

## Role of Grit and Academic Motivation on Academic Achievement among Students

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The present study aims to understand the importance of grit and academic motivation on academic achievement among college students. The study included 256 participants from different universities located in Bangalore. The mean age of participants was 20 years. The data was collected using the 12-item original grit scale and the 20-item academic motivation scale for college students, along with their Grade Point Average (GPA) in the previous semester. Collected data was analyzed using Jamovi software. Correlation analysis shows positive relationships between Grit, Intrinsic Motivation, and Academic Achievement. According to the multiple regression analysis results, educational attainment was predicted positively by Grit and Intrinsic motivation, while negativity with amotivation. Findings have been discussed in light of the relevant theoretical paradigm.

**Keywords:** Grit, Academic Motivation, Academic Achievement.

Academic achievement represents the performance outcome and indicates the extent to which a person has attained these specific goals. These goals were the focus of activities in instructional environments, specifically in schools, colleges, and Universities. Many criteria indicate academic achievement, for example, general procedural (skills), declarative knowledge (facts), grades, performance, educational degrees, or certificates. Educational sectors are taking many initiatives to provide quality education to empower students and prepare them for employment or to become entrepreneurs. However, the purpose has been individual personality factors like grit and motivation.

Academic performance can strongly predict future student success, particularly when paired with a commitment to perseverance in achieving goals (J. Liu, 2021). Additionally, heightened performance and the evaluation of academic perceptions

regarding success and failure can motivate students to exert more effort and demonstrate perseverance. Grit plays a crucial role in helping students achieve long-term goals, high-performance goals, high-performance high-performances, and challenges encountered along the way.

Inevitably, it tends to identify people based on their ability to persist when determining who gives up and who has the fortitude to finish the course today. Thus, research on dispositions that impact student patience and achievement results is becoming increasingly important today. (Bazelais et al., 2016).

### **Grit**

Grit is a hierarchical construct encompassing two underlying facets: perseverance of effort (PE) and consistency of interest (CI). While PE involves strenuous and effortful exertion towards achieving challenging goals despite hardship, CI involves passionate striving towards goals

across time and contexts (Duckworth & Quinn, 2009; Duckworth et al., 2007). Thus, grit can be conceptualized in terms of sustained motivation and interest in tasks to achieve long-term goals.

The four-factor theory of true grit by psychologist Paul Wong talks about how true grit is an unbreakable rope made of many strands: courage, faith, passion, and persistence. As is evident from the analogy, he added two more factors, courage, and belief, to the traditional 2-factor theory of grit presented by Duckworth, which focused only on persistence and passion (Wong, 2018). A gritty individual identifies a goal and works hard over an extended period despite "set" backs.

The "Grit" coaching model was developed by Lisa Eklund in 2015. This model empowers the client to find their strengths and follow through the path that is authentic to them. The coach supports the client in their search for that path. While on this gritty path, they discover the tools needed to help them travel towards their destination. Through exploration, the client learns how to turn roadblocks into opportunities for growth and change. This model is based on the science of neuroplasticity, which discovered that the mind can change the brain and that new neural pathways can be developed to change old habits and behavior.

Studies have demonstrated that individuals with higher scores on grit scales are more likely to engage in deliberate practice on tasks, which mediates the effect of grit on long-term achievement-related outcomes (Duckworth et al., 2011). Most investigations on the specific elements of grit, such as courage, passion, etc., and demographic differences in gender, age- etc., have been conducted with adult samples (Credé et al., 2017). However, some researchers have begun expanding the literature on youth populations to investigate

overall grit and the specific elements of grit (e.g., Datu et al., 2016).

Grit has repeatedly demonstrated a positive association with academic achievement, as evidenced by a significant positive correlation in a meta analytic study. ( $p = .18$ ; Credé et al., 2017). The results of a research study proved the importance of students' academic achievement. College undergraduates with higher grit also have higher grade point averages after controlling for SAT scores (Duckworth et al., 2007). Grit is also associated with higher overall potential (Duckworth et al., 2007). The process model of self-discipline and grit identifies the process of attaining long-term adaptive outcomes such as achieving a high grade in an examination, losing weight, or gaining promotion at work. Thus, in conclusion, the phenomenon of grit is very much necessary.

### **Academic Motivation**

One of the important psychological aspects of education is motivation. Indeed, various literature has seen that motivation outcomes such as curiosity, learning, and performance. Motivation is an urge to do something further. It can be viewed in multiple dimensions, such as intrinsic motivation, extrinsic motivation, and amotivation. Intrinsic motivation refers to doing an action for enjoyment, life, and pleasure, and satisfaction arrives from participation itself.

Extrinsic motivation is a behavior performed due to the direction and pressure others face to experience reward or punishment. Amotivation is when an individual is not interested or interested in doing anything (Deci & Ryan, 1985).

### **Academic Achievement**

Academic Achievement goals can be defined as students' individual preferences for different goals, which they strive to attain in educational situations and represent an essential component of a self-theory-based

system of meaning (Elliot & MWalberg's 2001). Walberg's theory of academic achievement posits that the psychological characteristics of individual students and their immediate psychological environments influence educational outcomes (cognitive, behavioral, and attitudinal) (Reynolds & Walberg, 1992). Research on academic achievement focuses on its relatedness to an increase in prosocial outcomes (Miles & Stipek, 2006), such as social competence (Welsh, PaO'Neilidaman, & O'Neil, 2001) and emotional well-being (Roeser et al., 2000).

Grade Point Average, or GPA, is a number that denotes how high or how well one scored in one's overall average in the bucket of courses offered during the semester. It is meant to score the individual one's studies and determine whether one's aggregate grades have been low or high. This number is then used to understand whether one meets the standards and expectations set by the degree program or University (Potter, 2020). Thus, the tool used to assess academic achievement in this study was GPA.

### Research questions

1. What is the relationship between grit and academic motivation of private university students?
2. What is the relationship between grit and academic achievement of private university students?
3. What is the link between academic motivation and academic achievement of private university students?
4. How do grit and academic motivation combined predict the academic achievement of private university students?

### Method

#### Sample

The sample size of the study was estimated at 254. The sample consisted of

males and females regardless of their socio-economic status. For data collection, the researcher aimed to select three private universities across Bangalore: Christ University, Jain University, and PES University. The age group ranged from 18-25 years. The sampling technique used for the study was simple random sampling.

### Tools

The following tools were used for the study.

1. *The Grit Scale* is a global grit measure that shows a person's grit by considering negative and positive feelings. It was initially developed in 2006 by Angela Duckworth. The scale has an internal consistency of 0.85.

2. *The Academic Motivation Scale* (AMS) measures students' motivation levels towards learning. It was developed in 1985 by Deci and Ryan. The scale has 27 items rated using a 5-point Likert Scale, ranging from Totally agree to disagree. The scale is highly reliable and has an internal consistency of 0.81.

3. *The Grade Point Average* (student's academic achievement). It is a summary statistic stating a student's average performance in their studies over a period, such as one semester.

### Procedure

A group of individuals obtained by probability sampling were given an electronic version of the Grit Scale for Children and Adults Scale and the Academic Motivation Scale for college students. Other demographic details like age, gender, academic major, G.P.A/C.G.P.A. The study's duration, process, and objectives were clearly explained to the individuals. Consent was also obtained from every participant beforehand. The participants were not informed of the true nature of the study. Instead, they were given ambiguous information, such as that they might have to

answer a questionnaire or write an introspective/ retrospective report about how they felt after completing the scales. The data collection took place for a month and extended to another half month.

### Result and Discussion

Of the 265 participants who completed the survey, Data from 9 participants were removed because they did not answer the academic achievement question. The final sample data consisted 254 participants.

Table 1. Relationship Between Grit and Academic Motivation

Scale	Grit	Academic Achievement
Grit	-	0.485**
Intrinsic Motivation	0.535**	0.564**
Extrinsic motivation	-0.120*	0.110
Amotivation	-0.244*	-0.194*

Note. \* Correlation is significant at the 0.05 level (2-tailed)

\*\* Correlation is significant at the 0.01 level (2-tailed)

Academic achievement and grit have a significant and positive correlation, as shown in Table 1. It was discovered that grit and academic success were positively correlated with intrinsic motivation. However, extrinsic motivation is unrelated to academic success and is negatively correlated with grit. Amotivation is negatively correlated with academic success and grit. This is in line with the previous research, as done by (Liam et al., 2018), focused on assessing the relationship between the two variables using data obtained from a western higher secondary school population. The results showcased that for higher-secondary students from the U.S., Canada, Germany, Australia, Austria, and the United Kingdom, there exists a direct link between more significant levels of grit and higher academic achievement as measured by CGPA.

The results build on existing research that a relationship exists between academic motivation and achievement—a study done (Ayub, 2010) in Karachi with the college population there. However, the present study demonstrated a significant relationship between intrinsic motivation and academic achievement, where intrinsic motivation is defined as a subdomain of academic motivation. The other subdomain of academic motivation, known as extrinsic motivation, is not found to have a negative relationship with academic achievement. This may be attributed to the fact that students who tend to have an internal willingness to study well are expected to perform better academically than their counterparts.

Amotivation, also known as avolition, is a psychological condition defined as “a reduction in the motivation to initiate or persist in goal-directed behavior.” The data provides a clearer understanding of previous research done by Datu et al. (2018) with a Filipino population, showcasing a significant negative correlation between grit and amotivation. These results have been replicated in the present study with an Indian population to prove that a higher level of grit is associated with a lower level of amotivation in a collectivistic society.

Table 2. Influence of Grit and Academic Motivation on Academic Achievement

Dependent variable	Predictor Variables	Beta Value (β)	p-value	
Academic Achievement	Grit	0.460	0.01	p value= 0.01
	Intrinsic Motivation	0.235	0.02	
	Extrinsic Motivation	-0.075	0.38	F value= 5.63
	Amotivation	-0.140	0.03	

Note. Dependent Variable: Academic Achievement Predictors: Amotivation, Intrinsic Motivation, Extrinsic Motivation, Grit

The results of the analysis (see Table 2) revealed that grit and intrinsic motivation showed a Positive influence over academic achievement. On the other side Amotivation have a significant negative influence on academic achievement. Extrinsic motivation was found to be non-significance over academic achievement. Overall, this initial model (Grit, intrinsic motivation, extrinsic motivation, amotivation) has shown 43% of variance on academic achievement

Table 3. Influence of Academic Motivation on Academic Achievement

Dependent variable	Predictor Variables	Beta Value ( $\beta$ )	p-value	
Academic Achievement	Grit	0.460	0.01	$r^2$ : 0.41 F value: 6.76 p-value: 0.01
	Intrinsic Motivation	0.235	0.02	
	Amotivation	-0.140	0.03	

Note: Dependent Variable: Academic Achievement; Predictors: Grit, Intrinsic Motivation and Amotivation.

After removing the predictors shown in the initial model of a low influence over the dependent variable, a trimmed regression analysis (see Table 3) has been done. Grit, Amotivation, and intrinsic motivation were set as predictors of academic achievement. The results showed a significant impact despite excluding the extrinsic motivation from the initial model of 43% to 41% as per the  $r^2$  outputs. From this it can understood that higher education is closely connected to academic performance, influencing how students handle difficulties and pressures in pursuing goals. Diligent study, passion, and perseverance are essential to mastering material and achieving academic success. Research indicates that perseverance is a strong predictor of academic success, as students motivated to value hard work are more likely to attain higher academic scores (Hernández et al., 2020).

## Conclusion

This research aimed to identify the impact of grit and academic achievement in academic achievement among college students. The major takeaway from this study was 'as the person have higher level of grit its associated with intrinsic motivation which further predict the better academic achievement (performance) in the form their semester scores'. This study is limited by its cross-sectional design and its use of a sample derived exclusively from private university students. Hence, findings cannot be generalized to public university student population. Further, research involving diverse populations and employing a range of measures is essential to comprehensively define the grit construct and elucidate its relationship with other achievement-related variables, i.e., choosing or remaining in the same career that has been aimed to be in. To advance this understanding, future studies should explore whether individuals characterized by high levels of grit (a) emphasize sustained effort over short-term intensity, (b) maintain consistent goals and interests over time, and (c) pursue extreme long-term objectives without deviation. Addressing these questions will necessitate mixed-methods and longitudinal study designs with adequate follow-ups to capture the complex dynamics of grit and its impact on student retention and academic success.

## References

- Banse, H., & Palacios, N. (2018). Supportive classrooms for Latino English language learners: Grit, ELL status, and the classroom context. *The Journal of Educational Research, 111*(6), 645-656. doi:10.1080/00220671.2017.1389682
- Clark, K. N., Dorio, N. B., Eldridge, M. A., Malecki, C. K., & Demaray, M. K. (2019). Adolescent academic achievement: A model of social support and grit. *Psychology in the Schools, 57*(2), 204-221. doi:10.1002/pits.22318

- , T. M. (2014). The Gritty: Grit and Non-traditional Doctoral Student Success. *The Journal of Educators Online*, 11(3). <https://doi.org/10.9743/jeo.2014.3.4>
- Deci, E. L., and Ryan, R. M. (1985). *Intrinsic Motivation and Self-determination in human behavior*. New York: Plenum Press.
- Hagger, M. S., & Hamilton, K. (2018). Grit and self discipline as predictors of effort and academic attainment. *British Journal of Educational Psychology*, 89(2), 324-342. doi:10.1111/bjep.12241
- Hernández, E. H., Moreno-Murcia, J. A., Cid, L., Monteiro, D., & Rodrigues, F. (2020). Passion or perseverance? The effect of perceived autonomy support and grit on academic performance in college students. *International Journal of Environmental Research and Public Health*, 17(6). <https://doi.org/10.3390/ijerph17062143>.
- Jiang, W., Xiao, Z., Liu, Y., Guo, K., Jiang, J., & Du, X. (2019). Reciprocal relations between grit and academic achievement: A longitudinal study. *Learning and Individual Differences*, 71, 13-22. doi:10.1016/j.lindif.2019.02.004
- Karlen, Y., Suter, F., Hirt, C., & Merki, K. M. (2019). The role of educators in students' grit, achievement goals, intrinsic and extrinsic motivation, and achievement in a long-term challenging task context. *Learning and Individual Differences*, 74, 101757. doi:10.1016/j.lindif.2019.101757
- Lam, K. K. L., & Zhou, M. (2019). Examining the relationship between grit and academic achievement within K 12 and higher education: A systematic review. *Psychology in the Schools*, 56(10), 1654–1686. <https://doi.org/10.1002/pits.22302>
- Lee, S., & Sohn, Y. W. (2017). Effects of grit on academic achievement and career-related attitudes of college students in Korea. *Social Behavior and Personality: An International Journal*, 45(10), 1629-1642. doi:10.2224/sbp.6400
- Light, A., & Nencka, P. (2019). Predicting educational attainment: Does grit compensate for low levels of cognitive ability? *Learning and Individual Differences*, 70, 142-154. doi:10.1016/j.lindif.2019.02.002
- Liu, J. (2021). The Students' Rite in Students' L2 Engagement in the English as a Foreign Language Classroom. *Frontiers in Psychology* (Vol. 12). <https://doi.org/10.3389/fpsyg.2021.749844>
- O'neal, C. R., Goldthrite, A., Riley, L. W., & Atapattu, R. K. (2018). A reciprocal, moderated mediation model of grit, engagement, and literacy achievement among dual language learners. *Social Development*, 27(3), 665-680. doi:10.1111/sode.12288
- Silva, Rui & Rodrigues, Ricardo & Leal, Carmem. (2018). Academic Motivation Scale: Development, Application, and Validation for Portuguese Accounting and Marketing Undergraduate Students. *International Journal of Business and Management*. 13. 1. 10.5539/ijbm.v13n11p1.
- Sturman, E. D., & Zappala-Piemme, K. (2017). Development of the grit scale for children and adults and its relation to student efficacy, test anxiety, and academic performance. *Learning and Individual Differences*, 59, 1-10. doi:10.1016/j.lindif.2017.08.004
- Testing for Normality using SPSS Statistics when you have only one independent variable*. (2018). Laerd.com. <https://statistics.laerd.com/spss-tutorials/testing-for-normality-using-spss-statistics.php>
- Whipple, S.S., & Dimitrova Grajzl, V. (2020). Grit, fit, gender, and academic achievement among first year college students. *Psychology in the Schools*.

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