



Positive Character and Academic Achievement: The Moderating Role of Family Function

Hasanuddin¹, Rahmi Lubis^{1*}, Lince Kristina Tafonao¹, Zain Adawiyah¹

¹ Medan Area University, Indonesia

Received : February 22, 2024

Revised : June 29, 2024

Accepted : July 1, 2024

Online : July 12, 2024

Abstract

Student academic achievement is an indicator of success in studying in college. Student habits in carrying out tasks reflected in personal character will impact student learning achievement. However, the positive character does not always influence learning achievement. Other factors that can weaken the role of positive character in academic achievement include family function. This research examines the moderating role of family function in determining the strength of the influence of positive character on student academic achievement. The 201 students majoring in natural sciences selected using stratified random sampling were involved in this explanatory quantitative research. Researchers employed the family function, the noble character scales, and the student cumulative achievement index. Data analysis used the Jamovi statistical software moderation test version 2.0.0. The results show that family function determines the magnitude of the influence of positive character on academic achievement. For students with high family function, character determines significantly academic achievement. On the contrary, for students with low family function. The study is beneficial for educational counsellors in overcoming the problem of low academic achievement by focusing on developing character and improving family function.

Keywords *Academic Achievement, Family Function, Moderation, Positive Character, Undergraduate Student*

INTRODUCTION

Higher education aims to achieve national education goals, namely developing Indonesian people and making the nation's life intelligent (Widarto, 2017). The undergraduates will act as decision-makers and problem-solvers in their community (Takase & Yoshida, 2021). From the outcome-based curriculum perspective, students' success is a competency in product construction (Junaidi, 2020). Lecturers evaluate students under the university learning achievement indicators by passing certificates or grade-point averages (Ministry of Education and Culture Republic of Indonesia, 2023).

High academic achievement is essential for students because it indicates study success. However, not all students can achieve satisfactory academic achievements. The research showed that 54.7% of students majoring in health had an achievement index < 2.9 on a scale of 4 (Chandrasena & Ilankoon, 2022). As many as 24% of first-year students did not meet their learning outcomes and showed a low achievement index (Wagner et al., 2022). Research on Indonesian students by Mappadang et al. (2022) shows that 6.1% of students majoring in Accounting and 43% in health have a low-grade point average (Jalali et al., 2020). Other research also found that 51% of medical and 29% of psychology students had low academic achievement (Amelia, 2022; Huda & Mulyana, 2018).

Several studies explain personal characteristic factors influencing student academic achievement. Academic achievement correlates with metacognitive ability (Moore, 2019) and time management (Iffland et al., 2016). Learning interest and the ability to manage stress and anxiety

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Corresponding author's email: rahmilubis@staff.uma.ac.id

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(Hamoud et al., 2018) and learning goals to achieve mastery and competence are positively correlated with academic achievement (Lüftenegger et al., 2016). Feelings of enjoying learning activities and not getting bored, self-control, and the desire to avoid performance or work correlate with student achievement index scores (Respondek et al., 2017; Živčić-Bećirević et al., 2017). Students' learning attitudes and enjoyment also impact their academic achievement (Johnson et al., 2022).

Students' attitudes toward others' feedback and openness to discussing mistakes predict academic success (Leighton et al., 2018). Self-regulated learning, effort, self-regulation, and help-seeking behaviour (Nabizadeh et al., 2019; Diseth et al., 2010; Al-Tameemi et al., 2023), study and sleep habits, avoiding excessive access to social media, and staying away from drugs (Kassaw & Demareva, 2023), studying patiently, learning from mistakes, and prioritizing learning correlate with student learning achievement (Abdulghani et al., 2014). Emotional intelligence and commitment determine student learning achievement (Crisp et al., 2015). Consistent intentions, satisfaction, information value, and internet addiction (Maqableh et al., 2021), strategic learning approach (Cassidy, 2012), personality character (Wang et al., 2023), study aspirations and previous abilities (Marcenaro-Gutierrez et al., 2017; Wrigley-Asante et al., 2023) correlate with academic achievement.

The magnitude of the influence of positive character on student academic achievement is not always consistent. Other factors play a role in determining the strength of the relationship between these two variables. A contradictory result of Abouzeid et al. (2021) found that openness influences academic achievement, but Wang et al. (2023) explain the opposite. Korkmaz et al. (2018) stated that self-efficacy requires other variables to moderate its relationship to academic achievement. Meanwhile, Thomas and Maree (2021) discovered that self-efficacy directly influences educational achievement. Hansenne and Legrand (2012) found that emotional intelligence did not affect academic achievement, while Almegeewly et al. (2022) stated that emotional intelligence does.

The empirical evidence is not convincing enough to conclude the positive influence of character on student academic achievement. Researchers suspect that family function influences the strength and weakness of the relationship between these two variables. Family function means the level of family capability to carry out responsibilities and maintain family cohesiveness (Shek & Wu, 2016). A family that functions well will show harmony between family members, care for each other, have emotional closeness, fulfil the child's material and immaterial needs, and have sufficient control over the child's behaviour (Lubis et al., 2021). The family function will impact personality growth and their capability to face challenges (Rushing et al., 2017).

Family function positively correlated with students' positive character (Lubis & Hasanuddin, 2023). Meanwhile, family function shows an inconsistent correlation with academic achievement. Research by Rezaei-Dehaghani et al. (2018) remarked that family function influences academic achievement. However, Islam and Chakrabarty (2020) stated that family type that indicates family functioning does not significantly influence adolescent academic achievement. Parental academic support affects academic aspirations more than the family's capacity to carry out its responsibilities in general (Pinquart & Ebeling, 2020). These empirical findings are the basis for researchers to place family function as a moderator, not a predictor of academic achievement (Memon et al., 2019; Sharma et al., 1981).

This research assumes that family function does not directly influence academic achievement but influences the strength of the relationship between positive character and academic achievement. The family function moderates the relationship between positive character and student academic achievement. The higher family function is assumed to strengthen the influence of positive character on academic achievement. Conversely, the lower the family function,

the weaker the influence of positive character on academic achievement.

LITERATURE REVIEW

Academic Achievement

Academic achievement is the output of the learning process at university (Moore, 2019). Learning achievement is an accumulation of knowledge, attitudes, and skills that students obtain from their learning (Liem, 2019). All students, lecturers, and parents expect high academic achievement because academic achievement is student learning success (Moss & Moss-Racusin, 2021). Academic achievement also designates the teaching and learning process effectiveness on campus (Tian & Sun, 2018). Several internal and external factors influence academic achievement. The internal factors include physical condition, intellectual abilities, study habits, learning styles, learning motivation, and personality traits (Costa & Faria, 2018; Donnelly et al., 2016; Ribeiro et al., 2019; Steinmayr et al., 2019). Students physical condition, intellectual capabilities, learning style, learning motivation, and characters influence academic achievement (Al-Abyadh & Abdel Azeem, 2022; Duckworth et al., 2019; Klein & Sosu, 2023; Nabizadeh et al., 2019). The external factors are the campus environment, relationships with lecturers, and peer and family support (Nunes et al., 2023; Suhaini, 2020).

Positive Character

Character is an amalgam of virtues, values, and personality traits that facilitate greatness (Crossan et al., 2017). Virtues are contextually relevant behaviours. Some virtuous behaviours express values, such as transparency and acting with sincerity. Values are an acquired set of deep-seated beliefs about what is morally right or wrong, and they remain relatively stable across contexts and situations (Monzani et al., 2021; Niemiec & Pearce, 2020). There are 24 character strengths involving six types of character: wisdom, courage, humanity, justice, temperance, and transcendence (VIA Institute, 2024). The Ministry of Education of the Republic of Indonesia has determined student character: faith in God and noble character, cooperation, creativity, critical reasoning, global diversity, and independence (Wijayanti & Muthli'in, 2023). Junus et al. (2019) developed the 16 students' noble characteristics: consistency, love of the truth, responsibility, integrity, justice, positive attitude, compassion, fortitude, self-control, hard work, social instinct, gratitude, generosity, humility, ambition, and wisdom. The noble character determines academic achievement (Mustafidah et al., 2022; Sagala, 2018), career success and work-related adjustment (Rini et al., 2021), social relationship satisfaction, mental health, and learner happiness (Ratunuman et al., 2021). Negative character predicts behavioural, interpersonal, and psychological problems (Sa'pang & Purbojo, 2019).

Family Function

Family function means the family's ability to carry out its roles and maintain family integrity. In general, there are two family function theories, namely result and process-oriented (Dai & Wang, 2015). Result-oriented family function emphasizes whether the family is successful in carrying out its role so that families will fall into several types based on the family's health condition. Olson proposed the Annular Model Theory based on family systems theory. He divides families into three dimensions: intimacy, adaptability, and communication. Based on the intimacy dimension, families are classified into several types, namely disengaged, separated, connected, and enmeshed. Based on adaptability, the family includes rigid, structured, flexible, and chaotic types. These 16 types produce three family types: the balance, middle, and extreme.

Process-oriented family function means that the family as a system influences family members' physical and psychological health. This theory believes that the family does not affect the

existing structure but rather the efforts to carry out its role for family members. McMaster stated that family function contains aspects of problem-solving, communication, parental role, affective response, and behavioural control. Shek et al. (2022) proposed that family functions create mutuality, harmony, effective communication, providing support, and controlling children's behaviour. Mutuality means creating a caring atmosphere and reciprocity for each other. Harmony means building harmonious and peaceful relationships between family members. Communication means building emotional closeness and mutual understanding between family members. Parental support meets the child's physical and psychological needs. In addition, control means directing children's behaviour through value socialization and supervision. Adolescents from well-functioning families will show positive behaviour, be mentally healthy, have high achievements, and build positive social relationships with those around them (Guevara et al., 2021; Lin et al., 2019; Yu et al., 2022). Several factors influence family function, including parental personality traits, economic conditions, parental marital satisfaction, parental behavioural problems, parental mental health, and the ability to deal with family crises (Lander et al., 2013; Li et al., 2018; Miller et al., 2000).

Family Function Moderating Role on Positive Character Impact on Academic Achievement

Rezaei-Dehaghani et al. (2018) found that family function influences academic achievement. However, Islam and Chakrabarty (2020) stated otherwise. The parental role determines the magnitude of children's learning behaviour and influences their academic achievement (Pinquart & Ebeling, 2020). We assumed that it is not the family functions that determine learning achievement but rather the parents' treatment, which shapes the child's character in facing academic demands. These empirical findings underlie researchers' assumptions regarding the role of family function in moderating the influence of character on academic achievement (Memon et al., 2019; Sharma et al., 1981).

RESEARCH METHOD

This quantitative explanatory research involved 201 students majoring in natural sciences at X University in Medan recruited using proportional random sampling techniques (see Table 1). This research uses a scale of family function, noble character, and student cumulative achievement index. The family function scale measures five aspects, namely mutuality, harmony, communication, parental support, and parental control (Lubis et al., 2023). The noble character scale measures four dimensions: giving the best, having meaningful goals, having confidence in one's abilities, and being able to collaborate. We measure the student's academic achievement by the student's Grade Point Average (GPA) in the even semester of T.A. 2022/2023. The Ethics Commission of the Indonesian Scientific Psychology Consortium (K-PIN) approved the research protocol with the number 091/2023 Ethics/KPIN. Research subjects read and signed informed consent before completing the scale. Data analysis used a moderation test with Jamovi statistical software Version 2.0.0.

Table 1. Participant's Identity Description

Identity	N	%
Sex (N= 201; M=1.40; SD=0.491)		
Male	121	60.2
Female	80	39.8

Identity	N	%
Religion (N= 201; M= 1.58; SD= 0.604)		
Moslem	97	48.3
Christian	92	45.8
Catholic	12	6
Ethnicity (N= 201; M=2.02; SD= 1.153)		
Toba Batak	101	50.2
Karo, Mandailing, Nias, Simalungun	25	12.4
Javanese	45	22.4
Aceh, Minang, Melayu, Banjar, Tionghoa, Banten	6	14.9
Age (N= 201; M= 22.02 SD= 4.114)		
19	12	6
20	54	26.9
21	39	19.4
22	32	22.9
23	7	15.9
24	2	3.5
25- 54	11	5.5
Father Education Level (N= 191; M= 2.75; SD= 0.813)		
Primary	21	10.4
Secondary	29	14.4
High School	117	58.2
University	24	11.9
Mother Education Level (N= 201; M= 2.78; SD= 0.908)		
Primary	25	12.4
Secondary	35	17.4
High School	101	50.2

Identity	N	%
University	40	19.9
Residence (N= 201; M= 1.91; SD= 0.950)		
Boarding/ rented house	100	49.8
Other family's	19	9.5
Parent's	82	40.8

FINDINGS AND DISCUSSION

Researchers tested the data skewness and obtained normal distribution with a skewness value < 3.00 and a kurtosis value < 12 (Weston & Gore, 2006). We removed one outlier that was more than 4.5 times the standard deviation so that the final sample was 200 people.

Validity and Reliability Test

Item-total correlation showed that the noble character scale has a correlation coefficient ranging from 0.351 to 0.753, and the family function ranged from 0.317 to 0.677. This result means that both scales have high validity (Tapsir et al., 2018). Factor analysis found that noble character items (loading factor > 0.4 , t value > 1.96) and family function scale items (loading factor > 0.3 , t value > 1.96) are valid to measure its objective (Sanders et al., 2014). Internal consistency test revealed that the two scales are reliable, with Alpha coefficients of 0.908 and 0.914 (Zimmermann et al., 2019). We conclude that scales are appropriate for measuring noble character and family function.

Variables Intercorrelation

The variable intercorrelation test shows that character positively correlated with GPA (see Table 2). It means that students' drive to provide the best results, confidence in their capacity to succeed, seeking meaningful goals, and being able to build interpersonal relationships significantly determine their cumulative achievement index (Wagner & Ruch, 2015).

Family function is correlated with GPA, but communication and parental control do not correlate with GPA. Family conditions that are harmonious, caring, and fulfilling needs create a sense of security and calm in students. This feeling allows them to focus on learning activities and complete their academic assignments to obtain a high GPA (Rezaei-Dehaghani et al., 2018). Meanwhile, emotional closeness with family members and parental guidance do not correlate with GPA. We conclude that lecturers or friends substitute the family emotional attachment and parental guidance as significant figures who provide academic guidance on campus.

All positive character aspects positively correlate with all family function aspects, except parental control when pursuing meaningful life goals. A harmonious family, caring for each other, having close relationships, meeting needs, and directing behaviour will produce positive personal character. A sense of security, comfort, trust, and respect for parents encourages students to develop positive behaviour that supports their developmental tasks. However, the value of socialization and parental supervision does not encourage students to achieve meaningful goals in learning. Conceivably, the lecturers and peers determine their desire for their goals (Kohnke & Sylvester, 2019).

Table 2. Variables intercorrelation

	Mut	Har	Com	Conc	Cont	FF	Best	SelfC	LifeM	Collab	PC
Har	0.772***										
Com	0.515***	0.458***									
Conc	0.519***	0.524***	0.408***								
Cont	0.167***	0.154***	0.451***	0.246***							
FF	0.878***	0.827***	0.756***	0.656***	0.438***						
Best	0.245***	0.151*	0.216**	0.269***	0.217**	0.254***					
SelfC	0.254*	0.242*	0.219**	0.338***	0.201**	0.294***	0.683***				
LifeM	0.388***	0.363***	0.196**	0.399***	0.081	0.385***	0.341***	0.376***			
Colla	0.218**	0.164*	0.353***	0.400***	0.339***	0.352***	0.510***	0.507***	0.395***		
PC	0.317***	0.250***	0.316***	0.427***	0.268***	0.377***	0.852***	0.880***	0.538***	0.721***	
GPA	0.222**	0.176*	0.123	0.160*	0.014	0.192**	0.268***	0.280***	0.248***	0.270***	0.368***

Note: *p< 0.05; **p< 0.01; ***p< 0.001; Mut= mutuality; Har= harmony; Com=communication; Conc= parental concern; Cont= parental concern; FF= family function; Best= Giving the best; Self C= self-confidence and self-competence; LifeM= pursuing the meaningful life goals; Collab= collaboration; PC= positive character; GPA= grade point average

Positive Character Relationship with Learning Achievement

Statistical tests show that noble character influences student learning achievement (see Table 3). It aligned with the study of [Batiao et al. \(2023\)](#), which stated that students' cognitive, physical, and emotional capabilities will impact study achievement. Students who try to give the best of themselves will gather credible information about the environment before concluding ([Fletcher et al., 2020](#)). They recognize their limitations and have the humility to correct mistakes ([Kibakaya & Oyeku, 2022](#)). They also accommodate other people's opinions and input ([Singer & Klimecki, 2014](#)). They actively help overcome other people's problems ([Steinebach et al., 2019](#)). With this attitude, students can find solutions to their academic tasks ([Wigfield et al., 2021](#)).

The noble character contains confidence in one's abilities. They work seriously according to the tasks given. They feel valuable themselves and deserve success ([Ezzani, 2020](#)). Adolescents with a positive character feel confident that they can do their job. They believe they can achieve success and do not easily give up when facing obstacles that hinder the completion of their studies ([Tenney et al., 2016](#)). They consider difficulties valuable lessons that grow their personality ([Duckworth & Seligman, 2017](#)). The more students have confidence in their abilities, the more their academic achievement will be ([Dogondaji et al., 2023](#); [Nuñez et al., 2023](#); [Ramos et al., 2023](#)).

Students with noble character also have clear life goals. They have personal values that guide them in attaining their goals ([Nawaz et al., 2023](#)). Students have ethics and awareness about what they need to accomplish and how to get it ([Arvanitis & Kalliris, 2020](#)). They work diligently and hard until they achieve their goals ([Meng & Jia, 2023](#)). This meaning in life encourages students to study and obtain the best results ([Gamage et al., 2021](#)).

Apart from that, students with noble character realize the interdependent relationship with others. They realize their limitations and recognize others' contributions to success ([Zhang, 2022](#)). Students also build mutually supportive and complementary relationships with people ([Jin, 2023](#); [Kim & Keane, 2023](#)). Positive relationships give them support to solve their academic challenges on campus and attain high academic achievements ([Romppanen et al., 2021](#)).

Family Function and Academic Achievement

The results showed that family function did not impact student academic achievement ($Z=1.64$; $p=0.102$). This result contradicts [Chui and Wong \(2017\)](#), [Yu et al. \(2022\)](#), and [Zhao and Zhao \(2022\)](#), who found that parental expectation, monitoring, and involvement enhance learning achievement. Even though the parental role is in the student's success, this influence does not occur directly. [Islam and Chakrabarty \(2020\)](#) stated that family factors in the form of parents' educational aspirations significantly influence children's learning achievement compared to parents' academic involvement. Meanwhile, a harmonious family that loves each other has emotional closeness, meets physical and psychological needs, instils values, and control does not directly cause students to have high learning achievements.

Being raised in a family that provides comfort, feeling loved, and having clear goals in life does not necessarily produce successful students. The family is only an external factor that delivers stimulus ([Davis-Kean et al., 2021](#)). Family only gives security and comfort within the family and fulfils students' needs to undergo their education. Parents are involved only to help solve practical academic problems, supervise assignments, or provide psychological support for discipline in completing tasks ([Mahuro & Hungi, 2016](#); [Schmid & Garrels, 2021](#)). However, students must fulfil the assignments and achieve their learning goals. To be able to achieve academic success, students need encouragement that comes from within themselves ([Martínez et al., 2019](#)).

Moderation Analysis

The moderation test shows that family function plays a role in influencing the relationship

between students' noble character and academic achievement ($Z= 3.13$; $p= 0.002$). Students with positive character will show high learning attainment, provided families function well. Adolescents who want to give their best, are confident in their abilities, have meaningful life goals, and collaborate will have high learning achievements as long as they grow up in a family that provides comfort, happiness, and a clear life goal. It aligned with findings from [Owens et al. \(2021\)](#), which state that personal character and environmental encouragement simultaneously impact student learning outcomes. We can say that positive character and high family function will produce high learning achievement. Conversely, high positive character but low family function will not necessarily create high academic achievement (Table 3).

Table 3. Moderation test result for academic achievement

Variable	Estimate	SE	Z	p
Noble character	0.00644	0.00141	4.57	< 0.001
Family function	0.00228	0.00119	1.10	0.272
Noble character * family function	2.62e-4	8.59e-5	3.07	0.002

Further moderation tests show that positive character influence on academic achievement significantly increases when family function is high. Conversely, positive characteristics do not affect academic achievement if family function is low. We can see in Table 4 that the positive character impact on learning achievement is higher when the family function is high and decreases when the family function is moderating. Students with positive character and well-functioning families will demonstrate high academic achievement. Meanwhile, students from low-functioning families do not necessarily have high academic achievements, even though they have a praising character. It contradicts [Häfner et al. \(2018\)](#), who found that low family function enhances character impact on academic achievement.

Table 4. Noble character effect on GPA based on family function level

Family Function	Estimate	SE	Z	P
Average	0.00661	0.00144	4.59	< 0.001
Low (- 1 SD)	0.00228	0.00208	1.10	0.272
High (+ 1 SD)	0.01094	0.00198	5.53	< 0.001

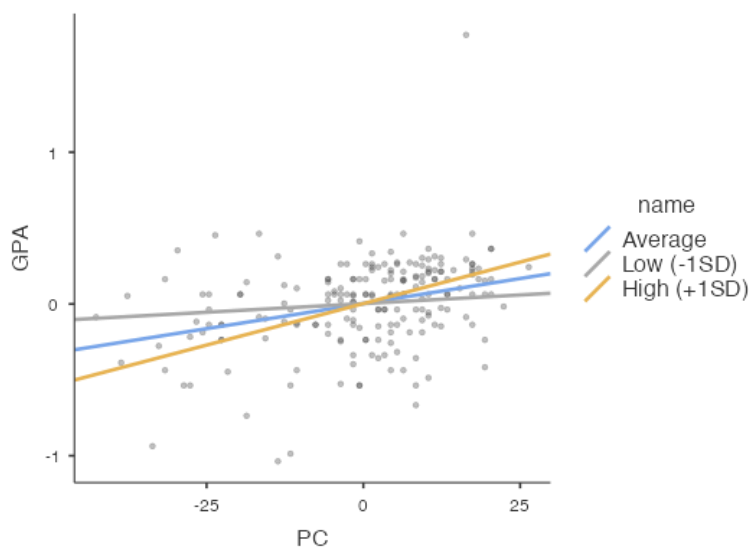


Figure 1. Moderation effect of family function on the relationship between positive character and GPA

CONCLUSIONS

This research shows that positive character has the opposite influence on the role of parents. The character does not impact student academic achievement when the family functions well. The low family function increases the impact of character on learning achievement. This research is practical for universities, educational counsellors, and parents in dealing with low student academic achievement issues. Universities and counsellors can foster parents to enhance their function.

LIMITATION & FURTHER RESEARCH

This research is valuable for intervention for low-student learning achievement problems. However, this research also has limitations. Firstly, the research was limited to students majoring in natural sciences at University X Medan. Studies in different populations may provide different results. Secondly, family function and student achievement measurement employ a student perspective. Measuring family functioning from a parental standpoint may give different results. Measuring academic achievement using study results card documents issued by the campus provides more accurate results. Thirdly, scale usage contains social desirability and rise to opportunities for faking good. However, researchers have minimized this by providing informed consent and filling out the scale confidentially. Further research may focus on universities in other cities or populations with different characteristics. The following researchers could measure family function involving the parents' perspective and use study result cards to document student GPA.

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