

Career Adaptability and Work Volition among Aviation Vocational Cadets: The Mediating Role of Career Engagement toward SDG 4, SDG 8, SDG 9, and SDG 10

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ABSTRACT

Objective: To analyzes the direct effect of career adaptability on work volition among cadets in aviation vocational higher education and its indirect effect through career engagement, while positioning the model within the Sustainable Development Goals (SDGs), especially SDG 4, SDG 8, SDG 9, and SDG 10. **Method:** The study used a quantitative explanatory design involving 310 active non-Polbit Diploma III cadets from Politeknik Penerbangan Surabaya and Akademi Penerbang Indonesia Banyuwangi. Data were collected using a closed-ended questionnaire with a six-point Likert scale and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). **Results:** Career adaptability had a positive and significant effect on career engagement, career engagement had a positive and significant effect on work volition, and career adaptability had a positive and significant direct effect on work volition. Career engagement also significantly mediated the relationship between career adaptability and work volition, indicating partial mediation. **Novelty:** The study contributes to SDG-oriented aviation vocational higher education by explaining how adaptive career resources become a perceived capacity for occupational choice when translated into proactive career development behavior among non-Polbit cadets.

INTRODUCTION

The contemporary labor market is characterized by increasing uncertainty, technological disruption, changing skill requirements, and increasingly competitive transitions from education to employment. Higher education graduates cannot rely solely on formal qualifications and technical skills; they also need the psychological readiness to interpret change, explore opportunities, make informed decisions, and sustain an independent career direction (Brown & Lent, 2016; Lent & Brown, 2013; World Economic Forum, 2025). In vocational education, this issue is particularly important because students are prepared to enter occupational sectors that demand professional competence, discipline, adaptability, and readiness to comply with evolving standards (UNESCO, World Bank, & International Labour Organization, 2023).

This study is also relevant to the Sustainable Development Goals (SDGs). The 2030 Agenda emphasizes inclusive and equitable quality education, lifelong learning, productive employment, decent work, innovation, resilient infrastructure, and reduced inequalities (United Nations, 2015, n.d.). Within this framework, aviation vocational higher education contributes to SDG 4 by strengthening employability-oriented learning, to SDG 8 by preparing young people for decent work, to SDG 9 by developing human resources for a safe and innovative aviation sector, and to SDG 10 by reducing unequal access to career opportunities through structured career support.

The SDG perspective is important because the education-to-work transition is not merely an individual career issue; it is also a sustainable development issue. Graduate

employability, career agency, and career adaptability can help higher education institutions connect curriculum, career guidance, industry engagement, and youth employment outcomes (Atitsogbe et al., 2019; De Vos et al., 2020; Tomlinson, 2017). In this sense, career development interventions in vocational higher education can serve as institutional mechanisms for supporting SDG 4 Target 4.4 and SDG 8 targets related to productive employment and youth transitions.

This condition is highly relevant to aviation vocational higher education. The aviation sector is highly regulated, technology-intensive, competitive, and safety-oriented. Cadets in aviation vocational institutions are expected not only to master technical competencies but also to adapt to changing technology, safety standards, regulations, organizational procedures, and recruitment patterns. The International Civil Aviation Organization (n.d.) emphasizes the importance of preparing competent aviation professionals who are able to operate, manage, and maintain the future air transport system.

For non-Polbit cadets, the transition from education to work may be more complex because they are not always guaranteed job placement after graduation. In the Indonesian aviation education context, non-Polbit refers to cadets outside government-sponsored cadetship or placement-oriented schemes. Therefore, these cadets need to build their career options more independently, competitively, and realistically. They may face constraints related to career information, family expectations, financial resources, geographic mobility, industry recruitment cycles, and competition among graduates. From an SDG perspective, these constraints are connected to inclusion, equity, and access to decent work (Blustein, 2006; Douglass, Velez, Conlin, Duffy, & England, 2017; Wei, Chan, & Autin, 2022).

In career psychology, the capacity to make occupational choices despite constraints is explained through the concept of work volition. Duffy et al. (2012) defined work volition as an individual's perceived capacity to make occupational choices despite constraints. The construct is strongly grounded in the Psychology of Working Theory, which views career choice and access to decent work as outcomes shaped by psychological resources, economic constraints, marginalization, contextual barriers, and human agency (Blustein et al., 2023; Duffy et al., 2016). Thus, work volition is relevant for understanding whether cadets perceive themselves as having the freedom, control, and capacity to determine and pursue their occupational choices.

One psychological resource that may strengthen work volition is career adaptability. Savickas (2005) and Savickas and Porfeli (2012) conceptualized career adaptability as a psychosocial resource that enables individuals to cope with vocational development tasks, occupational transitions, and work-related challenges. Career adaptability consists of four resources: concern, control, curiosity, and confidence. Cadets with higher career adaptability are expected to be more future-oriented, more responsible for their career decisions, more willing to explore occupational possibilities, and more confident in facing career barriers (Johnston, 2018; Rudolph et al., 2017; Zhao & Zhang, 2022).

However, adaptive readiness may not directly strengthen work volition if it is not translated into concrete career development behavior. Career engagement therefore becomes a relevant behavioral mechanism. Hirschi, Freund, and Herrmann (2014) defined career engagement as proactive career behavior, including career planning, self-exploration, environmental exploration, networking, skill development, and positioning

behavior. In aviation vocational higher education, career engagement can be reflected in cadets' activities, such as seeking information about aviation jobs, understanding recruitment requirements, building relationships with instructors and alumni, participating in additional training, and preparing career plans after graduation (Akkermans et al., 2013; Akkermans & Tims, 2017; Hirschi & Freund, 2014).

Previous studies have shown that work volition and career adaptability are associated with employability, perceived future decent work, and career-related outcomes among university students and emerging adults (Kim et al., 2019; Kim et al., 2020; Kwon, 2019; Wei et al., 2022). Studies on career resources also show that career adaptability and career competencies contribute to well-being, performance, school-to-work transition readiness, and perceived employability (Akkermans, Paradnike, Van der Heijden, & De Vos, 2018; Baluku, Mugabi, Nansamba, Matagi, Onderi, & Otto, 2021; Maggiori et al., 2017). Nevertheless, studies examining the direct and indirect relationships among career adaptability, career engagement, and work volition in aviation vocational higher education remain limited.

Based on this gap, the present study aims to analyze: (1) the effect of career adaptability on career engagement, (2) the effect of career engagement on work volition, (3) the direct effect of career adaptability on work volition, and (4) the mediating role of career engagement in the relationship between career adaptability and work volition among cadets in aviation vocational higher education. By adding an SDG lens, the study also explains how psychological and behavioral career resources may support quality vocational education, decent work readiness, innovation-oriented aviation human resources, and more inclusive career transitions.

Theoretical background and hypothesis development

Work volition is a central construct in the Psychology of Working Theory. It refers to an individual's perceived capacity to make occupational choices despite internal and external constraints (Duffy et al., 2012). In the present study, work volition is defined as cadets' perceived freedom, control, and capacity to choose and pursue desired work despite financial, structural, institutional, family, or labor-market barriers. This construct is important for non-Polbit cadets because their post-graduation transition may depend more heavily on individual career agency, active preparation, and the ability to navigate uncertain employment opportunities (Duffy, Diemer, & Jadidian, 2012; Lent, Brown, & Hackett, 1994).

In relation to SDG 8, work volition helps explain whether cadets perceive themselves as able to pursue productive and decent work in a competitive labor market. The Psychology of Working Theory is especially relevant because it connects individual agency with contextual constraints, marginalization, and access to decent work (Blustein et al., 2023; Duffy et al., 2016). Therefore, work volition is not treated only as a personal attitude but also as a career development construct shaped by educational support, structural barriers, and labor-market opportunities.

Career adaptability is a key construct in Career Construction Theory. Savickas (2005) described career adaptability as a set of psychosocial resources that help individuals cope with vocational development tasks and occupational transitions. Savickas and Porfeli (2012) operationalized career adaptability through four dimensions: concern, control, curiosity, and confidence. Career concern reflects future orientation, career control reflects responsibility for career decisions, career curiosity reflects exploration of

the self and career opportunities, and career confidence reflects belief in the ability to solve problems and overcome career challenges.

Career adaptability is particularly relevant for aviation vocational cadets. They must prepare for a highly regulated and competitive occupational field that involves safety culture, professional standards, certification, changing technology, and evolving industry demand. Meta-analytic and review evidence indicates that career adaptability is associated with adaptation responses, adaptation results, employability, and sustainable employment (Johnston, 2018; Rudolph et al., 2017; Zhao et al., 2022). In SDG terms, adaptability can be interpreted as a psychosocial resource that helps vocational graduates remain employable amid technological and industrial change.

Career engagement refers to proactive career behaviors that individuals undertake to develop their careers. Hirschi et al. (2014) developed the Career Engagement Scale to capture behaviors such as career planning, self-exploration, environmental exploration, networking, voluntary skill development, and positioning behavior. Unlike attitudes or intentions, career engagement emphasizes observable actions that support career development. This behavioral orientation is consistent with the broader literature on career competencies and career self-management (Akkermans et al., 2013; Lent & Brown, 2013).

In the context of aviation vocational higher education, career engagement can be observed when cadets actively seek job information, participate in competence-building activities, consult instructors or alumni, build professional networks, understand industry requirements, and prepare themselves for recruitment. Such behaviors align with SDG 4 because they support practical skills development and lifelong learning, and with SDG 8 because they increase readiness for productive employment and decent work (Tomlinson, 2017; UNESCO, World Bank, & International Labour Organization, 2023).

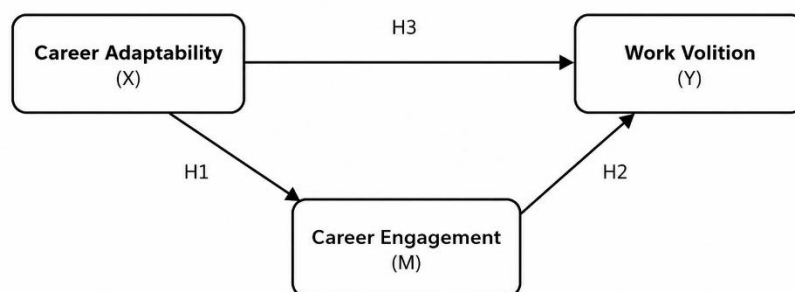
Career adaptability is expected to influence career engagement because individuals who are future-oriented, responsible, exploratory, and confident are more likely to engage in proactive career behaviors. Cadets with stronger career adaptability are more likely to plan their careers, search for occupational information, participate in additional training, and build networks. Therefore, H1 states that career adaptability has a positive effect on career engagement.

Career engagement is expected to influence work volition because proactive career behavior can strengthen individuals' perceived capacity to choose and pursue desired work. Cadets who actively plan, explore, network, and develop skills are more likely to understand their occupational options, identify potential barriers, and develop strategies to overcome them (Baluku et al., 2021; Hirschi et al., 2014). Therefore, H2 states that career engagement has a positive effect on work volition.

Career adaptability is also expected to have a direct effect on work volition. Cadets who are concerned about the future, take control of career decisions, explore opportunities, and believe in their ability to overcome obstacles are more likely to perceive themselves as capable of choosing and pursuing desired work (Kwon, 2019; Wei et al., 2022). Therefore, H3 states that career adaptability has a positive effect on work volition.

Career engagement is expected to mediate the relationship between career adaptability and work volition. Career adaptability provides psychological readiness, whereas career engagement transforms that readiness into concrete career development

actions. Through active involvement in career planning, exploration, networking, and skill development, cadets' adaptive resources may become stronger perceived freedom and control in occupational choice. Therefore, H4 states that career engagement mediates the effect of career adaptability on work volition.



H4: Career Adaptability -> Career Engagement -> Work Volition

Figure 1. Research model

The research model positions career adaptability as the independent variable, career engagement as the mediating variable, and work volition as the dependent variable. The model tests three direct effects and one indirect effect, while interpreting the career development model through an SDG lens related to quality education, decent work, innovation, and inclusion.

RESEARCH METHOD

This study used a quantitative approach with an explanatory research design. The design was selected because the study aimed to test causal relationships among latent variables based on a theoretically developed model. The model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM), which is appropriate for testing structural relationships and mediation effects among latent constructs (Hair et al., 2022; Nitzl, Roldan, & Cepeda, 2016).

The population consisted of active non-Polbit Diploma III cadets in aviation vocational higher education institutions in East Java, specifically Politeknik Penerbangan Surabaya and Akademi Penerbang Indonesia Banyuwangi. The total population was 361 cadets. The study involved 310 cadets selected using convenience sampling. This sampling technique was used because the participants were selected based on accessibility, availability, and willingness to complete the questionnaire (Etikan et al., 2016).

Data were collected using a closed-ended questionnaire with a six-point Likert scale. The scale ranged from 1, indicating the lowest level of agreement, to 6, indicating the highest level of agreement. The use of an even-numbered scale was intended to encourage respondents to provide a more definite response tendency.

Work volition was operationally defined as cadets' perceived freedom, control, and capacity to determine and pursue desired work despite financial, structural, institutional, family, or labor-market barriers. The variable was measured through dimensions of freedom and control in occupational choice, financial and resource constraints, and structural and institutional constraints. Career adaptability was operationally defined as cadets' psychosocial readiness to face career transitions,

changes, and challenges, and it was measured through career concern, career control, career curiosity, and career confidence. Career engagement was operationally defined as cadets' proactive behavior in developing their careers and was measured through career planning, career self-exploration, career environmental exploration, career networking, human capital and skill development, and career positioning behavior.

The SDG relevance of the variables was interpreted analytically rather than measured as an additional latent construct. Career adaptability and career engagement were interpreted as career resources that support skills development and lifelong learning in SDG 4, while work volition was interpreted as a psychological indicator related to perceived access to occupational choice and decent work in SDG 8. The aviation context also links the model to SDG 9 through the development of competent human resources for safety-oriented infrastructure and to SDG 10 through attention to non-Polbit cadets who may face more uncertain employment pathways.

The data were analyzed using PLS-SEM. The analysis consisted of measurement model evaluation and structural model evaluation. The measurement model was assessed through convergent validity, discriminant validity, Cronbach's alpha, and composite reliability. Convergent validity was evaluated using the Average Variance Extracted (AVE), while discriminant validity was assessed using the Fornell-Larcker criterion and HTMT when applicable (Fornell & Larcker, 1981; Henseler et al., 2015). The structural model was evaluated using path coefficients, t-statistics, p-values, and indirect effects. Hypotheses were accepted when the t-statistic was greater than 1.96 and the p-value was less than 0.05.

RESULTS AND DISCUSSION

Results

Descriptive statistics were used to describe the general tendency of respondents' responses to each research variable. The results are presented in Table 1.

Table 1. Descriptive statistics of research variables

Variable	N	Items	Minimum	Maximum	Mean	SD	Category
Career Adaptability	310	23	1.70	6.00	4.77	1.04	High
Career Engagement	310	16	1.06	6.00	4.73	1.05	High
Work Volition	310	19	1.11	6.00	4.78	1.02	High

Table 1 shows that all variables were in the high category. Career adaptability had a mean score of 4.77, indicating that cadets tended to have strong readiness to think about their future careers, take responsibility for career decisions, explore opportunities, and build confidence in facing career challenges. Career engagement had a mean score of 4.73, indicating that cadets tended to be actively involved in career planning, exploration, networking, skill development, and positioning behavior. Work volition had a mean score of 4.78, indicating that cadets generally perceived themselves as having the freedom, control, and capacity to determine and pursue occupational choices despite barriers.

The measurement model was evaluated to ensure that the indicators met the criteria for validity and reliability. The results are presented in Table 2.

Table 2. Construct validity and reliability

Variable	AVE	Cronbach's alpha	Composite reliability	Conclusion
Career Adaptability	0.639	0.974	0.975	Valid and reliable
Career Engagement	0.651	0.964	0.965	Valid and reliable
Work Volition	0.634	0.968	0.969	Valid and reliable

As shown in Table 2, all variables had AVE values greater than 0.50, indicating that the constructs met the criterion for convergent validity. Cronbach's alpha and composite reliability values were also above 0.70 for all variables, indicating that the constructs were reliable. Therefore, the measurement model was considered adequate for structural model testing.

Hypothesis testing was conducted by examining the path coefficients, t-statistics, and p-values. The results are shown in Table 3.

Table 3. Hypothesis testing results

Hypothesis	Structural path	Path coefficient	t-statistic	p-value	Decision
H1	Career Adaptability - > Career Engagement	0.376	7.730	0.000	Accepted
H2	Career Engagement - > Work Volition	0.346	6.022	0.000	Accepted
H3	Career Adaptability - > Work Volition	0.296	5.869	0.000	Accepted
H4	Career Adaptability - > Career Engagement - > Work Volition	0.130	4.417	0.000	Accepted

Table 3 shows that all hypotheses were supported. Career adaptability had a positive and significant effect on career engagement. Career engagement had a positive and significant effect on work volition. Career adaptability also had a positive and significant direct effect on work volition. In addition, the indirect effect of career adaptability on work volition through career engagement was significant. Because the direct effect of career adaptability on work volition remained significant, the mediation can be interpreted as partial mediation.

Discussion

The results indicate that career adaptability has a positive and significant effect on career engagement. This means that cadets with stronger career adaptability tend to be more actively involved in career development activities. This finding supports Career Construction Theory, which views adaptability as a psychosocial resource that enables individuals to cope with career tasks, occupational transitions, and work-related challenges (Savickas, 2005; Savickas & Porfeli, 2012). This finding is also consistent with studies showing that adaptability supports career resources, academic functioning, and transition readiness among students and young adults (Akkermans et al., 2018; Johnston, 2018; Rudolph et al., 2017).

In the context of aviation vocational higher education, this finding suggests that adaptive cadets are more likely to prepare for their future careers through concrete actions. Career concern encourages cadets to plan for their future; career control encourages them to take responsibility for their choices; career curiosity encourages them to explore occupational options; and career confidence encourages them to participate in competence-building activities and face recruitment challenges. These behaviors are relevant to SDG 4 because they indicate that vocational education should build not only technical competence but also career learning capacity and employability-oriented agency.

The results show that career engagement has a positive and significant effect on work volition. Cadets who are actively engaged in career planning, self-exploration, occupational exploration, networking, skill development, and positioning behavior tend to perceive themselves as having stronger freedom and control in choosing and pursuing work. This finding is consistent with the view that proactive career behavior helps individuals understand their occupational options and develop strategies for managing barriers (Akkermans et al., 2013; Hirschi et al., 2014; Lent & Brown, 2013).

Within the Psychology of Working Theory, work volition reflects the perceived capacity to make occupational choices despite constraints (Duffy et al., 2012; Duffy et al., 2016). Career engagement can transform uncertainty into information, preparation, and strategy. When cadets search for job information, understand industry requirements, build professional networks, and develop additional competencies, they become more confident that they can choose and pursue employment opportunities even in a competitive labor market. This mechanism supports SDG 8 because it strengthens psychological readiness for productive employment and decent work.

The results also show that career adaptability has a positive and significant direct effect on work volition. This indicates that cadets' adaptive readiness strengthens their perceived ability to make occupational choices despite barriers. Cadets who are future-oriented, responsible for career decisions, exploratory, and confident are more likely to feel capable of determining and pursuing their desired career direction. This finding aligns with prior research showing that career adaptability and work volition are important psychological resources in explaining employability and future work-related perceptions among students and emerging adults (Kim et al., 2019; Kwon, 2019; Wei et al., 2022).

For non-Polbit cadets, career adaptability is especially important because they may not have guaranteed placement after graduation. Strong adaptability helps them identify alternatives, manage uncertainty, and maintain agency in career decision-making. From an SDG 10 perspective, institutional career support should reduce unequal access to career information and opportunities among cadets with different

placement prospects, financial resources, family support, and access to professional networks (Douglass et al., 2017; United Nations, 2015).

The results demonstrate that career engagement mediates the effect of career adaptability on work volition. This means that career adaptability not only directly strengthens work volition but also does so indirectly by increasing cadets' involvement in career development activities. The mediation is partial because the direct effect of career adaptability on work volition remains significant. This finding highlights the importance of transforming adaptive readiness into proactive behavior, which is consistent with career self-management and sustainable career perspectives (Akkermans & Tims, 2017; De Vos et al., 2020).

The SDG interpretation strengthens the practical meaning of the mediation result. Career adaptability provides psychological resources, while career engagement represents the behavioral enactment of those resources. Cadets who are adaptable are more likely to plan, explore, network, develop skills, and position themselves professionally. These behaviors then strengthen their perception that they have the capacity to choose and pursue desired work despite structural, financial, institutional, or family-related constraints. For aviation vocational higher education, this means career services should be designed as part of sustainable education, decent work preparation, and human resource development for an innovative aviation sector (International Civil Aviation Organization, n.d.; UNESCO, World Bank, & International Labour Organization, 2023).

CONCLUSION

Fundamental Finding: This study concludes that career adaptability has a positive and significant effect on career engagement among cadets in aviation vocational higher education. Career engagement has a positive and significant effect on work volition. Career adaptability also has a positive and significant direct effect on work volition. Furthermore, career engagement significantly mediates the effect of career adaptability on work volition. **Implication:** The findings touch on several SDG-related points. First, the model supports SDG 4 by emphasizing career learning, skills development, and lifelong learning in vocational higher education. Second, it supports SDG 8 by strengthening readiness for productive employment and decent work. Third, it supports SDG 9 by preparing adaptable aviation human resources for a safety-oriented and technology-driven infrastructure sector. Fourth, it supports SDG 10 by highlighting the need for inclusive career support for non-Polbit cadets who may face more uncertain employment pathways. **Limitation:** This study used a quantitative cross-sectional design, so it cannot explain changes in career adaptability, career engagement, and work volition over time. The sample was selected using convenience sampling; therefore, the findings should be generalized carefully. The data were collected using self-report questionnaires and focused only on career adaptability, career engagement, and work volition. The SDG component was interpreted conceptually and was not tested as an additional measured variable. **Future Research:** Future research should use longitudinal designs to examine changes in cadets' career development from the early stage of education to graduation. Mixed-methods studies are also recommended to obtain a deeper understanding of cadets' experiences in facing career uncertainty. Future studies may compare cadets based on study program, academic level, internship experience, Polbit and non-Polbit status, preferred career pathways, and the perceived contribution of career services to SDG 4, SDG 8, SDG 9, and SDG 10.

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AUTHOR CONTRIBUTIONS

Linda Winiarsi contributed to conceptualization, data collection, analysis, and manuscript drafting. **Ekohariadi** contributed to supervision, validation, and manuscript review. **Ratna Suhartini** contributed to supervision, methodology review, and manuscript revision. All authors reviewed and approved the final version of this submission.

CONFLICT OF INTEREST STATEMENT

The authors confirm that no financial or personal conflicts of interest influenced the content or outcome of this study.

ETHICAL COMPLIANCE STATEMENT

This manuscript complies with research and publication ethics. The authors affirm that the work is original, was conducted with academic integrity, and is free from unethical practices, including plagiarism. The questionnaire data were used for academic purposes and managed confidentially.

STATEMENT ON THE USE OF AI OR DIGITAL TOOLS IN WRITING

The authors acknowledge the use of digital tools, including AI-based writing assistance, to support language refinement, formatting alignment, reference formatting checks, and manuscript preparation. All digital outputs were critically evaluated, revised, and verified by the authors to ensure academic rigor, ethical compliance, and consistency with the research data. The final responsibility for the manuscript rests entirely with the authors.

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