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RESEARCH ARTICLE

Looking Ahead and Staying the Course: Future Time Perspective and Grit as Predictors of Career Adaptability in Final-Year University Students

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Abstract: The transition from higher education to the world of work requires final-year university students to navigate career-related changes, uncertainty, and developmental demands. This study examined future time perspective and grit as predictors of career adaptability among final-year students at UIN Imam Bonjol Padang. Using a quantitative cross-sectional correlational design, the study involved 375 students recruited through purposive sampling from a population of 13,508 students. Data were collected using the Career Future Time Perspective Scale, Short Grit Scale, and Career Adapt-Abilities Scale Indonesian Form and analyzed using multiple linear regression. The results indicated that future time perspective and grit jointly predicted career adaptability, explaining 38.9% of its variance (R^2 = .389, adjusted R^2 = .385), $F(2, 372) = 118.273$, $p < .001$. Both predictors showed positive and significant associations with career adaptability. Future time perspective had an unstandardized regression coefficient of B = 0.890 (SE = 0.075) and a standardized coefficient of β = .487, $p < .001$, whereas grit had B = 0.622 (SE = 0.084) and β = .307, $p < .001$. The larger standardized coefficient for future time perspective indicates a stronger relative association with career adaptability within the regression model, although the difference between the predictors was not formally tested for statistical significance. These findings suggest that university career development services could emphasize future-oriented career planning, goal setting, and exploration of alternative career pathways while also supporting perseverance in pursuing long-term goals.

Keywords: career adaptability, future time perspective, grit, final year students, career transition

Abstrak. Transisi dari pendidikan tinggi ke dunia kerja menuntut mahasiswa tingkat akhir untuk menghadapi perubahan karier, ketidakpastian, dan berbagai tuntutan perkembangan. Penelitian ini bertujuan untuk menguji future time perspective dan grit sebagai prediktor career adaptability pada mahasiswa tingkat akhir di UIN Imam Bonjol Padang. Penelitian ini menggunakan pendekatan kuantitatif dengan desain korelasional cross-sectional yang melibatkan 375 mahasiswa, yang dipilih melalui teknik purposive sampling dari populasi sebanyak 13.508 mahasiswa. Data dikumpulkan menggunakan Career Future Time Perspective Scale, Short Grit Scale, dan Career Adapt-Abilities Scale Indonesian Form, kemudian dianalisis menggunakan regresi linear berganda. Hasil penelitian menunjukkan bahwa future time perspective dan grit secara simultan memprediksi career adaptability dengan menjelaskan 38,9% variansnya (R^2 = 0,389; adjusted R^2 = 0,385), $F(2, 372) = 118,273$, $p < 0,001$. Kedua prediktor menunjukkan hubungan positif dan signifikan dengan career adaptability. Future time perspective memiliki koefisien regresi tidak terstandarisasi sebesar B = 0,890 (SE = 0,075) dan koefisien terstandarisasi sebesar β = 0,487, $p < 0,001$. Sementara itu, grit memiliki koefisien regresi tidak terstandarisasi sebesar B = 0,622 (SE = 0,084) dan koefisien terstandarisasi sebesar β = 0,307, $p < 0,001$. Koefisien terstandarisasi yang lebih besar pada future time perspective menunjukkan hubungan relatif yang lebih kuat dengan career adaptability dalam model regresi yang digunakan, meskipun perbedaan antara kedua prediktor tersebut tidak diuji secara langsung untuk menentukan signifikansi statistiknya. Temuan ini menunjukkan bahwa layanan pengembangan karier di perguruan tinggi dapat menekankan perencanaan karier berorientasi masa depan, penetapan tujuan, dan eksplorasi jalur karier alternatif, sekaligus mendukung ketekunan mahasiswa dalam mencapai tujuan jangka panjang.

Kata kunci: career adaptability, perspektif waktu masa depan, grit, mahasiswa tingkat terakhir, transisi karier

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INTRODUCTION

Universities play a crucial role in preparing students not only to achieve academic competence but also to navigate the transition to the workforce. This transition becomes even more pronounced as students enter the final stages of their education (Thompson et al., 2021). In this phase, students begin to face various career development tasks, such as determining career choices, evaluating their competencies, seeking information about job opportunities, preparing for the recruitment process, and planning their career direction after completing their education (Azhenov et al., 2023). These various demands place final year students in a period that requires readiness to transition from a relatively structured educational environment to a more dynamic and less predictable world of work (Blokker et al., 2025). The need for such preparedness is becoming increasingly crucial as the transition from higher education to the world of work takes place amidst changing global job characteristics. Technological advancements, digitalization, automation, artificial intelligence, changes in organizational structures, and shifting skills requirements have transformed the types of jobs and competencies required by organizations. World Economic Forum (2025) projects that labor-market transformation will result in job creation and displacement equivalent to approximately 22% of current jobs by 2030. The report also estimates that 39% of workers' core skills may change or become outdated between 2025 and 2030. These projections illustrate the changing demands of the labor market that prospective graduates may encounter when preparing to enter the workforce.

The transition from education to work is also problematic internationally. The International Labour Organization reported that 64.9 million young people aged 15–24 were unemployed in 2023, corresponding to a youth unemployment rate of 13%. The ILO also estimated that approximately 20% of young people in this age group were not in employment, education, or training (NEET) (ILO, 2024). These statistics describe employment and educational participation among the broader youth population rather than career adaptability among final-year university students. Nevertheless, they provide a broader context for understanding the challenges young people may encounter during the transition from education to employment (Sikubwabo et al., 2024). These challenges involve not only securing a first job but also finding suitable employment, maintaining relevant competencies, and adapting to changing labor market demands. Individuals entering the workforce may encounter a mismatch between their educational background and available jobs, competition in recruitment, changing competency requirements, and uncertainty about whether their career plans will be realized as expected (Sun & Bunengi, 2025). Consequently, students approaching graduation need psychological resources that enable them to navigate change, reevaluate available options, and flexibly adjust their career plans as they prepare to enter the workforce.

Similar problems are found in Indonesia. According to Statistics Indonesia (BPS) (2026) 19.44% of young people aged 15–24 in Indonesia were not in employment, education, or training (NEET) in 2025. In West Sumatra, the corresponding proportion was 18.42%. These figures describe the employment, education, and training status of the broader youth population rather than career adaptability among final-year university students. In addition, a BPS report on education–employment mismatch among Indonesian youth found that the youth unemployment rate was more than twice the national rate and that more than one-third of employed young people experienced vertical mismatch, referring to a discrepancy between their educational attainment and their employment circumstances. The report also indicated that young people with higher levels of education tended to take longer to obtain employment (BPS, 2025). These findings highlight challenges in the transition from education to employment, although they do not directly measure university students' career adaptability. Final-year students may need to prepare for limited employment opportunities relevant to their field of study, changing competency requirements, recruitment competition, and the possibility of entering a field different from the one they initially planned to pursue (Fernandes & Rawatlal, 2024). Addressing these challenges may require psychological resources that enable students to respond to change, evaluate alternatives, and adjust their career plans when circumstances differ from their expectations (Gao et al., 2025).

Problems with readiness to face the world of work were also found among final year students at UIN Imam Bonjol Padang . Situmorang (2022) conducted a study of 340 final-year students from a population of 2,231 final-year students at UIN Imam Bonjol Padang. Among students without organizational experience, the highest level of readiness to face the world of work was in the low category, namely 43% or 73 out of 170 students. Conversely, among students with organizational experience, the most common category was high work readiness, namely 35% or 60 out of 170 students. The study also found significant differences in readiness to face the world of work based on organizational experience. These findings indicate that readiness to face the transition to the world of work has not developed evenly among final-year students at UIN Imam Bonjol Padang. Although work readiness and career adaptability are different constructs, this condition suggests that some final-year students still need psychological resources to face the education-work transition (Rahma & Mulyana, 2025). Students not only need to prepare competencies to obtain employment, but must also be able to anticipate change, consider various alternatives, make decisions when faced with uncertainty, and adjust plans if their desired career choices cannot be realized (Kwok, 2018). Psychosocial resources to face developmental tasks, transitions, and changes in career are known as career adaptability.

Career adaptability is a psychosocial resource that helps individuals deal with career development tasks, job transitions, and various unexpected changes and conditions in work life (Savickas & Porfeli, 2012). In Career Construction Theory, career adaptability describes the resources individuals use to manage the process of adjusting to the demands of career development (Haenggli & Hirschi, 2023). Savickas and Porfeli (2012) explains four dimensions of career adaptability: concern, control, curiosity, and confidence. Concern relates to attention and preparation for a future career; control reflects an individual's responsibility for their career choices and development; curiosity reflects exploration of various possibilities for themselves and their environment; while confidence indicates an individual's confidence in facing and completing career tasks and obstacles (Cristy & Kurniawati, 2023).

One of the psychological factors that is thought to be related to career adaptability is future time perspective (Diaconu-Gherasim et al., 2024). Future time perspective describes how individuals represent the future and connect current actions with the consequences and goals they wish to achieve in the future (Sun et al., 2023). Hilpert et al., (2012) He proposed four components of future time perspective: extension, speed, connectedness, and value. Extension relates to the future time span that an individual can imagine, speed relates to the perception of how quickly

or slowly time passes, connectedness describes the relationship between current behavior and future consequences, and value relates to the value placed on future goals or outcomes (Husman & Shell, 2008; Park et al., 2021). For final-year students, future-time perspective plays a crucial role because the future of work is rapidly approaching. Students need to understand that the activities they undertake during their final years of education have consequences for their career development after graduation (Kurniawati, 2021).The ability to connect current activities with future goals can encourage students to seek job information, improve competencies, gain relevant experience, and consider various career options. Conversely, students who are unable to see the connection between current and future activities may have difficulty determining priorities and directing their development toward specific career goals (Husman et al., 2025; Jia et al., 2022).

Previous research shows that future time perspective has a consistent relationship with career adaptability. Boo et al. (2021), through a cross-national study of college students in China and the United States, found that career adaptability was positively related to future time perspective, indicating that students with better career adaptability resources tend to have a stronger orientation toward the future. Similar results were found by Ling et al., (2022) A study of 423 college students in China showed a positive correlation between future time perspective and career adaptability. The study also found that future time perspective acts as a psychological mechanism linking proactive personality to career adaptability. In the Indonesian context, Medellu and Fadhilah (2022) conducted a study of 283 final-year students in Jakarta and found that future time perspective significantly predicted career adaptability. Perceptions of future opportunities contributed positively, while perceptions of future time constraints contributed negatively.

More recent findings were obtained Diaconu-Gherasim et al., (2024) Through a study of 483 college students, it was shown that the connectedness and extension dimensions of future time perspective were positively related to career adaptability, while the speed dimension was negatively related. These findings suggest that students' ability to envision the future, connect current activities with future goals, and see opportunities in the future is associated with better ability to cope with career demands and changes. However, the ability to envision the future is not necessarily sufficient to ensure that students are able to maintain efforts when facing obstacles in achieving career goals. Therefore, in addition to future time perspective, psychological resources related to persistence in maintaining efforts towards long-term goals are needed, namely grit. Duckworth et al., (2007) Grit is defined as persistence and consistency in pursuing long-term goals. Grit describes an individual's ability to maintain effort and commitment despite facing failure, obstacles, or the long-term process of achieving goals (Muhibbin & Wulandari, 2021). Individuals with high grit not only demonstrate intense effort at one point in time, but are also able to maintain direction and effort toward goals they deem important. This characteristic is relevant in career development because achieving career goals often requires a long process and does not always go according to plan (Duckworth, 2016). In the context of final-year college students, grit can help individuals maintain their efforts during the transition to the workforce. Students with high grit tend to persist in improving their competencies, exploring career paths, participating in recruitment processes, and refining their strategies after facing setbacks. Conversely, students who struggle to maintain their efforts may more easily abandon their career search and development when faced with obstacles (Woodward et al., 2026). Thus, grit has the potential to be a personal resource that supports students' ability to respond to career demands and changes.

The relationship between grit and career adaptability has received empirical support in a variety of educational and cultural contexts. Gregor et al., (2021) showed that grit is a personal resource that contributes to career adaptability in community college students in the United States. Similar findings were obtained. Li et al., (2021) Through a study of 839 college students in China, which showed that grit positively predicted career adaptability. This relationship also involved several self-regulatory processes, such as career exploration, career decision self-efficacy, positive affect, and goal commitment. Then, the study Zhai et al., (2023) found that grit contributes positively to career adaptability in students and plays a role in explaining the career adaptation process. Furthermore, Çarkıt (2024) showed that grit was a significant predictor of career adaptability in students in Turkey ($B = 0.71$, $p < 0.001$). The consistency of these findings was also seen in the Indonesian context. Andini et al., (2025) found a significant positive relationship between grit and career adaptability in fresh graduates of UIN Imam Bonjol Padang, indicating that individuals with higher levels of grit tend to have better career adaptability. Overall, the results of this cross-national study show a consistent pattern that persistence and consistency in maintaining long-term goals are important personal resources in supporting an individual's ability to deal with change, uncertainty, and various demands during the career development process.

Various previous studies have examined the relationship between future time perspective and career adaptability, as well as between grit and career adaptability. However, these two predictors have generally been examined separately. Although some studies have incorporated future time perspective, grit, and career adaptability into a single model, grit has often been positioned as a mediator rather than as an independent predictor. Consequently, the simultaneous predictive contributions of future time perspective and grit to career adaptability remain insufficiently explored. This gap warrants further investigation because the two constructs represent distinct but potentially complementary psychological resources. Future time perspective reflects students' ability to envision and plan for the future and to connect present actions with future goals, whereas grit reflects perseverance and consistency of effort in pursuing long-term goals. Both resources may be particularly relevant for final-year students navigating the transition from higher education to the workforce, a period characterized by change, uncertainty, and increasing career-development demands. This research gap is also relevant in the context of UIN Imam Bonjol Padang. Previous studies at the university have primarily examined work readiness and the relationship between grit and career adaptability among fresh graduates, while research examining future time perspective and grit simultaneously as predictors of career adaptability among final-year students remains limited. Accordingly, this study aims to examine the simultaneous and individual contributions of future time perspective and grit to career adaptability among final-year students at UIN Imam Bonjol Padang. Based on the theoretical framework and previous empirical findings, three hypotheses are proposed. The major hypothesis (H1) states that future time perspective and grit simultaneously and positively predict career adaptability. The first minor hypothesis (H2) proposes that future time perspective positively predicts

career adaptability, while the second minor hypothesis (H3) proposes that grit positively predicts career adaptability.

METHODS

Research Design

This study employed a quantitative approach with a cross-sectional correlational design. This design was used to test the predictive role of future time perspective and grit on career adaptability in final-year students at a single measurement point without manipulating the research variables (Spector, 2019). Cross-sectional design allows all research data to be collected in one research period so that it can provide an empirical picture of the relationship between variables according to the conditions of the participants at the time the research was conducted.

Participants and Data Collection Procedure

The population comprised 13,508 active students at UIN Imam Bonjol Padang. The initial target sample size was determined with reference to the sample size table developed by Krejcie and Morgan (1970). Participants were recruited using non-probability purposive sampling based on predefined eligibility criteria. Eligible participants were active undergraduate students enrolled in semester 8 or above. No predetermined faculty-specific quotas were applied. Therefore, the number of participants recruited from each faculty reflected the distribution of eligible students who participated in the study rather than a proportionally allocated faculty quota. A total of 375 students participated in the study. Data were collected from February to June 2026 through questionnaires distributed directly to eligible participants. The questionnaire collected demographic information, including participants′ initials, age, faculty, and gender. Before completing the questionnaire, participants were informed about the study′s purpose and the voluntary nature of their participation. Informed consent was obtained through a consent statement on the first page of the questionnaire. Participants were also informed of their right to withdraw from the study without penalty. To protect confidentiality, full names were not collected, access to the research data was restricted to the researcher, and findings were reported in aggregate form to prevent the identification of individual participants. The data were used solely for research purposes.

Instruments

Future Time Perspective

Future time perspective was measured using a modified version of the Career Future Time Perspective Scale (CFTP) by Park et al., (2021) based on the theoretical framework of Husman and Shell (2008). The instrument consists of 9 items covering three dimensions: opportunity, value, and connectedness. All items were formulated in a favorable direction and rated using a five-point Likert scale, ranging from 1 (strongly unsuitable) to 5 (strongly suitable). The modifications were made to standardize the response format and adapt the instrument to the context of university students. An example item is, "My future career is more important to me than my current career." Item scores were summed, with higher scores indicating a more positive future time perspective. No reverse scoring was applied because all items were formulated in a favorable direction. Content validity was assessed using Gregory formula, yielding a coefficient of 0.933. The overall Cronbach′s alpha was 0.887. At the dimension level, Cronbach alpha coefficients were 0.82 for opportunity, 0.85 for value, and 0.79 for connectedness.

Grit

Grit was measured using a modified version of the Short Grit Scale (Grit-S), drawing on the Indonesian version examined by Priyohadi et al., (2019) and the conceptualization proposed by Duckworth et al., (2007). The instrument consists of 8 items covering two dimensions: perseverance of effort and consistency of interest. All items were formulated in a favorable direction and rated using a five-point Likert scale, ranging from 1 (strongly unsuitable) to 5 (strongly suitable). The modifications were made to standardize the response format, adapt the instrument to the context of university students, and align the direction of item scoring. An example item is, "I finish what I started." Item scores were summed, with higher scores indicating greater grit. No reverse scoring was applied to the modified version because the items were formulated in a favorable direction. Content validity was assessed using Gregory formula, yielding a coefficient of 0.933. The overall Cronbach′s alpha was 0.887. At the dimensional level, Cronbach alpha coefficients were 0.84 for persistence in effort and 0.76 for consistency of interest, respectively (Duckworth & Quinn, 2009).

Career Adaptability

Career adaptability was measured using a modified version of the Career Adapt-Abilities Scale Indonesian Form (CAAS-Indonesian Form), drawing on the instrument reported by Sulistiani et al., (2018) and the theoretical framework proposed by Savickas and Porfeli (2012). The instrument consists of 24 items covering four dimensions: career concern, career control, career curiosity, and career confidence. All items were rated using a five-point Likert scale, ranging from 1 (strongly unsuitable) to 5 (strongly suitable). The modifications were made to standardize the response format and adapt the instrument to the context of university students. An example item is, "Thinking about what my future will be like." Item scores were summed, with higher scores indicating greater career adaptability. No reverse scoring was applied because all items were formulated in a favorable direction. Content validity was evaluated using Gregory formula, yielding a coefficient of 0.894, while internal consistency assessed using Cronbach alpha yielded a coefficient of 0.871. At the dimension level, Cronbach alpha coefficients were 0.86 for concern, 0.81 for control, 0.83 for curiosity, and 0.88 for confidence.

Data analysis

This study uses quantitative data analyzed using statistical methods using IBM SPSS Statistics version 27. Normality tests were conducted on the residuals of the regression model to determine whether the residuals were normally distributed, with the criteria that the data met the normality assumption if the p value > 0.05 (Khatun, 2021). Multicollinearity test was conducted using tolerance value and Variance Inflation Factor (VIF) to identify the existence of excessively high correlation between future time perspective and grit as predictor variables, with VIF value > 10 indicating high multicollinearity (Alita et al., 2021). The heteroscedasticity test is used to evaluate the equality of residual variances in the regression model to ensure that the model does not experience heteroscedasticity problems (Rogers et al., 2020). Hypothesis testing was conducted

using multiple linear regression analysis to examine the role of future time perspective and grit as predictors of career adaptability. The regression model was evaluated based on the regression coefficient, coefficient of determination (R^2), F value, and a significance level of $p < 0.05$. The coefficient of determination is used to indicate the proportion of career adaptability variation that can be explained simultaneously by future time perspective and grit.

RESULTS OF STUDY

The characteristics of the participants in this study are described based on faculty, age, and gender. This description is used to provide an overview of the participant profiles involved in the study. Overall, the study involved 375 final-year students at UIN Imam Bonjol Padang. The distribution of participant characteristics is presented in Table 1.

Based on Table 1, the largest number of participants came from the Faculty of Tarbiyah and Teacher Training (105 students, 28.0%), followed by the Faculty of Ushuluddin and Religious Studies (80 students, 21.3%) and the Faculty of Islamic Economics and Business (75 students, 20.0%). Regarding age, the majority of participants were 22 years old (120 students, 32.0%), followed by those aged 23 years (105 students, 28.0%). In terms of gender, the majority of participants were women (255 students, 68.0%). Regarding academic semester, most participants were enrolled in semester 8 (225 students, 60.0%), followed by semester 9 (75 students, 20.0%), semester 10 (45 students, 12.0%), and semester 11 or above (30 students, 8.0%). Furthermore, hypothetical and empirical descriptive statistics can be seen in Table 2.

Based on Table 2, the Future Time Perspective scale has an empirical mean of 26.46, which is lower than the hypothetical mean of 27.00. The Grit scale has an empirical mean of 23.81, which is slightly lower than the hypothetical mean of 24.00. Meanwhile, the Career Adaptability scale has an empirical mean of 72.42, which is higher than the hypothetical mean of 72.00. Furthermore, categorization variables can be seen in Table 3.

Table 1. Demographic Characteristics of Participants (N = 375)

Characteristic/Category	n (%)
Mean	22.88
Standard deviation	1.28
Age	
21 years	45 (12.0)
22 years	120 (32.0)
23 years	105 (28.0)
24 years	60 (16.0)
25 years	30 (8.0)
26 years	15 (4.0)
Gender	
Men	120 (32.0)
Women	255 (68.0)
Academic semester	
Semester 8	225 (60.0)
Semester 9	75 (20.0)
Semester 10	45 (12.0)
Semester 11 or above	30 (8.0)
Faculty	
Tarbiyah and Teacher Training	105 (28.0)
Ushuluddin and Religious Studies	80 (21.3)
Islamic Economics and Business	75 (20.0)
Da'wah and Communication Sciences	35 (9.3)
Faculty of Sharia	30 (8.0)
Faculty of Science and Technology	25 (6.7)
Faculty of Adab and Humanities	25 (6.7)

Table 2. Hypothetical and Empirical Descriptive Statistics

Data	Variabel	Frequency	Range	Min	Max	SD	Mean
Hypothetical	Future Time Perspective	375	36	9	45	6.00	27.00
	Grit	375	32	8	40	5.33	24.00
	Career Adaptability	375	96	24	120	16.00	72.00
Empirical	Future Time Perspective	375	35	10	45	7.656	26.46
	Grit	375	31	8	39	6.897	23.81
	Career Adaptability	375	81	32	113	13.987	72.42

Table 3. Categorization of Research Variables

Variables	Category	Score Range	Frequency	Percentage (%)
Future Time Perspective	Very high	36 < X	96	25.6%
	High	30 < X < 36	170	45.3%
	Moderate	24 < X < 30	79	21.1%
	Low	18 < X < 24	24	6.4%
	Very Low	X < 18	6	1.6%
Grit	Very high	32 < X	82	21.9%
	High	26.67 < X < 32	176	46.9%
	Moderate	21.33 < X < 26.67	88	23.5%
	Low	16 < X < 21.33	24	6.4%
	Very Low	X < 16	5	1.3%
Career Adaptability	Very high	96 < X	112	29.9%
	High	80 < X < 96	168	44.8%
	Moderate	64 < X < 80	72	19.2%
	Low	48 < X < 64	18	4.8%
	Very Low	X < 48	5	1.3%

Based on Table 3, the score distribution shows that the majority of participants' future time perspectives were in the high category, with 170 participants (45.3%), followed by the very high category with 96 participants (25.6%). For the grit variable, the high category was also the most dominant, with 176 participants (46.9%), while 82 participants (21.9%) were in the very high category. A similar pattern was found for career adaptability, with 168 participants (44.8%) in the high category and 112 participants (29.9%) in the very high category. These findings indicate that descriptively, the majority of participants had a high level of future time perspective, grit, and career adaptability. Furthermore, the results of the prerequisite test can be seen in Table 4 and Figure 1. Normal Q-Q Plot of Unstandardized Regression Residuals.

In addition to the Kolmogorov–Smirnov test, the normality of the regression residuals was examined visually using a Normal Q-Q Plot. This graphical assessment was conducted to evaluate the extent to which the observed residuals followed the expected normal distribution. The results of this assessment are presented in Figure 1.

Based on Table 4, the Kolmogorov–Smirnov test indicated that the regression residuals were normally distributed ($p = 0.932 > 0.05$). This finding was supported by the visual inspection of the Normal Q–Q Plot in Figure 1, which showed that most residual points were distributed close to the diagonal reference line. The linearity tests revealed significant linear components for both future time perspective ($F = 166.400$; $p < 0.001$) and grit ($F = 73.941$; $p < 0.001$) in relation to career adaptability. Furthermore, the multicollinearity test yielded tolerance values of 0.963 and VIF values of 1.039 for both predictor variables, indicating no evidence of multicollinearity. The Glejser tests also showed no significant evidence of heteroscedasticity for future time perspective ($p = 0.746$) or grit ($p = 0.341$). Overall, these results support the assumptions of normality and the absence of multicollinearity and significant heteroscedasticity. However, the linearity assumption should be further confirmed by examining the Deviation from Linearity results and the patterns of relationships between the variables.

Multiple linear regression analysis was conducted to examine the role of future time perspective and grit as predictors of career adaptability. The analysis was conducted simultaneously using an F-test and partially using a t-test. The results of the multiple linear regression analysis are presented in Table 5.

Table 4. Consolidated Results of Assumption Testing

Test	Variable	Value(s)	Criteria	Conclusion
Normality (KS test)	Residuals (Future Time Perspective and Grit*Career Adaptability)	$p = 0.932$	$p > 0.05$	Normal distribution
Linearitas	Future Time Perspective	$F = 166.400$; $p < 0.001$	$p < 0.05$	Significant linear component
	Grit	$F = 73.941$; $p < 0.001$	$p < 0.05$	Significant linear component
Multicollinearity	Future Time Perspective	Tolerance = 0.963; VIF = 1.039	Tolerance > 0.10; VIF < 10	No multicollinearity
	Grit	Tolerance = 0.963; VIF = 1.039	Tolerance > 0.10; VIF < 10	No multicollinearity
Heteroscedasticity (Glejser)	Future Time Perspective	$p = 0.746$	$p > 0.05$	No heteroscedasticity
	Grit	$p = 0.341$	$p > 0.05$	No heteroscedasticity

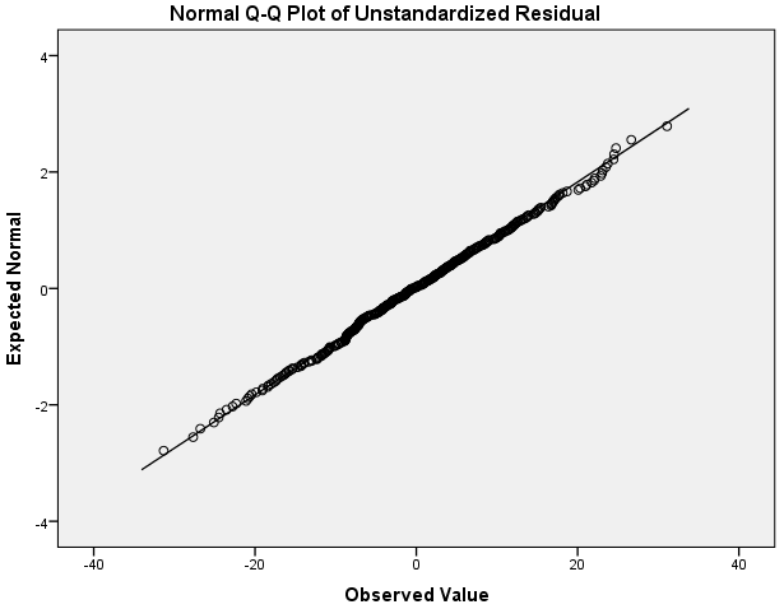


Figure 1. Normal Q–Q Plot of Unstandardized Regression Residuals

Based on Table 5, the multiple linear regression model was statistically significant, $F(2, 372) = 118.273$, $p < .001$, indicating that future time perspective and grit jointly predicted career adaptability. The coefficient of determination (R^2) was 0.389, indicating that the two predictors jointly explained 38.9% of the variance in career adaptability, while the remaining 61.1% was attributable to other factors not included in the model. The adjusted R^2 was 0.385, indicating that the model explained approximately 38.5% of the variance after adjustment for the number of predictors. Furthermore, a t-test was conducted to analyze the contribution of each predictor variable to career adaptability, with the results presented in Table 6.

Based on Table 6, future time perspective was positively and significantly associated with career adaptability ($B = 0.890$, $SE = 0.075$, $\beta = 0.487$, $t = 11.789$, $p < .001$, 95% CI [0.741, 1.038]). The confidence interval did not include zero, supporting a positive association between future time perspective and career adaptability after controlling for grit. Therefore, the first minor hypothesis was supported. Grit was also positively and significantly associated with career adaptability ($B = 0.622$, $SE = 0.084$, $\beta = 0.307$, $t = 7.419$, $p < .001$, 95% CI [0.457, 0.786]). The confidence interval also did not include zero, indicating a positive association between grit and career adaptability after controlling for future time perspective. Therefore, the second minor hypothesis was supported. Taken together, these findings indicate that both future time perspective and grit were significant positive predictors of career adaptability, with future time perspective showing a stronger relative contribution based on its standardized regression coefficient. To further examine the relative contribution of each predictor, the effective contribution of each variable to career adaptability was calculated by multiplying its standardized regression coefficient (β) by its zero-order correlation coefficient (r). The results of these calculations are presented in Table 7.

Based on Table 7, the effective contribution of each predictor was calculated by multiplying its standardized regression coefficient (β) by its zero-order correlation coefficient (r) with career adaptability. Future time perspective had an effective contribution of 26.6%, whereas grit had an effective contribution of 12.3%. Together, these contributions accounted for 38.9% of the variance in career adaptability, consistent with the coefficient of determination ($R^2 = 0.389$). These effective contributions represent the respective contributions of the predictors to the model's explained variance and should be distinguished from their unique contributions, which can be assessed using squared semipartial correlations. Descriptively, future time perspective showed a greater effective contribution than grit among final-year students at UIN Imam Bonjol Padang. However, this difference does not establish a statistically significant difference between the two predictors.

DISCUSSION

The results of the study show that the future time perspective of final year students tends to be in the high category. Husman and Shell (2008) explains that future time perspective relates to how individuals represent the future and connect current behavior to desired goals. This situation illustrates that final-year students have relatively good abilities in viewing their career futures, recognizing available opportunities, valuing long-term goals, and understanding the consequences of current activities. Park et al., (2021) emphasizes that in a career context, perceptions of future opportunities, the value of a goal, and the connection between current actions and future outcomes are important components that guide individual behavior. In the final stages of college, the future career becomes more concrete so that students begin to position academic activities and self-development as part of their preparation for life after completing their education (Sun et al., 2023).

Table 5. Results of the Multiple Linear Regression Model

Model	R	R^2	Adjusted R^2	F	*p*
Regression	0.623	0.389	0.385	118.273	< .001

Table 6. Results of Multiple Linear Regression t-Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	34.081	2.598		13.119	000	28.973	39.190
Future Time Perspective	.890	.075	.487	11.789	.000	.741	1.038
Grit	.622	.084	.307	7.419	.000	.457	.786

Table 7. Effective Contribution of Predictor Variables

Variables	Regression Coefficient (β)	Correlation Coefficient (r)	Effective Contribution (%)
Future Time Perspective	0.487	0.546	26.6
Grit	0.307	0.400	12.3
Total			38.9

The high future time perspective can be understood as a form of cognitive and motivational orientation development as students get closer to the transition to the world of work. Jia et al. (2022) Research shows that future orientation is related to the career construction process because future vision helps individuals organize current decisions and behaviors. Students who can imagine themselves in the future tend to more easily form goals, determine priorities, and assess whether current activities support the achievement of those goals. Ling et al. (2022) also explains that self-representation in the future can encourage individuals to take various actions that support career development. When students understand the connection between current decisions and life after graduation, they have a stronger psychological reason to seek information, develop competencies, and prepare for various career alternatives (Husman et al., 2025).

The research results also show that the grit of final year students tends to be high. Duckworth et al. (2007) defines grit as the ability to maintain persistence and consistency toward long-term goals despite facing various difficulties along the way. For final-year students, this characteristic becomes relevant because the transition to the workforce can involve uncertainty, competition, rejection, and changes in plans. Duckworth (2016) Individuals with grit not only demonstrate strong effort at one point in time, but are also able to sustain engagement with goals they deem important over the long term. Students with high grit are therefore more likely to persist and adapt their strategies when faced with obstacles in their education or career preparation (Muhibbin & Wulandari, 2021).

Psychologically, grit plays a role in maintaining the continuity of behavior when the expected results are not immediately obtained. Li et al. (2021) Studies have shown that grit is associated with various self-regulatory processes in career development, including career exploration, career decision self-efficacy, positive affect, and goal commitment. Students with high grit are not only able to initiate efforts toward career goals but also tend to maintain engagement when the process takes time or results in failure. Gregor et al., (2021) positions grit as a personal resource that helps individuals stay engaged in the career development process. This perseverance allows students to evaluate strategies, improve skills, try again, and explore alternatives without immediately abandoning their long-term goals (Woodward et al., 2026).

The career adaptability of final year students in this study also tends to be high. Savickas and Porfeli (2012) Career adaptability is defined as the psychosocial resources individuals use to cope with developmental tasks, transitions, and changes associated with career life. This condition is reflected in the ability to pay attention to the future (concern), take responsibility for career choices (control), explore various possibilities (curiosity), and have confidence in facing obstacles (confidence). Haenggli and Hirschi (2023) explains that these adaptive resources become important when individuals are in a career environment that is full of change and not entirely predictable. In final-year students, high career adaptability indicates psychological readiness to face the transition to the world of work through the ability to anticipate change, evaluate options, and adjust the direction of career development (Cristy & Kurniawati, 2023).

The findings indicate that future time perspective was positively associated with career adaptability among final-year students at UIN Imam Bonjol Padang. Its standardized regression coefficient (β = 0.487) indicates a positive association with career adaptability after controlling for grit. This coefficient also suggests that future time perspective had a stronger relative association with career adaptability than grit within the regression model. These findings are consistent with previous research suggesting that a future-oriented perspective helps individuals connect present activities with long-term career goals (Boo et al., 2021; Madellu & Fadhilah, 2022). Providing guidance on goal-setting, prioritization, and career planning, a future-oriented perspective can help students prepare for career-related transitions and challenges (Diaconu-Gherasim et al., 2024).

The relationship between future time perspective and career adaptability can be explained through the dynamics of career adaptation resources. Savickas and Porfeli (2012) explains that career concern develops when individuals begin to pay attention to and prepare for the future. Students who can envision life after graduation are more motivated to prepare while still in college. Understanding the consequences of current actions can also strengthen career control, as students increasingly recognize that their decisions and behaviors play a role in shaping their career development. Li and Lee (2023) shows that the connection between the present and the future is an important aspect in encouraging goal-oriented behavior. Perspectives on various future opportunities can also encourage career curiosity and gradually increase career confidence through the process of exploration and experience facing various career tasks (Jia et al., 2022).

The connectedness aspect provides further explanation regarding the dynamics of the relationship. According to Husman and Shell (2008) Individuals with a strong sense of future connectedness are able to see that present-day activities have consequences for achieving long-term goals. In final-year students, this understanding can lead to activities such as improving skills, pursuing professional experience, seeking job information, or preparing for the selection process being viewed as investments in one's career life. Park et al. (2021) explains that the stronger the connection between current behavior and future goals, the more likely an individual is to value activities that support the achievement of those goals. This process can encourage students to transform abstract visions of the future into more concrete and adaptive career preparation actions (Diaconu-Gherasim et al., 2024).

Grit was also positively associated with career adaptability among final-year students at UIN Imam Bonjol Padang. Its standardized regression coefficient (β = 0.307) indicates a positive association with career adaptability after controlling for future time perspective. Although the coefficient was smaller than that of future time perspective (β = 0.487), grit remained a relevant predictor in the regression model. This finding is consistent with previous research indicating that perseverance and sustained commitment to long-term goals are associated with career development and adaptability (Gregor et al., 2021; Li et al., 2021). Grit may help students maintain their efforts when facing career-related obstacles, while adjusting their strategies in response to changing circumstances (Zhai et al., 2023).

The dynamics of grit towards career adaptability can be understood through how students respond to obstacles. Duckworth et al. (2007) emphasizes that individuals with grit are able to maintain their efforts toward goals despite facing failure and a long process of achieving them. When initial strategies don't produce the desired results, students with strong grit tend to evaluate, improve their skills, seek alternatives, and try again rather than immediately abandoning their goals. Li et al. (2021) This process is linked to self-regulatory skills that support the development of career adaptability. Persistence, then, is not simply

persisting with the same methods, but maintaining commitment to goals while adapting strategies based on changing circumstances. This pattern supports control, curiosity, and confidence, which are important resources for career adaptability (Zhai et al., 2023).

The regression analysis showed that future time perspective and grit jointly explained 38.9% of the variance in career adaptability ($R^2 = 0.389$; adjusted $R^2 = 0.385$), and the overall model was statistically significant, $F(2, 372) = 118.273$, $p < .001$. These results indicate that the two predictors accounted for a proportion of the variation in career adaptability within the study sample. The remaining 61.1% of the variance was unexplained by the model and may reflect unmeasured factors, measurement error, and other sources of variability. The adjusted R^2 of 0.385 indicates that the model explained approximately 38.5% of the variance after accounting for the number of predictors. Although these results demonstrate the model explanatory performance within the current sample, they do not establish its predictive accuracy in new samples. Because out-of-sample prediction was not evaluated, further research using independent samples or cross-validation is needed to assess the model generalizability and predictive performance.

Beyond the statistical findings, future time perspective and grit may serve complementary functions in students' career development. Future time perspective helps students envision their desired futures and understand how present activities relate to long-term goals, whereas grit may help them sustain their efforts when pursuing those goals becomes challenging. This interpretation is consistent with Diaconu-Gherasim et al. (2024) who discussed the relationship between future perspective, grit, and career adaptability in students' career development. Similarly, Zhai et al. (2023) highlighted the relevance of persistence in the career construction process, in which individuals work toward future goals while navigating challenges and change. These complementary functions can be understood within Career Construction Theory, which conceptualizes career adaptation in terms of the psychosocial resources individuals use to manage career-related tasks, transitions, and changes (Savickas & Porfeli, 2012).

Psychologically, future time perspective can be understood as a resource that provides direction, while grit provides resilience to the process of achieving goals. Husman & Shell (2008) explains that a future perspective allows individuals to connect current actions with long-term goals, thus giving behavior a clearer direction. Students who understand their career goals can prioritize and choose relevant actions, but clarity of goals does not guarantee that the process of achieving them will be smooth. In such conditions, grit maintains continuity of effort when results are not immediately obtained. Duckworth et al. (2007) define perseverance as the ability to maintain commitment amidst various obstacles. The synergy between future direction and perseverance allows students to remain goal-oriented without losing the ability to maintain effort during the career adjustment process (Park et al., 2021).

The simultaneous relationship between the two predictors and career adaptability can also be explained through Career Construction Theory. Savickas and Porfeli (2012) views career adaptation as an active process in which individuals use psychosocial resources to respond to developmental tasks and changes. A future perspective helps students develop concerns about anticipating life after graduation and fosters control through the awareness of their responsibility for their career development. Haenggli and Hirschi (2023) emphasizes that adaptation requires an individual's ability to actively manage change, rather than simply react to environmental conditions. Grit then helps students maintain the process of exploration and adaptive action when obstacles arise, allowing curiosity and confidence to continue to grow. The integration of these various resources forms the basis for individuals to remain adaptive in the face of career change (Li et al., 2021).

The role of future time perspective and grit becomes even more important when placed in the context of students' transition to the world of work. Kwok (2018) explains that the transition from education to work is marked by uncertainty, requiring individuals to manage various career development possibilities. Plans developed during college cannot always be realized immediately because students may face competition, changing skill needs, or jobs that do not align with their initial choices. Fernandes and Rawatlal (2024) Research shows that students' career decision-making processes are influenced by various conditions that can change career choices during the transition process. In such circumstances, students need the ability to maintain long-term goals without becoming rigid in a particular strategy. A forward-looking perspective helps reevaluate directions and alternatives, while grit maintains effort throughout the adjustment process (Blokker et al., 2025).

Another important finding is that future time perspective showed a larger relative association with career adaptability than grit among final-year students at UIN Imam Bonjol Padang. This was reflected in the standardized regression coefficients, with future time perspective ($\beta = 0.487$) showing a larger coefficient than grit ($\beta = 0.307$). The effective contribution calculations also indicated a greater descriptive contribution from future time perspective (26.6%) than from grit (12.3%). These findings suggest that future time perspective accounted for a larger proportion of the variance explained by the regression model, although this descriptive difference does not establish that its contribution was statistically significantly greater than that of grit. This finding may be understood in the context of career development, as the ability to recognize opportunities, value goals, and understand the connection between present actions and future outcomes can encourage more planned career behavior (Park et al., 2021). For final-year students, this perspective is particularly relevant because they increasingly need to clarify their career goals, identify the competencies they need to develop, and consider alternative pathways if their initial plans cannot be realized. Consistent with this view, Medellu and Fadhilah (2022) found that organizing one's perspective toward the future contributes to career adaptability among final-year students. Nevertheless, grit also remains relevant because perseverance and sustained effort may help students navigate career-related challenges. Such effort may become more directed when students understand how their present actions relate to meaningful future goals (An et al., 2025). Taken together, these findings suggest that future time perspective and grit may function as complementary psychological resources in preparing students for the transition from university to work.

The implications of this research suggest that developing career adaptability in final-year students should encompass strengthening future orientation and the ability to sustain effort in achieving career goals. Career development programs can be directed at helping students build a clearer picture of the future, explore various career alternatives, develop short-term and long-term goals, and understand the connection between current activities and life after graduation. At the same time, strengthening grit should also be part of the career development process so

that students are able to face failure, reevaluate their strategies, and maintain effort when facing obstacles during the transition to the world of work. Integrating future orientation and perseverance is expected to help students establish a clearer career direction, remain consistent in carrying out the process of achieving it, and be able to adapt adaptively when faced with change and uncertainty in career development. This study has several limitations. First, the cross-sectional design prevents causal conclusions regarding the relationships between future time perspective, grit, and career adaptability. Second, the use of self-report measures may introduce response bias and shared-method bias. Third, instrument modifications may affect the interpretation of items and comparability with previous studies, highlighting the need for further validation. Finally, the absence of repeated measurements limits understanding of how these constructs and their relationships change over time.

CONCLUSION AND IMPLICATIONS

This study found that future time perspective (FTP) and grit were positively associated with career adaptability among final-year university students. The regression model was statistically significant, $F(2, 372) = 118.273$, $p < .001$, explaining 38.9% of the variance in career adaptability ($R^2 = .389$; adjusted $R^2 = .385$). FTP ($\beta = .487$, $p < .001$) had a larger standardized regression coefficient than grit ($\beta = .307$, $p < .001$), indicating a stronger relative association with career adaptability when both predictors were included in the model. However, this difference is descriptive and does not establish a statistically significant difference between their contributions. These findings suggest that future-oriented thinking and perseverance are relevant psychological resources associated with career adaptability. Nevertheless, the cross-sectional design precludes causal conclusions, and the model's predictive performance in other samples has not been evaluated. Future research should consider additional personal and contextual factors and employ longitudinal designs to examine the relationships among FTP, grit, and career adaptability over time.

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DECLARATIONS

Ethics approval and consent to participate

Participation was entirely voluntary, and informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose and procedures of the study, their right to withdraw at any time without penalty, and the confidentiality of their responses. All participants agreed to participate without coercion, and confidentiality was maintained throughout the research process.

Consent for publication

Not applicable. This manuscript does not contain any identifiable personal information, images, or other data requiring consent for publication.

Availability of data and materials

The datasets generated and analyzed during the current study are not publicly available to protect participants' confidentiality and privacy. However, anonymized data may be made available from the corresponding author upon reasonable request and subject to appropriate confidentiality considerations.

Conflicts of interest Statement

The authors declare that they have no conflicts of interest related to the conduct, authorship, or publication of this study.

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During the preparation of this manuscript, the authors used ChatGPT (OpenAI) to assist with language refinement, improving clarity, and enhancing the organization of the manuscript. The authors subsequently reviewed and edited all AI-assisted content and take full responsibility for the accuracy, integrity, and final content of the manuscript. Artificial intelligence was not used for data collection or statistical analysis.

Authors' contributions

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REFERENCES

Alita, D., Putra, A. D., & Darwis, D. (2021). Analysis of classic assumption test and multiple linear regression coefficient test for employee structural office recommendation. *IJCCS (Indonesian Journal of Computing and Cybernetics Systems), 15*(3), 295–306. https://doi.org/10.22146/ijccs.65586

An, R., Qian, G., Mumtaz, A., Alotaibi, K. A., & Wang, X. (2025). Digital fatigue and academic resilience among university students with grit and flexibility as mediators. *Scientific Reports, 15*(1), Article 45407. https://doi.org/10.1038/s41598-025-29313-7

Andini, S. O. D., Fitriana, D., & Arlotas, R. K. (2025). Grit as a predictor of career adaptability in fresh graduates. *Journal of Psychology and Instruction, 9*(2), 108–117. https://doi.org/10.23887/jpai.v9i2.92476

Azhenov, A., Kudysheva, A., Fominykh, N., & Tulekova, G. (2023). Career decision-making readiness among students' in the system of higher education: Career course intervention. *Frontiers in Education, 8*, Article 1097993. https://doi.org/10.3389/feduc.2023.1097993

Badan Pusat Statistik. (2025). *Cerita data statistik untuk Indonesia: Mismatch pendidikan–pekerjaan pemuda Indonesia: Implikasi bagi bonus demografi*. https://www.bps.go.id/id/publication/2025/10/31/c35e3066258c837175d3b097/cerita-data-statistik-untuk-indonesia--mismatch-pendidikan-pekerjaan-pemuda-indonesia--implikasi-bagi-bonus-demografi.html

Badan Pusat Statistik. (2026). *Persentase usia muda (15–24 tahun) yang sedang tidak sekolah, bekerja atau mengikuti pelatihan (persen), 2025* [Tabel statistik]. https://www.bps.go.id/id/statistics-table/2/MTE4NiMy/persentase-umur-muda-15-24-tahun-yang-sedangtidak-sekolah-bekerja-atau-mengikuti-pelatihan.html

Blokker, R., Akkermans, J., Nguyen, Y. N. N., Khapova, S., & Jansen, P. (2025). Beyond one-size-fits-all in school-to-work transition success: The role of career competency profiles. *Journal of Vocational Behavior, 161*, Article 104158. https://doi.org/10.1016/j.jvb.2025.104158

Boo, S., Wang, C., & Kim, M. (2021). Career adaptability, future time perspective, and career anxiety among undergraduate students: A cross-national comparison. *Journal of Hospitality, Leisure, Sport & Tourism Education, 29*, Article 100328. https://doi.org/10.1016/j.jhlste.2021.100328

Çarkıt, E. (2024). Relations between grit, career adaptability, and life satisfaction: A moderated mediation model. *Current Psychology, 43*(34), 27404–27413. https://doi.org/10.1007/s12144-024-06375-w

Cristy, A., & Kurniawati, F. (2023). A systematic literature review on career adaptability among adolescents. *Journal of Innovation in Educational and Cultural Research, 4*(3), 410–420. https://doi.org/10.46843/jiecr.v4i3.711

Diaconu-Gherasim, L. R., Țepordei, A., Labăr, A. V., Vîrgă, D., & Măirean, C. (2024). University students' future time perspective and career adaptability: The mediating role of grit. *The Career Development Quarterly, 72*(2), 121–134. https://doi.org/10.1002/cdq.12348

Duckworth, A. (2016). *Grit: The power of passion and perseverance*. Scribner.

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

Fernandes, M. R., & Rawatlal, K. V. (2024). Exploring factors that influence students' career decision making at a South African university. *African Journal of Career Development, 6*(1), Article a99. https://doi.org/10.4102/AJCD.v6i1.99

Gao, L., Li, Y., & Pang, W. (2025). Career adaptability and graduates' mental health: The mediating role of occupational future time perspective in higher education in China. *BMC Psychology, 13*(1), Article 158. https://doi.org/10.1186/s40359-025-02433-5

Gregor, M. A., Weigold, I. K., Wolfe, G., Campbell-Halfaker, D., Martin-Fernandez, J., & Ganginis Del Pino, H. V. (2021). Positive predictors of career adaptability among diverse community college students. *Journal of Career Assessment, 29*(1), 115–128. https://doi.org/10.1177/1069072720932537

Haenggli, M., & Hirschi, A. (2023). Career adaptability. In W. B. Walsh, L. Y. Flores, P. J. Hartung, & F. T. L. Leong (Eds.), *Career psychology: Models, concepts, and counseling for meaningful employment* (pp. 213–233). American Psychological Association. https://doi.org/10.1037/0000339-011

Hilpert, J. C., Husman, J., Stump, G. S., Kim, W., Chung, W., & Duggan, M. A. (2012). Examining students' future time perspective: Pathways to knowledge building. *Japanese Psychological Research, 54*(3), 229–240. https://doi.org/10.1111/j.1468-5884.2012.00525.x

Husman, J., Graham, M. C., White, D., Sullivan, B., & Livelybrooks, D. (2025). Reconceptualizing future time perspective extension through episodic future thinking. *Revista de Psicología, 43*(2), 1035–1073. https://doi.org/10.18800/psico.202502.015

Husman, J., & Shell, D. F. (2008). Beliefs and perceptions about the future: A measurement of future time perspective. *Learning and Individual Differences, 18*(2), 166–175. https://doi.org/10.1016/j.lindif.2007.08.001

International Labour Organization. (2024). *Global employment trends for youth 2024: Decent work, brighter futures*. https://doi.org/10.54394/ZUUI5430

Jia, Y., Hou, Z.-J., & Shen, J. (2022). Adolescents' future time perspective and career construction: Career adaptability as mediator and hope as moderator. *Journal of Career Development, 49*(1), 202–217. https://doi.org/10.1177/0894845320926579

Khatun, N. (2021). Applications of normality test in statistical analysis. *Open Journal of Statistics, 11*(1), 113–122. https://doi.org/10.4236/ojs.2021.111006

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607–610. https://doi.org/10.1177/001316447003000308

Kurniawati, H. (2021). The effect of future time perspective, emotional intelligence and peer support on career maturity in students. *Jurnal Konseling dan Pendidikan, 9*(3), 304–314. https://doi.org/10.29210/166600

Kwok, C. Y. N. (2018). Managing uncertainty in the career development of emerging adults: Implications for undergraduate students. *Australian Journal of Career Development, 27*(3), 137–149. https://doi.org/10.1177/1038416217744216

Li, H., Yu, X., Mei, Y., Liu, X., Li, L., & Luo, N. (2021). The effect of grit on career adaptability of Chinese college students based on the self-regulatory processes. *Frontiers in Psychology, 12*, Article 795153. https://doi.org/10.3389/fpsyg.2021.795153

Li, W., & Lee, S. J. (2023). Relationship between future time orientation, career adaptability focusing on the mediating role of procrastination. *Asia-Pacific Journal of Convergent Research Interchange, 9*(5), 517–526. https://doi.org/10.47116/apjcri.2023.05.43

Ling, H., Teng, S., Liu, X., Wu, J., & Gu, X. (2022). Future work self salience and future time perspective as serial mediators between proactive personality and career adaptability. *Frontiers in Psychology, 13*, Article 824198. https://doi.org/10.3389/fpsyg.2022.824198

Medellu, G. I. R., & Fadhilah, D. N. (2022). Role of future time perspective on career adaptability towards senior students. *Jurnal Penelitian dan Pengukuran Psikologi: JPPP, 11*(1), 19–28. https://doi.org/10.21009/JPPP.111.04

Muhibbin, M. A., & Wulandari, R. S. (2021). The role of grit in Indonesian student. *Psychosophia: Journal of Psychology, Religion, and Humanity, 3*(2), 112–123. https://doi.org/10.32923/psc.v3i2.1725

Park, I.-J., Han, K., & Ryu, K. (2021). Development and validation of a career future time perspective scale. *Journal of Career Development, 48*(5), 701–714. https://doi.org/10.1177/0894845319887810

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), 375–388. https://doi.org/10.12928/jehcp.v8i3.13870

Rahma, E. T., & Mulyana, O. P. (2025). Psychological predictors of career adaptability in university students: Refining the adaptive readiness model through a systematic review. *Amkop Management Accounting Review, 5*(2), 1358–1368. https://doi.org/10.37531/amar.v5i2.3349

Rogers, T. J., Gardner, P., Dervilis, N., Worden, K., Maguire, A. E., Papatheou, E., & Cross, E. J. (2020). Probabilistic modelling of wind turbine power curves with application of heteroscedastic Gaussian Process regression. *Renewable Energy, 148*, 1124–1136. https://doi.org/10.1016/j.renene.2019.09.145

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

Sikubwabo, C., Rukundo, D., Ruhumuriza, G., & Mukunzi, D. (2024). Transitioning from academia to workforce: Addressing the challenges faced by university graduates in securing employments in the labor market. *African Journal of Education, Science and Technology, 7*(4), 201–210. https://ajest.org/index.php/ajest/article/view/425

Situmorang, R. H. (2022). *Perbedaan kesiapan menghadapi dunia berdasarkan pengalaman berorganisasi pada mahasiswa akhir UIN Imam Bonjol Padang* [Skripsi sarjana, Universitas Islam Negeri Imam Bonjol Padang]. Repository UIN Imam Bonjol Padang. https://repository.uinib.ac.id/10251/

Spector, P. E. (2019). Do not cross me: Optimizing the use of cross-sectional designs. *Journal of Business and Psychology, 34*(2), 125–137. https://doi.org/10.1007/s10869-018-09613-8

Sulistiani, W., Suminar, D. R., & Hendriani, W. (2018). The Career Adapt-Abilities Scale-Indonesian Form: Psychometric properties and construct validity. *Proceedings of the 4th International Conference on Education, 4*(2), 1–9. https://doi.org/10.17501/24246700.2018.4201

Sun, S., Cao, X., Li, X., Nyeong, Y., Zhang, X., & Wang, Z. (2023). Avoiding threats, but not acquiring benefits, explains the effect of future time perspective on promoting health behavior. *Heliyon, 9*(9), Article e19842. https://doi.org/10.1016/j.heliyon.2023.e19842

Sun, Y., & Bunengi, H. D. (2025). University graduates and employment challenges: Causes, impacts, and countermeasures. *Peta International Journal of Social Science and Humanity, 4*(3), 63–78. https://doi.org/10.59088/pij.v4i3.81

Thompson, M., Pawson, C., & Evans, B. (2021). Navigating entry into higher education: The transition to independent learning and living. *Journal of Further and Higher Education, 45*(10), 1398–1410. https://doi.org/10.1080/0309877X.2021.1933400

Woodward, L. S., Patrick, S. D., & Rapport, L. J. (2026). Grit and graduation: Exploring persistence among urban university students. *Journal of College Student Retention: Research, Theory & Practice, 28*(1), 164–186. https://doi.org/10.1177/15210251241240742

World Economic Forum. (2025). *The future of jobs report 2025*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/

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), Article 3608. https://doi.org/10.3390/su15043608

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