Gender, Socioeconomic Status, and Neighborhood Social Cohesion: Examining Their Influence on Students' Academic Achievement

Yemei Wei , Nayab Ali * , Xing Tong , Mansoor Ahmad * , Muhammad Asif , Haihua Ying , Marjan Gul

Posted Date: 31 March 2025

doi: 10.20944/preprints202503.2248.v1

Keywords: academic achievement; gender; neighbourhood; social cohesion; socioeconomic status

Article

Gender, Socioeconomic Status, and Neighborhood Social Cohesion: Examining Their Influence on Students' Academic Achievement

Yemei Wei [1], Nayab Ali [2,*], Xing Tong [3], Mansoor Ahmad [4,*], Muhammad Asif [5], Haihua Ying [6] and Marjan Gul [7]

[1] School of Teacher Education, Nanjing XiaoZhuang University, Nanjing, China
[2] KhyberPakhtunkhwa, Child Protection and Welfare Commission (KPCPWC)
[3] School of Education Science, Nanjing Normal University, Nanjing, China
[4] Department of Sociology, Government Post Graduate College Timergara-Pakistan
[5] School of Public Administration, Department of Sociology, Hohai University 8 Focheng West Road, Jiangning District, Nanjing, 211100, P.R. China
[6] International College, Hohai University, Nanjing, China
[7] Department of Pakistan Studies Islamia College University, Peshawar
* Correspondence: nayabaup@gmail.com (N.A.); mansoorsoc5@gmail.com (M.A.)

Abstract: This study seeks to investigate how neighborhood social cohesion influences the academic achievement of students from different genders and family socioeconomic statuses. A cross-sectional design and a purposive sampling technique were adopted to collect data from 448 secondary schools students'. The relationship, strength and direction of the relationship among variables was determined by applying Chi-square, Kendall's Tau-c tests and hierarchical multiple regression tests. The results portrayed that children's academic achievement was significantly and positively associated with, willingness of the neighbours to assist one another ($P<0.05$, $T^c = 0.168$), neighbourhood trust ($P<0.05$, $T^c = 0.092$) and imitate relations among neighbours ($P<0.05$, $T^c = 0.310$). Furthermore, the results established that family socioeconomic status explained variation in children academic achievement in association with neighbourhood social cohesion, however, no significant difference was observed in the academic performance of students based on gender. In addition, hierarchal multiple regression analysis established that the family's socioeconomic status, and neighbourhood social cohesion were significant predictors ($P<0.05$) of students' academic achievement. These predictor variables explained 48.6 Percent variation in the academic performance of children ($R^2=0.486$). The study's hierarchical multiple regression analysis yielded a ranking that arranged the most important determinants of academic achievement. In the research region, the most significant predictor of children's academic achievement was their family socioeconomic level ($\beta = 40.09$), followed by neighbourhood social cohesiveness ($\beta = 15.24$). The results of the study showed that children living in cohesive neighborhoods, performed better academically compared to children from non-cohesive neighborhoods. Additionally, the study suggested that children from higher socioeconomic backgrounds who lived in cohesive neighborhoods had better academic outcomes than children from lower socioeconomic backgrounds.

Keywords: academic achievement; gender; neighbourhood; social cohesion; socioeconomic status

Introduction

Academic achievement is considered as the process of acquiring the skills and knowledge that form the foundation for development (Atkinson et al., 2015; Rono et al., 2013). Worldwide, the academic achievement is measured through standardized examinations, along with its verification in a system of grade marks or percentage points (York et al., 2015; Munir, et al., 2023). Numerous

 doi:10.20944/preprints202503.2248.v1

studies identified various socio-ecological, physical demographic and cognitive factors influencing students' academic achievement **(**Lisnyj, 2021; Islam et al., 2021).

Neighbourhood social cohesion is one of the important socio-ecological factors shaping students' academic achievement. Neighbourhood social cohesion encompasses the interconnectedness, quality of relationships, and mutual trust among neighbours, along with the shared values and norms within a community (Yuqi, 2017; Rosenblatt et al., 2021). Breedvelt et al. (2022) reported that neighbourhood social cohesion is a social capital that improves the socio-psychological functioning of humans and a source of improving social skills. Neighbourhood social cohesion is related to various dimensions of wellbeing including the educational outcomes among children (Ruby et al., 2021). Neighbourhood social cohesion is associated reduction in depression and necessary for proper mental health which indirectly effect students' academic growth and achievements (Yu et al., 2019). Children grows in a cohesive neighbourhood experience the environment of mutual trust, aid and cooperation, which results in development of sense of belongingness and development of psychosocial skills among children (Baleria, 2021; Wadley-Michigan, 2022). Young individuals residing in neighbourhoods characterized by lower cohesion, disorganization, and disorderliness are at higher risk of encountering peer groups that participate in deviant behavior and hold unfavorable attitudes toward education.

Advocates of the idea that community cohesion and homogeneity are key factors in predicting higher educational attainment contend that these characteristics protect them from a variety of risk factors, most of which are relational in nature, preventing social bonds from being broken and assisting in the development of appropriate trajectories (Hughes and Rebecca, 2021). In addition, a cohesive neighbourhood plays a positive role in promoting appropriate behaviour among children including the academic behaviours by promoting an environment of mutual rust and connectedness and keeping a keen check on children behaviour through mutual check and balance by all the community members (Ainsworth, 2002; Kingsbury et al., 2015; Chandler, 2019).

However, Sanbonmatsu et al. (2006) found that the influence of neighborhood social cohesion on children's academic achievement is secondary. They advocated that compared to the neighborhood, the impact of student personal factors such as interests, mental health status, and family factors like home environment and family socioeconomic status is higher on children's academic achievements (Imran et al., 2017). Socioeconomic status is one of the most important factors in residing in a specific neighborhood. It was found that children from higher socioeconomic standings are more likely to experience higher community belongingness, support and social cohesion compared to children from lower socioeconomic statuses (Elarbab, 2021). Similarly, Drukker et al. (2009) discovered varying effects of the neighborhood on boys and girls. Boys, who tend to spend more time in the neighborhood, are more likely to be influenced by neighborhood features like social cohesion. They concluded that neighborhood social cohesion is linked to the academic success of boys but not girls.

Theoretical Background

Researchers and educators have long been interested in exploring the personal and environmental factors that influence students' academic achievement. Some prominent theories in this area include achievement goal theory, self-determination theory, social learning theory, and the socio-ecological model.

The achievement goal theory links students' personal characteristics and self-determination to their academic achievement. This theory explains that students have personal goals, such as goals for self-improvement and gaining knowledge, as well as mastery goals to outperform others in academic grades. The theory suggests that these two types of goals enhance students' learning capabilities, leading to better academic achievement (Elliot, 1999; Maehr and Zusho, 2009; Elliot and McGregor, 2001)). Critics of this theory argue that it focuses only on students' personal factors at the micro level of academic achievement, overlooking other influential socio-ecological factors at a broader level

 doi:10.20944/preprints202503.2248.v1

(Dweck et al., 1988). They believe that some students outperform others despite exhibiting maladaptive behavior towards mastery and performance goal orientations, which contradicts the achievement goal theory (Harwood C. et al. 2000).

Another important theory in this regard is self-determination theory. This theory holds that both intrinsic (underlying tendencies of students to learn and perform at a higher level) and extrinsic motivations (supportive school environment and rewards from teachers) are important contributing factors to student academic achievement (Reeve and Halusic, 2009). However, this notion is challenged on the grounds that research has shown that rewards can have a detrimental effect on student learning. It has been observed that in the context of challenging tasks, prizes provide only temporary, surface-level motivation. Furthermore, a relentless focus on rewards suppresses creativity and real educational engagement among students (Locke and Latham, 1990).

Similarly, according to social learning theory, based on Bandura's Bobo Doll experiment in the 1960s, social learning is the result of observation and interaction with others. This theory suggests that the development of particular behaviors is the result of reciprocal interaction among individuals and their environment. This theory holds that the home, school, and neighborhood environment, as well as the social environment among peers and in the larger community, also have a profound impact on students' academic outcomes (Bandura, 1977; Blazevic, 2016).

The social learning theory has come under criticism for ignoring the emotional or motivational aspect of learning behavior. It is questioned, therefore, if this concept can be fully operationalized. Numerous assumptions in the theory have been shown to be incorrect by empirical research, including the notion that "the environment will induce changes in the individual naturally." This assumption isn't always accurate. Furthermore, it's unknown how much a person's conduct, environment, and personality influence how they learn. The concept has also ignored biological determinism and the influence of maturity on learning (Middleton et al., 2019).

Following a discussion of the main idea and objections to the aforementioned theories, there is a need to concentrate on a model that can aid in comprehending the various facets of youth ecology that foster academic development and reduce adverse educational outcomes in children.

One of the most widely used model which relate students' academic achievement with student personal, demographic and environmental factor is in this regard is Bronfenbrenner*'s* socioecological model (Bronfenbrenner, 1995a, 1995b). The present research is structured within the framework of Bronfenbrenner's socio-ecological model, which elucidates various facets of child development across different levels: Micro, Meso, Exco, and Macro (Bronfenbrenner, 1979). The microsystem, the closest context in which a student resides and engages, encompasses their home, neighbourhood, and school. At the meso level, interactions between two microsystems are considered, such as those between parents and neighbours or parents and teachers (Bronfenbrenner, 1979). The terms "exo system" and "macro system" refer to the national policies and prevailing culture that do not directly affect children and in which children are not actively participating. According to this model the micro and meso level system elements have direct impact on the student's experiences, educational attitudes, behaviours, and aspirations (Chinyoka, 2013; Hodgson and Spours, 2013).

The correlation between neighbourhood social cohesion and children's academic achievement has been extensively examined in developed nations, there has been relatively limited focus on this critical aspect of child development in less developed and developing countries, notably in the study area (District Malakand, Pakistan). Moreover, in these studies limited studies examined the influence of neighbourhood social cohesion on the academic achievements from students of different gender and socioeconomic status.. In addition, most of the studies collect proxy information from parents, teachers, and elders to know about children's perceptions of neighbourhood social cohesion. This study is distinctive in that it uses responses that were collected directly from Pakistani children, reflecting their views, attitudes, and sentiments regarding the aforementioned factors.

This research study has three main objectives: (1) to examine the association between neighbourhood social cohesion and students' academic achievement, (2) to know about the variation in students' academic achievements of children with respect to neighbourhood social cohesion on the

 doi:10.20944/preprints202503.2248.v1

basis of student gender and family socioeconomic status, and (3) to measure the strength of the relationship between neighbourhood social cohesion, family socioeconomic status and academic achievements.

Research Questions

- Whether neighbourhood social cohesion significantly contributed to students' academic achievement
- Whether there is a significant difference in the association between neighbourhood social cohesion ad students' academic achievement based on student gender and family socioeconomic status.

Whether the effect of family socioeconomic status is higher than neighbourhood social cohesion on students' academic achievement

Methodology

Research Design

This study utilized a cross-sectional research design, chosen based on the characteristics of the study population and the exploratory timeframe. This particular design is best suited for understanding current phenomena, issues, attitudes, perceptions, or problems, as it involves sampling from a cross-section of the population (Babie, 1989).

Sampling and Sample Size

The research was carried out in Khyber Pakhtunkhwa (Pakistan) District Malakand in the year 2020. In the District, there are 28 Union Councils (UCs) and 2 Tehsils. District Malakand was first divided into two tehsils. The tehsils were subsequently divided into rural and urban union councils. Out of a total of 28 union councils (23 rural and 5 urban), two urban and ten rural union councils were randomly selected at a ratio of 2:10. In addition, three schools—one for boys, one for girls, and one private were specifically selected from each selected Union Councils to gather data.

Across the 36 selected schools, there are 7952 pupils enrolled in the ninth and tenth grades; 6701 of these children attend government schools, while 1251 attend private ones. The sample size needed for 7952 students is 448, according to Sher Muhammad Chaudhry's sample size formula. Based on the total number of pupils, each school received a proportionate share of the 448-student sample (class 9 and 10). The sample random sampling technique was then used to randomly select the students (Chaudhry, 2009).

Measurement of Variables

The measurement of neighborhood social cohesion utilized the scale developed by Santos et al. (2013), which is widely recognized in the field. The scale comprises four items, with a high level of cohesion indicated by a positive response to two or more items. For assessing the family socioeconomic status (SES) of the students, the Kuppuswamy modified socioeconomic scale (2019) was employed. This scale derives its measurement from a composite score of three key variables: parental education, family monthly income, and occupation/income source. A scale of one for illiteracy, two for primary education (five years), three for middle education (eight years), four for secondary/matriculate education (ten years), five for intermediate education (twelve years), six for bachelor's degree (fourteen years), and seven for master's and above (sixteen years and above) was used to grade the parent education domain. On a scale of 1 (less than PRs. 15, 000), 2 (between PRs. 15,001 and 30,000), and 3 (above PRs. 30,000), the monthly family income domain was rated. Occupation/major source of income was assessed using a four-point scale, with ratings ranging from 1 for private employment to 4 for government employment. The maximum score in each of the three socioeconomic status (SES) domains was 14. Consequently, respondents from families scoring seven

 doi:10.20944/preprints202503.2248.v1

or less in the socioeconomic status assessment were classified as having low socioeconomic status, while those with a score of seven or more were classified as having a high socioeconomic level. A student's academic achievement (dependent variable) is determined by taking into consideration the marks percentage of their final exam results.**Data Analysis**

The collected data was coded and entered into SPSS software for analysis. Chi-square and Kendall's Tau-c tests were used to examine the association between neighborhood social cohesion and children's academic performance, with student gender and family socioeconomic status as control variables. Additionally, Fisher's Exact test was employed as an alternative to the Chi-square test in cases where the sample size was not sufficiently large to meet the Chi-square test's assumptions.

Assumptions Testing for Regression Analysis

When performing hierarchical multiple regressions, the basic assumptions of normality, linearity, multicollinearity of variables, and homoscedasticity were tested and confirmed using statistical procedures to ensure the robustness of the models.

Variables Selection

The hierarchical regression model's variable selection and ordering were done step-by-step. This technique assisted in identifying the most significant predictors of children academic success and the sequence in which variables should be added to the model based on their standardized Beta (β) values without appreciably lowering the model's R-square (R2) coefficient.

The F-test was used to determine the statistical significance of the Hierarchical Regression model at each level (stages 1-3) and of the complete model (stage 3). A t-test was used to determine the statistical significance of independent variables in predicting dependent variables.

Results

Association Between Neighbourhood Social Cohesion and Children's Academic Achievement

The findings presented in Table 1 demonstrate a significant ($p<0.05$) and positive ($T^c = 0.168$) association between the willingness of neighbours to assist one another and students' academic achievements. Similarly, a significant ($p<0.05$) and positive ($T^c = 0.092$) association was observed between trust among neighbours and student academic achievement. Furthermore, a significant and positive association was found between unity and imitate relations among neighbours and students' academic achievement ($p<0.05$, $T^c = 0.310$). However, a non-significant positive association was noted between neighbourhood shared values and students' academic achievement ($p>0.05$, $T^c = 0.078$).

Table 1. Association between neighbourhood social cohesion and children academic achievement.

Independent variable (neighbourhood social cohesion)	Dependent variable	Statistics
Your neighbours are willing to help each other	Academic achievement	$\chi2=13.000$ (0.001) $T^c=0.168$
Your neighbours share common values	Academic achievement	$\chi2=6.537$ (0.061) $T^c=0.078$
Your neighbours are trustworthy	Academic achievement	$\chi2=11.785$ (0.004) $T^c=0.092$

 doi:10.20944/preprints202503.2248.v1

In your neighbourhood there is unity and imitate relations among neighbours	Academic achievement	$\chi 2$=13.317 (0.003) T^c=0.310

Association Between Neighbourhood Social Cohesion and Children Academic Achievement (After Controlling for Respondents Gender)

The findings presented in Table 2 reveal that after controlling for gender of the respondents a significant and positive association was found between neighbourhood social cohesion and academic achievement for both male ($p<0.05$, T^c =0.159) and female ($p<0.05$, T^c =0.197). The overall results also highlighted a significant and positive association ($p<0.05$, T^c =0.174) between neighbourhood cohesion and academic ***achievement*** across both genders.

Table 2. Association between neighbourhood cohesion and children academic achievement (controlling for gender of the respondents).

Gender	Independent Variable	Dependent Variable	Statistics	Statistics for entire table
Male	Neighbourhood social cohesion	Academic achievement	$\chi 2$=9.170 (0.010) T^c =0.159	$\chi 2$=13.575 (0.000) T^c =0.174
Female	Neighbourhood social cohesion	Academic achievement	$\chi 2$=8.229 (0.008) T^c =0.197	

Relationship Between Neighbourhood Social Cohesion and Children's Academic Achievement (After Controlling for Respondents Family Socioeconomic Status)

After controlling for family socioeconomic status, the findings presented in Table 3 reveal a significant and positive influence of neighbourhood social cohesion on the academic ***achievement*** of children from low socioeconomic status families ($p<0.05$, T^c =0.176). Similarly, for high socioeconomic status families, the association was significant and positive ($p<0.05$, T^c =0.201). Overall, the analysis shows a significant and positive relationship between neighbourhood social cohesion and academic achievement across different socioeconomic status groups ($p<0.05$, T^c =0.234).

Table 3. Relationship between neighbourhood social cohesion and children's academic achievement (controlling for the family socioeconomic status of the respondents).

Family socioeconomic status (SES)	Independent Variable	Dependent Variable	Statistics	Statistics for entire table
High SES	Neighbourhood social cohesion	Academic achievement	$\chi 2$=5.413 (0.006) T^c =0.201	$\chi 2$=15.575 (0.000) T^c =0.234
Low SES	Neighbourhood social cohesion	Academic achievement	$\chi 2$=16.070 (0.004) T^c =0.176	

 doi:10.20944/preprints202503.2248.v1

Assumptions Testing for Hierarchical Regression Analysis

Normality Diagnostics

The skewness (0.064) and kurtosis (-0.071) values fall within the normal range as per the criteria of skewness between -2 to +2 and kurtosis between -7 to +7 (Hair et al., 2010; Bryne, 2010). Moreover, the normality assumption was satisfied at a significance level of P=0.05, with the Kolmogorov-Smirnov and Shapiro-Wilk tests yielding P-values of 0.200 and 0.636, respectively (P>0.05) as indicated in Table 4. Hence, the hypothesis of non-normal distribution of data was rejected, confirming the normal distribution of students' academic achievement.

Table 4. Normality diagnostics test.

Kolmogorov-Smirnov[a]			Shapiro-Wilk			Skewness (Standard error)	Kurtosis (Standard error)
Statistic	df	Sig.	Statistic	df	Sig.		
0.027	448	0.200	0.997	448	0.636	0.064 (0.115)	-0.071 (0.230)

Linearity

The P-P Plot (Figure-1) illustrates the relationship between independent variables and academic performance. The plot displays a predominantly linear pattern, with a few points showing slight deviations from the straight line, indicating overall linearity. This suggests that the assumption of linearity is satisfied.

Multicollinearity Diagnostics

The bivariate correlation analysis in Table 5 shows statistically significant correlations ($P < 0.05$) among the predictor variables: Gender, family socioeconomic status (SES), and neighborhood social cohesion. The correlation values range from $r = 0.191$ to $r = 0.570$, all below the threshold of $r = 0.7$. Moreover, the Variance Inflation Factor (VIF) values for the predictors are below 10, and tolerance values are above 0.10, indicating a low risk of multicollinearity. Thus, the assumption of multicollinearity is satisfied (Ernst AF, Albers, 2017; Stephen S & Karen, 2010).

Table 5. Correlation between variables.

S. No	Variable	1	2	3	
1	Academic Score	__			
2	Gender	0.111*	__		
3	Socioeconomic Status	0.599**	0.029^{NS}	__	
4	Neighbourhood Social Cohesion	0.191**	0.072**	0.121*	__

Note. Data in table give correlation coefficient (α) value while, * represent significant (P≥0.01 and ≤ 0.05), ** represent high significant (P=0.000) and NS represent non-significant correlation (P>0.05).

Homoscedasticity

The scatterplot in Figure 2 shows academic scores as the dependent variable with regression standard residuals. The plot indicates that all points fall within the range of -3 to 3 on both the X-axis

 doi:10.20944/preprints202503.2248.v1

and Y-axis, meeting the condition of homoscedasticity. This suggests that the data is suitable for hierarchical multiple regression analysis (Bowerman & Connell, 1990). Since all four assumptions (multicollinearity, normality, linearity, and homoscedasticity) have been satisfied, the dependent and independent variables are adequate for performing hierarchical multiple regression analysis.

Hierarchical Multiple Regression Analysis Results

Variable Selection

The predictor variables (family socioeconomic status, and neighborhood social cohesion) were found to be significant (P<0.05) in the hierarchical multiple regression model, explaining variation in the dependent variable, therefore, included in the regression model. However, gender was found non-significant contributor of children academic achievement, therefor was excluded in regression model.

Analysis of Variance (ANOVA)

ANOVA was used to test the overall statistical significance of the model. The results in Table 6 indicate that the model, including both blocks of variables, is statistically significant (P < 0.05, F (2, 445) = 134.020), demonstrating that the independent variables significantly predict academic achievement. Therefore, the hierarchical regression model was a good fit for the data.

Table 6. ANOVA.

Model		*SS*	*Df*	*MS*	F	Sig.
1	Regression	85073.052	1	116915.627	203.590	0.000 [b]
	Residual	100729.193	446	574.270		
	Total	185802.245	447			
2	Regression	88388.314	2	70115.079	134.020	0.000 [c]
	Residual	97415.930	445	523.168		
	Total	185802.245	447			

Note. [b]Denote relationship of Socioeconomic status (SES) and academic achievement. [c]Denote relationship of the interaction between socioeconomic status & neighbourhood social cohesion with and academic achievement.

Model Summary Results

To investigate the association between independent factors (family socioeconomic status and neighbourhood social cohesion) and dependent variable (academic achievement), a two-stage Hierarchical Multiple Regression was performed (Table 7). The first stage involved family socioeconomic status (SES), and the second stage involved neighbourhood social cohesion. Regression models were constructed using variables in accordance with theoretical criteria put forward by Pant, and Mwariri and colleagues (*Mwariri et al., 2017; Pant, 2020)*. The sequence of variable input in the regression models based on their weighted importance in determining children's academic progress was confirmed by the standardized Beta coefficient (β) values in Table 7.

Table 7. Model Summary.

Model, Step, and Predictor Variables	R^2	*SE*	(ΔR^2)	*Df*	Sig
Model 1 1-Socioeconomic status (SES)	0.413	23.96393	0.413	(1, 446)	0.000

 doi:10.20944/preprints202503.2248.v1

Model 2 1-Socioeconomic Status (SES) 2-Neighbourhood Social Cohesion	0.486	22.87287	0.073	(1, 445)	0.002

According to the summary of the hierarchical multiple regression model (Table 7), family socioeconomic status (SES) at stage one (model-1) significantly influenced the regression model ($P<0.05$) and explained 41.3% ($R2=0.413$) of the variance in children's academic attainment.
At the second stage (model-2), the inclusion of neighbourhood social cohesion was found to have a substantial ($P<0.05$) impact on children's academic achievement, accounting for 48.6% of the variation ($R^2=0.486$). The addition of neighbourhood social cohesiveness to the variables (family socioeconomic status) entered in model-2, as indicated by the R^2 change, accounts for the extra 0.073 variance. The aforementioned two regression models are all statistically significant ($P < 0.05$), indicating that the addition of a variable at each step or block results in a statistically significant increase in variance that takes academic achievement into account.

Coefficient

Results in Table 8 show that all the three predictor variables introduced in the models (socioeconomic status (SES), and neighbourhood social cohesion) have statistically significant ($P<0.05$) impact on children academic achievement.

Table 8. Coefficient.

	Unstandardized Coefficents		Standardized Coefficients	*t*	Sig.	95% CI		Collinearity statistics	
	B	*SE*	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	8.535	2.827		3.019	0.003	2.979	14.091		
Socioeconomic Status (SES)	40.092	2.636	0.570	15.210	0.000	34.912	45.273	0.869	2.151
Neighbourhood Social Cohesion	15.249	2.284	0.250	6.676	0.000	10.760	19.739	0.767	1.002

Furthermore, values of unstandardized coefficients (Table 8) indicate that by keeping all variables constant, a student is expected to secure 8.535% ($\beta=8.535$) marks in exams as indicated by the constant value of the coefficient. Moreover, children from higher socioeconomic status (SES) families secure 40.092% higher marks ($\beta=40.092$) compared to children from low socioeconomic status (SES) families. Moreover, neighbourhood social cohesion have a significant effect on the academic achievement of children as a unit change (from low to high neighbourhood social cohesion) 15.249% increase occurs in marks of children compared to non-cohesive neighbourhood ($\beta=15.249$).

The hierarchical regression model specification for this study is given as follows: Y (Academic achievement) = 8.535+ 40.092 (socioeconomic status) + 15.249 (neighbourhood social cohesion).

 doi:10.20944/preprints202503.2248.v1

Discussion

Every day, children interact with neighbours, which play a crucial role in their socialization. Sociologists consider these interactions as a micro-level agent of socialization within the socio-ecological framework. The neighbourhood social and physical environments play a significant role in determining a person's mental health. Neighbourhood social cohesion is defined as the social environment in which residents are connected to one another, have strong social ties, cooperate with one another, and uphold a set of common values. A cohesive neighbourhood positively influenced the development of its residents. A child grows in a positive social environment and a cohesive neighbourhood experienced positive mental health growth and satisfaction in life which indirectly affects their life achievement including their educational outcomes. On the other hand, a child growing up in a community marked by social disorganization, typified by clustered poverty, racial segregation, social seclusion, and residential instability, lack of trust among neighbours, lack of cooperation, and physical and social disorder, can have negative effects on its members. This environment can lead to depression, tension, and other mental health problems. Children growing up in such neighbourhoods often experience feelings of loneliness and depression, which can negatively impact their achievement in school.

Children in rural areas often develop close relationships with their neighbours due to the tight-knit community and shared cultural, religious, and ethnic backgrounds. The rural setting of the study area brings together inhabitants with similar cultural backgrounds, fostering a strong sense of community. This cohesion is built on trust, support, and shared values, creating a unified neighbourhood. Children in close-knit communities are valued members and receive support to develop positive character traits and succeed in various aspects of life, including academic achievement. Those who recognize their neighbours' supportive actions as stemming from shared values tend to show improved academic achievement, as indicated by significant positive association tests results. Kaasa (2019), who corroborates these findings, reported that social capital in terms of relationships, values, and attitude expedites personal development so that one can accomplish collective societal goals and make a meaningful contribution to society. Similarly, Iqbal (2023) asserts that this social capital has a positive socialization effect, especially on younger socialization, and that it promotes mutual respect, trust, cooperation, and understanding among members. When children live in a community that values education and is cohesively integrated, they are socialized for greater educational endeavors through positive social penalties. A culture of learning and growth at the community level also forces children to actively participate in their education, leading to positive educational outcomes (Stephany and Deepens, 2018; Rodriguez et al., 2015). Similarly, according to Halfon et al. (2018), an individual's degree of psychological wellbeing, including their educational achievement, is positively correlated with the strength of their social bonds, trust, and sense of closeness among their neighbours. Furthermore, Doyle (2020) and Xie et al. (2022) discovered that a cohesive neighbourhood, defined by mutual trust, support, and cooperation, is linked to improving student academic achievements and fostering positive community connections.

Gender plays a significant role in shaping the life outcomes of children. In patriarchal societies, boys and girls are often treated differently, with boys enjoying more freedom and access to resources. This can impact their academic achievement and social interactions. The current study on the relationship between neighborhood social cohesion and children's academic success concluded that social cohesion in the neighborhood has a universal and positive impact on the academic achievement of both boys and girls, regardless of their gender.

Cultural restrictions on females are more stringent, as they have the freedom to participate and play in the streets and neighbourhoods without any restrictions until puberty. After puberty, their mobility is limited to the home, immediate neighbourhood, relatives, and schools. However, this restriction does not weaken social relations, as females still have the freedom to interact with other females in their surroundings. This may explain why gender was found to have no influence on the academic achievement of children due to neighbourhood social cohesion. These results are consistent

 doi:10.20944/preprints202503.2248.v1

with Anna (2016) who found that a cohesive social network of educated individuals facilitates the socialization of children and helps them achieve high academic goals. Children in such environments learn behaviors that contribute to the educational success of community members. Findings of Han et al. (2020) however, contradict these findings by reporting that in patriarchal societies, female students often experience higher levels of loneliness compared to boys. This is due to their limited connection with other community members. Additionally, cultural restrictions on their mobility, especially after puberty, result in less community support and limited access to opportunities and resources. As a result, female students face emotional challenges and lack self-confidence, leading to lower rates of continuing higher education and negatively impacting their academic achievements (Kim et al., 2021).

Furthermore, the association between neighbourhood social cohesion and academic achievement was found spurious on the basis of family socioeconomic status (Table 4). The results highlighted that children from higher socioeconomic status families, when exposed to similar neighbourhood social cohesion, obtained higher academic grades compared to children from lower socioeconomic status families. The probable reason for these findings is that higher socioeconomic standings makes the family able to fulfill timely the educational needs of their children and also to reside in a quality neighbourhood characterized with quality educational facilities, safe and cohesive environment. Therefore, a combination of neighbourhood social cohesion with high socioeconomic status is a better predictor of academic achievement.

Similarly, *a*ccording to Algren (2020), students from higher family socioeconomic backgrounds tend to have stronger social capital and better relationships with family members, neighbours, and educational institutions. Their higher economic status, social connections, and sense of belonging contribute to greater life satisfaction and academic success. Conversely, students from lower socioeconomic backgrounds often have weaker social networks and fewer social resources, which can negatively impact their academic achievement (Li et al., 2020; Ho et al., 2021). It has been found that, similar to socioeconomic status and family and school environments, the neighbourhood environment and social mechanisms within the neighbourhood, such as social networks, connectedness, cohesion, and interactions, also influence children's educational outcomes (Andersson et al., 2018).

The hierarchical multiple regression analyses revealed that both neighborhood social cohesion and family socioeconomic status are significant contributors to improved academic achievement among children. However, the positive impact of higher socioeconomic status on academic achievement is greater compared to neighborhood social cohesion. The results indicate that higher socioeconomic status is associated with better child care, safety, investment in basic and educational needs, and greater involvement in children's education, all of which directly influence academic achievement. Socioeconomic status is so crucial that it can overshadow the negative effects of disadvantaged and non-cohesive neighborhoods. Research suggests that children from higher-income, supportive families benefit more from living in affluent neighborhoods characterized by a sense of community and solidarity. Additionally, the study found that children from higher socioeconomic backgrounds with parents who were more involved in their education showed better social development than children from lower socioeconomic backgrounds with less involved parents, especially if they lived in cohesive and affluent neighborhoods (Kingston et al., 2013). Similarly, Munir et al. (2023) found that children from higher socioeconomic status families are more likely to engage in educational activities and meet their educational needs promptly; leading to better academic performance compared to children from lower socioeconomic status families.

Conclusion

It has been concluded that children who live in a cohesive neighbourhood that is marked by mutual assistance and support, trustworthy relationships, shared values, unity, and close relationships do better academically. Children grow up in a cohesive environment based on a sense

 doi:10.20944/preprints202503.2248.v1

of belongingness, increased learning motivation, and trust, all of which contribute to higher academic performance in schools. Furthermore, the study found that, even in the same area, children from high socioeconomic households are more likely to achieve good academic grades than children from low socioeconomic families. This suggests that higher socioeconomic status makes it easier to access proper educational resources, which are crucial in facilitating higher academic achievements among students from higher socioeconomic backgrounds. Interestingly, there is no difference observed in students' academic achievement based on their gender. This suggests that gender does not play an influential role in academic outcomes within the study population. While exploring the factors influencing academic achievement, family socioeconomic position ranked highest, followed by neighborhood social cohesiveness in the study location. This indicates the most influential role of socioeconomic status and community support in educational outcomes among children. Based on these findings, recommendations are made that emphasis the on targeted educational and economic policies that recognize the important role of both neighbourhood support and socioeconomic status in influencing student academic behavior and their overall academic achievement. To provide a favorable learning environment for secondary school students, efforts to strengthen social support and reduce economic differences may be crucial. Neighborhood social cohesion and family socioeconomic status are important factors influencing child educational outcomes. Promoting community gatherings for food, games, sports, and celebrations can foster understanding between different groups, create a sense of community belongingness, and reduce tension and prejudice in the neighborhood. This can contribute to a safe and protective environment, benefiting children's educational outcomes. Additionally, providing specialized support services and initiatives for pupils from disadvantaged socioeconomic backgrounds, such as academic support, tutoring, mentoring, and counseling, can address specific challenges they may face. Encouraging parents from diverse socioeconomic backgrounds to actively engage in their children's education through workshops, school events, and decision-making processes, and establishing effective communication channels between parents and schools can also benefit children's educational outcomes.

Limitation of the Study

While the present study contributes novel findings to the literature, it has some limitations. Firstly, it only examined the micro level of Bronfenbrenner's socio-ecological model, specifically focusing on neighbourhood social cohesion and its impact on the academic achievement of secondary school students. Future research could explore how meso and macro level factors of the socio-ecological model influence student academic achievement. Secondly, the study only looked at the influence of gender and family socioeconomic status on the relationship between neighbourhood social cohesion and academic achievement. Future studies should consider additional demographic variables that may affect this relationship. Lastly, the study was limited to secondary schools, and further research should encompass other levels of educational institutions.

Ethics Statement

The study involving humans was approved by Ethical Committee of the Chairmanship of the Department of Rural Sociology, Agriculture University Peshawar, KhyberPakhtunkhwa, Pakistan. The study was conducted in accordance with the local legislation and institutional requirements. Written informed consent for data collection from secondary school students was obtained from the district education departments for both male and female schools. In addition, students provided verbal consent in the presence of their teachers subsequent to securing written approval from district education departments. Moreover, the study adhered to APA's ethical research guidelines, prioritizing the protection of respondents' humanity and dignity to prevent any negative emotions. The interview schedule was pretested for ethical concerns before data collection. Only questions pertaining to the study variables were included in the interview schedule for willing students, who were interviewed in front of their teachers. Students were assured of confidentiality and were not

asked about their identities. They had the option to end the interview at any time. Prior to answering questions about the variables, students were briefed on the study's objectives. Data collection from female respondents was conducted by a trained female investigator, who followed cultural considerations and worked under the researcher's supervision.

Author Contributions: Yemei Wei: Conceptualization, Methodology, Funding acquisition, Software, review & editing. Nayab Ali: Conceptualization, Data curation, Investigation, Methodology, Supervision, Resources, Validation, Visualization, Writing original draft, review & editing. Xing Tong: Conceptualization, Methodology, Funding acquisition, review & editing. Mansoor Ahmad: Data curation, Investigation, Resources, Software, Writing original draft, review & editing. Muhammad Asif: Data curation, Investigation, Resources, Software, review & editing. Haihua Ying: Conceptualization, Methodology, Writing original draft, review & editing.

Acknowledgments: The authors would like to express their gratitude to the National Social Science Fund Youth Project in Education for their support of the research, authorship, and publication of this article. Also, the authors are thankful to all the participants in this study and the district education departments for their valuable contributions.

References

Algren, M. H., Ekholm, O., Nielsen, L., Ersbøll, A. K., Bak, C. K., & Andersen, P. T. (2020). Social isolation, loneliness, socioeconomic status, and health-risk behavior in deprived neighbourhoods in Denmark: A cross-sectional study. *SSM - Population Health, 10*, 100546.

Andersson, E. K., Malmberg, B. (2018). Segregation and the effects of adolescent residential context on poverty risks and early income career: A study of the Swedish 1980 cohort. *Urban Stud.* 55(2):365–83.

Atkinson, L., Beitchman, J., Gonzalez, A., Young, A., Wilson, B., Escobar, M., & Villani, V. (2015). Cumulative Risk, Cumulative Outcome: A 20-Year Longitudinal Study. *PloS One*, 106, e0127650. doi: 10.1371/ journal. pone.0127650.

Babie E. (1989). *The Practice of Social Research* (5th ed). Belmont, CA: Wades worth Publishing Company.

Baleria, G. (2021). "Counteracting Othering in the Community College Setting: Increasing Belonging and Curiosity to Improve Student Success." *Community College Journal of Research and Practice.* 45 (4): 273–289. doi:10.1080/10668926.2019.1689207

Bandura, A. (1977). Social learning theory [internet]. Englewood Cliffs, NJ: Prentice Hall. 247p. DOI: 10.1177/105960117700200317.

Blazevic, I. (2016). Family, Peer and School Influence on Children's Social Development. *World. Journal of Education*. 6(2). DOI: 10.5430/wje.v6n2p42.

Bowerman, B. L., & Connell, R. T. 1990. Linear Statistical Models–an applied approach (2nd ed). Boston, MA: WS-KentP Publishing Co.

Breedvelt, J., Tiemeier, H., Sharples, E., Galea, S., Niedzwiedz, C., Elliott, I., & Bockting, C. L. (2022). The effects of neighbourhood social cohesion on preventing depression and anxiety among adolescents and young adults: rapid review. *BJPsych Oopen*, *8*(4), e97. https://doi.org/10.1192/bjo.2022.57

Bronfenbrenner U. (1995a). The bioecological model from a life course perspective: Reflections of a participant observer. In Moen P., Elder G. H. Jr, Lüscher K. (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 599–616). Washington, DC: American Psychological Association.

Bronfenbrenner U. (1995b). Developmental ecology through space and time: A future perspective. In Moen P., Elder G. H. Jr, Luscher K. (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 617–649). Washington, DC: American Psychological Association.

Bronfenbrenner, U. (1979). Ecological models of human development. *American Psychologist*, 32(7): 513–531

Byrne, B. M. (2010). Structural equation modeling with AMOS: Basic concepts, applications, and programming. New York: Routledge.

 doi:10.20944/preprints202503.2248.v1

Chandler, C. R. (2019). Neighbourhoods Matter: Study finds neighbourhoods are significantly related to academic achievement in African American youth over time. https://journals.sagepub.com/doi/10.1177/0095798418806130

Chaudhry, S.M. (2009). *Introduction to statistical theory*, 8th edition, Publisher: Lahore, Pakistan: Ilmi Kitab Khana,

Chinyoka, K. (2013). Psychosocial effects of poverty on the academic performance of the girl child in Zimbabwe. Doctoral thesis published online. http://uir.unisa.ac.za/bitstream/handle/10500/13066/thesis_chinyokai_k.pdf.

Chiu, M. M., Chow B. W. Y. (2015). Classmate characteristics and student achievement in 33 countries: classmates' past achievement, family socioeconomic status, educational resources, and attitudes toward reading. *J. Educ. Psychol*, 107 152–169. 10.1037/a0036897.

Doyle, S. (2020). "Schools Welcome Plans for 'Stunning' Campus." *Irish News*. June 24. https://www.irishnews.com/news/educationnews/2020/06/24/news/schools-welcome-plans-for-stunning-campus-1982013

Drukker, M., Feron, F. J. M., Mengelers, R., Van, Os J. (2009). Neighbourhood socioeconomic and social factors and school achievement in boys and girls. *Journal of Early Adolescence,* 29(2):285–306. doi: 10.1177/0272431608320124.

Dweck, C,, Leggett, E. A (1988). social-cognitive approach to motivation and personality. Psychological Review. 95: 256-273

Elarbab, R. (2021). Associations between social cohesion, social capital, socio-economic status, ethnicity, geographical location and self-rated health among South African people. file:///C:/Users/nayab/Downloads/Thesis-Rua-Elarbab-June-23-2021-Version-1%20(1).pdf

Elliot, A. J,, McGregor, H. A. A. (2001)..2 x 2 achievement goal framework. Journal of Personality and Social Psychology. 2001: 80(3): 501–519. doi: 10.1037/0022-3514.80.3.501.

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. Educational Psychologist.; 34: 169–189

Ernst, A. F., Albers, C. J. 2017. Regression assumptions in clinical psychology research practice-a systematic review of common misconceptions. Peer J; 5: e3323. Doi: 10.7717/peerj.3323. PMID: 28533971; PMCID: PMC5436580.

Farooq, M. S., Chaudhry, A. H., Shafique, M., and Berhan, G. (2011). Factors affecting students' quality of academic performance: A case of secondary school level. *Journal of Quality and Technology Management*, 7(2): 01-14.

Hair, J., Black, W. C., Babin, B. J. & Anderson, R. E. (2010) Multivariate data analysis (7th ed.). Upper Saddle River, New Jersey: Pearson Educational International.

Halfon et al., (2018). N. Halfon, C.B. Forrest, R.M. Lerner, E.M. Faustman. *Handbook of Life Course Health Development*. Springer. (eBook) DOI 10.1007/978-3-319-47143-3

Han, H. R., Chung, Y., Kim, K., Lee, J. E. & Kim, M. T. (2020). Depression in North Korean refugees: A mixed methods study. *Public Health* **185**, 283–289. https://doi.org/10.1016/j.puhe.2020.05.046.

Harwood C. et al. (2000) Achievement Goals in Sport: A Critique of Conceptual and Measurement Issues. Journal of Sport and Exercise Psychology, 22: 235-255.

Ho, H., Chen, Y., & Yen, C. (2021). Moderating effects of friendship and family support on the association between bullying victimization and perpetration in adolescents. *Journal of Interpersonal Violence*. 37(7-8): 4640-4659. doi: 10.1177/0886260520985503.

Hodgson, A., spours k. (2013). *Tackling the crisis facing young people: building 'high opportunity progression* eco-systems', Oxford Review of Education, 39:2, 211-228, DOI: 10.1080/03054985.2013.787923

Hughes, J., & Rebecca L. (2021). *Shared education: a case study in social cohesion*, *Research Papers in Education*, DOI: 10.1080/02671522.2021.1961303.

Imran, M., Afshari, M., Ghavifekr, S., Razak, A. Z. A. (2017). Demography factors and students academic performance in secondary schools. *Mojem Malaysian Online J Educ Manag*. 1(2):1–9.

Iqbal, M. M. A., Mahmood, Q. K., Saud, M., & Hayat, N. (2023). Social capital and happiness in university students: a higher-order analysis. International Journal of Adolescence and Youth, 28(1). https://doi.org/10.1080/02673843.2023.2261526

 doi:10.20944/preprints202503.2248.v1

Islam, Ariful, Sanzida, Tasnim. (2021). "An Analysis of Factors Influencing Academic Performance of Undergraduate Students: A Case Study of Rabindra University, Bangladesh (RUB)." Shanlax International Journal of Education. 9 (3): 127-135

Jwadley-Michigan. J. (2022). *Neighbors can close gap when teens missed bonding with mom.* https://www.futurity.org/neighbors-child-mother-bonding-social-skills-2793292-2.

Kaasa, A. (2019). Determinants of individual-level social capital: Culture and personal values. *Journal of International Studies*, 12(1), 9-32. doi:10.14254/2071- 8330.2019/12-1/1

Kim, M. H. et al. (2021). Social isolation, loneliness and their relationships with mental health status in South Korea. *Psychiatry Investig.* **18**, 652–660. https://doi.org/10.30773/pi.2021.0067.

Kingsbury, M., Kirkbride, J. B., McMartin, S. E., Wickham, M. E., Weeks, M., & Colman, I. (2015). Trajectories of childhood neighbourhood cohesion and adolescent mental health: evidence from a national Canadian cohort. *Psychological Mmedicine*, *45*(15), 3239–3248. https://doi.org/10.1017/S0033291715001245

Kingston, S., K.Y. Huang, E. Calzada, L. Brotman, 2013. Parent involvement in education as a moderator of family and neighbourhood socioeconomic context on school readiness among young children. J. Community Psychol., 41 (2013), pp. 265-276

Li, J., Wang, J., Li, J. Y,, Qian, S., Jia, R. X., Wang, Y. Q., Liang, J. H., Xu, Y. (2020). How do socioeconomic status relate to social relationships among adolescents: a school-based study in East China. BMC Pediatr. 20(1):271. doi: 10.1186/s12887-020-02175-w. PMID: 32493261; PMCID: PMC7268251.

Lisnyj, K. T., Pearl, D. L., McWhirter, J. E. (2021). Papadopoulos A. Exploration of Factors Affecting Post-Secondary Students' Stress and Academic Success: Application of the Socio-Ecological Model for Health Promotion. Int J Environ Res Public Health. 2021 Apr 5;18(7):3779. doi: 10.3390/ijerph18073779. PMID: 33916373; PMCID: PMC8038589.

Locke E. A, Latham G. P. A theory of goal setting and task performance. *Englewood Cliffs, NJ: Prentice Hall Inc.* 1990

Maehr, M. L, Zusho, A.(2009). Achievement goal theory: Past, present, and future. In K. Wentzel & D. Miele Eds., Handbook of Motivation at School. New York, NY: Taylor & Francis. 1: 77-104.

Middleton, L., Hall, H., Raeside, R.(2019). Applications and applicability of Social Cognitive Theory in information science research. *Journal of Librarianship and Information Science.*; *51*(4): 927-937.

Munir, J., Faiza, M., Jamal, B., Daud, S., & Iqbal, K. (2023). The Impact of Socio-economic Status on Academic Achievement. *Journal of Social Sciences Review*, *3*(2), 695–705. https://doi.org/10.54183/jssr.v3i2.308

Munir, J., Faiza, M., Jamal, B., Daud, S., & Iqbal, K. (2023). The Impact of Socio-economic Status on Academic Achievement. *Journal of Social Sciences Review*, *3*(2), 695–705. https://doi.org/10.54183/jssr.v3i2.308

Mwariri, M. W., Marete, J. B., Mwenda, E. G. 2017. Impact of parents' social economic status on students' academic performance in public secondary schools in Kieni East Subcounty, Nyericounty, kenya. IJRDO-J. Educ. Res. 2: 38–60.

Pant, K. R. 2020. Influences of parental socio-economic status on academic achievement: A case study of rural communities in Kailali, Nepal. Contemp. Res. Interdiscip. Acad. J. 4: 95–109.

R, Yu., O, Cheung., J, Leung., et al. *(2019).* Is neighbourhood social cohesion associated with subjective well-being for older Chinese people? The neighbourhood social cohesion study. *Bmj Open,* 9, p. e023332. 10.1136/bmjopen-2018-023332

Reeve J., Halusic M. How K-12 teachers can put self-determination theory principles into practice. *Theory and Research in Education*. 2009; *7*(2), 145–154. DOI: 10.1177/1477878509104319.

Rodriguez Mene's, Jorge, and Luisa Donato. (2015). ''*Social Capital, Social Cohesion, and Cognitive Attainment*.'' Pp. 324–43 in The Handbook of Research Methods and Applications on Social Capital, edited by Y. Li. Cheltenham, England: Edward Elgar Publishing.

Rono, R. 2013. *Factors affecting pupils' performance in public primary schools at kenya certificate of primary education examination (KCPE) in Emgwen Division, Nandi District, Kenya,* http://erepository.uonbi.ac.ke/bitstream/handle/ 11295/52949/abstract.pdf?sequence=3.

Rosenblatt, A.M., Crews, D.C., Powe, N.R. et al. (2021). Association between neighbourhood social cohesion, awareness of chronic diseases, and participation in healthy behaviors in a community cohort. *BMC Public Health* **21**, 1611. https://doi.org/10.1186/s12889-021-11633-8

 doi:10.20944/preprints202503.2248.v1

Ruby, Yu.,, G. Leung., J. Chan., B.H.K. Yip., S. Wong., T. Kwok., J. Woo. (2021). Neighbourhood Social Cohesion Associates with Loneliness Differently among Older People According to Subjective Social Status. *The Journal of Nnutrition, Hhealth and Aaging.* 25 (1): 41-47

Sanbonmatsu, L., Kling, J. R., Duncan, G. J., & Brooks-Gunn, J. 2006. Neighbourhoods and academic achievement results from the Moving to Opportunity experiment. *Journal of Human Rresources*, 4(14): 649-691.

Santos SM et al. 2013.Cross-cultural adaptation and reliability of measurements on self-reported neighborhood characteristics in ELSA-Brasil.www.scielo.br/rsp. Rev Saúde Pública;47 (Supl 2), DOI: 10.1590/S0034-8910.2013047003871.

Santos, S. M et al. 2013. Cross-cultural adaptation and reliability of measurements on self-reported neighbourhood characteristics in ELSA-Brasil.www.scielo.br/rsp. *Rev Saúde Pública*; 47 (Supl 2), DOI: 10.1590/S0034-8910.2013047003871.

Sirin. 2005. Socioeconomic status and academic achievement: a meta-analytic review of research. *Review of Educational Research*, 75(3): 417-453.

Stephany, F. (2019). It Deepens Like a Coastal Shelf: Educational Mobility and Social Capital in Germany. *Soc Indic Res* **142**, 855–885. https://doi.org/10.1007/s11205-018-1937-9

Stephen, S., & Karen, G. M. 2010. Data Analysis with SPSS (4th ed). United States: Pearson Education (US).

Wani, R.T. (2019). Socioeconomic status scales-modified Kuppuswamy and Udai Pareekh's scale *J Family Med Prim Care*, 8:1846-9.

Xie, K., Vongkulluksn, V. W., Cheng, S.-L., and Jiang, Z. (2022). Examining high-school students' motivation change through a person-centered approach. *J. Educ. Psychol.* 114:89. doi: 10.1037/edu0000507

York, T. T., Gibson, C., & Rankin, S. (2015). Defining and Measuring Academic Success. Practice Assessment, Research & Evaluation. *University of Massachusetts Amherst Libraries.* 20 (1): 5. DOI: https://doi.org/10.7275/hz5x-tx03.

Yuqi, L., Fulong, W., Ye, L.,& Zhigang, L.(2017) Changing neighbourhood cohesion under the impact of urban redevelopment: a case study of Guangzhou, China. *Urban Geography,* 38(2): 266-290. DOI: 10.1080/02723638.2016.1152842.