

Effect of Family Cultural Capital on the Academic Achievement of University Students:

A Case Study of the UAE

Ayesha Abdulla Almutawa

University of Sharjah - College of Arts – Sociology

Family cultural capital is an important factor that strongly impacts children's academic achievements by promoting positive attitudes and study practices fostered by active support. Besides, student-teacher relationships and characteristics of educational institutions are other primary factors affecting students' academic achievement. Considering the proposed argumentation, research also focused on examining the impacts of these factors on academic achievement under Bourdieu's Theory of Cultural Capital. Data from 354 students enrolled in the University of Sharjah was analyzed using the Partial Least Square- Structural Equation Modelling (PLS-SEM). Findings revealed that family communication and supervision significantly impact the academic achievement of university students as prominent components of Cultural Capital theory. The impact of teacher-student relations also remained significant, implying the importance of relevant relationships in encouraging the students to perform academically. Finally, the moderation of characteristics of educational institutions on the relationships between family communication, family supervision, and teacher-student relationship on students' academic achievement remained validated by the analysis, indicating the educational institutions as important factors in strengthening academic achievement among university students. This research concluded that establishing strong family communication and supervision, fostering constructive teacher-student relations, and ensuring that educational institutions complement the resilience of family support can collectively create an environment that improves the learning experience. Eventually, this enables students to reach their highest academic capabilities.

Keywords: Family Cultural Capital; Family Communication; Family Supervision; Teacher-Student Relationship; Characteristic of Educational Institution

1. Background

Higher education is crucial in producing skilled individuals to address

real societal challenges. Education is a powerful force for positive transformation, improving health and livelihoods while encouraging social tranquillity. On an individual level, it is related to improved living standards through increased productivity; those with higher education access more economic and social prospects (Tadese et al., 2022). On a wider scale, education nurtures well-informed and skilled human capital, widely acknowledged as a driving force behind economic development that significantly contributes to social and economic development. In this regard, academic achievement denotes how a student, teacher, or institution has recognized their educational objectives, whether short- or long-term, determined through continuous assessment or accumulative grade point average (CGPA) (Al-Abyadh & Abdel Azeem, 2022). A study conducted among vocational high school students in Indonesia demonstrated that those with strong academic achievements enjoy a higher income, improved employment advantages, and excellent prospects for progress. Also, academically successful students tend to have strong self-esteem and confidence, encounter lower levels of stress and depression, show social inclinations, and are less likely to be involved in anti-social behaviours (Habes et al., 2022; Tentama & Abdillah, 2019). According to (Ullah & Almani, 2022), The importance of students' performance holds weight not just for the students themselves but also for the universities, as it demonstrates the effectiveness of their educational efforts. Extending literature on students' education and achievement analyzed different elements affecting students' performance. These encompass factors such as the quality of physical facilities, educators, and the students' perspectives, aspirations, and self-awareness (Masud et al., 2019; Nyoni et al., 2017; Ozcan, 2021).

Similarly, existing studies witnessed other factors affecting students' academic achievement (Li & Qiu, 2018; Mushtaq & Khan, 2012; O'Malley et al., 2015; Weiser & Riggio, 2010). Here (Xing, 2023) cited an example of family as a power factor, indicating different aspects, including family background, social and economic structure, size and others. In line with these ideas, researchers introduced the concept of "cultural capital" to explain why students from different social backgrounds achieve diverse academic achievements (ŞENGÖNÜL, 2022; Wang & Huang, 2021). This term was used to describe how the benefits accrued by students from diverse social groups align with the distribution of resources across these classes (Otiso & Ayienda, 2021). According to (Yu et al., 2022), family cultural capital is a hidden yet powerful mechanism for promoting better opportunities for their children. Within the educational context, differences in students' academic achievements are often attributed to optimism regarding personal persistence, family support, and the quality of schooling. In their study, (Otiso & Ayienda, 2021) also witnessed that the factors in a family's cultural capital significantly influence a student's academic performance. According to the family stress model, parents from lower social strata may encounter significant life challenges and be

occupied with their livelihoods.

In contrast, families with higher socioeconomic status can provide their children with better educational opportunities through the resources and support they offer, affecting students' academic performance. Families affect their children's academic achievements by nurturing positive attitudes and study practices facilitated by active parental involvement and support. Apart from family cultural capital, (Arrascue, 2023) considers teacher-student relations as another major aspect affecting student academic achievement in many cases. As noted, establishing a robust teacher-student relationship is a helpful educational asset. Numerous research works have witnessed the impacts of these connections on students across different age groups. The relationship forged between a teacher and a student appears as a powerful determinant of the student's level of engagement and contentment within the classroom. (Afzal et al., 2023)(P56) also witnessed that Students have positive relationships with their teachers and have a deeper understanding of them, resulting in decreased conflicts. Also, these students show improved academic achievements compared to their counterparts. Contrarily, students with negative relationships with teachers tend to depend more on them, encounter greater life challenges and have difficulties forming intimate connections, contributing to their lower academic performance.

Study Objectives and Gaps

Notably, the effect of family cultural factors and the quality of teacher-student relationships on academic achievement is strong and multifaceted. Family culture shapes a student's values, attitudes, and work ethic toward education (Otiso & Ayienda, 2021). At the same time, the quality of the relationship between teachers and students is equally important. A positive relationship encourages engagement, trust, and open communication, which are paramount in improving the learning experience (Lee, 2012). Thus, despite family and institutional factors' importance in academic achievements, the relevant phenomenon remained underrepresented in the United Arab Emirates. Most of the existing studies have focused on students' academic achievements (Alhumaid et al., 2021; Salloum & Aburayya, 2023; Tahat et al., 2022), yet family cultural factors are yet not addressed as they mainly focused on the effects of transitions to e-learning (Fernandez et al., 2022), students demographics (Dukmak, 2015), language competency (Harb & El-shaarawi, 2007) and cultural differences (Dev, 2018), while no study focused on the family cultural factors affecting the student's academic achievement.

Further, despite the utmost importance of teacher-student relations (Bai et al., 2021; Yu et al., 2022) and institutional characteristics (Tilbrook & Shifrer, 2022), relevant concern should be given in the Emirati context. Based on these

gaps, current research focused on the impact of family cultural capital and teacher-student relationship, with the mediation of characteristics of educational institutions. The primary aim is to gain deep insights into the relevant phenomenon and propose practical implications that may help policymakers, parents, teachers, and other practitioners to improve academic achievements among higher education students in the United Arab Emirates.

2. Literature Review

Bourdieu's Theory of Cultural Capital

Bourdieu's Theory of Cultural Capital theoretically supports this research. Notably, the relevant theory is a sociological framework developed by French sociologist Pierre Bourdieu, asserting that cultural, economic, and social capital play an important role in determining an individual's social mobility and success within a given society. Based on these premises, the current research assumes the impact of family cultural capital delivered by communication and supervision as essential factors in students' academic performance. Families establish different communication and guidance norms and practices, steering how children express themselves, hear, and engage in conversations. These norms shape a child's social competence, affecting their adeptness at building relationships and navigating different social contexts. Even regarding the role and impact of family cultural capital (Košutić, 2017), consider it a pathway for young students to select their higher educational access and choose institutions and academic majors. In this regard, cultural capital can be converted into economic capital mainly through the educational system, emphasizing the importance of family and education in Bourdieu's cultural capital theory. This transformation is affirmed by obtaining educational stability through the family's cultural capital, which essentially intertwines both as important factors in young students' lives. As a result, the relationship between family cultural capital and students ensures social and financial stability. For instance, (Willekens & Lievens, 2014) further consider the family cultural capital as providing confidence and improving the self-esteem of the young generation to ensure their social participation, social stability, and increased cultural participation. Under the cultural capital theory assumptions, the study by (Shakeri & Khalilzadeh, 2020) also found that family supervision and communication patterns directly and significantly impact a student's academic success. Also, these communication patterns indirectly affect academic achievement through the lens of accountability. The way students perceive their classroom environment directly and significantly affects their academic progress, and this perception also indirectly impacts academic achievement, mediated by a sense of responsibility. Also, a sense of responsibility directly and significantly affects students' academic performance as it navigates their behaviours. Thus, considering the primary assumptions of Bourdieu's cultural

capital theory, this research proposed the conceptual framework illustrated in Figure 2. Table 1 also defines the operationalization of the study constructs implied in the current research.

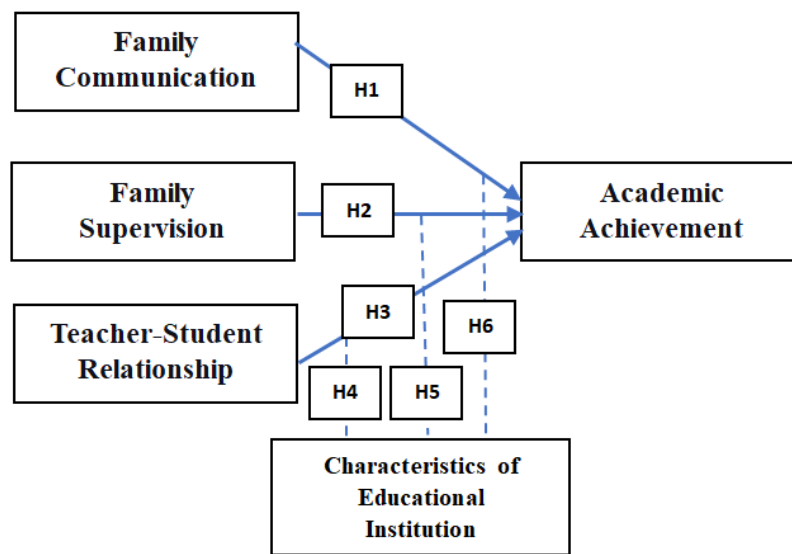


Figure 1- Explanatory Framework of Current Research

Family Communication and Academic Achievement

According to (Runcan et al., 2012), communication between family and children involves critical communication that requires specific abilities, dedicated time, and availability. It encompasses more than mere expression, including a parent's effort to convey information clearly and meaningfully to the child, handling both the specifics and the broader context. This communication is a cornerstone for promoting balanced and constructive relationships, facilitating understanding, and establishing mutual acceptance between family and their children (Tadese et al., 2022). For example, communication for children is a critical aspect of family cultural capital, encompassing the linguistic and social skills shared within the familial context. Communication for children serves as a critical aspect of family cultural capital, encompassing the linguistic and social skills shared within the familial context (Yuen et al., 2016). Language proficiency cultivated through family relations forms a cornerstone of this capital. Children exposed to various vocabularies and in-depth language experiences tend to develop robust linguistic abilities, improving academic performance and affecting their cognitive development and social interactions (Đurišić, 2018). Their study (Ullah & Almani, 2022) examined how parental communication influences students' academic performance at Crescent International School, Thailand. Qualitative data from the sample of 12 individuals revealed that students with high communication with their parents showed superior academic performance and acquired higher scores across all subjects compared to students with less involved parents.

These findings highlight the significance of family communication in a child's education, stressing the need for parents to interact with children as they play a crucial role as their child's first educators. Thus, with the help of the cited literature, it is hypothesized that.

H1. Family communication has a positive impact on academic achievement.

Family Supervision and Academic Achievement

According to (Symeou, 2007), family supervision is critical in shaping a student's educational performance. Their supervision encompasses the guidance, direction, and support parents or guardians provide in their academic journey. This form of involvement directly facilitates the accumulation of cultural capital, as parents who actively supervise their children often transfer useful knowledge, educational values, and expectations. These elements constitute a substantial component of cultural capital, providing the child with a basis of intellectual resources. To further affirm the importance of family supervision, (Pandey & Thapa, 2017) investigated the impact of parental guidance and involvement on students' academic progress in India. Data collected from a sample of 120 students, encompassing both genders, from various types of schools showed a positive correlation between parental impact and academic achievements among the study respondents. Notably, girls scored higher on the scale and indicated parental influence was more favourable than boys. (Boonk et al., 2018) argued that A child who obtains consistent and productive family supervision is more likely to excel academically, leading to higher educational qualifications and better employment opportunities in the future. Also, a student's educational achievements are usually recognized and valued in society, contributing to their social status, highlighting how family supervision impacts academic performance and has broader implications for their future socioeconomic status as a component of cultural capital. (Erdem & Kaya, 2020) examined the impact of parental engagement on students' academic performance across pre-school, elementary, and secondary education levels. Data was gathered using a meta-analysis approach, indicating parental expectations as the most significant factor positively impacting academic performance. Interestingly, the overall impact of parental involvement on student's academic achievement remained consistent across various education levels, types of measurement, and measurement areas. Nonetheless, variations were noticed based on the developmental stage of each country. Hence, it is hypothesized that.

H2. Family supervision has a positive impact on academic achievement.

Table 1 Operationalization of Key Terms

Construct	Definition	Sources
Family Communication	Family communication is an exchange of information, opinions, feelings, and expressions among components of a family unit. It is based on verbal and non-verbal interactions, including conversations, gestures, and shared activities. Family communication plays a critical role in shaping a family's values, beliefs, and overall dynamics, affecting individual members' behaviours and attitudes towards various facets of life, including education.	(Tadese et al., 2022) (Ullah & Almani, 2022)
	Family communication involves an ongoing process of sharing thoughts, emotions, and information among family members to show and sustain significant connections. Family communication involves verbal and non-verbal forms of expression, fostering trust, understanding, and a sense of association within the family unit. It plays a critical role in shaping an individual's values, attitudes, and work ethic, especially in education, as it affects how a student perceives and deals with academic goals, eventually contributing to academic achievement.	
Family Supervision	Family supervision is the direction, supervision, and monitoring level parents provide to their children within a family setting. It involves setting rules, limitations, and expectations and consistently implementing these guidelines to assure the child's safety, wellbeing, and expansion. Family supervision influences a student's behaviour, attitudes towards education, and overall academic attainment.	(Pandey & Thapa, 2017) (Boonk et al., 2018)
	Family supervision is based on the proactive involvement of parents or guardians in their child's life, including their academic matters. It involves providing help, motivation, and resources for a child's educational success. This supervision involves activities, i.e., assisting with homework, attending parent-teacher meetings, and being aware of the child's improvement and challenges in school. A strong family supervision promotes a positive learning environment, supports the value of education, and contributes to a student's academic accomplishments.	
Teacher-Student Relationship	The teacher-student relationship is the dynamic and interactional relationship between a teacher and a student within an educational setting. The teacher-student relationship is based on emotional, social, and instructional factors, including trust, esteem, support, and communication. A positive teacher-student relationship is indicated by mutual understanding, where the teacher provides advice, motivation, and individualized attention to promote the student's academic development and personal growth.	(Chikendu, 2022) (Arrascue, 2023)
	The teacher-student relationship represents the interpersonal bond between a teacher and a learner, extending beyond the sheer transmission of knowledge and involves parts of mentorship, guidance, and compassion. A teacher-student relationship is built on confidence, open communication, and a genuine respect for the student's wellbeing and academic improvement.	
Characteristics of Educational Institution	Characteristics of an educational institution are operationalized as the unique features, characteristics, and qualities that define and shape the environment and functions of a specific educational organization. These characteristics involve the institution's mission and goals, organizational design, teaching methods, curriculum design, aptitudes, resources, and policies. Also, they may include factors, i.e., class size, student-to-teacher balance, extracurricular activities, and the educational principles supported by the institution.	(Lei, 2016) (Daka, 2020)
	The characteristics of an educational institution are based on the individual characteristics and elements that distinguish one learning institution from another. This involves factors such as the institution's educational purposes, teaching methods, assessment techniques, and overall ethos. It also expands to physical characteristics, including campus layout, technological resources, and the availability of technical facilities.	
Academic Achievement	<i>Academic achievement</i> is the success, ability, and achievement a student acquires in their educational matters. It encompasses a range of indicators, including grades, standardized test scores, class rankings, and performance in education. Academic achievement mirrors a student's capability to learn, apply, and show knowledge and skills in different areas of study.	(Agulla et al., 2008; Chen & Yang, 2019)

	Academic achievement involves the extent to which a student completes or exceeds the established learning goals, standards, or standards set by an educational institution or curriculum. It thoroughly assesses students' academic, cognitive, and intellectual growth across various subjects and disciplines. This achievement is generally evaluated through assessments, tests, assignments, and other evaluation forms.	
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Teacher-Student Relationships and Academic Achievement

According to (Fosen, 2016), a robust teacher-student relationship is critical for academic accomplishment. When teachers build trust, show care, and support their students, it creates positive learning conditions. Students feel more relaxed asking questions, striving for help, and participating in class discussions. This sense of belonging and motivation increases their confidence, enhancing their study performance. As noted by (Arrascue, 2023), children dedicate their early life to education, beginning from age 5, spending about 7 hours each day in school. With each passing grade, they commit to gaining new knowledge, meeting higher standards, and growing socially. Each year is characterized by many transformations, and one of the most influential factors in this journey is the student's teacher. Over the years, teachers have helped their students meet grade-level requirements. Thus, teachers seek methods to enhance their students' learning experience, indicating the importance of the teacher-student relationship in improving students' learning experiences. To further affirm this, a study (Lee, 2012) examined the relationship between students' perceptions of the social surroundings within their school and their academic performance. Data collected from 3,748 ninth and tenth graders from 147 schools supported the idea that authoritative schools, which show high academic rigour and positive teacher-student relationships, have an advantage. Strong teacher-student relationships and academic stringency correlate with students' behavioural and emotional engagement. Besides, the teacher-student relationship significantly predicted reading performance. As a result, (Chikendu, 2022) argued that encouraging teacher-student relationships holds value due to their positive impact on various facets of education, including enhanced student engagement in learning, improved academic performance, and a great sense of inspiration among students. Thus, it is proposed that.

H3. Teacher-student relationship has a positive impact on academic achievement.

Characteristics of Educational Institution

According to (Moscoso, 2000), the characteristics of an institution, i.e., its mission, teaching methods, resources, and environment, directly affect students' learning experiences, which in turn impacts their academic achievements. Here (Joosten & Cusatis, 2019) cited an example of the quality of teaching methods

and instructional practices within an institution, which plays a crucial role in shaping academic achievement. Institutions that use effective and innovative teaching approaches provide prospects for development and promote critical thinking to promote a more helpful learning environment. As a result, students have an increased understanding, decreased retention, and application of knowledge, eventually leading to improved academic achievement. The institution's policies, i.e., class size and support services, also facilitate academic achievement. Smaller class sizes and lower student-to-teacher ratios enable more personalized attention, allowing teachers to handle individual learning needs better. Support services, including tutoring, counselling, and special education programs, can help students encounter academic challenges, eventually strengthening their performance (Tadese et al., 2022). In their study (Daka, 2020) examined the institutional characteristics of the University of Zambia's School of Medicine and their influence on academic performance. Data from the mixed methods approach showed that effective governance and well-qualified staff positively affected students' academic performance. However, it was also highlighted that the school should align student registration with infrastructure capability to improve the provision of educational resources and ensure improved academic performance. Another study by (Jr, 2003) investigated the relationship between the physical attributes of schools, student performance and behaviour, and teacher job satisfaction levels. The preceding goal was to establish whether there were tangible relationships between schools having distinct physical features and high levels of student achievement, positive behaviour, and teacher contentment. Results showed that, among the schools involved in the study, significant correlations were found between the physical characteristics of the school and student achievement. Thus, (Lei, 2016) stated that while schools may vary, high-performing ones usually share similar features. These institutions notably influence students' sense of devotion, commitment, involvement, and perseverance, which are necessary for academic accomplishments. Thus, considering the cited literature, this research hypothesized that.

H4. Characteristics of educational institution moderates the impacts of family communication on academic achievement.

H5. Characteristics of educational institution moderates the impacts of family supervision on academic achievement.

H6. Characteristics of educational institution moderates the impacts of teacher-student relationship on academic achievement.

3. Research Methods

Study Respondents

This research used purposive sampling through an online survey to collect data. The survey was conducted in English and targeted adult students (18 years old and above) across different departments at the University of Sharjah United Arab Emirates. Recent data shows that there are a total of 14,325 students enrolled in the University of Sharjah (University of Sharjah, 2023). Further, based on the sample size formula provided by Krejci and Morgan, a sample of 370 university students was selected. Thus, the chosen sample size of 370 exceeded the estimated minimum requirement of 300 for a 95% level of accuracy. It aligns with suggested guidelines for employing the PLS-SEM approach (Christopher Westland, 2010), where the sample size should ideally be at least ten times the number of indicators used to assess constructs. Also, the literature suggests that an adequate PLS-SEM sample size falls within the 200 to 500 respondents' range. (Cangur & Ercan, 2015) also affirmed that 300 respondents could effectively represent the factors affecting students' achievements, further supporting the sample size selected in the current research study. After data gathering, all the responses were carefully calculated, indicating that 16 were missing. Consequently, 354 responses were finalized, showing a response rate of 95.6%, which is higher than the threshold value of 60.0%. Further, the respondents' profile descriptives indicated that most respondents (56.7%) were males and 43.3% were females. 48.0% of respondents were 18-20 years old, 22.5% were 25-38 years of age, 59.0% of respondents were 21-24 years of age, and 12.7% were 29 years old or above. Regarding the university majors, 48.9% had Social Sciences, 28.3% had Medical Sciences, 14.6% had Linguistics/ Humanities, and 8.2% marked "Others" as their university major. Finally, 55.9% of respondents were graduate-level students, 21.8% were undergraduate-level students, 17.5% were undergraduates, and 4.8% were doctorate-level students. Table 1 presents the details of respondents' personal profiles.

Table 1- Respondents' Personal Profile

Variables	Constructs	N	%
Gender	Female	153	43.3%
	Male	201	56.7%
Age	18-20 years	170	48.0%
	21-24 years	59	16.6%
	25-38	80	22.5%
	29 years or above	45	12.7%
University Major	Social Sciences	168	48.9%
	Medical Sciences	66	28.3%
	Linguistics/Humanities	34	14.6%
	Others	19	8.2%
Academic	Undergraduate	77	21.8%
	Graduate	198	55.9%

Level	Postgraduate	62	17.5%
	Doctorate	17	4.8%

Study Instrument

The data-gathering tool contained six sections and 28 questions, including gender, age, university major, and study level. The first section involved questions concerning the respondents' demographics. The section involved five questions to measure the "Family Communication" construct adopted from two existing studies (See Gupta, 2019; Yu et al., 2022). Further, the "Family Supervision" construct was measured by adopting four questionnaire items from the study (Hammer et al., 2013). Regarding the construct "Teacher-Student Relationship", four measurement items were adopted from the research by (Bai et al., 2021; Yu et al., 2022). "Academic Achievement" was measured by four items from the study by (Balch, 2012), and "Characteristics of Educational Institution" was assessed by using six questionnaire items from the study by (Tilbrook & Shifrer, 2022). Notably, the reliability analysis of the questionnaire indicated that all the variables' Cronbach Alpha and Composite Reliability values also surpassed the threshold of 0.7, indicating that the results would be generalizable. Table 2 shows the questionnaire measurement items, sources, and reliability analysis results. Testing the constructs' reliability and finding the Cronbach Alpha values showed strong reliability (Family communication 0.558, Family Supervision 0.549, Teacher-Student relationship 0.535, characteristics of Educational Institution 0.565, and Academic Achievement 0.505)." Also, the Composite Reliability values surpassed the recommended threshold of 0.7 (Family communication 0.804, Family Supervision 0.719, Teacher-Student relationship 0.713, characteristics of Educational Institution 0.668, and Academic Achievement 0.753)."

Table 2- Questionnaire Items, Sources, and Results of the Reliability Analysis.

Constructs	Items	Sources	CA	CR
Family Communication	My parents hear my opinion and value it.	(Gupta, 2019; Yu et al., 2022)	0.558	0.804
	My parents obligated me to obey their rules.			
	My parents teach me that it is essential to excel in education.			
	My parents often discuss the importance of education with me.			
Family Supervision	My parents often praise my academic performance in front of others.	(Hammer et al., 2013)	0.549	0.719
	My family's involvement in overseeing my learning contributes to my academic success.			
	My parents guide me about the appropriate behaviour.			
	My parents tell me about effective behaviour that helps me adjust in educational settings.			
Teacher-Student Relationship	My parents supervise me when I feel emotionally low.	(Bai et al., 2021; Yu et al., 2022)	0.535	0.713
	Teachers help to manage the academic work pressure.			
	Teachers are always available to provide educational guidance and support.			

	Teachers often give us emotional and psychological support when needed.	al., 2022)		
	I never feel restricted in talking to my teachers.			
Academic Performance	I am certain that I have mastered the skills I learned this year.	(Balch, 2012)	0.565	0.668
	I am certain that now I excel in my academic performance.			
	I do not feel bored in the class.			
	I perform my best in the class.			
	I am interested in my studies, and I want to continue.			
Characteristics of Educational Institution	Offers students educational and psychological support systems.	(Tilbrook & Shifrer, 2022)	0.505	0.753
	Offers career development opportunities.			
	Offers students well-fare services.			
	Community service policies.			
	Support for student activities safety management systems.			
	Support to minority students.			

Study Design and Data Analysis

Structural Equation Modeling (SEM) is a refined statistical approach widely used in scientific research to analyze and comprehend causal relationships among latent and measurable variables. It extends path analysis by including pathways between latent variables, suggesting a more exhaustive view than simple correlations. Partial Least Squares Structural Equation Modeling (PLS-SEM) was applied in this study due to its causal predictive nature and a strong focus on prediction. PLS-SEM aims to improve the explanatory power of constructs and variables by developing latent variable scores that minimize model residuals through partial least squares regressions. It is variance-based as it considers total variance to estimate parameters. In this context, PLS-SEM effectively evaluates observable variables to refine the model and evaluate relationships between latent variables. Various fit indices, including NFI, SRMR, NFI, and chi-square, supported the model's sufficiency. A well-fit SRMR value is below 0.08. A chi-square value below 5.0 and an NFI value of 0.80 or higher shows a well-fitting model. Cronbach's alpha, average variance extracted (AVE), and factor loads were calculated to validate measurement models, with thresholds set at 0.7, 0.5, and 0.5, respectively (Kraft, 2020). Path coefficients and f^2 measurements were also calculated, with an f^2 value of 0.35 or higher considered large (Samartha & Kodikal, 2018). Path analysis was used to examine relationships between variables and reveal their causal relationships by creating a path diagram showing the variables' ability to affect an outcome directly or indirectly through other variables.

Statistical Analysis and Results

This study is grounded in six research hypotheses, using a two-step approach commonly employed in Structural Equation Modeling (SEM), known as "inner model and outer model assessment." Initially, the focus was on assessing the validity and reliability of the inner model, which included

evaluating the measurement tool. Following this, the study examined the relationships presented in the study hypotheses. The first step entailed an assessment of the inner model's validity and reliability. Convergent validity was inquired to verify the internal consistency among the measurement items for each construct assessed as suggested by (Cheung & Wang, 2017). Moreover, discriminant validity was used to measure the extent to which the study constructs were distinguished, following the method outlined by (Mello & Collins, 2001).

The results of the convergent validity assessment are summarized in Table 3. Notably, most of the Factor Loads of the measurement items exceeded the suggested threshold of >0.5 (Mello & Collins, 2001). Also, the Average Variance Extracted Values (AVE) surpassed the threshold of >0.5 , indicating strong internal consistency across all items (Habes et al., 2021) (Family communication 0.556, Family Supervision 0.546, Teacher-Student relationship 0.504, characteristics of Educational Institution 0.565, and Academic Achievement 0.573)."

Table 00- Convergent Validity and Construct Reliability Assessment

Variables	Items	Loads	AVE
Family communication	FCM1	0.830	0.556
	FCM2	0.776	
	FCM3	0.780	
	FCM4	0.699	
	FCM5	0.634	
Family Supervision	FCS1	0.502	0.546
	FCS2	0.827	
	FCS3	0.782	
	FCS4	0.805	
Teacher-Student Relationship	TSR1	0.737	0.504
	TSR2	0.746	
	TSR3	0.686	
	TSR4	0.753	
Academic Achievement	AA1	0.660	0.565
	AA2	0.559	
	AA3	0.717	
	AA4	0.721	
	AA5	0.673	
Characteristics of Educational Institution	CHR1	0.785	0.573
	CHR2	0.786	
	CHR3	0.702	
	CHR4	0.692	
	CHR5	0.472	
	CHR6	0.391	

Further, the study assessed the model's fit after eradicating items with lower loading values. According to (Mérigot et al., 2010), goodness of fit evaluation helps determine how well the measurement model aligns with the expected model. The finalized measurement model for this research is shown in Table 4. Following withdrawing items with lower loading values, the goodness

of fit analysis generated a Standardized Root Mean Square (SRMR) value of 0.136, falling below the established threshold of <0.80 . The Non-Fit Index (NFI) was also reported at 0.823, between 0 to 1. The Tucker and Lewis Index (TLI) remained at 1.538, surpassing the recommended threshold of >0.92 . Also, the chi-square value was recorded at 2.536, well below the prescribed threshold of <3.00 , as (Sun, 2005) suggested, showing a favourable fit for the study.

Table 4- Goodness of Fit

	Value	Criteria
SRMR	0.136	<0.85
NFI	0.823	b/w 0-1
TLI	1.538	>0.90
Chi-square	2.536	<3.00

The next step involved evaluating the discriminant validity of the measurement tool using a two-step process involving both the Fornell-Larcker scale and the Heterotrait-Monotrait Ratio (HTMT) suggested by (Cheung & Wang, 2017). The findings showed that the correlation values associated with each construct are distinct, indicating a lack of consequential interrelationships. Also, the cumulative HTMT value remained less than the established threshold of <0.90 , as suggested by (Habes et al., 2022). This confirms the existence of discriminant validity among the study's constructs. Results of the Fornell-Larcker criterion and Heterotrait-Monotrait Ratio can be found in Table 6a and 6b, respectively.

Table 5- Multicollinearity Analysis

	Unstandardized Coefficients		Collinearity Statistics	
	B	Std. Error	Tolerance	VIF
Family Communication	.538	.102	.165	1.061
Family Supervision	.382	.057	.389	2.570
Teacher-Student Relationship	.259	.050	.512	1.951
Characteristics of Institution	-.346	.113	.142	1.058

The multicollinearity analysis was further conducted to examine the potential correlations between the predictors in the current research study. Notably, multicollinearity in regression-based research occurs when two or more independent variables in a regression analysis are strongly correlated, leading to issues in accurately estimating the individual contributions of each variable (Daoud, 2017). Thus, the Variance Inflation Factor (VIF) was conducted to test the multicollinearity, as shown in Table 5. Results revealed that the VIF value of each predictor remained less than the threshold value of 3.0 (Family communication 1.061, Family Supervision 2.570, Teacher-Student

relationship 1.951, characteristics of Educational Institution 1.058), indicating that multicollinearity does not exist between predictor variables.

Table 6a- Fornell-Larcker scale

	Academic Achievement	Characteristics of Institution	Family Communication	Family Supervision	Teacher-Student Relationship
Academic Achievement	0.652				
Characteristics of Institution	0.660	0.357			
Family Communication	0.012	0.262	0.346		
Family Supervision	0.474	0.406	0.482	0.239	
Teacher-Student Relationship	0.581	0.464	0.501	0.635	0.162

Table 6b- Heterotrait-Monotrait Ratio (HTMT)

Relationship	HTMT
Characteristics of Institution <-> Academic Achievement	0.825
Family Communication <-> Academic Achievement	0.907
Family Communication <-> Characteristics of Institution	1.257
Family Supervision <-> Academic Achievement	0.771
Family Supervision <-> Characteristics of Institution	0.585
Family Supervision <-> Family Communication	0.627
Teacher-Student Relationship <-> Academic Achievement	0.721
Teacher-Student Relationship <-> Characteristics of Institution	0.55
Teacher-Student Relationship <-> Family Communication	0.563
Teacher-Student Relationship <-> Family Supervision	0.969

According to (Samartha & Kodikal, 2018), the effect size (f^2) is a test that measures the strength of the relationship between latent constructs in a regression-based study. It demonstrates how much the dependent variable is predicted to change when the independent variable shifts by one unit, with all other factors holding constant (Selya et al., 2012). In this context, an effect size of 0.020 or below is deemed small, 0.15 is moderate, and 0.35 or higher is large (Kraft, 2020). As a result, the effect size indicating the power of Family Communication on Academic Achievement stands at 1.518 (large), while the effect size of Family Supervision on Academic Achievement is 0.205 (medium), and the effect size of Teacher-Student Relationship on Academic Achievement is 0.275 (medium). These values highlight a significant impact of the independent variable on each corresponding dependent variable, as detailed in Table 7.

Table 7- Effect Size (f^2) Calculation

Independent Variable	Dependent Variable	f^2	Size
Family Communication	Academic Achievement	1.518	Large
Family Supervision	Academic Achievement	0.205	Medium
Teacher-Student relationship	Academic Achievement	0.275	Medium

Finally, the path analysis was conducted to examine the relationship hypothesized in the current research study (Kelcey et al., 2021). The path analysis was based on testing the direct relationships and further the proposed moderations. First, the effect of Family Communication on Academic Achievement was tested as proposed in the first hypothesis. Analysis revealed the beta coefficient value 0.792, t-statistics 2.917 and a significance value of $p < 0.000$, which validated the first hypothesis. Further, the H2 of the study was tested (Family Supervision \rightarrow Academic Achievement) and supported with the beta coefficient value 0.339, t-statistics 9.265 and significance value $p < 0.000$. The third hypothesis of the study also remained significant with a beta coefficient value of 0.289, t-statistics 9.896 and a significance value of $p < 0.000$ (Teacher-Student Relationship \rightarrow Academic Achievement).

Similarly, the moderation analysis was conducted to examine the moderating effect of Characteristics of Institution on the relationship between Family Communication and Academic Achievement, indicating the beta coefficient value -0.0017, t-statistics 1.006 and significance value $p < 0.000$. The moderation of Characteristics of Institution on the relationship between Family Supervision and Academic Achievement also remained significant with a beta coefficient value of 0.102, t-statistics of 11.205 and significance value $p < 0.000$. Finally, the moderating effect of Characteristics of Institution on the relationship between Teacher-Student Relationship and Academic Achievement remained significant with the beta coefficient value -0.055, t-statistics 9.972 and significance value $p < 0.000$. The path analysis supported all the study hypotheses, validating the proposed conceptual framework in current research. Furthermore, the path between Family Supervision and Academic Achievement remained strongest among all (0.436), followed by the path between Teacher-Student Relationship and Academic Achievement (0.310), the path between Characteristics of Institution x Teacher-Student Relationship \rightarrow Academic Achievement remained the third strongest (0.217) among all. Table 8 represents the results of the path analysis.

Table 8- Hypotheses Testing (Regression Weights, Path Analysis)

	<i>M</i>	<i>β</i>	<i>STDEV</i>	<i>t-statistics</i>	<i>P</i>
Family Communication \rightarrow Academic Achievement	-0.002	0.792	0.020	2.917	0.000
Family Supervision \rightarrow Academic Achievement	0.436	0.339	0.079	9.265	0.000
Teacher-Student Relationship \rightarrow Academic Achievement	0.310	0.289	0.042	9.896	0.000
Characteristics of Institution x Family Communication \rightarrow Academic Achievement	-0.011	-0.017	0.096	1.006	0.000
Characteristics of Institution x Family Supervision \rightarrow Academic Achievement	-0.212	0.102	0.030	11.205	0.000
Characteristics of Institution x Teacher-Student Relationship \rightarrow Academic Achievement	0.217	-0.055	0.018	9.972	0.000

4. Discussion

Earlier studies have established a strong relationship between family cultural capital and their children's educational achievements. Research, for instance, that by (Erikson & Jonsson, 1996) and (Stromme & Hansen, 2017), and (Shavit & Blossfeld, 1993) has shown that one's social background particularly correlates with academic performance, preferred field of study, and educational achievement level. Also, preceding studies by (Andersen & Hansen, 2012) and (Hansen & Mastekaasa, 2006) have shown that students with greater cultural knowledge, family guidance, and support tend to outperform those with weak cultural capital and parental guidance. Based on these findings, current research also added to the existing literature witnessing the effect of family cultural capital on academic achievement among university students in the United Arab Emirates. Notably, this research further proposed the direct effect of the teacher-student relationship, which is further moderated by characteristics of educational institutions on students' academic achievement. As noted by (Cortina, 1993) the relationship between teachers and students can affect the students' emotions, behaviour, and intellectual processes, representing a mutual interpersonal bond that grows in proximal, involving active engagements and encompassing factors like the overall classroom environment.

Thus, the first hypothesis of current research proposed "H1. Family communication has a positive impact on academic achievement". The study respondents agreed that their parents hear their opinions and obligate them to follow their rules. According to the respondents, their parents teach them that it is essential to excel in education by discussing the importance of education and praising their educational performance. These results are consistent with the existing literature (Fallahchai & Darkhord, 2011; Yahaya, 2009). For example, in their metanalytical study, (Castro et al., 2015) gathered data from 37 studies and found that parental communication approaches emphasizing overall supervision of children's learning activities strongly correlate with higher academic achievement. The most vigorous correlations are observed when families sustain high academic expectations for their children, engage in ongoing communication concerning education-related matters, and actively encourage the development of reading habits.

Further, the second study hypothesis was "H2. Family supervision positively impacts academic achievement". The study results also supported the H2 of the study, indicating a general agreement by the respondents concerning their family supervision as affecting their academic achievement. According to the respondents, their family's involvement in overseeing their learning contributes to academic success. Also, they agreed with the fact that their parents' guide about appropriate behaviour may help them adjust in educational settings. Besides, the respondents indicated the availability of parents' supervision during emotionally low times. In a similar context, (Israel et al.,

2001) also witnessed the impact of family cultural capital, particularly social and cultural capital, as a crucial element shaping the students' educational success. Also, the interactive and structural aspects of cultural capital play a role in helping young individuals to excel academically, albeit to a barely lesser extent. Other studies, such as those by (Ceballo, 2004) and (Henderson & Berla, 1994), also witnessed a positive effect of family on scholar achievements among students in the United States.

The third study hypothesis, "H3. Teacher-student relationship has a positive impact on academic achievement", also remained significant by the path analysis". According to the study respondents, teachers help manage academic work pressure and are always available to provide educational guidance and support. Besides, teachers provide them emotional and psychological support when needed, and the respondents never feel restricted in talking to their teachers. A similar study (Košir & Tement, 2014) investigated the three competing models proposing the directional effect of teacher acceptance, student-perceived teacher support, and academic achievement. The results confirmed the hypothesized reciprocal model, confirming a bi-directional relationship between teacher acceptance and academic achievement. Also, it was found that student-perceived teacher support mediated this relationship across the entire sample. Other studies (Maulana et al., 2023; Xu et al., 2023; Zhang et al., 2020) also witnessed the relevant effect, affirming family supervision as a strong predictor of academic achievement on different levels. Finally, the last three hypotheses were based on the proposed mediation of Characteristics of Educational Institutions on the relationship between Family Communication, Family Supervision, and Teacher-Student Relationship on students' academic achievement (H4, H5, H6) at the University of Sharjah. According to the study respondents, their institution offers educational and psychological support systems, career development opportunities, and student welfare services .

Further, the respondents indicated the availability of community service policies, Support for student activities safety management systems, and the institution providing support to minority students. Existing literature, such as (Hun et al., 2013) and (Beyene & Yimam, 2016), also witnessed the significant role and impact of educational institutions' characteristics in facilitating students' academic achievement in different ways. Another study by (Marlina et al., 2021) identified the factors affecting student achievement after transitioning from educational institutions to the e-learning environment. Further, curriculum characteristics, external motivation, and organizational structure directly impact student performance. However, regarding student behaviour, motivation and surroundings appeared as the prominent variables showing a significant influence.

5. Conclusion

This research was based on investigating the multifaceted factors affecting academic achievement. The study findings highlight the crucial role of family cultural capital in shaping students' academic achievement. Family communication and supervision were key components of this capital, positively affecting academic achievement. This highlights the importance of promoting open and supportive family communication and setting effective supervision systems to promote a facilitative learning environment. Furthermore, this study shed light on the pivotal impact of teacher-student relationships on academic achievement. A positive and constructive connection between educators and students was linked with improved academic performance. This highlights the significance of promoting an environment that encourages significant interactions and mutual relations between teachers and their pupils. Such relationships can promote trust and motivation, supporting students' engagement and readiness for learning. The subtle role of educational institutions' characteristics in moderating the impact of family cultural capital on academic achievement also remained significant. It was found that these attributes significantly impacted the effectiveness of family communication and supervision, suggesting that the educational environment plays a critical role in deciding how family support translates into discernible academic gains. Thus, tailoring techniques to align the strengths of family cultural capital with the characteristics of the educational institution holds great assurance for optimizing student achievement. Thus, it is concluded that by developing strong family communication and supervision practices, promoting positive teacher-student relationships, and aligning the characteristics of educational institutions with the resilience of family support, we can collectively pave the way for a more conducive and augmenting learning experience, eventually empowering students to achieve their full academic potential.

Study Implications

Applying Cultural Capital Theory in this study offers important theoretical insights. This framework indicates that cultural resources within a family, such as communication patterns and supervision practices, play a critical role in students' academic achievements. In the multifarious cultural landscape of the UAE, this theory acquires special relevance. It suggests that family dynamics have cultural values affecting a student's education approach. This study revealed in-depth pathways through which cultural capital is embodied in academic achievement by investigating how these factors interact with teacher-student relationships and institutional factors. Including institutional characteristics as moderators expands the theoretical framework, highlighting the dynamic interplay between individual and institutional aspects. This

suggests that the influence of family communication, supervision, and teacher-student relationships on academic achievement is contingent on the characteristics of the educational institution. Institutional policy, resources, and learning environment can strengthen or mitigate the impact of these family and interpersonal dynamics. This theoretical integration acknowledges that academic attainment is an intricate interweaving of family practices and institutional contexts. Adapting Cultural Capital Theory to the UAE context provides a unique lens to comprehend the specific socio-cultural fabric of the region. It recognizes that transmitting cultural capital may take on distinct forms affected by traditions, values, and socioeconomic realities precise to the UAE. Adapting cultural capital theory permits a deeper exploration of how Emirati families infuse cultural values linked to education and how these values interact with the educational environment to ensure academic achievement.

6. Limitations and Recommendations

This research has some basic limitations. First, this research focused on an institution from a single university that questions the generalizability of results in other geographical regions. Future researchers can replicate this study and focus on other geographical regions to delimit this scope. Further, this research involves single-method (quantitative) approaches that narrow its scope. A mixed-method study can further help overcome these limitations and gain deeper insights. Finally, the third limitation is based on selecting only two variables (Family Communication and Family Supervision) from the Cultural Capital theory. The family shares several tangible and intangible assets with their children that affect their academic achievement. Prospective research can focus on these other assets to gain in-depth insights and ensure the generalizability of their findings in other geographical regions.

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