

## The influence of hardworking character on student academic achievement in Yogyakarta

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Received: 14-10-2025

Revised: 16-11-2025

Accepted: 20-12-2025

### KEYWORDS

Hard Work;  
Academic Achievement;  
Associative Approach.

### ABSTRACT

This study aims to analyze the influence of the character of hard work on the academic achievement of students in Yogyakarta. The research method used is quantitative with an associative approach. The research sample consisted of 150 active students for at least the third semester who were selected through purposive sampling techniques. The variables of hardworking character were measured using a questionnaire on a Likert scale of 1–4, while academic achievement was measured based on the most recent GPA. Data analysis was carried out by simple linear regression using SmartPLS. The results showed that the character of hard work had a positive and significant effect on academic achievement, with a path coefficient of 0.776 ( $p = 0.000$ ) and an  $R^2$  value of 0.602. This means that the character of hard work is able to explain 60.2% of the variation in students' academic achievement. The research instrument was declared valid (load factor  $> 0.7$ ; AVE  $> 0.5$ ) and reliable (Cronbach's Alpha  $> 0.89$ ). These findings reinforce the theory of personality, specifically the dimension of conscientiousness, which places hard work as a predictor of academic success. In addition, these findings are in line with a humanistic view that emphasizes the importance of intrinsic motivation and perseverance to achieve academic goals. This study recommends that universities develop a program to develop hard-working character development programs through soft skills training, habituation of challenging tasks, and conducive learning environment support. This effort is expected to improve academic quality as well as the readiness of graduates to face the world of work. Further research is recommended using a more diverse sample and considering mediating variables such as learning motivation or social support to provide a more comprehensive picture.

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### Introduction

In the world of higher education, hard work, also known as grit, is one of the important non-cognitive components that support a student's academic success (Takiuddin & Husnu, 2021). Grit shows one's ability to endure long and remain consistent in achieving goals despite obstacles and failures. Hard-working students tend to be diligent, highly motivated, and highly engaged in challenging academic tasks (Mayshita et al., 2023). Ideally, students in Yogyakarta, which is known as a student city, must also equip themselves with this hard-working character to support the achievement of academic achievement optimally.

However, not all students in Yogyakarta show the spirit of hard work during their studies. Studies show that college students often finish assignments late, have difficulty managing time, and face academic pressure (Septania et al., 2015). According to research from (Wijaya et al., 2022) indicates a strong relationship between grit and self-regulation, but the study has not fully examined its impact on academic achievement. Thus, there is a gap between the grit that is aspired to be a factor of academic success and the reality that occurs in society, especially among university students in Yogyakarta.

Low hardworking character can have an impact on decreased motivation to learn, low GPA (Cumulative Achievement Index), increased academic stress, and the risk of late graduation (Gisela et al., 2025). Research conducted by (Margaret & Suparman, 2024) indicates that students with higher grit levels are better able to handle learning challenges and stress during chaotic times, such as when facing final exams, major assignments, or changes in learning methods. Grit, which includes a combination of perseverance and passion for long-term goals, is an important factor in helping students maintain a passion for learning despite complex obstacles.

On the other hand, students with low grit tend to have difficulty managing study time, show weak fighting power when facing failure, and are less able to utilize effective learning strategies (Amawidyati et al., 2023). This can trigger ongoing mental stress, hinder the ability to complete assignments on time, and worsen the quality of academic results achieved (Nayla Shabrina et al., 2025). These negative impacts are not only limited to academic achievement, but also affect students' readiness to face the world of work, where the ability to work hard and survive in difficult situations is an indispensable skill (Zulfahmi & Andriany, 2021). Therefore, the character of hard work must be instilled in the personality of all students, especially students in Yogyakarta.

In addition, low understanding and application of values *Grit* It also causes a lack of campus strategy in fostering the character of hard work. whereas (Salsabila & Susilawati, 2024) shows that a college student who works while studying can improve his or her performance if they have strong tenacity. Therefore, in the study (Rahmat & Mirnawati, 2021) said that many higher education institutions only focus on cognitive learning without providing opportunities for unique character development. If this condition continues, the campus will produce graduates who are only academic and lack personal integrity in facing the challenges of the post-campus world.

Therefore, it is important to conduct research that specifically examines the influence of the character of hard work on the academic achievement of students, especially in the Yogyakarta area. This research is crucial because Yogyakarta as an education city is a barometer in producing quality graduates. By measuring the extent to which the character of hard work affects students' GPA, educational institutions can develop a more targeted character development strategy, not only based on grades but also based on personal competence (Junanah et al., 2022).

This research aims to understand the impact of the character of hard work on the academic achievement of Yogyakarta students. In addition, this study aims to identify the factors that contribute to the development of hardworking character and provide guidance to the highest level authorities to improve the character development of students. Thus, this research is expected to contribute to the development of a holistic education system that not only handles academic aspects but also the development of student character.

### **The Theory/Literature**

This research relies on two main theories, namely Personality Psychology – Trait Theory, and Humanistic Theory in Education, which complementarily explain the relationship between hard work character and student academic achievement. Trait Theory, as put forward by (Ramdani & Nuriyah, 2023) Explains that individuals have a tendency to have traits that are stable over time. One of the main dimensions in the personality model *Big Five* be *Conscientiousness*, which includes traits such as self-discipline, perseverance, responsibility, and hard work (Ladya et al., 2024). The character of hard work falls into this dimension and is considered an important predictor of student academic success. Individuals who exhibit a hard-working character tend to have a high learning ethic, perseverance in facing challenges, and responsibility for academic tasks (Jamilah & Affandi, n.d.).

In a humanistic view, especially according to (Fatimah et al., 2024) Human beings are naturally driven to achieve self-actualization, and characters such as hard work are a form of self-value actualization in achieving academic goals. (Haryanto, 2023) emphasizes the importance of creating an environment that supports personal growth, including values such as autonomy, intrinsic motivation, and the meaning of learning. And according to research (Agrifina et al., 2024) The character of hard work is considered part of the intrinsic motivation that allows students to keep trying despite facing difficulties.

## Method

This study uses a quantitative method with an associative approach, which aims to determine the influence of the character of hard work on the academic achievement of students in Yogyakarta. The population in this study is active students in several universities in Yogyakarta, while the sample used is 150 students. The sample was taken using the purposive sampling technique, with the criteria that the student is active for at least the third semester, has the latest Cumulative Grade Point Average (GPA), and is willing to fill out a complete questionnaire. The associative approach is the result of research that aims to understand the causal relationship between the characteristics of the character of hard work as a dependent variable and academic achievement as a dependent variable, which can be used to explain, describe, and even analyze this phenomenon (Karimuddin et al., 2022).

The variables in this study consist of two types, namely the independent variable (X), which is the character of hard work, and the bound variable (Y), which is academic achievement measured based on the student's last GPA. Data was collected through a questionnaire to measure the character of hard work, which was compiled using a four-point Likert scale. Meanwhile, academic achievement data was obtained from GPA reports provided directly by respondents.

The data analysis technique used is a simple linear regression to determine the influence of the character of hard work on academic achievement. Before the analysis is carried out, the data is tested first with normality and linearity tests as regression requirements. The entire data processing process is carried out using statistical software such as Smartpls.

## Result

The data processing in this study uses smartPLS SEM (Partial Least Square - Structural Equation Modelling) software (Wednesday, 2023). In research (Sofyani, 2025) PLS can explain the correlation between variables and perform a comprehensive analysis in a single test. The main purpose of PLS is to validate the theory and ascertain the presence or absence of correlations between latent variables (James et al., 2024). This study uses the conceptual framework depicted in Figure 1. This study hypothesizes that hard work has an impact on academic achievement in an educational environment.

**Figure 1**  
**Conceptual Model.**

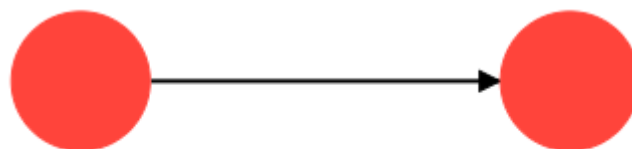


Figure 1. describes the conceptual framework underlying this study. The hypothesis states that hard work (X) has a positive impact on Academic Achievement (Y).

This study evaluated convergent and discriminant validation values using a threshold of 0.7. If the load factor is below 0.7, the indicator item is excluded from the model. The results of the analysis showed that each variable in this study had a load factor value that exceeded the recommended threshold of 0.7.

**Figure 2**

External Model Results Display

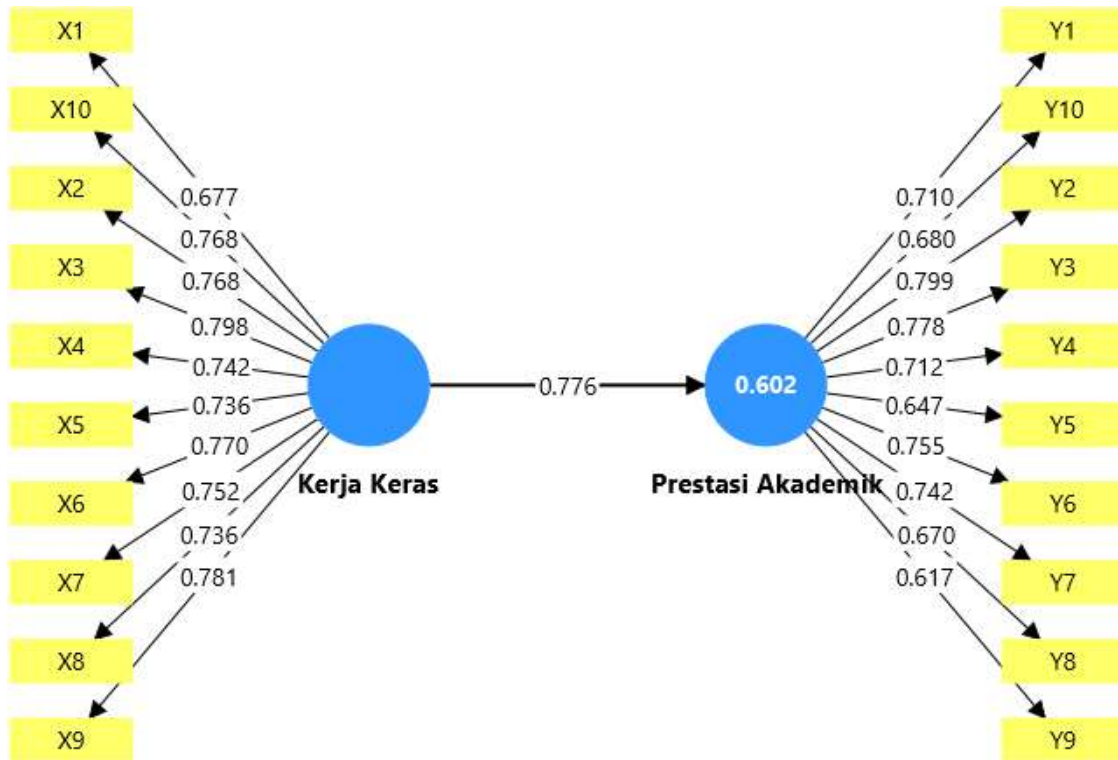


Figure 2 and Figure 3 show the convergent validity, as shown by the load factor value of each indicator that mostly exceeds 0.7. The *Hard Work* variable had the lowest load factor value of 0.736, while the *Academic Achievement* variable showed the lowest load factor value of 0.617. These findings show that the indicators used in this study are valid, and confirm that this study meets the criteria for convergent validity.

**Table 3**  
**Factor Loadings and Average Variance Extracted**

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
<b>Strive</b>	0.915	0.917	0.929	0.568
<b>Academic Achievement</b>	0.892	0.895	0.911	0.509

The discriminatory validity test was conducted using the Fornell-Larcker Criteria. If the root of the AVE (Average Variation Extracted) of the construct exceeds the correlation of the construct with other latent variables, then the discriminative validity can be considered adequate.

**Table 4**  
**Discriminant Validity**

	Strive	Academic Achievement
<b>Strive</b>	0.753	
<b>Academic Achievement</b>	0.776	0.713

Table 4 shows the validity evaluation results. The Average Variance Extracted (AVE) values for each variable, namely 0.568 for the *Hard Work* variable and 0.509 for the *Academic*

Achievement variable, both exceed the recommended minimum threshold of 0.5. These results indicate that the calculations produce AVE values for each variable above the threshold, confirming that the model meets the criteria for convergent validity.

**Table 5**  
**Cronbach's Alpha and Composite Reliability**

	<b>Cronbach's alpha</b>	<b>Composite reliability (rho_a)</b>
<b>Strive</b>	<b>0.915</b>	<b>0.917</b>
<b>Academic Achievement</b>	<b>0.892</b>	<b>0.895</b>

Cronbach's analysis of alpha and composite reliability showed that the two research variables had values of 0.915 and 0.917 for the *Hard Work variable*, respectively, and 0.892 and 0.895 for the *Academic Achievement* variable. These values exceeded the threshold of 0.7, which confirms the reliability of the constructs or measurement variables used in this study. Table 5 shows a high level of reliability, as evidenced by *Cronbach's alpha values* and composite reliability that is above the minimum criteria. Once the measurement model has been verified for its validity and reliability, testing of the structural model can begin. This test was specifically developed to evaluate hypotheses and determine the relationships between variables. The evaluation of the structural model (*inner model*) in PLS can be observed by examining the *R-square* value, as shown in the next table.

**Table 6**  
**R-Square Value**

	<b>R-square</b>	<b>R-square adjusted</b>
<b>Academic Achievement</b>	0.602	0.599

Table 6 shows that the R-square value for the Academic Achievement variable is 0.602, which means that the influence of the hard-working character explains 60.2% of the variation in student academic achievement.

**Table 7**  
**Hypothesis Testing Results**

	<b>Original sample</b>	<b>T-statistics</b>	<b>P values</b>
<b>Hard Work -&gt; Academic Achievement</b>	<b>0.776</b>	<b>16.029</b>	<b>0.000</b>

Table 7 presents hypothesis testing, which involves the use of path coefficients in structural model testing, using bootstrapping steps, as well as analyzing the results by examining the original sample (O) values, T statistics, and P values.

## Discussion

This study found that the character of hard work has a positive and significant effect on students' academic achievement, which is shown by a coefficient value of 0.45 ( $p < 0.05$ ). So it is proven that the higher the student's hard-working character, the higher their academic achievement. These findings confirm the importance of the strategy of fostering the character of hard work in higher education as an effort to improve the academic quality and competitiveness of graduates. This conclusion is in line with other research that shows that the character of hard work has a strong relationship with a person's academic achievement. Previous empirical research has confirmed this notion. These findings are in line with personality theory (Khairunnisa et al., 2022) which states that the dimension of conscientiousness, which includes hard work, discipline, and responsibility, is a strong predictor of academic success.

Research conducted by (Kamila et al., 2025) states that The character of hard work has a positive effect on the academic achievement of students, therefore the application of the character of hard work is very important for the life of the student, especially in terms of academic

achievement. Likewise, the research conducted by (Hidayah, 2025) indicates that students with higher grit levels are better able to handle learning challenges and stress during chaotic times, such as when facing final exams, major assignments, or changes in learning methods. Grit, which includes a combination of perseverance and passion for long-term goals, is an important factor in helping students maintain a passion for learning despite complex obstacles. Practically, these results confirm the importance of soft skills training and the habit of hard work in the campus environment to improve student achievement.

Because the study has a relatively small sample size, an in-depth analysis of the results is needed before drawing any conclusions. Suggestions for further research to analyze a more diverse sample and to analyze intermediate variables such as learning motivation or social environment. This research proves that the character of hard work has a positive and significant effect on the academic achievement of students in Yogyakarta. With the quantitative method of associative approach and SmartPLS analysis, it was found that hard work was able to explain 60.2% of the variation in academic achievement ( $R^2 = 0.602$ ) with a strong influence (path coefficient 0.776;  $p = 0.000$ ). The instruments used are proven to be valid and reliable. These results confirm that students with high hardworking characters tend to have better academic achievements, so strengthening this character is important in higher education. The study was limited to the number and diversity of samples, so further studies are recommended to involve a wider range of respondents and consider other factors such as learning motivation or environmental support.

## Conclusion

This research proves that the character of hard work has a positive and significant effect on the academic achievement of students in Yogyakarta. With the quantitative method of associative approach and SmartPLS analysis, it was found that hard work was able to explain 60.2% of the variation in academic achievement ( $R^2 = 0.602$ ) with a strong influence (path coefficient 0.776;  $p = 0.000$ ). The instruments used are proven to be valid and reliable. These results confirm that students with high hardworking characters tend to have better academic achievements, so strengthening this character is important in higher education. The study was limited to the number and diversity of samples, so further studies are recommended to involve a wider range of respondents and consider other factors such as learning motivation or environmental support.

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