

Article

**Grit and Career Adaptability in University Students: Resilience as a Mediator**

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**Abstract:** This study aims to examine the role of agility as an intermediary in the relationship between agility and career suitability among university students. This study used a quantitative approach with insight methods involving 319 university students in Pekanbaru, Indonesia, who were selected through purposive sampling techniques. The instruments used include the Gritness instrument (Grit-S), the Connor-Davidson Gritness instrument (CD-RISC), and the Career Capability instrument (CAAS). Data analysis was carried out using a Structural Equation Model based on Partial Least Squares (PLS-SEM). The results of the analysis show that resourcefulness has a significant positive relationship with agility ( $\beta = 0.71$ ,  $t = 20.36$ ,  $p < .001$ ) and career adaptability ( $\beta = 0.51$ ,  $t = 8.03$ ,  $p < .001$ ). Conscientiousness also had a direct impact on career adaptability ( $\beta = 0.39$ ,  $t = 6.03$ ,  $p < .001$ ) and acted as a partial mediator in the relationship between agility and occupational adaptability ( $\beta = 0.27$ ,  $t = 5.38$ ,  $p < .001$ ). These findings confirm that assertiveness and conciseness are important psychological resources that need to be built through intervention based on the power to increase career preparedness among university students.

**Keywords:** Grit; resilience; career adaptability; work readiness; university student

## Introduction

College students are generally individuals in the process of determining their future direction. The knowledge they gain in college provides a strong foundation for them to secure their desired jobs. However, recent graduates are often confused about finding work and adjusting to the work environment. This is also explained by Wibowo et al. (2020) in their research, where recent graduates tend to be unprepared and hesitant about finding work after graduation. They also have difficulty determining their career path. Therefore, they are expected to be equipped with information and training to support their abilities in the world of work. Furthermore, academic-related factors such as resilience are also crucial for students in facing the challenges of academic and professional life. A study by Lee and Kim (2019) found that students with high levels of grit demonstrated greater confidence in managing their career choices, ultimately increasing their career adaptability. This highlights the importance of conducting further research to examine the relationship between grit and career adaptability among students.

Several research findings in Pekanbaru, Indonesia, such as Mariyanti's (2024) study, have established effective emotional regulation as a key factor in helping students develop resilience, namely the ability to effectively cope with challenges and stress. Meanwhile, Wahyudi's (2022) study explored the relationship

between locus of control and resilience. The research findings showed a positive relationship between internal and external locus of control and resilience. In other words, the higher the locus of control, the higher the level of resilience. Furthermore, Putri's (2023) study conducted in Pekanbaru found a significant positive correlation between optimism and resilience among students. This proves that higher levels of optimism are correlated with higher resilience, while lower levels of optimism are associated with lower resilience. The ability to maintain an optimistic outlook allows students to feel confident in their future work. Based on the research conducted in Pekanbaru, it appears that there is still little research focusing on the relationship between grit and career adaptability, as well as resilience.

Several research findings in Pekanbaru, Indonesia, such as Mariyanti's (2024) study, have established effective emotional regulation as a key factor in helping students develop resilience, namely the ability to effectively withstand challenges and stress. Meanwhile, Wahyudi's (2022) study examined the correlation between locus of control and resilience. The study showed a positive correlation between internal and external locus of control and resilience. Therefore, a higher locus of control will affect resilience levels. Furthermore, Putri's (2023) study conducted in Pekanbaru found a positive correlation between resilience and optimism among students. This proves that higher levels of optimism are offset by higher resilience, while lower levels of optimism are threatened by lower resilience. The ability to maintain an optimistic outlook allows students to feel confident in their future careers. Based on the research conducted in Pekanbaru, it appears that there is still little research focusing on the relationship between grit and career adaptability, as well as resilience.

The main focus of career adaptation is having the ability to adapt to the work environment, which is obtained through learning in education, social environments, role integration, and planning strategies. The four core dimensions comprising this adaptability construct are awareness, control, curiosity, and self-confidence. These dimensions enable individuals to be better prepared for career challenges and fully utilize their potential in the labor market (Zahari & Omar, 2021). Savickas and Porfeli (2012) explain that individuals with high career adaptability demonstrate career awareness and an awareness of the importance of preparation in planning a successful career. These individuals frequently participate in various competency training programs. Career control refers to an individual's sense of responsibility for their abilities, which enables them to adapt effectively through self-discipline, effort, and persistence in achieving their goals. This leads to the development of career curiosity—actively exploring opportunities and identifying career-related challenges. Finally, career confidence is reflected in their ability and behavior to pursue a career that aligns with their abilities (Hirchi et al., 2020).

Pang et al. (2021). Career adaptability and resilience are believed to be able to reduce the difficulties experienced by someone in making decisions. Bernabé et al. (2024) stated that emotional factors can increase or decrease resilience, especially in the area of career development. The study by Jamaludin, Rashid, Siwok, and Rusbadrol (2021) revealed that the social personality type was the most dominant among employees, while family factors served as the main influence in individuals' career choices. Having sufficient resilience towards career adaptability helps students develop cognitive flexibility to face greater future challenges, enabling them to overcome existing limitations and survive in more positive situations (Santilli et al., 2020). Therefore, resilience is a significant factor influencing career adaptability (Topino et al., 2022). Karaman et al. (2020) and Yalçın et al. (2022) in their research showed that resilience functions as a mediating factor in career adaptability and can foster a more positive attitude towards career adaptation.

## Literature Review

Grit is often associated with perseverance and the ability to endure difficult situations until the desired goal is achieved. According to Ya and Razak (2019), grit is an important value that serves as a model, especially when facing challenging and difficult situations. Yau and Shu (2023) found that grit can have a positive impact on a person's relationships and career abilities, which are then influenced by their personality traits (Yau & Shu, 2023), self-concept, and self-esteem (Park, 2023). Furthermore, the effects of grit can provide a constructive self-perspective and foster hope for the future (Zhai et al., 2023).

Grit plays a role in persistence and passion, which are crucial for achieving long-term goals. Grit is a complex trait that requires mutually reinforcing cognitive and emotional abilities (Tang et al., 2021). The

concept of grit needs to be instilled in individuals, especially in the context of future career planning. Grit does not develop instantly; it requires personal maturity, including open-mindedness and emotional stability, to face challenges. Yang et al. (2023) noted that grit enables individuals to persist in the face of adversity, solve problems, and maintain a positive mindset focused on learning. This is crucial for developing and utilizing career adaptability resources such as mindfulness, self-control, curiosity, and self-confidence. Conversely, individuals with low grit will struggle to adapt to change and maintain control over their journey.

Pawlak et al. (2022) found that one of the factors contributing to the development of grit among students in enhancing their career capabilities was the enjoyment of learning. There are also gender differences in grit levels, particularly in the ability to learn new things (Khajavy et al., 2021). Similarly, resilience plays a crucial role in managing stress and navigating future career development. Gracia et al. (2021) found that students' resilience levels influence their ability to maintain an optimistic outlook on career adaptation. Resilience also contributes to self-regulation and self-confidence, both of which are important when navigating challenges in the workplace (Hirschi et al., 2020). Santilli et al. (2020) highlighted in their study of college students that resilience helps manage stress and infection, thus supporting the development of career adaptation. With resilience, students can plan their careers with more confidence and face future career challenges. The transition period during college life is crucial because students are expected to be able to face broader life challenges. Ramos-Diaz et al. (2019) resilience facilitates more positive life transitions and strengthens individual capacity.

Kim et al. (2024) found that resilience plays a crucial role in influencing an individual's ability to adapt during situational or work-related changes, particularly in the post-pandemic work environment. Changes in an individual's attitude reflect a more optimal adjustment process in response to increasing work demands. Time management skills are also a contributing factor in fostering resilience in the workplace. Similarly, Zhang et al. (2021) explained that resilience mediates the relationship between resilience and career adaptability. Their study was conducted in a work environment where artificial intelligence increasingly assists individuals in completing tasks with ease. However, resilience remains necessary to face increasingly complex work challenges over time. Building resilience in early career professionals requires the interaction of personal strengths and environmental protective factors, both of which help individuals adapt effectively to workplace challenges (Sudin et al., 2024).

The mediating role of resilience becomes increasingly important in linking grit to career adaptability. According to Li and Wang (2023), resilience supports grit in facing shifts in work situations or adapting to new work models. Grit does not solely focus on a single aspect but consists of two key components: sustained effort and sustained interest, both of which must be continuously developed to achieve career goals. Resilience also serves as a psychological bridge that enhances one's adaptive capacity toward a successful career and career adaptability. However, cultural context must also be taken into account when developing grit to achieve career success (Lee et al., 2019). This study aims to test the following hypotheses:

- H<sub>01</sub>: There is no significant relationship between grit and career adaptability among university students.
- H<sub>11</sub>: There is a significant relationship between grit and career adaptability among university students.
- H<sub>02</sub>: There is no significant relationship between grit and resilience among university students.
- H<sub>12</sub>: There is a significant relationship between grit and resilience among university students.
- H<sub>03</sub>: There is no significant relationship between resilience and career adaptability among university students.
- H<sub>13</sub>: There is a significant relationship between resilience and career adaptability among university students.
- H<sub>04</sub>: Resilience does not significantly mediate the relationship between grit and career adaptability among university students.
- H<sub>14</sub>: Resilience significantly mediates the relationship between grit and career adaptability among university students.

## Methodology

Demographically, the majority of respondents in this study were female students (64%), were in their fifth semester of study (15%), and were between 19 and 20 years old (49%). This fact indicates that this study involved students who were in the middle stage of their studies and belonged to the early adulthood age group.

Table 1. Respondent data distribution

Category	Frequency	Percent
<b>Gender</b>		
Male	115	36
Female	204	64
<b>Semester</b>		
1	3	1
2	10	3
3	46	18
4	59	18
5	82	15
6	49	11
7	34	11
8	16	5
9	20	6
<b>Age</b>		
19	47	14.7
20	107	33.5
21	70	21.9
22	60	18.8
23	21	6.6
24	10	3.1

This study employed a quantitative research approach. Quantitative research involves collecting numerical data and performing statistical analyses to examine the relationships and effects among variables, developing new conceptual methods, including modeling, and selecting appropriate models (Brandt et al., 2024). The sample consisted of 319 university students. It measures gender, semester, and age. The sampling technique used was purposive sampling. The criteria for this research are students who are active in lectures based on. The criteria for this research are students who are active in lectures based on gender, semester level, and age. Data collection was conducted through a Google Form distributed via WhatsApp social media. Respondents who met the research criteria were invited to complete the questionnaire and give their consent through an informed consent form. The process of providing information in the consent form must be clear and comprehensive, including the research objectives, procedures, potential risks, benefits of the research, as well as participants' rights and their ability to withdraw at any time without consequences, as participation is entirely voluntary. Researchers must not engage in any form of deception in conducting their studies. Detailed information about risk factors must be conveyed to participants. Efforts to address cultural differences and competencies must also be clearly integrated into the research elements, including the diversity of the population (Tao et al., 2021). The researcher provided a detailed explanation of the contents of the consent form, including the rights and responsibilities of both the researcher and the respondents.

The Career Adapt-Abilities Scale (CAAS) was used as an instrument in this study, developed by Savickas (2012) and then adapted by Sulistiani et al. (2018) into Indonesian. The CAAS consists of four dimensions (concern, control, curiosity, and confidence) and comprises 24 positive items. The response options use a five-point Likert scale: (5) Very Strongly, (4) Strongly, (3) Moderately, (2) Slightly, and (1) Not at All Strong. This instrument has demonstrated high reliability, with  $\alpha = .91$  (Sulistiani et al., 2018). The Grit instrument was developed by Duckworth and Quinn (2009). Short then used. The Grit Scale (Grit-S) was used to measure grit, which was also adapted by Priyohadi et al. (2019). The Grit-S has two dimensions (interest and effort). and consists of eight items. The response options use a five-point Likert scale: (5) Very Suitable, (4) Suitable, (3) Somewhat Suitable, (2) Unsuitable, and (1) Very Unsuitable. Furthermore, for assessing

resilience, Aloba et al. (2016) utilized the Connor-Davidson Resilience Scale (CD-RISC), which consists of 10 items and was adapted by Simamora (2024). The CD-RISC uses a five-point Likert scale with the following response options: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree. Structural Equation Modeling with Partial Least Squares (SEM-PLS) was used as an analytical tool in this study, which aims to analyze latent variables that cannot be measured directly. In addition, it can also be used to measure all variables. SEM analysis can assess the validation and alignment of the model, so that researchers are able to reveal the extent to which the research model fits the data.

## The Findings

In this study, inferential analysis was conducted using the Partial Least Squares-Structural Equation Modeling (PLS-SEM) method. Using a two-stage reflective-reflective measurement model approach, this study ensured that the model structure used had adequate validity and reliability before interpreting the relationships between latent variables.

Table 2. Outer loadings for measurement model (stage 1)

Variable	Dimension	Indicator	Outer Loading
Grit	Passion	G2	0.704
		G4	0.839
		G7	0.791
		G8	0.739
Resilience	Perserverance	G1	0.828
		G3	0.768
		G5	0.755
		G6	0.806
	Ability to bounce back from a variety of challenges	R1	0.681
		R2	0.799
		R3	0.607
		R4	0.777
		R5	0.773
		R6	0.719
Career Adaptability	Concern	R7	0.726
		R8	0.655
		R9	0.772
		R10	0.739
		CA1	0.824
		CA2	0.744
		CA3	0.828
		CA4	0.821
		CA5	0.804
		CA6	0.803
	Control	CA7	0.762
		CA8	0.696
		CA9	0.798
		CA10	0.760
		CA11	0.779
		CA12	0.749
	Curiosity	CA13	0.748
		CA14	0.788
		CA15	0.795
		CA16	0.798
		CA17	0.750
		CA18	0.810
	Confidence	CA19	0.792
		CA20	0.813
		CA21	0.778
		CA22	0.804
		CA23	0.813
		CA24	0.804

Based on the results of the first-stage testing, most indicators met the criteria for convergent validity with outer loading values  $\geq 0.70$ . However, several indicators under the Resilience construct, such as R1 (0.681), R3 (0.607), and R8 (0.655), showed outer loading values below the threshold. As these values did not meet the required criteria, the corresponding indicators were removed in order to improve the quality of the measurement model.

Meanwhile, indicator CA8 (0.696) under the Control dimension of the Career Adaptability construct also recorded an outer loading slightly below 0.70. However, in social science research, outer loading values slightly below 0.70 can still be considered acceptable, especially if removing an indicator risks lowering the internal reliability of the measured construct. Further analysis showed that removing CA8 would actually reduce the internal reliability of the Control dimension. Therefore, it was deemed more appropriate to retain this indicator in the model.

After eliminating the indicators that did not meet the convergent validity criteria, the second-stage analysis was carried out using the revised model. The results of this second-stage analysis are presented in the figure and table below:

Table 3. Outer loadings for measurement model (stage 2)

Variable	Dimension	Indicator	Outer Loading
Grit	Passion	G2	0.704
		G4	0.839
		G7	0.791
		G8	0.739
	Perserverance	G1	0.828
		G3	0.768
		G5	0.755
		G6	0.806
		R2	0.785
		R4	0.794
Resilience	Ability to bounce back from a variety of challenges	R5	0.775
		R6	0.745
		R7	0.744
		R9	0.792
		R10	0.757
		CA1	0.828
Career Adaptability	Concern	CA2	0.744
		CA3	0.828
		CA4	0.820
		CA5	0.804
		CA6	0.803
		CA7	0.763
		CA8	0.696
	Control	CA9	0.799
		CA10	0.761
		CA11	0.777
		CA12	0.748
		CA13	0.748
		CA14	0.788
	Curiosity	CA15	0.795
		CA16	0.798
		CA17	0.750
		CA18	0.810
		CA19	0.791
		CA20	0.813
	Confidence	CA21	0.778
		CA22	0.804
		CA23	0.813
		CA24	0.804

The results of the second-stage analysis indicate that all remaining indicators have outer loading values greater than 0.70; thus, no further indicator elimination is required. The next step in evaluating convergent validity involves calculating the Average Variance Extracted (AVE). AVE is used to assess the extent to which a construct explains the variance of its associated indicators. The results of the analysis are presented in Table 4.

Table 4. Average variance extracted (ave) for constructs

Variable	Dimension	AVE
Grit	Passion	0.593
	Perserverance	0.624
Resilience	Ability to bounce back from a variety of challenges	0.594
Career Adaptability	Concern	0.647
	Control	0.574
	Curiosity	0.611
	Confidence	0.641

Based on the results of the AVE calculations presented in the table above, all aspects of each variable have met the AVE criterion of  $\geq 0.50$ , indicating that more than 50% of the variance in the indicators can be explained by the latent constructs being measured. Reliability is a measure of the internal consistency of a construct, indicating the extent to which the indicators within a construct produce stable and reliable results. In this study, reliability was evaluated using Cronbach's Alpha and Composite Reliability (pc). Values of  $\geq 0.70$  indicate that the construct has a satisfactory level of reliability.

Table 5. Reliability analysis for constructs

Variable	Dimension	Cronbach's Alpha	Composite Reliability
Grit	Passion	0.770	0.853
	Perserverance	0.802	0.869
Resilience	Ability to bounce back from a variety of challenges	0.886	0.911
Career Adaptability	Concern	0.891	0.917
	Control	0.852	0.890
	Curiosity	0.873	0.904
	Confidence	0.888	0.915

Based on the analysis results, all constructs in this study have Cronbach's Alpha and Composite Reliability values above 0.70, indicating that these constructs possess high reliability and can be trusted to measure the variables under investigation. Therefore, the measurement model in this study meets the reliability criteria and can be used for further analysis.

In this study, inner model testing was conducted using latent variable scores (LVS) obtained after completing the first-order construct analysis. At this second-order stage, constructs consisting of several dimensions were re-estimated in the second-order construct model (high-order construct). The direct influence stage aims to test the direct correlation between latent variables. This is done to observe whether there is a line coefficient value (Original Sample/O), *t*-statistic, and *p*-value obtained through bootstrapping. The criteria for significance testing were that a relationship is considered significant if the *t*-statistic  $\geq 1.96$  and the *p*-value  $\leq 0.05$ . Meanwhile, the path coefficient (O) indicates the direction and strength of the relationship between the independent and dependent variables. The results of the analysis can be seen in the following figure and table:

Table 6. Inner model results

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	t Statistics ( O/STDEV )	p value
Grit → Career Adaptability	0.51	0.508	0.063	8.02	< 0.001
Grit → Resilience	0.71	0.710	0.035	20.36	< 0.001
Resilience → Career Adaptability	0.38	0.387	0.064	6.02	< 0.001

The results of the direct effect analysis indicated significant relationships between grit, resilience, and career adaptability among university students. The relationship between grit and career adaptability was positive and significant ( $\beta = 0.51$ ,  $t = 8.03$ ,  $p < .001$ ), suggesting that students with higher levels of grit are better able to adapt to career-related challenges.

In addition, grit was significantly associated with resilience ( $\beta = 0.71$ ,  $t = 20.36$ ,  $p < .001$ ), indicating that students who exhibit greater perseverance also tend to demonstrate stronger resilience when facing difficulties. Furthermore, resilience was positively related to career adaptability ( $\beta = 0.39$ ,  $t = 6.03$ ,  $p < .001$ ), implying that students who are more resilient are more capable of adjusting to changes in their career paths.

Table 7. Mediation effect of resilience

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	t-Statistics ( O/STDEV )	p values
Grit → Resilience → Career Adaptability	0.274	0.275	0.051	5.381	.000

The results of the indirect effect analysis indicated that resilience serves as a significant mediator in the relationship between grit and career adaptability among students. The indirect effect was statistically significant ( $\beta = 0.27$ ,  $t = 5.38$ ,  $p < .001$ ), suggesting that students with higher levels of grit tend to demonstrate stronger resilience, which in turn enhances their ability to adapt to career-related challenges.

Furthermore, the previous direct effect analysis also showed that grit has a significant direct influence on career adaptability ( $\beta = 0.51$ ,  $p < .001$ ). Given that both the direct and indirect effects are statistically significant, these results support a partial mediation model. In other words, students with high grit not only directly enhance their career adaptability but also do so indirectly through the development of resilience. This highlights resilience as a key psychological mechanism that bridges the relationship between grit and career adaptability.

To further evaluate the explanatory power of the model,  $R^2$  analysis was conducted to assess the proportion of variance in the endogenous constructs explained by the predictor variables. The results of the  $R^2$  analysis indicated that grit explains 50.4% of the variance in resilience ( $R^2 = 0.50$ ). This suggests that approximately half of the variation in resilience can be accounted for by grit, while the remaining variance may be attributed to other variables not included in the present model. In contrast, career adaptability had an  $R^2$  value of 0.69, indicating that 68.8% of its variance is explained jointly by grit and resilience. Hair et al. (2022), an  $R^2$  value above 0.67 reflects substantial predictive power. Therefore, the model demonstrates strong explanatory capacity in predicting students' career adaptability based on the two independent variables.

## Discussion

The findings of this study revealed that grit has a significant positive relationship with resilience ( $\beta = 0.71$ ,  $t = 20.36$ ,  $p < .001$ ) and career adaptability ( $\beta = 0.51$ ,  $t = 8.03$ ,  $p < .001$ ). In addition, resilience significantly predicts career adaptability ( $\beta = 0.39$ ,  $t = 6.03$ ,  $p < .001$ ). The mediation analysis further confirmed that resilience plays a partial mediating role in the relationship between grit and career adaptability ( $\beta = 0.27$ ,  $t = 5.38$ ,  $p < .001$ ). The  $R^2$  value for resilience was 0.504, and for career adaptability it was 0.688, indicating that the model demonstrates strong explanatory power for the endogenous variables.



Duckworth et al. (2007) emphasize grit as an important predictor of long-term coping despite adversity. Xu et al. (2025) and Mat et al. (2023) further support grit's role in enhancing career adaptability. This would be better linked to self-motivation in career decision-making, showing that those who are persistent and confident in their abilities are better prepared for the work environment.

Similarly, Mensih et al. (2024) highlight that grit, supported by emotional stability and resilience, facilitates students' adaptation to career challenges in social fields, which often involve stress and uncertainty, thereby improving career adaptability. These findings are reinforced by Salim et al. (2024), who found grit to mediate the relationship between openness to experience and teaching effectiveness during remote learning, indicating that persistent individuals are more resilient in challenging educational contexts. Research by Zhai et al. (2023) suggests that career adaptability is effectively achieved only when individuals possess inner strengths to overcome obstacles. This view is supported by Yau and Shu (2023) and Park (2023), who link grit closely with personality traits, self-concept, and self-esteem. Pang et al. (2021) confirm that high grit encourages proactive career development, readiness to face new challenges, and resilience to occupational stress. Furthermore, Yang et al. (2023) argue that grit not only helps individuals cope with difficulties but also maintains positive, learning-oriented thinking—an essential element of career adaptability.

As noted by Alhadabi dan Karpinski (2019) and Santilli et al. (2020), grit contributes not only to academic performance and promising career prospects but also serves as a key factor in developing long-term career maturity and flexibility. Moreover, the positive correlation between grit and resilience strengthens findings by Eskreis-Winkler et al. (2014), who observed that gritty individuals not only set long-term goals but also possess internal toughness to recover from failures. This underscores grit as a foundation of mental toughness, which enhances adaptability in career contexts. The positive association between grit and resilience aligns with Barua & Burgess (2024), who introduced the concept of “psychological battery,” where grit sustains long-term effort capacity, and resilience aids recovery from stress.

This complementary relationship between persistence and resilience is supported by Orines et al. (2023), who found a significant positive correlation between the two in university athletes in the Philippines, with regression analysis showing both persistence and resilience as positive predictors of subjective well-being, suggesting that individuals who are persistent and resilient are more likely to achieve higher psychological well-being. These findings also indicate a significant correlation between resilience and career adaptability, consistent with Savickas (2013), who described career adaptability as the psychosocial ability to handle challenges and work transitions, with resilience being a core factor driving this adaptability. Fang and Xu (2025) supported this by showing that resilience predicts career adaptability through internal emotional support and external stress management. Resilience has a good correlation with career adaptability and has a role as a moderator in overcoming difficulties in decision-making (Pang et al., 2021). Resilient attitudes contribute to the self-control, self-regulation, and self-confidence necessary to face work challenges (Fang & Xu, 2025). Santilli et al. (2020) also found that resilience helps students manage stress and uncertainty, thus supporting the development of career adaptability. Furthermore, Reynardo and Huwae (2024) found that higher levels of resilience are associated with greater career adaptability.

The partial mediation effect of resilience in the relationship between grit and career adaptability indicates that resilience is not merely a direct result of grit but also acts as an important psychological pathway. This aligns with Masten's (2019) Developmental Systems Theory, which posits resilience as a “buffer” maintaining emotional stability and behavioral adaptation in challenging environments. Thus, gritty and resilient individuals not only set long-term goals but also adapt flexibly and strategically to career uncertainties, making them better prepared for workforce transitions.

Further explanation based on the study results shows that an  $R^2$  value of 0.504 for resilience suggests that grit accounts for more than half of the variation in psychological resilience among students, confirming grit as a primary predictor of resilience. This implies that students with high grit levels tend to possess stronger resilience when facing academic pressures and daily life challenges. Mustaza and Kutty (2022) support this finding, showing grit accounts for 19.3% of resilience variance among Malaysian university students, with a significant positive relationship.

Additionally, the  $R^2$  value of 0.688 for career adaptability indicates that the combination of grit and resilience strongly predicts students' ability to adapt to career challenges and uncertainties. Xu et al. (2025), resilience and self-efficacy in career decision making play an important mediating role between basic psychological needs satisfaction and career adaptability among students. These findings align with Savickas' (2013) Career Theory, emphasizing career adaptability as the result of inner psychological strengths developed through life experiences and personality traits. Therefore, grit and resilience serve as crucial psychological resources shaping students' career adaptability. Meriak et al. (2022) also found that persistence significantly influences an individual's ability to cope with changing job demands. Zhang et al. (2021) further explained the role of resilience in mediating the relationship between persistence and career adaptability.

## Conclusion

This study confirms that grit and resilience are essential psychological constructs that influence students' career adaptability. The findings suggest that persistence has both direct and indirect effects (through resilience) on career adaptability, making resilience a partial mediator. These results align with previous research that has given a strong role to internal psychology, particularly persistence and the ability to recover from adversity, as key drivers in supporting students' adaptation to their career challenges. The theoretical implications of this study suggest that integrating persistence and resilience into career development theory can enhance understanding of how individual differences contribute to students' readiness to navigate the modern workplace. From a practical perspective, these findings highlight the importance of higher education institutions designing interventions and programs that foster persistence and resilience among students. Such efforts could include psychoeducational training, mentoring programs, and experiential learning opportunities aimed at strengthening students' long-term goal orientation and coping strategies.

Despite these contributions, this study has several limitations. First, the use of a cross-sectional design limits the ability to draw causal conclusions between variables. Longitudinal studies are recommended for future research to examine changes in grit, resilience, and career adaptability over time. Second, the study authors acknowledge the reliance solely on self-report questionnaires, which may be susceptible to social desirability bias and common method variance. Using a mixed-methods approach or triangulation of data sources in future research could enhance the validity of the findings. Future research should consider diverse cultural and institutional contexts to enhance external validity. In conclusion, the results of this study provide valuable insights into the psychological mechanisms that support students' readiness for career development and emphasize the need to cultivate grit and resilience as part of a holistic student development strategy in higher education.

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## References

- Alhadabi, A., & Karpinski, A. (2019). Grit, self-efficacy, achievement orientation goals, and academic performance in university students. *International Journal of Adolescence and Youth*, 25(5), 519–535. <https://doi.org/10.1080/02673843.2019.1679202>
- Aloba, O., Olabisi, O., & Aloba, T. (2016). The 10-item Connor–Davidson Resilience Scale: Factorial structure, reliability, validity, and correlates among student nurses in Southwestern Nigeria. *Journal of the American Psychiatric Nurses Association*, 22(1), 43–51. <https://doi.org/10.1177/1078390316629971>
- Barua, B. & Burgess, J. (2024). The role of resilience in the relationship between grit and flow: Introducing Grit Flow Questionnaire. In J. V. de Príncipe (Ed.), *Resilience of Multicultural and Multigenerational Leadership and Workplace Experience* (pp. 302–323). IGI Global. <https://doi.org/10.4018/979-8-3693-1802-7.ch014>

- Bernabé, M., Merhi, R., Lisbona, A., & Palací, F. (2024). Future work: Self and proactive career behavior-the serial mediating effect of academic passion and resilience. *Revista de Psicodidáctica*, 29(1), 39–46. <https://doi.org/10.1016/j.psicod.2023.10.002>
- Brandt, H., Henninger, M., Ulitzsch, E., Kleinke, K., & Schäfer, T. (2024). Responsible research assessment in the area of quantitative methods research: A comment on Gärtner et al. *Measurement Practice*, 8, Article 3796. <https://doi.org/10.15626/MP.2023.3796>
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087–1101. <https://doi.org/10.1037/0022-3514.92.6.1087>
- Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT–S). *Journal of Personality Assessment*, 91(2), 166–174. <https://doi.org/10.1080/00223890802634290>
- Eskreis-Winkler, L., Shulman, E. P., Beal, S. A., & Duckworth, A. L. (2014). The grit effect: Predicting retention in the military, the workplace, school and marriage. *Frontiers in Psychology*, 5, Article 36. <https://doi.org/10.3389/fpsyg.2014.00036>
- Fang, H., & Xu, X. (2025). The role of psychological resilience and career adaptability in the relationship between perceived social support and employment anxiety among college students. *Journal of Psychology in Africa*, 35(1), 151–157. <https://doi.org/10.32604/jpa.2025.065786>
- García-León, M. Á., Caparrós-González, R. A., Romero-González, B., González-Perez, R., & Peralta-Ramírez, I. (2019). Resilience as a protective factor in pregnancy and puerperium: Its relationship with psychological state and hair cortisol concentrations. *Midwifery*, 75(8), 138–145. <https://doi.org/10.1016/j.midw.2019.04.016>
- Hirschi, A., & Koen, J. (2021). Contemporary career orientations and career self-management: A review and integration. *Journal of Vocational Behavior*, 126(4), 1–18. <https://doi.org/10.1016/j.jvb.2020.103505>
- Jamaludin, N. A., Rashid, A. H. A., Siwok, S. R., & Rusbadrol, N. (2021). Hubungan antara personaliti dengan faktor pendorong pemilihan kerjaya dalam kalangan pekerja di sebuah syarikat janakuasa elektrik di Johor. *e-Bangi: Journal of Social Sciences & Humanities*, 18(8), 39–53. <https://doi.org/10.17576/ebangi-2021-1808-04>
- Karaman, M. A., Vela, J. C., & Garcia, C. (2020). Do hope and meaning of life mediate resilience and life satisfaction among Latinx students?. *British Journal of Guidance & Counselling*, 48(5), 685–696. <https://doi.org/10.1080/03069885.2020.1760206>
- Khajavy, G. H., MacIntyre, P. D., & Hariri, J. (2021). A closer look at grit and language mindset as predictors of foreign language achievement. *Studies in Second Language Acquisition*, 43(2), 379–402. <https://doi.org/10.1017/S0272263120000480>
- Kim, P., Cho, W., & Yang, I. (2024). Workplace disruption in the public sector and HRM practices to enhance employee resilience. *Review of Public Personnel Administration*, 44(1), 86–115. <https://doi.org/10.1177/0734371X221095399>
- Lee, K., & Kim, M. (2019). The effects of grit on career adaptability in college students: The mediating role of career decision-making self-efficacy. *Journal of Career Development*, 46(5), 468–482. <https://doi.org/10.1177/0894845318788262>
- Li, T., Tien, H. L. S., Gu, J., & Wang, J. (2023). The relationship between social support and career adaptability: The chain mediating role of perceived career barriers and career maturity. *International Journal for Educational and Vocational Guidance*, 23(2), 319–336. <https://doi.org/10.1007/s10775-021-09515-x>
- Mariyanti, S. (2024). *Hubungan antara regulasi emosi dengan resiliensi akademik pada siswa SMK Abdurrah Pekanbaru* [Thesis, Universitas Islam Negeri Sultan Syarif Kasim Riau]. *Institutional Repository Universitas Sultan Syarif Kasim Riau*. <http://repository.uin-suska.ac.id/id/eprint/83318>
- Masten, A. S. (2019). Resilience from a developmental systems perspective. *World Psychiatry*, 18(1), 101–102. <https://doi.org/10.1002/wps.20591>

- Mat, T. Z. T., Alias, A., Ali, M. M., & Khairuddin, K. F. (2023). Peranan sokongan sosial, kekuatan dalaman dan ketahanan diri pelajar berbakat sukan semasa pandemik COVID-19: Suatu kajian tinjauan di Malaysia. *e-Bangi: Journal of Social Sciences & Humanities*, 20(3), 1–19. <https://doi.org/10.17576/ebangi.2023.2003.05>
- Mensih, M., Ibrahim, F., & Hassan, N. (2021). Hubungan antara motivasi pencapaian, kecerdasan emosi dan ketahanan diri dalam kalangan mahasiswa kerja sosial. *e-Bangi: Journal of Social Sciences & Humanities*, 18(1), 37–48. <https://doi.org/10.17576/ebangi-2021-1801-04>
- Mustaza, M. S. A., & Kutty, F. M. (2022). The relationship between grit personality and resilience. *Creative Education*, 13(10), 3255–3269. <https://doi.org/10.4236/ce.2022.1310208>
- Orines, R., Cabana, J. M., Carlos, J. M., Fernandez, P. N., Medel, P., & Suing, M. T. (2023). Grit and resilience as predictors of subjective well-being among university student-athletes. *International Journal of Physical Education, Sports and Health*, 10(4), 7–12. <https://doi.org/10.22271/kheljournal.2023.v10.i4a.3001>
- Pang, L., Wang, X., Liu, F., Fang, T., Chen, H., & Wen, Y. (2021). The relationship between college students' resilience and career decision-making difficulties: The mediating role of career adaptability. *Psychology*, 12(6), 872–886. <https://doi.org/10.4236/psych.2021.126053>
- Park, S. (2023). Longitudinal relationships between grit, self-esteem, and academic achievement among primary school students. *School Psychology International*, 45(5), 522–544. <https://doi.org/10.1177/01430343231216973>
- Pawlak, M., Csizér, K., Kruk, M., & Zawodniak, J. (2022). Investigating grit in second language learning: The role of individual difference factors and background variables. *Language Teaching Research*, 29(5), 2093–2118. <https://doi.org/10.1177/13621688221105775>
- Priyohadi, N. D., Suhariadi, F., & Fajrianthi, F. (2019). Validity test for Short Grit Scale (Grit-S): Duckworth on Indonesian millennials. *Journal of Educational, Health and Community Psychology*, 8(3), 375–387. <https://doi.org/10.12928/jehcp.v8i3.13870>
- Putri, D. M., Santi, D. E., & Kusumandari, F. (2023). Resiliensi akademik pada mahasiswa tingkat akhir: Bagaimana peranan optimisme dan efikasi diri? *Sukma: Jurnal Penelitian Psikologi*, 4(1), 1–11. <https://doi.org/10.30996/sukma.v4i1.8874>
- Ramos-Díaz, E., Rodríguez-Fernández, A., Axpe, I., & Ferrara, M. (2019). Perceived emotional intelligence and life satisfaction among adolescent students: The mediating role of resilience. *Journal of Happiness Studies*, 19(6), 1669–1680. <https://doi.org/10.1007/s10902-018-0058-0>
- Reynardo, B. D., & Huwae, A. (2024). Resiliensi dan adaptabilitas karier pada fresh graduate. *Journal Social Library*, 4(3), 680–688. <https://doi.org/10.51849/sl.v4i3.345>
- Salim, R. M. A., Prastyo, A. S. N., Rumlatur, N. A., & Situmorang, D. D. B. (2024). Role of grit as mediator in the relationship of openness to experience and effectiveness of teachers during distance learning. *COUNS-EDU: The International Journal of Counseling and Education*, 9(4), 48–57. <https://doi.org/10.23916/0020240947630>
- Santilli, S., Grossen, S., & Nota, L. (2020). Career adaptability, resilience, and life satisfaction among Italian and Belgian middle school students. *The Career Development Quarterly*, 68(3), 194–207. <https://doi.org/10.1002/cdq.12231>
- Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, 80(3), 661–673. <https://doi.org/10.1016/j.jvb.2012.01.011>
- Savickas, M. L. (2013). Career construction theory and practice. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (2nd ed., pp. 147–183). Wiley.
- Simamora, M. R. (2024). Validity of the Indonesian version of the 10-Item Connor-Davidson Resilience Scale (CD-RISC) among first-year theological students. *ABARA: Jurnal Konseling Pastoral*, 2(1), 11–19. <https://abara.iakntarutung.ac.id/index.php/abara>
- Sudin, S. A., Kamaruddin, S. H., & Ismail, R. (2024). Daya tahan usahawan program Agropreneur Muda Terengganu berdasarkan perspektif pegawai pelaksana. *e-Bangi: Journal of Social Sciences &*

- Humanities*, 21(4), 421–436. <https://doi.org/10.17576/ebangi.2024.2104.33>
- Topino, E., Svicher, A., Di Fabio, A., & Gori, A. (2022). Satisfaction with life in workers: A chained mediation model investigating the roles of resilience, career adaptability, self-efficacy, and years of education. *Frontiers in Psychology*, 13, Article 1011093. <https://doi.org/10.3389/fpsyg.2022.1011093>
- Tang, X., Wang, M.-T., Guo, J., & Salmela-Aro, K. (2021). Building grit: The longitudinal pathways between mindset, commitment, grit, and academic outcomes. *Journal of Youth and Adolescence*, 50(5), 850–863. <https://doi.org/10.1007/s10964-020-01397-6>
- Wahyudi, F. (2022). *Hubungan locus of control dengan resiliensi pada mahasiswa UIN Suska Riau yang merantau di Pekanbaru pada masa pandemi COVID-19* [Doctoral dissertation, Universitas Islam Negeri Sultan Syarif Kasim Riau]. *Institutional Repository Universitas Islam Sultan Syarif Kasim Riau*. <http://repository.uin-suska.ac.id/id/eprint/58434>
- Wibowo, D. H., Ambarwati, K. D., & Crescenzo, P. (2020). The role of grit and parent-child communication in career adaptability. *Psikohumaniora: Jurnal Penelitian Psikologi*, 5(2), 185–196. <https://doi.org/10.21580/pjpp.v5i2.5727>
- Xu, M., Lu, H., Fu, J., Zhu, H., & Zhao, Y. (2025). The relationship between basic psychological needs satisfaction and career adaptability among university students: The roles of grit and career decision-making self-efficacy. *Behavioral Sciences*, 15(2), 1–14. <https://doi.org/10.3390/bs15020167>
- Yalcin, S. B., Carkit, E., & Kocakoglu, M. G. (2022). The mediating role of resilience between career adaptability and life satisfaction. *Journal of Teacher Education and Lifelong Learning*, 4(2), 99–109. <https://doi.org/10.51535/tell.1159130>
- Yang, L., Sin, K. F., & Savickas, M. L. (2023). Assessing factor structure and reliability of the Career Adaptability Scale in students with special educational needs. *Frontiers in Psychology*, 14, Article 1030218. <https://doi.org/10.3389/fpsyg.2023.1030218>
- Yau, O. K. T., & Shu, T. M. (2023). Why are students with a higher level of grit more engaging in learning? The mediation effect of negotiable fate on the grit–student engagement relationship in higher education during COVID-19. *Journal of Pacific Rim Psychology*, 17(4), 1–13. <https://doi.org/10.1177/18344909231171728>
- Zahari, Z., & Omar, M. K. (2021). Pendekatan kebolehsuaian kerjaya dalam kalangan pelajar kolej vokasional di Selangor. *Malaysian Journal of Social Sciences and Humanities*, 6(1), 52–60. <https://doi.org/10.47405/mjssh.v6i1.612>
- Zhai, C., Chai, X., Shrestha, S., & Zhong, N. (2023). Grit and career construction among Chinese high school students: The serial mediating effect of hope and career adaptability. *Sustainability*, 15(4), 1–11. <https://doi.org/10.3390/su15043608>
- Zhang, J., Yuen, M., & Chen, G. (2021). Career-related parental support, vocational identity, and career adaptability: Interrelationships and gender differences. *Career Development Quarterly*, 69(2), 130–144. <https://doi.org/10.1002/cdq.12254>