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Metacompetencies for the future workforce: An analysis of generation Z's work readiness in the VUCA workplace

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Abstract
This study aimed to explore how metacompetencies influence the work readiness of Generation Z in Indonesia and to investigate the moderating effect of prior work experience. The originality of this research lies in its application of Shet's (2024) VUCA-oriented metacompetency framework within the Indonesian workforce context. Adopting a quantitative explanatory approach, the study gathered data from 125 Generation Z workers aged 17-28 across Indonesia, collected between July and August 2025. The data were analyzed using Structural Equation Modeling with the Partial Least Squares (SEM-PLS) technique by SmartPLS 4 software, complemented by Multi-Group Analysis (MGA) to examine both direct causal relationships and the moderating influence of work experience. The results reveal that cognitive, cross-cultural, and personal effectiveness competencies significantly enhance work readiness, while analytical competency shows no significant effect. Work experience moderates these relationships, strengthening the influence of metacompetencies on readiness. Practically, the findings guide educators, employers, and policymakers to prioritize experiential learning and metacompetency development as strategic foundations for preparing Gen Z to thrive in the VUCA workplace.

Keywords: Generation Z, Metacompetencies, VUCA, Work Readiness

Abstrak
Penelitian ini bertujuan untuk mengeksplorasi bagaimana metakompetensi memengaruhi kesiapan kerja Generasi Z di Indonesia, sekaligus menyelidiki efek moderasi dari pengalaman kerja sebelumnya. Orisinalitas penelitian ini terletak pada penerapan kerangka kerja metakompetensi berorientasi VUCA dari Shet (2024) dalam konteks tenaga kerja Indonesia. Dengan menggunakan pendekatan kuantitatif-eksplanatori, penelitian ini mengumpulkan data dari 125 angkatan kerja Generasi Z berusia antara 17 - 28 tahun di seluruh Indonesia, pada bulan Juli-Agustus 2025. Data dianalisis menggunakan Structural Equation Modeling dengan teknik Partial Least Squares (SEM-PLS) dengan aplikasi SmartPLS 4, dilengkapi dengan Multi-Group Analysis (MGA) untuk menguji hubungan kausal langsung dan pengaruh moderasi dari pengalaman kerja. Hasilnya mengungkapkan bahwa kompetensi kognitif, lintas budaya, dan efektivitas personal secara signifikan meningkatkan kesiapan kerja, sementara kompetensi analitis tidak menunjukkan efek yang signifikan. Pengalaman kerja memoderasi hubungan ini, yang memperkuat pengaruh metakompetensi terhadap kesiapan. Secara praktis, temuan ini memandu para pendidik, pemberi kerja, dan pembuat kebijakan untuk memprioritaskan pembelajaran berdasarkan pengalaman dan pengembangan metakompetensi sebagai landasan strategis dalam mempersiapkan Gen Z agar berkembang di tempat kerja VUCA.

Kata kunci: Generasi Z, Kesiapan Kerja, Metakompetensi, VUCA

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1. Introduction

The current work environment is increasingly complex and dynamic, as described by the VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) concept, which highlights challenges arising from technological change, globalization, and recurring crises (Ying, 2024; Zhang-Zhang & Rohlfer, 2022). These rapid transformations compel the workforce to develop relevant competencies (Mujib & Purusa, 2022b). Job readiness is therefore essential for Generation Z to acquire the skills required to thrive in this evolving landscape (Hameed & Sharma, 2020). Shaped by the rapid advancement of information technology, this generation possesses distinct characteristics that influence their readiness for work (Febriana & Mujib, 2021).

Generation Z, born between 1997 and 2012, represents a cohort of digital natives who have grown up surrounded by rapid technological advancement. They are often described as creative, adaptable, and highly proficient with digital tools (Benítez-márquez et al., 2022). Shaped by constant exposure to technology, their work styles differ considerably from earlier generations. Members of this generation tend to value inclusivity, seek meaningful work, and excel in multitasking and technology-driven environments (Agarwal & Vaghela, 2018). Yet, despite these strengths, research shows that many Gen Z individuals face noticeable gaps in essential workplace skills particularly in areas such as management, communication, and problem-solving (Bennett & Lemoine, 2014; Yılmaz et al., 2024). To thrive in today's dynamic world of work, they require not only technical expertise but also metacompetencies, a broader set of integrative abilities that foster learning, adaptation, and innovation. These higher-order skills enable individuals to remain relevant and competitive amid constant change (Brown, 1993). Developing metacompetencies enhances one's capacity to learn, think creatively, and respond effectively to uncertainty, serving as a crucial form of adaptability in the VUCA workplace (Mujib & Purusa, 2022a).

In modern organizations, employees are expected to cultivate metacompetencies alongside soft skills that enhance overall employability (Astuti et al., 2025). Core capabilities such as collaboration, critical thinking, creativity, and communication have become indispensable for success in fast-changing, unpredictable work environments (Thornhill-miller et al., 2023). In volatile settings, employees must communicate clearly with diverse stakeholders to manage evolving demands; under uncertainty, they rely on critical thinking to make informed decisions with limited data. Meanwhile, complexity calls for creative problem-solving, and ambiguity requires interdisciplinary teamwork.

Thriving in a VUCA world thus depends on developing traits such as cognitive flexibility, an agile mindset, personal ambidexterity, complex problem-solving, continuous learning, and resilience (Shet, 2024). The increasing intricacy of professional life also demands mastery of cross-disciplinary metacompetencies such as iterative learning, sustainable innovation, dynamic adaptability, and resilient improvisation (Zenk et al., 2024).

Despite these growing demands, numerous studies reveal a persistent mismatch between the competencies of recent graduates and the expectations of employers.

Many graduates enter the workforce with limited professional experience and insufficient practical knowledge, two factors that are critical for competitiveness in today's job market (Kamil et al., 2024). The skills gap often includes weaknesses in digital literacy, teamwork, problem-solving, and interpersonal communication, which collectively hinder employability (Tee et al., 2024; Yong & Ling, 2023). Generation Z, as the newest entrants to the labor force, faces similar challenges. While they may possess strong theoretical and technological foundations, they often struggle to translate these abilities into effective performance in complex, high-pressure environments. This raises important questions about whether current education and training systems are adequately developing metacompetencies, and how well-prepared Gen Z truly is to meet the demands of the modern workplace.

However, scholarly attention to the role and urgency of metacompetencies for Generation Z workers remains limited. Considering their unique characteristics compared to earlier generations, deeper exploration is necessary to identify which metacompetencies are most critical for preparing them to succeed in the evolving world of work. Most previous research examining the gap between academic preparation and industry requirements has focused on university graduates in general, without distinguishing generational differences (Czerwińska-Lubszczyk et al., 2022; Radermacher et al., 2014; Radermacher & Walia, 2013). For example, Beke et al. (2020) found that students often prioritize technical knowledge over essential workplace competencies such as teamwork and adaptability. Likewise, Abides (2024) emphasized the need for both technical and soft skills among electronics technology students, yet did not address metacompetencies as broader, integrative abilities. Similarly, Sajdak et al. (2022) identified a skills gap within the context of Industry 4.0, revealing a disconnect between the competencies developed through education and those valued by employers, particularly in social, managerial, and personal domains.

In the Indonesian context, this issue is increasingly relevant due to the intensifying competition in the labor market and the ongoing transition toward a digital-based economy. Against this backdrop, the present study aims to analyze the metacompetencies required by Generation Z to achieve adequate job readiness in a VUCA workplace environment. The novelty of this research lies in adopting the VUCA-based metacompetency framework developed by Shet (2024), which encompasses cognitive, analytical, cross-cultural, and personal effectiveness competencies. This framework offers an integrative lens for understanding how metacompetencies shape job readiness in rapidly evolving work settings. Furthermore, the study examines how work experience functions as a moderating factor that strengthens the relationship between metacompetencies and job readiness.

Amid rapid technological disruption, recurring crises, and intensifying global competition, preparing Generation Z for the workplace has become increasingly urgent. Although prior studies have highlighted skill gaps among young workers, most focus on technical or soft skills and overlook metacompetencies as higher-order capacities needed to navigate VUCA conditions. This study addresses that gap by examining the role of metacompetencies in shaping Generation Z's job readiness within the

Indonesian context. Its novelty lies in applying Shet's (2024) VUCA-based metacompetency framework and in testing work experience as a moderating factor that strengthens the relationship between metacompetencies and job readiness. By shifting the focus from isolated skills to adaptive capabilities, this research offers a more integrative and context-sensitive perspective on workforce readiness.

The findings of this study are expected to make both theoretical and practical contributions. Theoretically, it enriches employability and human capital theory by integrating metacompetencies as higher-order constructs that determine generational adaptability in the workforce. Practically, the results are expected to guide educational institutions, training organizations, and human resource development practitioners in designing more effective learning and development programs that foster these essential metacompetencies. By doing so, stakeholders can better prepare Generation Z for the demands of the future workplace and enhance the overall competitiveness of the Indonesian workforce in the global era.

2. Literature Review

Work Readiness

Work readiness reflects an individual's level of maturity that combines knowledge, practical skills, and positive attitudes, allowing them to adjust effectively to an organization's culture, expectations, and performance standards while showing potential for long-term career growth (Sagita et al., 2020). It is demonstrated through the ability to set realistic goals, take responsibility, adapt to the work environment, and collaborate productively with others (Astuti et al., 2025). In essence, work readiness represents how prepared a person is to enter and succeed in the professional world by drawing on their knowledge, competencies, values, and behavior (Cabrera, 2020). Cabrera (2020) identifies four core dimensions of work readiness: attitude toward work, technical skills, social skills, and organizational awareness.

The attitude toward work dimension evaluates whether individuals show strong work ethics, discipline, commitment, integrity, and responsibility in performing their duties. This is particularly significant for Generation Z, as many fresh graduates often struggle to reconcile their expectations with workplace realities (Benítez-Márquez et al., 2022; Yılmaz et al., 2024). Technical skills involve the specific abilities and expertise required in a particular profession. Cabrera (2020) highlights that employees who possess solid technical competence are able to contribute immediately and adapt to technological advancements and procedural changes, skills that are indispensable in today's digital and industrial landscape. Social skills encompass the ability to build relationships, communicate effectively, and collaborate within teams. These include teamwork, conflict resolution, empathy, and interpersonal communication (Cabrera, 2020). Finally, organizational awareness refers to understanding an organization's values, structure, norms, and expectations. This dimension emphasizes that being work-ready means not only mastering technical knowledge but also understanding how one's role aligns with the broader goals and culture of the organization.

Metacompetencies

Metacompetencies refer to higher-order abilities that enable individuals to keep learning, remain adaptable, and manage complexity and uncertainty in the workplace (Brown, 1993). Within the VUCA environment that characterized by volatility, uncertainty, complexity, and ambiguity (Bennett & Lemoine, 2014), Smetacompetencies serve as a vital foundation that keeps technical skills relevant amid rapid change. They function as adaptive mechanisms that allow individuals to apply their skills in different contexts, reassess situations, and design effective strategies to meet evolving work demands (Bennett & Lemoine, 2014; Brown, 1993). Metacompetencies bring together diverse forms of experience, practice, and intelligence, forming the basis for academic, emotional, analytical, creative, and personal capabilities (Zenk et al., 2024). Contemporary studies classify them into four main categories that are essential for success in the VUCA era: Cognitive Competencies, Analytical Competencies, Cross-Cultural Competencies, and Personal Effectiveness Competencies (Shet, 2024; Zenk et al., 2024).

Cognitive competencies focus on mental agility and intellectual capability, serving as the foundation for learning, adapting, and making sound decisions (Shet, 2024). These competencies typically include three elements: cognitive flexibility, an agile mindset, and personal ambidexterity. Cognitive flexibility involves the ability to shift perspectives, adjust thinking patterns, and respond effectively to dynamic environments. Individuals who possess this trait can modify their strategies, explore alternatives, and embrace change, enabling them to make informed decisions even when faced with conflicting information. An agile mindset reflects a proactive and open approach to challenges and opportunities, one that values experimentation, resilience, and continuous growth. Meanwhile, personal ambidexterity represents the balance between exploration (seeking new opportunities) and exploitation (optimizing existing resources). This balance allows individuals to address immediate demands while preparing for long-term shifts.

In relation to work readiness, cognitive adaptability supports individuals in navigating ambiguity, anticipating change, and responding effectively to organizational uncertainty (García-Álvarez et al., 2022). As suggested by employability theory, cognitive competency is a crucial element of work readiness, as it underpins lifelong learning and continuous adaptation (Fugate et al., 2004). Moreover, work experience can further reinforce this relationship by providing real-world opportunities to apply critical thinking and decision-making. Consequently, individuals with higher cognitive competence, especially those with professional or internship experience, are more likely to demonstrate stronger work readiness within dynamic and uncertain environments.

H1: Cognitive Competency has a positive effect on Generation Z's Job Readiness, and this effect is stronger among those with work or internship experience

Analytical competencies focus on an individual's capacity to collect, evaluate, and derive insights from data and information. These competencies contribute to overall

personal development by enhancing productivity, earning potential, adaptability, problem-solving skills, and innovative capacity. Complex problem-solving enables individuals to navigate dynamic VUCA environments effectively, while creativity refers to the ability to generate new ideas, solutions, or expressions through innovative and imaginative thinking. Creative competencies foster innovation, competitiveness, and adaptability to change. Employees with high creativity are more likely to produce innovative ideas to overcome challenges and solve problems effectively (Shet, 2024). Individuals with strong analytical abilities can assess data critically and make evidence-based decisions, making them better prepared to face dynamic workplace challenges. However, for Generation Z (who tend to value speed, flexibility, and hands-on application over deep analysis) the impact of analytical competency on job readiness may vary (Visser & Terblanche, 2025). Work experience may strengthen this effect, as it provides opportunities to apply analytical abilities in practical contexts such as solving complex tasks, identifying operational problems, and designing data-driven solutions. Therefore, individuals with high analytical competency, especially those with prior work experience, are expected to demonstrate higher levels of job readiness.

H2: Analytical Competency has a positive effect on Generation Z's Job Readiness, and this effect is stronger among those with work or internship experience

Cross-cultural competencies refer to the knowledge, skills, attitudes, and behaviors that enable individuals to interact, communicate, and work effectively with others from different backgrounds. A collaborative mindset fosters communication and knowledge sharing, thereby improving decision-making and problem-solving. Cross-cultural collaboration involves effective interaction and respect across cultures, appreciation of diversity, and leveraging the strengths of multicultural teams to achieve shared goals (Shet, 2024). Cross-cultural intelligence encompasses the understanding, awareness, and adaptability required to engage effectively with people from diverse cultural contexts, while respecting their customs, norms, beliefs, and values. Previous studies show that cross-cultural abilities contribute significantly to employability, as individuals with these competencies tend to be more flexible, open-minded, and adaptive to environmental changes (Succi & Canovi, 2019). Work experience in diverse environments enhances exposure to cultural differences and strengthens social adaptability. Therefore, it is expected that cross-cultural competency will positively influence job readiness, with stronger effects among Generation Z individuals who have prior work experience.

H3: Cross-Cultural Competency has a positive effect on Generation Z's Job Readiness, and this effect is stronger among those with work or internship experience.

Personal effectiveness competencies refer to self-management skills that enable individuals to manage themselves, their time, and resources optimally to achieve both personal and organizational goals. In the VUCA-based workplace, these competencies form a crucial foundation for productivity, adaptability, and career sustainability. The three core aspects of personal effectiveness include personal resilience, continuous

learning, and adaptive mindset (Shet, 2024). Personal resilience involves the capacity to cope effectively with difficulties, maintain mental and emotional well-being, and recover from setbacks. Continuous learning represents an individual's proactive and independent approach to personal and professional development, aiming to stay current, adapt to changes, and enhance capabilities over time. An adaptive mindset involves viewing change as an opportunity for personal and professional growth rather than as a threat or barrier. Together, these aspects form the core of personal effectiveness in the VUCA era (Clarke, 2017; Succi & Canovi, 2019). Individuals who demonstrate strong personal effectiveness are capable of maintaining productivity, managing pressure, and navigating uncertainty with high motivation and confidence. From the self-management perspective of employability theory, personal effectiveness serves as a key driver of job readiness, as it ensures individuals can align themselves with organizational expectations and job demands (García-Álvarez et al., 2022). Work experience reinforces this relationship by providing practical opportunities to cultivate responsibility, discipline, and self-regulation in professional settings. Therefore, individuals with high personal effectiveness, especially those with prior work experience, tend to exhibit higher levels of job readiness.

H4: Personal Effectiveness Competency has a positive effect on Generation Z's Job Readiness, and this effect is stronger among those with work or internship experience

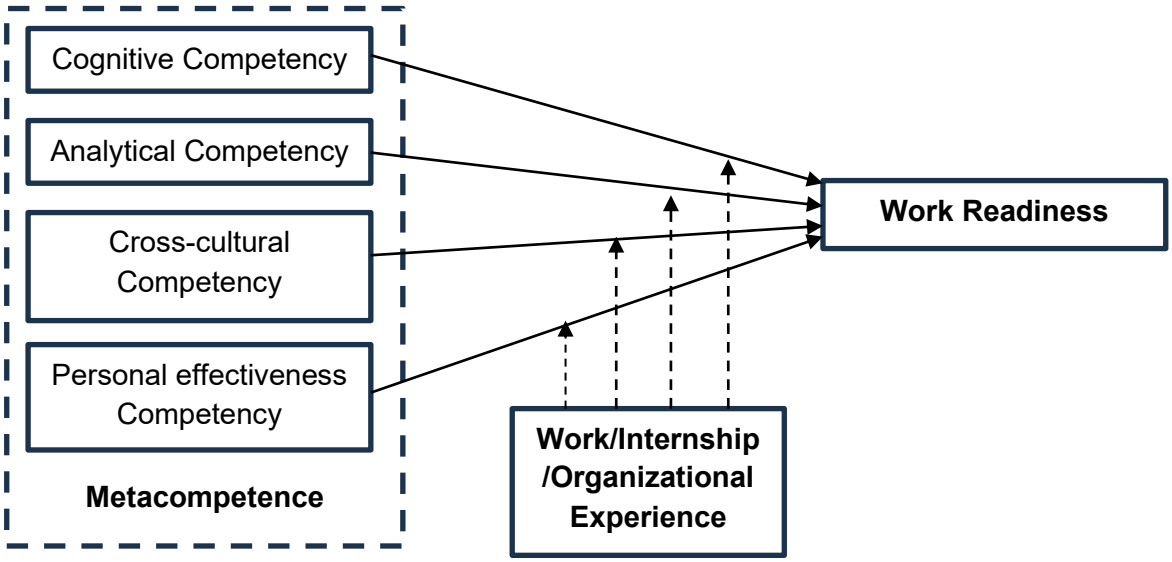

Figure 1. Research Model

3. Research Method

This research employs an explanatory approach aimed at identifying and testing the causal relationships between selected variables. The central purpose is to explore the types of metacompetencies that Generation Z employees in Indonesia need in order to improve their work readiness. The study draws on the VUCA competency framework introduced by Shet (2024), which encompasses four primary dimensions: analytical competency, cognitive competency, personal effectiveness, and cross-cultural

competency. A quantitative approach was adopted, utilizing numerical data to measure and analyze these relationships. The research sample consisted of Indonesian workforce aged 20 to 28 years consist of final undergraduated student and early employee. The selection of respondents with these age criteria is in accordance with the Generation Z category which is currently entering that age. This generational cohort was chosen to assess how their metacompetency profiles relate to their overall readiness to enter and succeed in the workforce.

Data were analyzed using Structural Equation Modeling (SEM) with the Partial Least Squares (PLS) method. Following Hair et al. (2010), who recommend a sample size of 100–200 respondents for SEM-PLS analysis, this study included 125 participants. Primary data were collected through both on-site surveys and online self-administered questionnaires, ensuring diverse participation across settings. Data was collected in July-August 2025 from respondents spread across various cities in Indonesia. Data was analyzed with the help of SmartPLS 4 software.

The indicators for the metacompetency constructs were adapted from Shet's (2024) model and included ten key components: cognitive flexibility, agile mindset, personal ambidexterity, cross-cultural intelligence, cross-cultural collaboration, creativity, complex problem-solving, personal resilience, continuous learning, and adaptive mindset. Meanwhile, the instrument used to assess work readiness was adapted from Sagita et al. (2020) and measured four main aspects: personal characteristics, organizational acumen, work competencies, and social intelligence.

Before testing the hypotheses, the dataset underwent validity and reliability analyses to ensure that the measurements were both accurate and consistent. Subsequently, a Multi-Group Analysis (MGA) was performed to examine differences in the strength of relationships between respondent groups, specifically between those with work or internship experience and those without prior experience. The PLS-SEM method was selected because it effectively accommodates both regression and moderation analysis, making it appropriate for assessing the proposed research model.

4. Results and Discussion

4.1. Results

Based on the demographic data presented in the table 1, the majority of respondents were in the 17–22 years old age group, accounting for 86 respondents (68.8%), while 39 respondents (31.2%) were in the 23–28 years old category. This indicates that most participants belong to the younger segment of Generation Z, who are either in the early stages of their careers or still pursuing higher education. In terms of educational background, the majority of respondents had completed senior high school or vocational school (SMA/SMK), totaling 91 respondents (72.8%). This was followed by bachelor's degree (S1) holders with 24 respondents (19.2%), and diploma (D3) and junior high school (SMP) graduates with 5 respondents (4.0%) each. These results show that most respondents are at the secondary education level, which aligns with the study's focus on youth employability and early career readiness. In terms of internship experience, 81 respondents (64.8%) reported having participated in

internship programs, while 44 respondents (35.2%) had not yet experienced internships. This indicates that a majority of Generation Z respondents have been exposed to practical work environments, which may enhance their understanding of workplace dynamics and contribute positively to their work readiness. Detailed data regarding the respondent profile is shown in Table 1.

Table 1. Respondent Profile

Category		Frequency	Percentage (%)
Age	17 - 22 years	86	68.80
	23-28 years	39	31.20
Education	Diploma	5	4.00
	Bachelor	24	19.20
	Senior High School	91	72.80
	Junior High School	5	4.00
Work/ Internship Status	Employed/Work Experienced	81	64.80
	Not Employed/ Not Work Experienced	44	35.20

Sources: data processed (2025)

Validity and Reliability Testing

Table 1. Loading Factor Value

	Cognitive Competency	Analytical Competency	Cross-cultural Competency	Personal effectiveness Competency	Work Readiness	Note
X1.1	0.645					Valid
X1.3	0.791					Valid
X1.4	0.740					Valid
X1.5	0.745					Valid
X1.6	0.808					Valid
X2.1		0.706				Valid
X2.2		0.814				Valid
X2.3		0.860				Valid
X2.4		0.747				Valid
X3.1			0.765			Valid
X3.2			0.717			Valid
X3.3			0.763			Valid
X3.4			0.748			Valid
X4.1				0.737		Valid
X4.2				0.834		Valid
X4.5				0.735		Valid
Y1.1					0.677	Valid
Y2.1					0.667	Valid
Y2.2					0.740	Valid
Y2.3					0.800	Valid
Y3.1					0.741	Valid
Y3.2					0.726	Valid
Y3.3					0.711	Valid
Y4.1					0.665	Valid
Y4.3					0.740	Valid

Validity testing was conducted to assess the extent to which the statement indicators accurately represent the measured variables. A variable is considered valid if it meets the loading factor criteria, generally with a value above 0.7 (Hair et al., 2010). Indicators

are also considered valid if they exhibit a correlation value greater than 0.6, which is regarded as sufficient. The results of the subsequent tests indicate that all indicators are valid and adequately support the constructs of the measurement model. The results of the convergent validity test are presented in Table 2.

Discriminant validity testing aims to ensure that each variable is distinct from the others. Discriminant validity is established when the square root of the Average Variance Extracted (AVE) value for each variable is greater than its correlations with other variables. All variables used in this study were found to possess adequate discriminant validity (see Table 3).

Tabel 2. Square Root of AVE Value

	CC	AC	CcC	PEC	WR	Note
Cognitive Competency (CC)	0.742					Valid
Analytical Competency (AC)	0.639	0.816				Valid
Cross-cultural Competency (CcC	0.605	0.462	0.770			Valid
Personal Effectiveness Competency (PEC)	0.349	0.416	0.198	0.785		Valid
Work Readiness (WR)	0.333	0.558	0.271	0.703	0.718	Valid

Note: The AVE root value is shown in bold.

Subsequently, a reliability test was conducted to confirm the consistency of the instruments used in the study. A variable is considered reliable if it has both a Cronbach's alpha and Composite Reliability value of ≥ 0.70. The results show that all variables meet the minimum threshold for reliability testing and can therefore be considered reliable (see Table 4).

Table 3. Reliability Test Result

Variables	Cronbach's alpha	Composite reliability	Note
Cognitive Competency	0.838	0.880	Reliable
Analytical Competency	0.832	0.888	Reliable
Cross-cultural Competency	0.774	0.854	Reliable
Personal effectiveness Competency	0.705	0.828	Reliable
Work Readiness	0.883	0.906	Reliable

Hypothesis Testing

To test the proposed hypotheses, a bootstrapping procedure was conducted to analyze the effects of the independent variables on the dependent variable. This analysis examined the significance of metacompetencies on work readiness across all respondent groups. The results indicate that most metacompetency variables have a significant positive effect on work readiness.

Cognitive competency was found to have a positive and significant influence on work readiness, as indicated by a correlation coefficient of 0.179 and a p-value of 0.010. This suggests that competencies involving mental and intellectual abilities serve as a foundation for individuals' adaptability, decision-making, and self-development, which in turn enhance their readiness for the workforce. Conversely, analytical competency did not show a statistically significant positive effect on work readiness (correlation coefficient = 0.078, p-value = 0.141). This may be because, for Generation Z, the ability

to collect, evaluate, and derive insights from data is not considered a critical factor in determining work readiness.

The findings also reveal a positive and significant effect of cross-cultural competency on Gen Z's work readiness (correlation coefficient = 0.157, p-value = 0.004), supporting the notion that the ability to interact, communicate, and collaborate effectively with individuals from diverse backgrounds contributes to higher levels of work readiness. Finally, personal effectiveness competency demonstrated the strongest positive influence, with a correlation coefficient of 0.513 and a p-value of 0.000. This result provides evidence that self-management skills enable Gen Z individuals to achieve both personal and organizational goals effectively, thereby enhancing their overall work readiness. The summary of correlation analysis results for all groups is presented in Table 5 and Figure 2.

Tabel 4. Correlation Test

Hyphoteses	Original sample	Sample mean	Standard deviation	T statistics	P values	Note
H1	0.179	0.178	0.069	2.575	0.010	Accepted
H2	0.078	0.092	0.053	1.474	0.141	Rejected
H3	0.157	0.159	0.055	2.846	0.004	Accepted
H4	0.513	0.504	0.062	8.321	0.000	Accepted

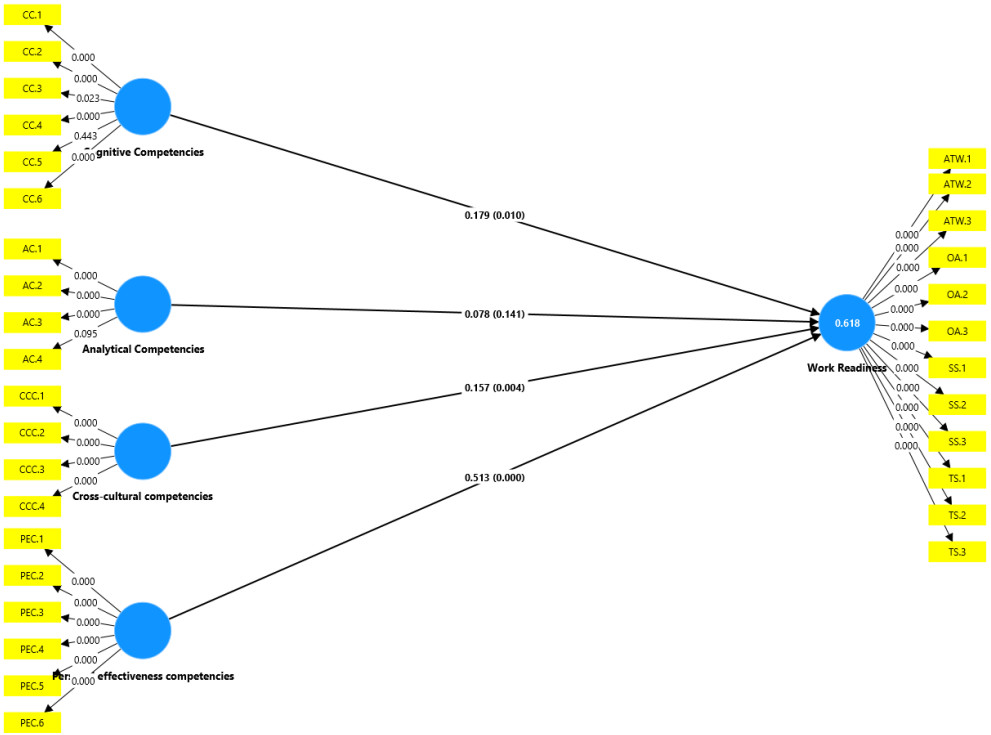

Figure 2. Correlation Analysis with Bootstrapping

Further data analysis was conducted to examine the differences in the influence of metacompetency variables on work readiness between respondent groups, categorized as "Employed/Work Experienced" and "Not Yet Employed/Work Experienced." The technique used for this testing was Multi-Group Analysis (MGA). Prior to conducting the MGA, model fit was assessed using the Standardized Root Mean Square Residual (SRMR), d_ULS, and d_G indicators. The results showed an

SRMR value of 0.073, d_ULS of 0.453, and d_G of 0.157, indicating a good overall fit for the developed model.

To perform the MGA, Measurement Invariance of Composites (MICOM) was conducted to ensure that the observed differences between groups reflected genuine variations in the phenomenon under study. Following the procedure recommended by Henseler et al. (2025), the MICOM process involves three main steps. The first step, configural invariance, ensures that the model structure is identical across groups. This includes the use of the same indicators, construct specifications, analytical procedures, and parameter estimation methods for both groups. The second step, compositional invariance, tests whether the construct composition is equivalent across groups. This test is performed using a permutation test, comparing the correlation between the composite scores of constructs in both groups with the 5% quantile value. The third step, equality of means and variances, assesses whether the constructs' means and variances are equivalent between groups. Differences are evaluated within a 95% confidence interval, and if the observed differences fall within this interval, the construct is considered invariant between groups.

The results confirm that configural invariance was achieved, as both respondent groups were treated identically. Therefore, the MICOM procedure proceeded to the next stage. Based on the compositional invariance test (Step 2), most constructs demonstrated compositional equivalence between groups. The original correlation values for analytical competencies, cognitive competencies, personal effectiveness competencies, and work readiness were greater than the 5% quantile and had p-values > 0.05, indicating compositional invariance for these constructs. However, for cross-cultural competencies, the p-value was 0.014 (< 0.05) and the original correlation (0.960) was lower than the 5% quantile (0.973), indicating that compositional invariance was not achieved for this construct. Thus, four out of the five constructs met the compositional equality criteria. Overall, the results demonstrate partial measurement invariance, as most constructs met the compositional invariance requirement, except for cross-cultural competencies.

In the third step of the MICOM procedure, the equality of means and variances was tested to ensure no significant differences existed in the construct distributions between the two groups. The results of Step 3a (mean equality) showed that analytical competencies (original difference = 0.059; p = 0.366) and cognitive competencies (original difference = –0.213; p = 0.060) had mean differences within the 95% confidence interval, indicating that the means of these two constructs were equivalent between groups. In contrast, cross-cultural competencies (original difference = –0.296; p = 0.016), personal effectiveness competencies (original difference = –0.297; p = 0.018), and work readiness (original difference = –0.252; p = 0.035) exhibited significant mean differences outside the 95% confidence interval, suggesting that these three constructs differed between groups.

The results of Step 3b (variance equality) showed no significant differences in construct variances between groups, with p-values > 0.05 across all constructs

(analytical competencies = 0.161; cognitive competencies = 0.219; cross-cultural competencies = 0.225; personal effectiveness competencies = 0.428; work readiness = 0.385). These findings confirm that variance invariance was achieved for all constructs. In summary, the MICOM analysis indicates that most constructs exhibit equal means and variances across groups, though mean differences were observed in cross-cultural competencies, personal effectiveness competencies, and work readiness.

Tabel 6. MGA Analysis Result

	Path Coeff			p value
	Employed	Not Employed	difference	
Cognitive Competencies -> Work Readiness	0.066	0.310	-0.245	0.036
Analytical Competencies -> Work Readiness	0.104	0.034	0.070	0.269
Cross-cultural competencies -> Work Readiness	0.166	0.242	-0.077	0.045
Personal effectiveness competencies -> Work Readiness	0.316	0.318	-0.002	0.005

4.2. Discussion

The results of the data analysis confirmed the proposed research objectives and hypotheses. The findings reveal that most aspects of metacompetence positively influence the work readiness of Generation Z, with work experience acting as a key moderating factor that enhances this relationship. Metacompetencies can be understood as a set of higher-order, integrative skills that require continual learning and reflection to produce meaningful performance outcomes (Brown, 1993). This conclusion supports both employability theory and human capital theory, which suggest that readiness for work is shaped not merely by technical knowledge but also by broader capabilities such as adaptability, critical reasoning, and self-management (García-Álvarez et al., 2022). Previous research likewise indicates that in today's digital era, the employability of young professionals relies more on a balanced mix of cognitive, social, and personal competencies rather than on technical expertise alone (Tushar & Sooraksa, 2023).

Among the various dimensions examined, cognitive competence emerges as a key driver of work readiness, particularly for individuals with previous work exposure. These mental capacities help young workers manage ambiguity and respond effectively to rapid change, characteristics that define the VUCA environment. When cognitive abilities are cultivated only through theoretical instruction rather than direct experience, their impact on readiness tends to be limited. This finding highlights the value of experiential learning, where internships, part-time employment, and project-based engagements provide opportunities to apply abstract reasoning, problem-solving, and adaptive decision-making in practice. In contrast, analytical competence did not show a significant effect on Gen Z's readiness for work. This may suggest that today's younger workforce places greater value on flexibility, collaboration, and practical engagement than on intensive analytical reasoning. The result diverges from

Clarke's (2018) findings, which identified analytical thinking as a critical employability skill for the 21st century. Similarly, (Visser & Terblanche, 2025) observed that while employers still consider analytical ability important, Gen Z professionals tend to highlight interpersonal skills, creativity, and a strong work ethic as the competencies they rely on most.

The study also demonstrates that cross-cultural competence contributes positively to work readiness, particularly among individuals with employment experience. This form of competence enhances teamwork, decision-making, and innovation in diverse work settings (Ng et al., 2009). Its relevance continues to grow with the globalization of industries and the increasing multicultural nature of the workforce. The results align with (Chiu et al., 2013), who found that cross-cultural competence enhances empathy, communication, and social adaptability in international organizations. Exposure gained through real work experience plays a critical role in fostering intercultural sensitivity and global awareness, helping employees perform effectively in varied cultural contexts.

Finally, personal effectiveness competence was identified as the most influential factor shaping Gen Z's work readiness. This supports earlier research by Clarke (2018) and Succi and Canovi (2020), who emphasized that intrapersonal skills form the bedrock of employability in an unpredictable and rapidly changing environment. Personal effectiveness enables individuals to manage themselves efficiently, sustain productivity, and remain adaptable amid shifting professional demands. In particular, resilience helps workers maintain performance and engagement when confronted with challenges or setbacks. This aligns with self-management theory, which highlights the importance of emotional regulation and self-direction in achieving workplace success. Higher-order metacompetencies such as self-regulation and goal orientation are essential for sustaining long-term career relevance and effectiveness. Furthermore, hands-on work experience enhances these abilities by allowing individuals to practice responsibility, adaptiveness, and self-control in authentic professional settings.

5. Conclusion

The results of the data analysis confirmed the proposed research objectives and hypotheses that explore how metacompetencies influence the work readiness of Generation Z in Indonesia, while also investigating the moderating effect of prior work experience. The results of this study confirm that most aspects of metacompetence positively shape the work readiness of Generation Z. Among these, cognitive, cross-cultural, and personal effectiveness competencies were found to have the most substantial impact, while analytical competency did not show a significant relationship with readiness for work. This pattern suggests that Gen Z's preparedness for professional life is influenced less by their analytical or logical reasoning abilities and more by adaptive, interpersonal, and self-management skills. Furthermore, work experience emerged as an essential moderating factor, strengthening the link between core metacompetencies and job readiness. Experience, therefore, plays a vital role in

transforming these competencies from abstract potential into tangible capabilities that can be applied effectively in real-world organizational settings.

From a theoretical perspective, the findings build upon and refine both employability theory (Fugate et al., 2004). They demonstrate that metacompetencies (i.e. cognitive, cross-cultural, and intrapersonal dimensions) can be regarded as higher-order forms of human capital that define the employability and readiness of emerging workers. The absence of a significant relationship between analytical competency and work readiness introduces a new insight into the discourse on 21st-century skills (Clarke, 2017). For this generation, the value of analytical ability may be overshadowed by the growing importance of flexibility, rapid adaptation, and collaboration across diverse contexts. Additionally, the findings lend strong support to experiential learning theory (Kolb, 1984), emphasizing that practical experiences serve as the mechanism through which conceptual understanding is transformed into actionable competence. Overall, this study contributes to a more context-sensitive model of work readiness that reflects the unique attributes of Generation Z and the dynamic realities of today's digital workplace.

Practically, the findings of this research provide strategic guidance for educational institutions, organizations, and policymakers in preparing young people to thrive in the VUCA era. First, higher education institutions should strengthen experiential learning curricula such as internships, interdisciplinary projects, and entrepreneurship programs that allow students to apply metacompetencies in authentic professional contexts. Second, organizations are encouraged to design training and mentorship programs that emphasize not only technical proficiency but also the development of cognitive agility, cross-cultural sensitivity, and personal effectiveness. Finally, government and employment agencies can incorporate metacompetencies as key indicators in workforce development policies. By integrating formal education, workplace experience, and continuous self-development, Gen Z's work readiness can be holistically enhanced to meet the demands of an increasingly dynamic and complex world of work.

This study is not without its limitations. First, the data used in the study is relatively limited, with only 125 workforce participating as respondents. Although this amount of data meets the minimum requirements for analysis using the SEM-PLS technique, this is a weakness because the study findings are not strong enough to be generalized to a broader context, particularly for Generation Z throughout Indonesia. Furthermore, the literature supporting the topic of metacompetence, specifically covering the four dimensions tested in this study, is still quite limited. This has limited the development of studies on the factors that act as antecedents and outcomes of metacompetence, including the limited number of studies that have developed and tested the reliability of measurement instruments for these variables. Future studies are recommended to expand the scope of the research sample to strengthen the generalization of the results to the target group of Generation Z in Indonesia. Opportunities for future research topics include exploring metacompetence studies accompanied by measurements of these variables.

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