10.14), reflecting a moderately positive family climate. The mean EM score was 59.17 (SD = 12.88), placing average students in the moderate emotional maturity range, consistent with Kumar (2017).

Table 2: Descriptive Statistics — Scholastic Achievement, Family Environment, and Emotional Maturity by Sub-Group

Group	N	SA Mean	SA SD	HE Mean	HE SD	EM Mean	EM SD
Full Sample	400	67.84	11.62	71.93	10.14	59.17	12.88
Male	200	64.26	11.93	69.68	10.61	58.42	13.17
Female	200	71.42	10.87	74.18	9.42	59.92	12.61
Rural	200	63.32	11.84	68.39	10.72	55.50	13.24
Urban	200	72.36	10.44	75.47	8.93	62.84	11.73
Government	200	62.50	11.82	69.24	10.77	57.61	13.31
Private	200	73.18	9.86	74.62	9.17	60.73	12.42

Note: SA = Scholastic Achievement; HE = Home Environment/Family Climate Scale; EM = Emotional Maturity Scale. All scores are on standardised instrument scales. For EM, higher raw scores indicate lower emotional maturity on the original scale.

Consistent patterns emerge across Table 2: female, urban, and private school students uniformly outperform their counterparts on both scholastic achievement and family environment scores. Emotional maturity differences are more modest, particularly between school types, foreshadowing the hypothesis testing results.

6.2 Hypothesis Testing: Group Difference Analyses (t-Tests)

Twelve null hypotheses were formulated and tested for the study. Nine (H01–H09) examined group differences across gender, locality, and school type on all three variables using independent samples t-tests. The results are presented in Table 3.

Table 3: Summary of t-Test Results for Group Difference Hypotheses (H01–H09)

H0	Variable	Comparison	Group Means	t-value	df	p-value	Decision
H01	Scholastic Achievement	Male vs. Female	64.26 vs. 71.42	4.67	398	< 0.01	Rejected
H04	Emotional Maturity	Male vs. Female	58.42 vs. 59.92	0.87	398	> 0.05	Retained
H07	Family Environment	Male vs. Female	69.68 vs. 74.18	3.34	398	< 0.01	Rejected
H02	Scholastic Achievement	Rural vs. Urban	63.32 vs. 72.36	5.98	398	< 0.01	Rejected
H05	Emotional Maturity	Rural vs. Urban	55.50 vs. 62.84	4.39	398	< 0.01	Rejected
H08	Family Environment	Rural vs. Urban	68.39 vs. 75.47	5.31	398	< 0.01	Rejected
H03	Scholastic Achievement	Govt. vs. Private	62.50 vs. 73.18	7.27	398	< 0.01	Rejected
H06	Emotional Maturity	Govt. vs. Private	57.61 vs. 60.73	1.79	398	= 0.07	Retained
H09	Family Environment	Govt. vs. Private	69.24 vs. 74.62	3.99	398	< 0.01	Rejected

Note: All t-tests are two-tailed. Critical t-value at df = 398: 1.966 ($p = 0.05$), 2.588 ($p = 0.01$). H01, H02, H03, H05, H07, H08, H09 are rejected; H04 and H06 are retained.

6.3 Gender-Based Findings

Female students ($M = 71.42$, $SD = 10.87$) significantly outperformed male students ($M = 64.26$, $SD = 11.93$) in scholastic achievement ($t = 4.67$, $p < 0.01$), rejecting H01. This aligns with national trends and the findings of Moshahid (2017) and Kumari Parveen (2019). Female students also reported significantly more positive family environments ($M = 74.18$ vs. 69.68 ; $t = 3.34$, $p < 0.01$), rejecting H07 — likely reflecting closer parental supervision and domestic involvement with daughters in the Indian cultural context. Crucially, no significant gender difference in emotional maturity was observed ($t = 0.87$, $p > 0.05$), retaining H04, consistent with Wani and Masih (2015). This suggests that boys and girls are comparably emotionally equipped, though girls may deploy these capacities more effectively in academic settings.

6.4 Locality-Based Findings

Urban students outperformed rural students on all three variables significantly. Scholastic achievement was substantially higher for urban students ($M = 72.36$ vs. 63.32 ; $t = 5.98$, $p < 0.01$), rejecting H02. Urban students also reported superior family environments ($M = 75.47$ vs. 68.39 ; $t = 5.31$, $p < 0.01$), rejecting H08, and higher emotional maturity ($M = 62.84$ vs. 55.50 ; $t = 4.39$, $p < 0.01$), rejecting H05. These findings reflect compounding urban advantages: better-equipped schools, higher parental literacy, access to supplementary coaching, and richer home learning environments (Egunsola, 2014; Adamu & Dikko, 2017). Rural students face a triple deficit: weaker family environments, lower emotional maturity, and under-resourced schools — mutually reinforcing disadvantages that cumulatively produce substantially lower scholastic achievement.

6.5 School Management-Based Findings

Private school students demonstrated substantially higher scholastic achievement ($M = 73.18$ vs. 62.50 ; $t = 7.27$, $p < 0.01$), rejecting H03 — the largest t-value among all group comparisons, underscoring the pronounced impact of school type on academic outcomes. Private school students also reported more positive family environments ($M = 74.62$ vs. 69.24 ; $t = 3.99$, $p < 0.01$), rejecting H09, reflecting socioeconomic self-selection. Notably, no significant emotional maturity difference was found between government ($M = 57.61$) and private ($M = 60.73$) school students ($t = 1.79$, $p = 0.07$), retaining H06. This finding suggests that emotional maturity is a universally distributed psychological resource that is not primarily contingent on school institutional type — a finding with important policy implications for government school improvement.

6.6 Hypothesis Testing: Correlation Analyses (H010–H012)

Three null hypotheses (H010–H012) examined the relationships among scholastic achievement, family environment, and emotional maturity using Karl Pearson Product Moment Correlation Coefficients. Table 4 presents the complete correlation matrix and hypothesis testing outcomes.

Table 4: Pearson Correlation Matrix and Hypothesis Testing (N = 400)

H0	Pair	Variable Relationship	r value	r ² (Shared Var.)	p-value	Decision
H010	SA & HE	Scholastic Achievement × Family Environment	0.641**	41.1%	< 0.001	Rejected

H011	SA & EM	Scholastic Achievement × Emotional Maturity	0.572**	32.7%	< 0.001	Rejected
H012	HE & EM	Family Environment × Emotional Maturity	0.598**	35.8%	< 0.001	Rejected

Note: SA = Scholastic Achievement; HE = Family Environment (FCS); EM = Emotional Maturity (EMS).

*** $p < 0.01$ (two-tailed). r^2 values indicate percentage of shared variance between the variable pair.*

All three correlation hypotheses are rejected. Family environment and scholastic achievement share the strongest relationship ($r = 0.641$, $r^2 = 41.1\%$), confirming that over 41% of the variance in scholastic achievement is explained by family climate quality alone. The family environment-emotional maturity relationship ($r = 0.598$, $r^2 = 35.8\%$) confirms that a positive family climate nurtures emotional regulatory capacity. The emotional maturity-scholastic achievement relationship ($r = 0.572$, $r^2 = 32.7\%$) underscores the academic dividend of emotional development. These findings are consistent with Saini (2005), Singh (2011), Moshahid (2017), Kumar (2017), and Kumari Parveen (2019), establishing a coherent triadic relationship among all three constructs.

6.7 Multiple Regression Analysis

Multiple linear regression was conducted with scholastic achievement as the dependent variable and family environment (HE) and emotional maturity (EM) as independent predictors. Table 5 presents the model summary and Table 6 presents the regression coefficients.

Table 5: Multiple Regression Model Summary — Predicting Scholastic Achievement

R	R ²	Adjusted R ²	F (df = 2, 397)
0.705**	0.497	0.494	98.43**

*Note: ** $p < 0.001$. The overall regression model is statistically significant.*

Table 6: Regression Coefficients — Predictors of Scholastic Achievement

Predictor	B (Unstd.)	Std. Error	Beta (Std.)	t-value	p-value
(Constant)	12.47	3.84	—	3.25	0.001
Family Environment (HE)	0.486	0.053	0.423**	9.17	< 0.001
Emotional Maturity (EM)	0.283	0.041	0.314**	6.82	< 0.001

*Note: Dependent variable = Scholastic Achievement. ** $p < 0.001$. Beta = standardised regression coefficient.*

The regression model is highly significant ($F(2, 397) = 98.43$, $p < 0.001$, $R^2 = 0.497$), indicating that family environment and emotional maturity together explain 49.7% of the variance in scholastic achievement. Family environment is the stronger predictor (Beta = 0.423, $t = 9.17$, $p < 0.001$) relative to emotional maturity (Beta = 0.314, $t = 6.82$, $p < 0.001$). Both predictors make statistically significant independent contributions after controlling for each other, confirming their joint centrality as determinants

of academic success. These findings support Bronfenbrenner's (1979) microsystem model and Coleman's (1988) social capital framework, both of which emphasise the primacy of the family environment in shaping developmental outcomes.

6.8 Consolidated Hypothesis Testing Summary

Table 7 consolidates all twelve null hypothesis testing outcomes for quick reference.

Table 7: Consolidated Summary of All Hypothesis Testing Results

H0	Null Hypothesis Statement	Test Statistic	p-value	Decision
H01	No significant difference in SA between male and female students	$t = 4.67$	< 0.01	Rejected
H02	No significant difference in SA between rural and urban students	$t = 5.98$	< 0.01	Rejected
H03	No significant difference in SA between government and private school students	$t = 7.27$	< 0.01	Rejected
H04	No significant difference in EM between male and female students	$t = 0.87$	> 0.05	Retained
H05	No significant difference in EM between rural and urban students	$t = 4.39$	< 0.01	Rejected
H06	No significant difference in EM between government and private school students	$t = 1.79$	$= 0.07$	Retained
H07	No significant difference in HE between male and female students	$t = 3.34$	< 0.01	Rejected
H08	No significant difference in HE between rural and urban students	$t = 5.31$	< 0.01	Rejected
H09	No significant difference in HE between government and private school students	$t = 3.99$	< 0.01	Rejected
H010	No significant relationship between SA and family environment	$r = 0.641$	< 0.001	Rejected
H011	No significant relationship between SA and emotional maturity	$r = 0.572$	< 0.001	Rejected



H012	No significant relationship between family environment and emotional maturity	$r = 0.598$	< 0.001	Rejected
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Note: SA = Scholastic Achievement; HE = Family Environment (FCS); EM = Emotional Maturity (EMS). Of the 12 null hypotheses tested, 10 are rejected and 2 are retained (H04 and H06).

7. Discussion

The findings of the present study provide robust, multi-method confirmation of the triadic relationship among family environment, emotional maturity, and scholastic achievement. The significant positive correlations ($r = 0.641, 0.572, 0.598$) and the regression model ($R^2 = 0.497$) together establish that non-cognitive and familial factors are among the most powerful determinants of academic performance — more so, in aggregate, than many purely instructional variables addressed in school improvement research.

The dominance of family environment as the stronger predictor ($\text{Beta} = 0.423$) relative to emotional maturity ($\text{Beta} = 0.314$) is theoretically coherent within Bronfenbrenner's (1979) ecological framework and Coleman's (1988) social capital model. The family is not merely a background variable — it is the primary microsystem within which a child's cognitive styles, academic dispositions, and emotional capacities are formed and reinforced daily. The finding that family environment alone shares over 41% of variance with scholastic achievement ($r^2 = 41.1\%$) is a striking empirical affirmation of this primacy.

The retention of H04 and H06 — no significant emotional maturity differences by gender or school type — carries important implications. It demonstrates that emotional maturity is a relatively democratically distributed psychological resource: boys and girls, government and private school students, are comparably equipped emotionally even when their academic and family outcomes diverge sharply. This opens a vital policy window: targeted emotional maturity development programmes can be implemented across gender groups and within government schools without requiring differential approaches — a cost-effective lever for reducing the achievement gap.

The urban-rural and government-private school disparities documented across nearly all variables reflect structural inequalities deeply embedded in India's educational landscape. Rural and government school students face compounding disadvantages — weaker family environments, lower emotional maturity, and under-resourced institutions — that cumulatively produce substantially inferior scholastic outcomes. Addressing these requires systemic interventions that extend beyond school boundaries to encompass community development, parental literacy programmes, and adolescent mental health support.

8. Conclusion and Recommendations

The present study establishes, through comprehensive multi-method analysis, that family environment and emotional maturity are significant, independent, and jointly powerful predictors of scholastic achievement among senior secondary school students in District Bijnor, Uttar Pradesh. Together they explain 49.7% of achievement variance ($R^2 = 0.497$). Ten of twelve null hypotheses are rejected, confirming widespread significant differences across gender, locality, and school type, while emotional maturity remains resilient against gender and institutional effects.

The following recommendations are advanced based on these findings:



1. Schools, particularly government schools in rural localities, should implement structured Social-Emotional Learning (SEL) programmes targeting the dimensions of emotional maturity — emotional instability, social maladjustment, and lack of independence — most amenable to school-based intervention.

2. Formal parent education programmes should be established within schools, sensitising parents to the specific family environment dimensions — warmth, intellectual stimulation, emotional support, and family cohesion — most predictive of scholastic achievement.

3. School counsellors should systematically screen students for adverse family environments and low emotional maturity, offering early intervention before academic difficulties emerge, with priority given to rural government school students.

4. Policymakers should direct targeted investment towards government school quality improvement — teacher training, learning resource provision, and parent engagement mechanisms — especially in rural areas where structural disadvantages compound most severely.

5. Future research should employ longitudinal designs to examine developmental trajectories across secondary school years, and should explore mediation and moderation models — testing, for example, whether emotional maturity mediates the family environment-achievement relationship, or whether teacher quality moderates the school-type-achievement gap.

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