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Article

Navigating uncertainty: The interplay of future job forecasting, learning agility, responsiveness, and adaptability

Encep Saefullah, Bambang Dwi Suseno*, Nani Rohaeni

Bina Bangsa University, Kota Serang, Banten 42124, Indonesia
*** Corresponding author:** Bambang Dwi Suseno, bambangdwisuseno4@gmail.com

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Abstract: Background: According to the 2023 World Economic Forum report, the impact of Artificial Intelligence (AI) and automation on the job market was more significant than originally projected. Although 2018 research forecasted significant job losses balanced by job creation, current data indicates otherwise. Between 2023 and 2027, it is anticipated that 69 million new jobs will be created due to advancements in AI, however, this will be offset by the loss of 83 million jobs, leading to a net decrease of 14 million jobs worldwide. Roles related to AI, digitalization, and sustainability, such as AI specialists and renewable energy engineers are expected to grow, while those in clerical and administrative sectors are most at risk of decline. This shift underscores the need for reskilling and adapting to evolving fields, as nearly 44% of workers skills will face disruption by 2027. The demand for analytical thinking, technological literacy, and adaptability will grow as companies increasingly adopt frontier technologies. **Objectives:** (1) identify key variables influencing adaptability of college graduates in Indonesia, (2) quantify the strength of relationships between these variables to understand the combined effect on graduate adaptability. The research also aims to (3) develop theoretical and practical recommendations to strengthen ICIL policy and equip students with the relevant skills needed to thrive in an ever-changing job market. **Methodology:** The research focuses on predicting future employment trends, adaptability, and learning agility (LA), along with the implications for improving the Independent Campus Independent Learning (ICIL) policy. It focused on the significant unemployment rate among college graduates, along with the lack of research on the relationship between job change predictions, graduates' adaptability, and the impact on graduates' general well-being. The mixed-method strategy with quantitative analysis was used to conduct this research with data collected from 284 ICIL participants through online survey. The gathered data was evaluated using Structural Equation Modeling (SEM) with Lisrel version 10. Results: The result showed that job trend projections significantly influence responsiveness, which demonstrated a robust association between employment trend predictions and LA. Responsiveness significantly influenced learning agility which indicated no significant direct association between job trend projections and graduate adaptability. **Conclusion:** The research emphasized the need to consider adaptability as a concept with multiple dimensions. It proposed incorporating these factors into strategies for education and human resources development in order to better equip graduates for the demands of a constantly changing work market. **Unique contribution:** This research focused on adaptability as a multifaceted concept that consist of the ability to forecast job trends, be sensitive, and possess LA. It offered a deeper understanding of the relationships between these variables as discussed in the human resources literature. Technology, corporate culture, and training played a critical role in connecting employment trend prediction with the ability to respond effectively. **Key recommendation:** Institutions should implement a comprehensive approach to the development of human resources, with emphasis on fostering critical thinking, analytical abilities, and the practical application of information. By employing these tactics, higher education institutions may effectively equip graduates with both academic proficiency and the ability to adapt and thrive in quickly changing organizational environments, leading to

the production of robust and versatile workers.

Keywords: navigating uncertainty; job prediction; learning agility; responsive attitudes; digital technology revolution

1. Introduction

The Independent Campus Independent Learning (ICIL) policy, initiated by the Ministry of Education, Culture, Research, and Technology, was predicted to encounter significant challenges from uncontrollable external conditions. The National Labor Force Survey (Sakernas) conducted by the Central Statistics Agency (BPS, 2024) stated that in February 2024, Indonesia had 7.195 million unemployed individuals. The unemployment rate among diploma and college graduates stood at 5.49%, or approximately 0.395 million individuals (BPS, 2024). This high unemployment rate among college graduates is alarming and requires urgent attention and proactive measures.

Certain roles related to Artificial Intelligence (AI), digitalization, and sustainability—such as AI specialists and renewable energy engineers—were anticipated to experience growth, while jobs in clerical and administrative sectors were mostly at risk of decline (World Economic Forum, 2023). This shift focuses on the need for reskilling and adapting to evolving fields, as approximately 44% of skills possessed by workers will face disruption by 2027. The demand for analytical thinking, technological literacy, and adaptability tend to experience growth as companies increasingly adopt frontier technologies (World Economic Forum, 2023).

Developing countries are experiencing a reduction in income growth, with per capita income expected to reach an average of 2.8% in the next two years. This was perceived as a significant drop from the pre-pandemic average recorded within 2010 to 2019. The decline puts developing countries, excluding China on par with advanced economies in terms of income growth witnessed between 2020 and 2024, showing a stalled convergence. Moreover, fragile and conflict-affected regions were specifically vulnerable, with the pandemic causing a predictable decrease in per capita income by 2024, seven times the decline experienced by other developing economies. A major factor was the severe disruption to tourism, a sector highly regarded by several of these regions (World Bank, 2022). However, the recovery was anticipated to be slow, with persistent declines in output levels.

Preliminary research on predicting changes in employment patterns related to adaptability of college graduates are limited and often contradictory. Therefore, during the global concerns about health, ensuring high levels of mental well-being was perceived as an international priority (WHO, 2018). Certain research had reported that the adaptability, cognitive, behavioral, and emotional adjustments of individuals in new, different, and uncertain situations played an important role in predicting academic and work outcomes (Holliman et al., 2020; Li et al., 2018; Martin et al., 2021). However, no research had been conducted on the relationship between adaptability and psychological well-being.

Zenebe (2021) stated that further research is necessary to improve heterogeneity and generalizability. Furthermore, adaptability and social support as predictors of psychological well-being needed to be examined to determine the unique effects (Buzzai, 2020; Maskusi et al., 2024). This research explored the extent to which

adaptability of college graduates supported by social resources related to various government policies such as ICIL/MBKM initiatives, in order to address gaps in previous literature. Meanwhile, reduced investment in Indonesia decreased job creation leading to stagnant production growth, and hindering new opportunities. This presents a significant challenge for college graduates struggling to adapt to the dynamic work environment. Therefore, to address this critical issue, the current research aimed to identify major variables influencing the adaptability of college graduates in Indonesia. It also focused on quantifying the relationship strength between these variables to understand the combined impact on graduate adaptability, including developing theoretical and practical recommendations based on acquired results. The essence was to strengthen ICIL policy, effectively equipping students with the relevant skills and mindsets to thrive in an ever-changing job market.

2. Literature review and hypothesis development

2.1. Prediction of Future Job Trends (PFJ) and Responsive Attitude

Learning agility (LA) is gradually becoming important in the dynamic labor market due to technology improvements, automation, and globalization. As old static skills become less relevant, LA defined as the continuous capacity and desire to learn, adapt, and apply information in new situations becomes increasingly important. Tokar and Kaut (2018), stated that the development of Emotional Intelligence (EI), early career exploration, and novel learning methods helped students become resilient and adaptable.

The adoption of traditional teaching methods in higher education frequently impeded the growth of critical thinking and flexibility, two abilities essential for navigating uncertainty and producing new value in the business world. The 2020 pandemic drew attention to the need for fresh perspectives on leadership and more job flexibility. Younger workers are gradually accepting protean career orientation, which focuses on individual professional decisions, associated with higher levels of career optimism. Based on this perspective, teachers need to find a consensus between getting students ready for certain professions, and providing relevant tools required to deal with the changing industrial dynamics. In addition, addressing global and societal concerns required developing graduate capital, mentorship skills, and global competency (Schmid, 2022).

The adaptation of college students to the competitive labor market is becoming important as the digital age advances. It is essential to possess both academic and soft skills including adaptability, inventiveness, and creativity to meet industrial needs (Bakhshi et al., 2017). Students must prepare for uncertainty and rapid change as the global job market becomes more competitive. Meanwhile, digitalization practically alters every work, requiring technical skills and knowledge of current digital trends (Garavan et al., 2012).

Students who can predict future trends tend to gain competitive advantage. For example, AI, automation, and big data are changing corporate operations, offering competitive advantage to those able to predict these trends. Previous research stated that students who quickly adapt to technology and market changes tend to succeed.

Preparation for the rapidly changing labor market, ensured long-term professional success and flexibility in line with anticipating future employment trends, while concentrating on LA. Based on an in-depth literature review, the following hypothesis was proposed.

H1: The better the job prediction, the greater the responsiveness to competition and digitalization changes.

2.2. Predictions of Future Job Trends and learning agility

LA and EI are critical components that promote emotional control, flexibility, and successful career exploration, essential for both forecasting and improving the professional achievement of students. EI is particularly important for controlling feelings such as dissatisfaction and anxiety, which tend to have an enormous influence on job search success and career flexibility. Additionally, it increases self-confidence, helping in the selection of job route (Munawir and Suseno, 2020; Strielkowski et al., 2020). EI-focused targeted training programs, such as stress management and simulated interviews, offers students essential professional skills, enhancing the capacity to select appropriate career pathways. Meanwhile, LA is a powerful predictor of success that enables swift adjustment and meaningful unpredictable settings, thereby enhancing academic self-efficacy (ASE), motivation, and long-term engagement (Saputra et al., 2018; Tripathi and Sankaran, 2021). In order to promote professional preparedness, it also acts as a mediator in the interaction between sustained engagement and academic drive. As a lifetime activity, career exploration is essential to formulating well-thought-out career plans and skillfully handling the rapid changes in workplaces. Therefore, incorporating EI and LA to training interventions greatly improves career readiness, ensuring students are properly equipped to handle the demands of the changing labor market.

College students tend to forecast future trends, responding to rapid changes such as technological advances and global environmental dynamics. This was also realized by acquiring important abilities and applying the newest knowledge. According to the World Economic Forum (2020) research, technological advances drive future workplace transformations, compelling individuals to constantly upgrade respective skills, adapting to a dynamic digital environment. This mandates students to use information resources to develop relevant skills for the ever-changing sector (World Economic Forum, 2018).

Development of Technical and Digital Skills Programming, data analysis, knowledge of AI and new technologies are crucial in the digital age. McKinsey & Company (2018) stated that 50% of future employment will demand more technology. Therefore, students must keep improving respective technological abilities to stay competitive in the global labor market.

Due to the rapidly changing work environment, adaptability, creativity, and innovation are becoming more crucial. Deloitte (2017), stated that the following soft skills communication, and cooperation were also essential. These abilities helped in resolving complicated problems innovatively, while applying critical thinking in unexpected situations (Deloitte, 2017).

Critical thinking and trend prediction students tend to forecast future trends by thinking critically, while monitoring economic and technical developments. However,

the Institute for the Future (2017), stated that data analysis and trend prediction were essential for planning for future difficulties, especially in a competitive corporate climate.

At work, lifelong learning is becoming increasingly important, and to compete in the rapidly-changing labor market, students must complete the education process, according to the OECD (2021). Additionally, technology supports this trend by making learning more flexible and open-ended (OECD, 2021). Based on an in-depth literature review, the following hypothesis was proposed.

H2: The better the student's ability to predict future career trends, the greater the chances of career success.

2.3. The relationship between Responsive Attitude (RA) and learning agility

In order to effectively educate students on dynamic businesses, especially the media industry, which faces regular unanticipated problems, higher education must strike a balance between academic knowledge and practical skills (Suseno and Basrowi, 2023; Wrigley et al., 2021). Moreover, education initiatives should focus on cultivating human, social, cultural, psychological, and identity capital (Nur et al., 2023; Schmid et al., 2022). Responsive Attitude (RA), mentoring skills, and cultural awareness tend to be improved by participation in Mentorship and Skills Development (MSD) programs (Pfund et al., 2022; Zaccor, 2018). Drawing inspiration from the educational paradigm adopted by Finland, global competency proved essential for negotiating a variety of international settings (Jantunen et al., 2022; OECD, 2018). As a mediator between academic self-efficacy (ASE), motivation, and long-term engagement, LA is specifically significant in the field of education (Jian, 2022). This variable offers students the capacity to assimilate quickly, applying lessons learned to novel contexts, while adapting, and synthesizing several valuable information. Based on an in-depth literature review, the following hypothesis was proposed.

H3: The stronger the Responsive Attitude, the higher the learning agility.

2.4. The correlation between responsive Attitude and Adaptability of University Graduates (AOUG)

Educators must strike a balance between imparting practical skills and critical knowledge in order to prepare students for the dynamic and intricate nature of the media industry. Graduates who mainly focus on theory may not be ready for the challenges of the real world, while those who concentrate on practical abilities find it more difficult to solve systemic problems, including adapting to change. Therefore, to address this issue, frameworks prioritizing MSD programs to improve mentoring skills and cultural awareness should be implemented in schools to develop five capital forms, namely human, social, cultural, psychological, and identity (Schmid, 2022; Mustofa et al., 2023). Currently, global competency is essential in the society because it enables students interact with individuals from different backgrounds, successfully handling both domestic and international issues.

EI and parental support are also essential for managing student emotions, while fostering career adaptability (Haratsis et al., 2015; Kim and Park, 2022; Mittal, 2020; Motlova and Honsova, 2021; Strielkowski, 2020; Wang and Litvinov, 2020).

Developing cohesive career objectives and adjusting to changes in the workplace require career exploration, which incorporates self-awareness and environmental knowledge. Due to the changing career pathways, graduates need to possess high RA to prompt adaptability, while successfully negotiating the uncertainties of the labor market. The concept implied that possessing high RA increased the flexibility of graduates, essential for succeeding in the unstable and always changing labor market. Based on an in-depth literature review, the following hypothesis was proposed.

H4: The stronger the responsive attitude, the higher the adaptability of university graduates.

2.5. Learning agility and Adaptability of University Graduates

LA is a critical success factor that frequently outperforms conventional cognitive or behavioral attributes. This factor is defined as the capacity and drive to apply information in novel circumstances, while learning from experiences. According to Lombardo and Eichinger (2000), LA is a crucial skill for solving problems in the industry and education sector since it includes the ability to learn, adapt, and perform exceptionally in changing circumstances. It acts as a bridge between motivation, engagement, and ASE, improving the capacity of students to apply information, overcome obstacles, and value variety.

The research by Tripathi and Sankaran (2021) and Saputra et al. (2018) stated that LA enhances learning culture and engagement in both corporate and educational contexts. The global significance in promoting success was exhibited by the stability across a range of populations, especially in rapidly evolving contexts where adaptability and agility were critical. Sternberg et al. (1995) stated that practical intelligence considerably affected long-term commonsense tests, enabling individuals to adapt effortlessly to changes. Due to this LA is a crucial quality for both learners and future leaders. Based on an in-depth literature review, the following hypothesis was proposed.

H5: The higher the learning agility, the greater the adaptability of university graduates.

2.6. Future job prediction ability and high Adaptability of University Graduates

Prediction of Future Job (PFJ) skills are essential for students, because it helps in career planning, matching respective interests and talents with new prospects. Specific career forecasts, supported by parental engagement, improved flexibility and overall well-being are essential for preparing students for the workforce (Haratsis et al., 2015; Suseno and Dwiatmadja, 2016). Furthermore, ability-based EI fostered self-control and confidence, significantly influencing career mobility and job search success (Strielkowski, 2020). Enhancing EI using capability-based methods and focused university interventions equipped students for future professional obstacles. Forming coherent career objectives and managing the dynamic, nonlinear nature of job growth require exploration, incorporating both environmental and self-research. This ongoing process ensured students were better equipped for future job difficulties, improving overall life satisfaction by adjusting to rapid changes in the work environment. Additionally, the process was supported by predictive abilities and parental career-

related behaviors. Based on an in-depth literature review, the following hypothesis was proposed.

H6: The greater the ability to predict future work, the higher the adaptability of university graduates.

3. Methodology

The research adopted mixed-methods, where the quantitative offered a preliminary understanding, and the qualitative provided deeper insights. Creswell and Clark (2011) stated that this combination impacted the strengths of both methods while reducing the weaknesses.

3.1. Operational definition of variables

- Prediction of Future Job Trends (PFJ) Anticipated crucial trends based on synthesized information, diverse perspectives, professional development dynamics, personal profile understanding, and digital literacy (Haratsis et al., 2015; Park, 2022; Strielkowski, 2020).
- Responsive Attitude (RA) Willingness and ability to respond appropriately to situations and challenges, symbolized by collaboration, critical thinking, realism, responsiveness, and problem-solving ability (Banwo, 2023; OECD, 2018; Schmid et al., 2022; Walis, 2021; Wrigley, 2021).
- Learning Agility (LA) Capacity to learn and adapt rapidly, proven by academic motivation, atmosphere, diversity understanding, and value adoption (De Meuse et al., 2010; Jian, 2022; Lombardo and Eichinger, 2000).
- Adaptability of University Graduates (AOUG) Ability to adapt to various contexts, exhibited by innovation, individual adaptability, task engagement, EI, and achievement orientation (Badiozaman, 2023; Chui et al., 2020; Ma et al., 2019; Öztemel and Akyol, 2021; Parola and Marcionetti, 2021).

3.2. Population and sample

The population used in this research consisted of students who participated in the Indonesian ICIL policy. In addition, of the 57,822 applicants, 16,250 students (KemendikbudRistek, 2024), geographically distributed across several islands, including Sumatra, Java, Sulawesi, Bali, and West Nusa Tenggara, representing Western, Central, and Eastern Indonesia, were selected. A purposive sampling method was used to select participants that accurately represented the research population.

The justification for the sample size adhered to Hair et al. (2010), who recommended a minimum of five times the number of indicators. However, with 19 indicators, the minimum recommended sample size was 95 (5 × 19), ensuring stable parameter estimates (Kline, 2015). The two prevalent data analysis methods used were Structural Equation Modeling (SEM) and CFA (Confirmatory Factor Analysis). Both methods enabled academics to evaluate conceptual frameworks and quantify constructs.

The trial test was carried out from February to June 2024, while the survey questionnaire was developed by converting indicators from each assessed variable. Following the initial testing on a restricted sample, the questionnaire was considered valid and reliable. The purposive sampling strategy focused only on students who

participated in the ICIL program to complete the questionnaire through the Google Form link. The questionnaire comprised 19 multiple-choice questions.

- Prediction of Future Job (PFJ) using multiple-choice questions 1) synthesizing information; 2) diverse perspectives; 3) dynamics of professional development; 4) comprehending individual profiles; and 5) stimulus for digital literacy training (Haratsis et al., 2015; Park, 2022; Strielkowski, 2020).
- Multiple-choice questions of a Responsive Attitude 1) collaboration; 2) critical thinking; 3) realism; 4) responsiveness; and 5) problem-solving ability (Banwo, 2023; OECD, 2018; Schmid et al., 2022; Walis, 2021; Wrigley, 2021).
- Learning Agility (LA), comprised multiple-choice questions focused on 1) academic motivation; and 2) environment; 3) comprehension of diversity; 4) assimilation of new values (De Meuse et al., 2010; Lombardo and Eichinger, 2000; Jian, 2022).
- Assessing the Adaptability of University Graduates (AOUG) with multiple-choice questions 1) innovation; 2) individual adaptation abilities; 3) task engagement; 4) emotional intelligence (EI); and 5) achievement orientation (Badiozaman, 2023; Chui et al., 2020; Ma et al., 2019; Öztemel and Akyol, 2021; Parola and Marcionetti, 2021).

A total of 293 students participated, however after filtering, only 284 responses were considered appropriate for the research. These responses exceeded the minimum sample size recommended by Hair et al. (2010), as well as ensured the stability of parameter estimates per Kline (2015).

3.3. Data processing

Primary data obtained from the participants were processed using SEM, with Lisrel v.10 software.

4. Result and findings

4.1. Descriptives

The research comprised 284 participants, predominantly female (172 or 60.56%) compared to male students (112 or 39.44%). The management program had the most participants (162 or 57.04%), followed by accounting (57 or 20.07%), Business (24 or 8.45%), and Public Administration (25 or 8.80%), including Islamic Communication, Broadcasting, and Information Systems (8 each or 2.82%).

The participants were evenly split between semesters six (141 or 49.65%) and eight (143 or 50.35%), providing insights from different educational stages. Meanwhile, semester six students, at the intermediate stage, offered respective perspectives on core courses and preparation for final projects. Semester eight students, nearing graduation, focused on final assignments and theses, exhibiting mature attitudes, while offering insight on curriculum experience.

During the ICIL program, the selected participants engaged in student exchanges at universities both in Indonesia and abroad, comprising 45.77% of the total. 18.66% of participants residing in villages contributed to community efforts aimed at enhancing local potential, thereby improving welfare. This was also realized through company internships (11.27%), and entrepreneurship (24.30%). The distribution

reflected a strong inclination toward enriching academic experiences, community development, practical industry skills, and entrepreneurial endeavors.

4.2. Model testing

Model testing through Standardized Regression Weights evaluated the relationships between latent variables and the indicators, providing insight into the representation of basic constructs, as shown in **Figure 1**.

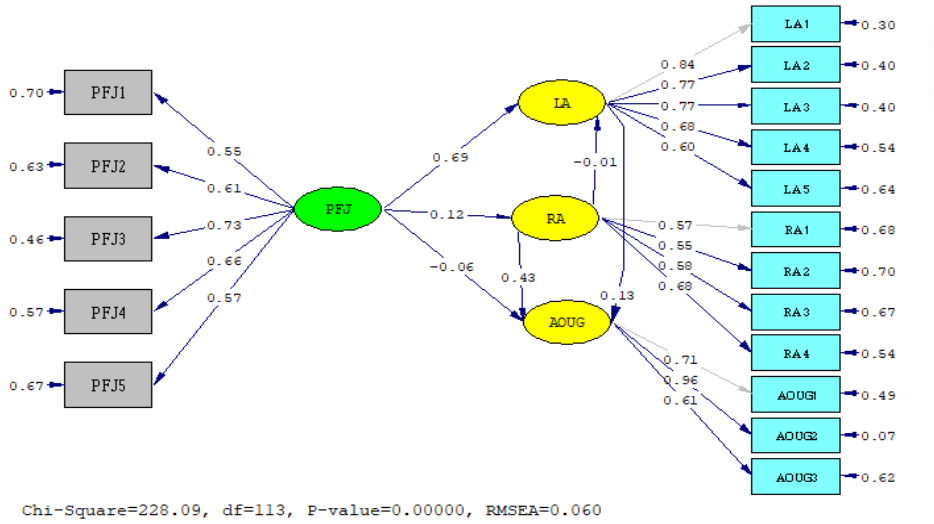

Figure 1. Structural Equation Model Testing Output (2024).

Table 1. Standardized regression weights (group number 1-default model).

			Loading factor
PFJ1	←	PFJ	0.55
PFJ2	←	PFJ	0.61
PFJ3	←	PFJ	0.73
PFJ4	←	PFJ	0.66
PFJ5	←	PFJ	0.57
LA1	←	LA	0.84
LA2	←	LA	0.77
LA3	←	LA	0.77
LA4	←	LA	0.68
LA5	←	LA	0.60
RA1	←	RA	0.57
RA2	←	RA	0.55
RA3	←	RA	0.58
RA4	←	RA	0.68
AOUG1	←	AOUG	0.71
AOUG2	←	AOUG	0.96
AOUG3	←	AOUG	0.61

Figure 1 shows the relationships between latent variables and the indicators. PFJ with loading factors ranging from 0.55 to 0.73, showed significant contributions from

all indicators. Subsequently, PFJ3 had the highest loading strongly reflecting job satisfaction, while PFJ1 had the lowest with valid contribution. LA Factor with indicators had strong loadings, with LA1 and LA5 highest and lowest at 0.84 and 0.60, respectively denoting LA1 as the strongest representation of LA. Meanwhile, RA Factor loadings had less variability, with RA4 and RA2 highest and lowest at 0.68 and 0.55, respectively. This showed an even representation of role ambiguity by the four indicators, with RA4 being the most dominant. AOUG Factor loadings varied significantly, with AOUG2 exceptionally high at 0.96, strongly reflecting organizational autonomy and growth, while AOUG3 was lower at 0.61 with valid contribution. **Table 1** shows the standardized regression weight values for each tested variable.

ll indicators possessed a loading factor exceeding 0.6 however, there are smaller values of approximately 0.6, categorized as moderate, affirming the usefulness. The fluctuation in values showed differing efficacy in representing the latent variables. PFJ3 (dynamics of professional development) exhibited the highest strength for PFJ, while LA1 (academic motivation) showed considerable strength in LA. The RA indications were coherent, with RA4 (responsiveness) being the most significant. AOUG2 (individual adaptability skills) and AOUG3 (task engagement) showed robust performance in AOUG, with AOUG3 being marginally lower although within reasonable thresholds, thereby confirming the validity. The model exhibited robust construct validity and reliability, requiring additional examination of the overall appropriateness, including the verification of discriminant and convergent validity.

4.3. Goodness of Fit testing

Table 2 shows the outcomes from Goodness of Fit (GOF) testing conducted for the model. GOF is a critical measure used to evaluate how well a proposed model correlated with observed data. This assessment was essential for confirming the model accurately captured the relationships between latent variables and indicators.

Table 2. Goodness of Fit.

No	Criteria	Model SEM	Cut of Value	Model Evaluation
1	χ^2 significance probability	0.00	≤ 0.05	Moderate fit
2	PNFI	0.77	≤ 0.90	Goodness of Fit
3	NFI	0.92	≥ 0.90	Goodness of Fit
4	RFI	0.91	≥ 0.90	Goodness of Fit
5	GFI	0.91	≥ 0.90	Goodness of Fit
6	AGFI	0.88	≤ 0.90	Moderate Fit
7	PGFI	0.67	≤ 0.90	Goodness of Fit
8	IFI	0.96	≥ 0.90	Goodness of Fit
9	CFI	0.96	≥ 0.90	Goodness of Fit
10	RMSEA	0.071	≤ 0.08	Goodness of Fit
11	RMR	0.048	≤ 0.08	Goodness of Fit

Note: PNFI: Parsimony normed fit index; NFI: Normed fit index; RFI: Relative fit index; GFI: Goodness of Fit index; AGFI: Adjusted goodness of fit index; PGFI: Parsimony goodness of fit index; IFI: Incremental fit index; CFI: Comparative fit index; RMSEA: Root means square error of approximation; RMR: Root means square residual.

The results of the GOF for SEM model are shown in **Table 2**. A significant χ^2 value less than 0.05 typically denoted a poor fit, sensitive to large sample sizes. Despite the significant χ^2, the model had a moderate fit. However, PNFI less than 0.90 had moderate parsimony standards and a moderate fit. NFI, RFI, GFI, IFI, and CFI values greater than 0.90 showed a good fit. AGFI slightly less than 0.90 confirmed a moderate fit and potential improvement areas, while a low PGFI denoted inefficiency and poor fit. RMSEA and RMR values less than 0.08 showed a good fit. The SEM model showed good fit based on NFI, RFI, GFI, IFI, CFI, RMSEA, and RMR values, with opportunity for improvement in χ^2 significance, PNFI, AGFI, and PGFI. In addition, proper adjustments tend to improve the overall fit.

4.4. Composite reliability and AVE latent variable

Average Variance Extracted (AVE) is a metric adopted in SEM using Lisrel to evaluate construct, particularly convergent validity. This variable showed the extent to which the hidden variable accounts for the inconsistency of the connected indicators. The results of the Composite Reliability (CR) and AVE tests conducted on the latent variables, are shown in **Table 3**.

Table 3. Composite reliability and AVE latent variable.

Variable	Dimension	Code	Standardized	CR	AVE
PFJ1	←	PFJ	0.550	0.838	0.511
PFJ2	←	PFJ	0.610		
PFJ3	←	PFJ	0.730		
PFJ4	←	PFJ	0.660		
PFJ5	←	PFJ	0.570		
LA1	←	LA	0.840	0.909	0.669
LA2	←	LA	0.770		
LA3	←	LA	0.770		
LA4	←	LA	0.680		
LA5	←	LA	0.600		
RA1	←	RA	0.570	0.778	0.568
RA2	←	RA	0.550		
RA3	←	RA	0.580		
RA4	←	RA	0.680		
AOUG1	←	AOUG	0.710	0.878	0.714
AOUG2	←	AOUG	0.960		
AOUG3	←	AOUG	0.610		

The use of quantitative method to analyze structural measurement models, ensured the validity and reliability of latent variables were essential. Furthermore, CR and AVE were commonly used to assess these attributes. The metrics offered a comprehensive assessment of how effectively the indicators comprising a latent variable captured the intended construct, as shown in **Table 3**.

Based on **Table 3**, CR values greater than 0.7 implied good internal consistency for latent variables. While, all variables analyzed exceeded this threshold, confirming

reliability. AVE values greater than 0.5 showed strong convergent validity, with all variables meeting this criterion. Specifically, PFJ showed CR and AVE of 0.838 and 0.511, respectively confirming reliability and validity. LA had CR and AVE of 0.909 and 0.669, confirming high reliability and validity. RA, with CR and AVE of 0.778 and 0.568, was reasonably reliable and valid. AOUG had CR and AVE of 0.878 and 0.714, showing strong reliability and validity. Generally, these analyses supported the reliability and validity of all latent variables, meeting the requirements of path analysis or SEM.

4.5. Hypothesis testing

Coefficients with a *t*-value greater than 1.96 (in absolute value) were significant at 95% confidence interval, showing 95% certainty that observed effects were based on chance. In structural analysis, such significance is crucial for understanding the relationships between latent variables. The *t*-value, derived by dividing the coefficient by the standard error, exceeding 1.96 (or falling below −1.96) confirmed significance at the 5% level. This provided evidence to reject the null hypothesis (coefficient equals zero) and support the alternative, showing a meaningful influence of the independent variable on the dependent one.

The following is the interpretation and analysis of the structural equation.

$$LA = 7.521 - 0.007RA + 0.702\ PFJ + e \quad (1)$$

When both RA and PFJ are zero, LA equals 7.521. For every one-point increase in RA, LA decreases by 0.007. However, for each one-point increase in PFJ results in a 0.702 increase in LA. PFJ was observed to have the greatest influence on LA.

$$AOUG = 0.148 + 0.367\ RA + 0.01\ PFJ + 0.066\ LA + e \quad (2)$$

When RA, PFJ, and LA are all zero, AOUG is 0.148. If RA increases by one unit, AOUG rises to 0.367. A one-unit increase in PFJ led to a 0.01 increase in AOUG. Meanwhile, a one-unit increase in LA raised AOUG by 0.066. Among these variables, RA had the greatest impact on AOUG.

The evaluation of path coefficients is shown in **Table 4**.

Table 4. The path coefficients evaluation.

Path	Coefficient	Standar Error	*t*-Value	Significance
LA ← RA	0.13	0.065	2.47	Significant
LA ← PFJ	0.69	0.069	10.13	Significant
RA ← PFJ	0.12	0.082	4.19	Significant
AOUG ← LA	0.13	0.10	4.77	Significant
AOUG ← RA	0.43	0.091	3.26	Significant
AOUG ← PFJ	0.059	0.11	0.56	Not significant

4.6. Results of the hypothesis test

Summary of hypothesis test results

H1: There is a direct relationship between PFJ (Prediction of Future Job) and RA (Responsive Attitude). With a coefficient and *t*-value of 0.13 and 2.47, greater than the critical threshold of 1.96, this hypothesis was accepted. This implied that PFJ

significantly impacted RA, making it unlikely that the observed effect was due to chance.

H2: PFJ positively influenced LA (Learning Agility), with a coefficient and *t*-value of 0.69 and 10.13, greater than the critical limit of 1.96. Therefore, this hypothesis was accepted, confirming that higher PFJ led to greater LA. The relationship was statistically significant and unlikely to be random.

H3: RA positively affected LA, as shown by a coefficient and t-value of 0.12 and 4.19, greater than 1.96. Therefore, the hypothesis was accepted, confirming that RA significantly impacted LA. This effect was statistically significant and not due to chance.

H4: RA enhanced AOUG (Adaptability of University Graduates). With a coefficient and *t*-value of 0.13 and 4.77, greater than 1.96, the hypothesis was accepted. This confirmed that RA had a significant positive effect on increasing AOUG, and the relationship was unlikely to be coincidental.

H5: There was no direct relationship between LA and AOUG. Despite having a coefficient and *t*-value of 0.43 and 3.26, greater than 1.96, the hypothesis was accepted, depicting that LA does not have a direct influence on AOUG. The result was statistically significant and unlikely to be due to chance.

H6: There was no direct relationship between PFJ and AOUG. With a coefficient and *t*-value of 0.059 and 0.56, less than 1.96, this hypothesis was rejected, suggesting that PFJ does not significantly impact AOUG.

5. Discussion

The first hypothesis suggested a positive correlation between PFJ (Prediction of Future Job) and RA (Responsive Attitude). However, the current research stated that there was no direct relationship between these two variables, focusing on the complexity of the interaction. The dynamic was influenced by mediating factors such as technological advancements, organizational culture, training levels, and contextual elements namely industry type and economic uncertainty. Recent research had shown that these factors complicated the predictive power of PFJ on RA in various contexts. For example, Smith et al. (2020) and Suseno et al. (2021), stated that technological developments in the workplace altered employee perceptions of job factors, subsequently affecting respective RA. Similarly, Johnson and Martin (2020), stated that a strong organizational culture often reduced the direct impact of PFJ on RA, as company support and resources protect employees from potential job-related uncertainties. Brown et al. (2019) also stated that adequate training and a dynamic work environment tend to weaken the direct relationship between PFJ and RA, as well-trained employees were more adaptable to changes in respective roles.

The second hypothesis stated that the greater the ability to predict Future Job Trends, the higher the LA. In addition, the LA refers to the individual's capacity to learn and apply the experience in new situations. PFJ is crucial in the current fast-paced world shaped by technology and globalization. Previous research had stated a strong direct relationship (coefficient = 0.69) existed between predicting job trends and LA. Therefore, predicting job trends directly improved LA, confirmed by a significant *t*-value of 10.13 (critical value > 1.96). The results showed a strong and positive correlation between job trend predictions and LA, suggesting that graduates

who can anticipate labor market trends were better equipped to develop LA, essential for adapting to new situations (Garcia and Johnson, 2018).

The third hypothesis stated that strong RA correlated with higher LA, defined as the ability to rapidly and effectively respond to changes and situations. Meanwhile this research stated that a significant direct relationship existed between RA and LA, implying RA was crucial for improving LA. Organizations should develop strategies and environments that prompt continuous learning and innovation to improve adaptability in dynamic settings. The accepted null hypothesis (t-value = 4.19, critical value > 1.96) showed that an increase in RA improved LA, although there was no significant direct relationship. The distinction was evidenced in how RA focused on reacting swiftly to current situations, while LA concentrated on deeper learning and application across diverse contexts (Derue et al., 2012; Lombardo and Eichinger, 2000).

The fourth hypothesis stated that a strong RA correlated with higher adaptability among university graduates, crucial for success in the workforce. The analysis showed a direct relationship with a correlation coefficient and t-value of 0.43 and 4.77 (critical value > 1.96), respectively confirming the hypothesis. Therefore, RA tended to increase graduate adaptability by 43%, showing the significant role played.

These results corresponded with theories focusing on responsiveness in adaptability, including openness to new experiences, willingness to learn, and flexibility (Savickas, 2013; Tokar and Kaut, 2018). Therefore, institutions should prioritize developing responsiveness through curricula activities that promote openness, flexibility, and experiential learning. This research provided insights into improving graduate adaptability and guided institutions in designing effective development programs.

The fifth hypothesis stated that adaptability was essential for the success of university graduates in the present dynamic work environment, enhanced by LA. However, the results showed that there was no significant and direct relationship (t-value = 3.26, critical value > 1.96) between LA and graduate adaptability, contrary to expectations. Other factors including organizational context, interpersonal skills, and psychological factors such as self-efficacy and resilience mediated or moderate this relationship (Bick et al., 2019). Differences in definitions and measurements across previous research explained the varied results. Meanwhile, this research focused on the importance of a general method in education and training programs, incorporating LA, technical skills and psychological support to effectively prepare the graduates for workplace challenge.

The sixth hypothesis stated that PFJ was essential for helping university graduates adapt to the changing work environment. However, this research stated that there was no significant direct relationship (t-value = 0.56, critical value < 1.96) between predicting job trends and graduate adaptability, rejecting the hypothesis. Instead, PFJ indirectly influenced adaptability by enhancing LA and RA, which served as mediators. The findings suggested that internal factors namely cognitive flexibility, resilience, and interpersonal skills drove adaptability than predictive abilities. Besides, actionable knowledge and implementation were more critical for adaptation than mere prediction (Suseno, 2019). Due to the unpredictability of the labor market, the research recommended that education and career development programs should focus on

broader skill development rather than relying solely on predictions of Future Job Trends (Buzzai, 2020).

6. Conclusion

In conclusion, this research examined the correlation between PFJ, RA, LA, and adaptability in university graduates. The findings implied the absence of a direct correlation between PFJ and adaptability. However, the research stated that elements such as technology, corporate culture, and training could influence the relationship. PFJ had a substantial correlation with LA, suggesting that enhancing predictive skills increased LA by 69%, crucial for responding to a dynamic work environment. Furthermore, RA exerted a direct and substantial influence on LA and adaptability, accounting for 43% of graduate adaptability. This drew attention to the need of cultivating RA for future career advancement.

The present research possessed multiple limitations, and the sample was confined to undergraduates who participated in the ICIL program. Therefore, the findings were inconsistent with the broader graduate community. This research adopted a cross-sectional method, which assessed variables at a single point in time, failing to capture changes or advancements in graduate adaptability over time. Furthermore, mediating elements such as technology, organizational culture, and training were referenced only conceptually and not empirically examined, resulting in inadequate understanding of respective mediating functions.

The findings of this research produced significant consequences for higher education and the professional environment. Robust Adaptability OF Graduates was crucial in this swiftly evolving period, enhancing predictive abilities and responsiveness through PFJ and RA, respectively enabling the confrontation of workplace issues. Furthermore, higher education institutions must incorporate content pertaining to employment trends, technological advancements, and organizational culture into the curricula. Enhancing critical thinking, analytical abilities, and the practical application of knowledge was essential for producing more resilient and adaptive graduates.

Future research needs to broaden the sample to accommodate graduates from various programs and institutions, thereby enhancing the generalizability of the results. Longitudinal analyses also needed to assess the evolution of graduate adaptability over time. Moreover, additional research could examine the influence of mediating elements namely technology, organizational culture, and training in greater detail to enhance the understanding of the relationship among PFJ, RA, LA, and adaptability. Subsequent reviews should investigate effective educational and training methods to improve responsiveness and LA in graduates.

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