The Development and Psychometric Properties of the Academic Dishonesty Scale (Indonesian Version) in Emerging Adulthood Students

Philicia Christanti Martajaya[1], Jason Dionnicius Young[2], Sandi Kartasasmita[3], Didik Brahmantio Saryono[4], Tasya Viviana[5]

{philicia.705220219@stu.untar.ac.id[1] , jason.705220224@stu.untar.ac.id[2] , sandik@fpsi.untar.ac.id[3]}

Undergraduate of Psychology, Universitas Tarumanagara[1,2,3], Faculty of Psychology, Universitas Tarumanagara[4], Doctoral Degree Programme, Faculty of Psychology, Universitas Muhammadiyah Malang[4]

Abstract. Academic dishonesty has become a substantial issue in educational institutions. AI technologies have come up with additional challenges to academic integrity, requiring the use of updated measuring tools. Currently, no validated Academic Dishonesty Scale exists in Indonesia, encouraging the development of an Indonesian version. This study aims to develop an Academic Dishonesty Scale (ADS) Indonesian version for emerging adulthood students and examine its psychometric properties. The scale highlights current AI challenges in education. Following analysis, 18 items were retained across three categories, including (a) integrity compromised, (b) misuse of AI, and (c) general cheating with 18-items. This study involved 288 emerging adult students, consisting of 59 males (20.5%) and 229 females (79.5%), aged 18-25 years (M = 19.70 years). Cronbach's alpha was .814 and CFA showed excellent fit: CFI = .950, RMSEA = .047, SRMR= .047, and GFI = .937, supporting the three factor structure.

Keywords: Academic Dishonesty, Artificial Intelligence, Emerging Adulthood Students, Psychometric Properties

1 Introduction

Dishonesty, defined as acts or attempts to act without honesty [1], has become common phenomena in society, and when occurs in academic settings, it is recognized as academic dishonesty, representing a violation of educational integrity. Academic dishonesty is an existing global problem in education [2]. Exacerbated by increased academic pressure and workload which often heighten students' temptation to cheat [3]. Encompassing traditional behaviors such as plagiarism, exam cheating, fabrication, and unauthorized collaboration [4],[5]. In Indonesia, academic dishonesty represents a persistent challenge in higher education specifically in university [6], especially technological advances such as AI play an important role in educational environment but are also a major concern in educational institutions because they lead to unethical behavior [7], moreover the accessibility of artificial intelligence (AI) tools encourage students to ignore essential learning processes by using this technology to quickly complete assignments or achieve high grades, which can ultimately compromise the

ISPsy 2025, May 29, Purwokerto, Indonesia

DOI 10.4108/eai.29-5-2025.2360820

development of basic academic skills such as analytical logics, independent research methods, and original creative expression. In addition, it has also increased the compromised ideals of academic integrity, making it easier for students to participate in plagiarism and other sorts of cheating.

The emergence of artificial intelligence (AI) tools has introduced qualitatively different forms of academic misconduct that cannot be adequately captured by existing measurement approaches. Students today certainly benefit from the ease of learning, finding information, and other academic assistance from technological advances such as AI, but this also become concern and refers to ease of unethical behavior in the learning system [8], sometimes labeled 'AI-giarism' that traditional measurement scales fail to capture [4]. Current instruments, such as the Academic Dishonesty Scale developed [29], assess conventional misconduct dimensions but exclude AI-related behaviors, creating a significant measurement gap in contemporary educational contexts.

This gap is particularly critical in the Indonesian context, where existing scales do not address AI misuse among emerging adult students navigating complex technological and cultural landscapes. Therefore, this study aims to develop a culturally relevant Academic Dishonesty Scale for Indonesian emerging adults that integrates traditional misconduct dimensions with a new AI-related subscale, providing a comprehensive instrument for measuring contemporary academic dishonesty and supporting institutional efforts to foster academic integrity.

2 Literature Review

Academic dishonesty is fraudulent behavior to gain an unfair academic advantage [9], traditionally categorized into plagiarism and cheating [10]. There are some factors that influence academic dishonesty. First there are personality factors [11],[12]. Research consistently demonstrates that personality traits significantly predict academic misconduct. Students exhibiting higher levels of honesty, humility, friendliness, conscientiousness, openness to experience, and extraversion show reduced likelihood of engaging in academic misconduct [12], while those with higher impulsiveness (likely to take risks without considering the consequences) and ruthlessness (can act aggressively, especially when focused on success) demonstrate increased levels of academic dishonesty during college [13].

Second, there are academic motivation values that explain that perceptions of widespread cheating are positively associated with goal persistence and reward reactivity (action taken to claim the reward) while at high achievement motivation increases dishonest behavior when combined with reward reactivity [14]. It's also explained that students with low learning motivation engage in academic shortcuts such as cheating, whereas those with higher intrinsic motivation maintain greater academic integrity.

Third, cultural context plays a significant role in how students respond to cheating behaviors among their peers [15],[16].

It is revealed that the influence of perceived peer cheating varies depending on the cultural environment students inhabit. Students from collectivistic societies show a stronger tendency to be influenced by their peers' cheating behaviors compared to those from individualistic cultures. Also, the cultural dimension of power distance significantly affects this phenomenon. In societies characterized by high power distance, students demonstrate an even greater susceptibility to peer cheating influence [15]. Religious involvement demonstrates protective

effects against academic misconduct through reinforcement of ethical behavioral norms (3), with active participation in religious activities correlating with reduced dishonesty rates [17]. Study also reveals that academic motivation values, and personality factors predict academic dishonesty behavior differently across cultures and countries [18].

Lastly, artificial intelligence represents the capability of computational systems to process data inputs, develop understanding through experience and modify their processes to accomplish designated goals [19]. However, the increasing use of AI in everyday life brings concerns about the need for proper and biased regulation [19]. While AI virtual assistants enhance educational experiences through improved accessibility, efficiency, and student engagement, they also simultaneously create substantial challenges for academic integrity within educational institutions [20],[21]. AI-powered tools like ChatGPT exemplify this dual nature, dramatically improving research and writing efficiency while raising fundamental questions about authenticity and ethical academic practice, thereby highlighting the continued importance of human oversight and critical analysis [22]. AI language models support asynchronous communication, boosting student engagement and collaboration, yet they enable new forms of academic misconduct through the submission of work that isn't their own [23], [24], [25]. Followed by existing academic pressures, as demanding educational environments characterized by strict deadlines and concurrent coursework create conditions that inadvertently encourage academic dishonesty [26]. Research across various educational contexts reveals substantial misconduct prevalence, particularly among first-semester students and students taking introductory courses [27]. These results draw attention to the dual nature of artificial intelligence: while technology facilitates learning and increases study efficiency, it also creates possibilities for academic dishonesty that schools and universities must address carefully and deliberately.

These emerging AI-related challenges expose critical limitations in existing measurement approaches for academic dishonesty. While academic dishonesty has attracted significant attention from various disciplines over decades, existing measurement scales lack the psychometric sophistication necessary to address technology-mediated misconduct. Researchers have developed reliable instruments for measuring traditional forms of academic dishonesty, as well as studies revealing increasing misconduct rates over three decades [28], established tools like McCabe and Treviño's 1993 Academic Dishonesty Scale as widely used tool for assessing offenses such as cheating and plagiarism in various cultural contexts, making it a valuable tool in cross-cultural studies [29] and Bashir and Bala's 2018 multidimensional expansion address only conventional components such as plagiarism, examination cheating, assignment falsification, unauthorized internet copying, improper collaboration, and data tampering [30], [31], [32],[33].

Existing measurement approaches do not fully capture the complex interplay of factors driving contemporary academic misconduct. Despite extensive research investigating how personality [12],[13], motivation [14], culture [3],[18], and AI [22],[23],[24],[25] affect academic dishonesty, significant gaps remain in understanding these multifaceted relationships, particularly as AI tools proliferate and potentially obscure new forms of dishonest behavior [20]. These issues highlight the urgent need for better tools that are culturally relevant, reliable, and capable of reflecting the realities of today's digital learning environment. So, future research should take a broader and longer-term view to better understand how all these factors combine and change over time, especially in different cultural settings.

The interrelationship between personality, culture, and technology factors indicates the need for a multidimensional approach that can include the complexity of contemporary academic cheating. Based on a review of existing research, three main factors emerge: First is Integrity Compromised includes behavior that opposes integrity values, which consist of honesty, trust, equity, respect, responsibility, and courage [9]; lying to others in the context of task completion [34]; plagiarism, which involves taking someone else's words or ideas without acknowledging the source [10],[34],[35]; claiming all or part of someone else's work as one's own [34]. Second, misuse of AI includes behavior that uses information or ideas from AI without mentioning the source, quotation, attribution, and claiming that the information or ideas are purely one's own [20]; manipulating data and/or materials using AI [36]; and using AI as an external assistance in completing tasks without personal contribution [9],[10],[35]. Last is general cheating includes behavior involving dishonesty, unfairness, and violation of rules to gain personal advantage, such as giving and/or receiving information during assessments or exams and using exam materials/content/answer keys illegally [9],[34].

3 Method

3.1 Participants

The research participants are emerging adult students from several universities in Jakarta, Bogor, Depok, Tangerang, and Bekasi. The cities are selected because they have a high population density with many educational facilities to provide a broader picture of the students' behavior. Non-probability sampling method, specifically purposive sampling, was applied due to age and academic status restrictions. The initial participants are 345 emerging adult students from 17 universities. However, only 288 participants were involved in the study because of inconsistent responses. There are 59 males (20.5%) and 229 females (29.5%), with an age range of 18-25 years. The mean age of the participants is 19.70 years old (SD = 1.241). The demographic characteristics of participants are shown in Table 1.

Table 1. Demographic Characteristic of Participants

Demographic		Frequency	Percentage
Gender	Man	59	20.5
	Woman	229	79.5
	Total	288	100.0
Age (years)	18	44	15.3
	19	101	35.1
	20	71	24.7
	21	49	17.0
	22	19	6.6
	23	1	.3
	24	2	.7
	25	1	.3
	Total	288	100.0

3.2 Instrument and Procedures

The Academic Dishonesty Scale (Indonesian Version) is initially generated from an extensive literature review about theoretical foundations of academic dishonesty and based on the previous ADS measurement development [29], which consists of six dimensions with a total of 23 items originally in English. The translation process followed a forward-backward translation procedure, in which the English version was first translated into Indonesian and then back into English by independent translators who were proficient in both the source and target languages. This procedure was carried out to ensure the accuracy of the statements in reflecting the intended construct.

To adapt the scale to the Indonesian context and address contemporary issues where AI is increasingly utilized in academic settings, four additional items were generated to represent a new dimension, “misuse of AI”. The first and second item were written to emphasize the practice of plagiarism, specifically in using AI [20], which indicates a modern form of intellectual dishonesty that overcomes typical plagiarism detection methods, resulting in diminished originality and prioritizing rapid task completion over genuine learning. The third item highlighted the practice of falsification using AI [36], which indicates a sophisticated form of academic deception that undermines the fundamental ethical standards and evidence-based inquiry that are considered as the foundation of academic integrity. The fourth item addressed the use of AI as an unauthorized external assistance in completing assignments (9,10,29,35), which violates academic expectations and fosters excessive dependency that affects the development of academic skills and critical thinking abilities.

Following the translation and development of the four new items, experts with backgrounds in educational psychology and measurement were involved in an expert review. The experts evaluated all 27 items for semantic, conceptual, and cultural clarity, as well as relevance in the Indonesian higher education context.With the addition the misuse of AI dimension, the instrument initially compromised 27 items across seven dimensions: cheating in examination (9,10,29,34,35), plagiarism (9,10,29,34,35,36), outside help (9,10,29,35), prior cheating (29), falsification (9,29,36), lying about academic assignments (9,29,35), and misuse of AI (20,23).

Each item was rated on a 5-point Likert scale (1 = “Never”; 2 = “Rarely”; 3 = “Sometimes”; 4 = “Frequently”; and 5 = “Always”). Data collection was conducted by distributing online questionnaires of the Academic Dishonesty Scale (ADS) using the Google Form platform, which included the “Name/Initial”, “Gender”, “Age”, “Domicile”, “University origin”, “Faculty”, and an informed consent statement that confirms the participants' voluntary agreement to participate in this study. After exploratory testing and item analysis, items with poor factor loadings were removed, reducing the scale to a final set of 18 items with adequate psychometric properties.

3.3 Validation

The internal structure of ADS was examined in this study through factor analysis, including Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The Kaiser-Meyer Olkin (KMO) and Bartlett Test of Sphericity were conducted as preliminary testing to look into suitability for factor analysis. Factor analysis is considered inappropriate if the KMO value falls below 0.5, while values less than 0.6 indicate miserable sampling requiring improvement [37],[38]. KMO values between 0.6-0.69 indicate mediocre sampling adequacy, values between 0.7-0.79 indicate middle sampling adequacy, and values between 0.8-1.0

indicate adequate sampling for factor analysis [37]. Additionally, Bartlett Test of Sphericity must show significance ($p < .05$) to proceed with factor analysis [38]. EFA with maximum likelihood extraction and orthogonal varimax rotation was applied to determine the optimal factor structure [39], with items retained if they demonstrated factor loadings ≥ 0.3 [38]. CFA was subsequently conducted to assess the fit of the factor model using multiple fit indices with established thresholds: Comparative Fit Index (CFI ≥ 0.95), Goodness of Fit Index (GFI ≥ 0.90), Root Mean Square Error of Approximation (RMSEA ≤ 0.06), and Standardized Root Mean Square Residual (SRMR ≤ 0.08) [39–41]. Discriminant validity was assessed by examining factor correlations, where low correlations demonstrate that each factor is a sufficiently distinct construct [38,42]. Moreover, internal consistency was assessed using Cronbach's alpha [43] to measure the extent to which items within ADS are consistent with one another and ensure that participants' response patterns remain consistent across all scale items [39]. The scale is considered internally consistent if Cronbach's alpha exceeds the acceptable 0.7 threshold [43–45]. JASP version 0.18.3.0 was used for the validity and reliability analysis of the ADS.

4 Result

4.1 Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) with maximum likelihood factoring method and orthogonal varimax rotation was applied to determine the factor structure. The suitability test adequacy of sample size was assessed by the Kaiser-Meyer Olkin (KMO) test, which obtained an overall KMO value of .811, indicating adequate sampling for factor analysis [37]. Individual item KMO values ranged from .559 to .884, with item P4 showing the lowest KMO value and item LAA4 having the highest KMO value. All values exceeded the threshold of .5, confirming the appropriateness of data to be used for factor analysis. The detailed result of the KMO test is shown in Table 2.

Table 2. Kaiser-Meyer Olkin (KMO) Test Result

Items	Measure of Sampling Adequacy (MSA)
Overall	0.811
CE1	0.877
CE2	0.794
CE3	0.824
CE4	0.584
CE5	0.843
P1	0.779
P2	0.578
P3	0.881
P4	0.559
OH1	0.804
OH2	0.818
OH3	0.759
OH4	0.659
PC1	0.644
PC2	0.773
PC3	0.832
F1	0.848
F2	0.783

Items	Measure of Sampling Adequacy (MSA)
F3	0.601
LAA1	0.833
LAA2	0.835
LAA3	0.860
LAA4	0.884
MA1	0.867
MA2	0.829
MA3	0.796
MA4	0.810

The suitability test correlation matrix between variables was assessed by the Bartlett Test of Sphericity, which obtained a significant value of $p < 0.001$, indicating significant correlation between variables and the data set and confirming that the data set is suitable for factor analysis. The result of Bartlett Test of Sphericity is shown in Table 3.

Table 3. Bartlett Test of Sphericity Result

X^2	df	p
2053.910	351.00	<.001

The EFA revealed a three factor structure with eigenvalues above 1.0, explaining 52.6% of total variance. All factor loadings exceeded 0.3. Based on the EFA results, it was revealed that a total of 27 items were grouped into 3 main factors. The first factor consists of nine (9) items, including items LAA3, LAA2, CE3, LAA4, F1, LAA1, F2, OH1, and P1. In this factor, the items are compiled from a combination of several initial dimensions, such as lying about academic assignments (LAA), cheating in examinations (CE), falsification (F), outside help (OH), and plagiarism (P). The factor loadings value of items in the first factor are ranged between .339 (P1) to .728 (LAA3). The second factor consists of four (4) items, including items MA1, MA2, MA3, and MA4. All items are from one initial dimension, namely misuse of AI. The factor loadings value of items on Factor 2 are ranged between .507 (MA4) to .773 (MA2). The third factor consists of five (5) items, including items PC3, CE2, CE1, CE5, and PC2. The items are compiled from a combination of two initial dimensions, such as prior cheating (PC) and cheating in examination (CE). The factor loadings value of items on Factor 3 are ranged between .363 (PC2) to .663 (PC3). Nine (9) items were eliminated because the factor loadings are below 0.3. At last, the total of 18 items were formed into three (3) factors. The EFA results with eigenvalues, factor variances, and factor loadings are shown in Table 4.

Table 4. Exploratory Factor Analysis (EFA) Results: Factor Loadings

Items			**Eigenvalues**	**Factor Variances**	**Factor Loadings**		
					1	**2**	**3**
Factor 1			5.763	0.147			
LAA3	I pay someone to help on writing papers or working on my academic assignments.	Saya membayar jasa seseorang untuk bantu dalam penyusunan makalah atau mengerjakan tugas akademik saya.			0.728		

	Items		Eigenvalues	Factor Variances	Factor Loadings		
					1	2	3
LAA 2	I purchased projects/tasks/papers by online means and then submitted them as my own individual work.	Saya membeli proyek/tugas/makalah secara online lalu mengumpulkannya serta menganggapnya sebagai tugas individual saya.			0.655		
CE3	I exchanged my exam paper with another student in order to get a better grade on the exam.	Saya menukar kertas ujian milik saya dengan mahasiswa/i lainnya untuk meraih nilai yang lebih bagus dalam ujian.			**0.560**		0.353
LAA 4	I gave my lecturer a fake excuse to get extra time to complete a project or assignment.	Saya memberikan alasan palsu kepada dosen untuk mendapatkan tambahan waktu dalam menyelesaikan proyek atau tugas.			0.556		
F1	I submitted the assignment on my own name after it was completed by my friend.	Saya mengumpulkan tugas atas nama saya sendiri setelah tugas tersebut dibuat oleh teman saya.			0.554		
LAA 1	I made excuses that were not true when I was late submitting an assignment because I had already passed the deadline.	Saya memberikan alasan yang tidak sesuai dengan kenyataan, ketika terlambat mengumpulkan tugas karena sudah melewati batas waktu pengumpulan yang ditentukan.			0.472		

	Items		Eigenvalues	Factor Variances	Factor Loadings		
					1	2	3
F2	I limited the information sources available to my friends by disrupting their library resources so that they could not obtain the information they needed.	Saya membatasi sumber informasi yang dibutuhkan oleh teman saya dengan merusak sumber kepustakaannya sehingga mereka tidak mendapatkan informasi yang dibutuhkan.			0.417		
OH1	I tried to commit bribery (bribe) to get special assistance.	Saya mencoba melakukan suap (menyuap) untuk mendapat bantuan khusus.			0.381		
P1	I copied summaries of stories/poems/chapters from textbooks and claimed them as my own work.	Saya menyalin ringkasan cerita/puisi/bab dari buku teks lalu mengakuinya sebagai hasil karya saya.			0.339		
Factor 2			2.144	1.150			
MA2	I have used AI to complete academic assignments without any understanding of the work itself.	Saya pernah menggunakan AI untuk menyelesaikan tugas akademik tanpa memahami isinya.			0.378	**0.773**	
MA1	I have used AI to complete academic assignments without any personal contribution.	Saya pernah menggunakan AI untuk menyelesaikan tugas akademik tanpa memberikan kontribusi pribadi.			0.367	**0.704**	
MA3	I have used AI to modify research data so that the results match the research hypothesis that was formulated before.	Saya pernah menggunakan AI untuk memperbaiki data penelitian agar hasilnya sesuai dengan hipotesis penelitian yang				0.575	

	Items		Eigenvalues	Factor Variances	Factor Loadings		
					1	2	3
		telah disusun sebelumnya.					
MA4	I feel less capable of doing academic work without the assistance of AI.	Saya merasa kurang mampu mengerjakan tugas akademik tanpa bantuan dari AI				0.507	
Factor 3			1.684	0.229			
PC3	Before the exam, I encouraged my classmates to cheat.	Sebelum ujian, saya mengajak teman-teman sekelas saya untuk menyontek.			0.443		**0.633**
CE2	I used prohibited items, such as hidden notes, calculators, and other electronic devices during the exam.	Saya menggunakan benda-benda yang dilarang, seperti catatan tersembunyi, kalkulator, dan perangkat elektronik lainnya selama ujian berlangsung.			0.338		**0.558**
CE1	During the exam, I used special codes to obtain answers from my classmates.	Selama ujian, saya menggunakan kode khusus untuk memperoleh jawaban dari teman-teman saya.					0.532
CE5	I copied answers from other students during the exam.	Saya menyalin jawaban dari mahasiswa lain selama ujian berlangsung.					0.510
PC2	I swapped seats to strategic locations to get better grades in the exam.	Saya menukar tempat duduk saya dengan tempat duduk strategis untuk mendapatkan nilai yang lebih baik dalam ujian.					0.363

4.2 Confirmatory Factor Analysis

The Confirmatory Factor Analysis (CFA) was applied to three factors extracted from EFA. The new structure of ADS which has three dimensions with a total of 18 items was assessed by Confirmatory Factor Analysis (CFA) and obtained the following results. CFA results obtained several fit indices of the factor model. The indices of the model were Comparative Fit Index (CFI) = .950, Goodness of Fit Index (GFI) = .937, Root Mean Square Error of Approximation (RMSEA) = .047, and Standardized Root Mean Square Residual (SRMR) = .047. This shows that the three-factor model provides a suitable and precise evaluation of the ADS structure as all fit indices exceeded its acceptable threshold. The CFA results and fit measures value are shown in Table 5. Factor correlations ranged from .120 to .185, as shown in Table 6, indicating adequate discriminant validity as the correlations were sufficiently low to demonstrate that each factor measures distinct aspects of academic dishonesty.

Table 5. Confirmatory Factor Analysis (CFA) results: Fit indices

CFI	GFI	RMSEA	SRMR
0.950	0.937	0.047	0.047

Table 6. Factor Correlations Matrix

	Factor 1	Factor 2	Factor 3
Factor 1	-		
Factor 2	.185	-	
Factor 3	.120	.138	-

4.3 Reliability Analysis

The overall reliability of the ADS with all 18 items was α = .814, indicating good internal consistency by exceeding the 0.7 threshold [43–45]. ADS consists of three factors: Factor 1 (9 items) with α = .772, Factor 2 (4 items) with α = .775, both indicating good reliability, and Factor 3 (5 items) with α = .695, which approached the acceptable threshold. Individual item reliabilities (if item dropped) ranged from .789 to .816. The reliability analysis result is shown in Table 7.

Table 7. Overall, Subscales, and Individual Items Reliability Statistics

Subscale/Items	**Items in Subscale**	**Coefficient α**	**Coefficient α (if item dropped)**
Overall	18 items	0.814	-
Factor 1	9 items	0.772	-
LAA3			0.802
LAA2			0.805
CE3			0.808
LAA4			0.804
F1			0.805
LAA1			0.800
F2			0.812
OH1			0.812

Subscale/Items	Items in Subscale	Coefficient α	Coefficient α (if item dropped)
P1			0.807
Factor 2	4 items	0.775	-
MA2			0.789
MA1			0.793
MA3			0.810
MA4			0.816
Factor 3	5 items	0.695	-
PC3			0.800
CE2			0.805
CE1			0.810
CE5			0.809
PC2			0.807

5 Discussion

The Exploratory Factor Analysis (EFA) of the Indonesian version of the Academic Dishonesty Scale (ADS) revealed a three-factor solution comprising 18 items, which differed from the original dimensions. Factor 1 was newly named as Integrity Compromised, consisted of nine (9) items from five (5) different dimensions (lying about academic assignments, cheating in examinations, falsification, outside help, and plagiarism) that are combined into one (1) factor, suggesting that these dishonest behaviors are perceived as a unified construct in the Indonesian context and refers to every behavior that violates the values of honesty, trust, fairness, respect, accountability, and courage [9]; prevaricate behaviors to others when it comes to completing assignments, plagiaristic behavior, taking other's words or/and ideas without acknowledging the sources; and claiming a whole or part of the work as one's own [34]. Factor 2 was named as Misuse of AI, consisted of four (4) items, defined as any behaviors that use information or ideas from AI without stating the source, citation, attribution, and claiming it as one's own [20]; manipulating data or/and materials using AI [36]; and the use of AI as external assistance in completing assignments without any self-contribution (9,10,29,35,36), it is also emerged as a distinct dimension not explicitly present in earlier ADS versions, highlighting the growing relevance of AI-related academic misconduct. Factor 3 was newly named as General Cheating, consisted of five (5) items from two (2) dimensions integrates prior cheating and cheating in examination, refers to every fraudulent, unfair, rule-breaking behavior to gain personal advantages, such as giving or receiving information during assessment and unauthorized use of assessment materials/content (9,29,34).

This restructuring suggests a context-specific clustering of dishonest behaviors and the recognition of AI misuse as a novel and critical form of academic dishonesty. The translation process followed a forward-backward translation procedure, in which the English version was first translated into Indonesian and then back into English by independent translators who were proficient in both the source and target languages. Also, experts with backgrounds in educational psychology and measurement were involved in an expert review. The experts evaluated all 27 items for semantic, conceptual, and cultural clarity, as well as relevance in the Indonesian higher education context. The Indonesian version of the Academic Dishonesty Scale (ADS) already has adequate psychometric information. Confirmatory Factor Analysis (CFA) supported the three-factor structure, with fit indices (CFI = .95, GFI = .937, RMSEA = .047, SRMR = .047) indicating strong model-data alignment. The scale also demonstrated high

internal consistency (Cronbach's α = .814 overall), comparable to or exceeding reliability coefficients reported in prior ADS validations, confirming its suitability for use in Indonesia. However, in general, the internal consistency reliability was lower as compared to the origin scale [29]. This instrument can be used to identify the frequency of academic dishonesty behaviours in Indonesia. Compared with earlier versions of the ADS, this adaptation not only reorganizes existing behavioral categories but also introduces AI misuse as a distinct and measurable factor. This addition enhances the instrument's relevance in contemporary academic settings, where technology-mediated misconduct is increasingly prevalent.

In this study, the Indonesian version of Academic Dishonesty Scale (ADS) has proven valid and reliable to be used in Indonesian context. However, this scale still has its limitations. The first limitation is that ADS is a self-report questionnaire, therefore the responses given by respondents may be skewed by social desirability bias. In order to mitigate this bias, data collection was carried out with guarantees of respondent anonymity and response confidentiality. Secondly, the measurement outcomes of ADS are limited to identify the frequency of academic dishonesty behaviors, unable to determine the underlying intentions or internal drives that motivate individuals to engage in academic dishonesty behaviors. Thirdly, Factor 3 demonstrated marginally acceptable internal consistency (α = .695). Fourthly, convergent validity has not been adequately examined, test-retest reliability has not been tested, and there is currently insufficient evidence of the instrument's external validity. Lastly, this study involves a relatively insufficient number of participants and obtained by regional sampling. To provide a more comprehensive view of Indonesian students, future research should involve a larger population and more geographically diverse samples, consider item optimization for Factor 3, investigate measurement invariance across different groups (multi-group invariance), and conduct longitudinal validation.

6 Conclusion

Based on the conducted validity and reliability assessments, it can be concluded that the Indonesian version of Academic Dishonesty Scale (ADS), consisting of three (3) dimensions with a total of 18 items is a valid and reliable measurement tool among emerging adulthood students in Indonesia. The participants in this study were exclusively emerging adulthood students. However, future research is still needed to broaden the scope of testing populations to improve the quality of instrument application in a variety of contexts, particularly by validating the instrument across different educational levels, including elementary, middle, and high school students.

Acknowledgments. We extend our sincere gratitude to Dr. Dra. Ninawati, M.M.; Niken Widi Astuti, M.Si., Psi.; Jessica, M.Psi., Psi.; and Agustina, M.Psi., Psi. for granting us permission to collect data for this research. Their support has been instrumental to the success of this study.

References

[1] Anitha P, Gandhi R, Sundaram S. Prevalence, types and reasons for academic dishonesty among college students. 2021;7(1):1–14. Available from: http://www.jssshonline.com/

[2] Ampuni S, Kautsari N, Maharani M, Kuswardani S, Buwono SBS. Academic dishonesty in Indonesian college students: An investigation from a moral psychology perspective. J Acad Ethics. 2019 Dec 1;18(4):395–417.

[3] Herdian H, Mildaeni IN, Wahidah FR. "There are Always Ways to Cheat" academic dishonesty strategies during online learning. Journal of Learning Theory and Methodology. 2021 Jun 30;2(2):60–7.

[4] Yusra SR, Hanifa R. Unveiling Indonesian higher education students' english academic writing misconduct in the era of technology & AI: Comprehension vs practice. World Journal of English Language. 2025;15(5):220–31.

[5] Jamaluddin SF, Lufityanto G, Purba FD, Lesmana CBJ, Andrianto S, Ardi R, et al. Spirituality Beyond Religiosity: Understanding Perceptions of Academic Cheating in Indonesia and Malaysia. Jurnal Psikologi. 2024 Dec 30;51(3):231–45.

[6] Komisi Pemberantasan Korupsi. Laporan hasil Survei Penilaian Integritas (SPI) pendidikan. Pusat Edukasi Antikorupsi [Internet]. 2023 [cited 2025 May 16]; Available from: https://aclc.kpk.go.id/aksi-informasi/informasi/20230705-survei-kpk-2022-ekosistem-pendidikan-belum-mendukung-internalisasi-nilai-integritas.

[7] Mohammadkarimi E. Teachers' reflections on academic dishonesty in EFL students' writing in the era of artificial intelligence. Journal of Applied Learning & Teaching. 2023;6(2):105–14.

[8] Uddin MM, Abu SE. Navigating ethical frameworks to mitigate academic misconduct while leveraging generative AI. In: International Conference of Education, Research and Innovation [Internet]. Seville, Spain: IATED Digital Library; 2024. p. 1–21. Available from: https://www.researchsquare.com/article/rs-4607113/v1

[9] Benson L, Rodier K, Enström R, Bocatto E. Developing a university-wide academic integrity e-learning tutorial: A Canadian case. International Journal for Educational Integrity. 2019 Dec 1;15(1).

[10] Krou MR, Fong CJ, Hoff MA. Achievement motivation and academic dishonesty: A meta-analytic investigation. Educ Psychol Rev. 2021 Jun 1;33(2):427–58.

[11] Lee SD, Kuncel Nathan R., Gau J. Personality, attitude, and demographic correlates of academic dishonesty: A meta-analysis. Psychol Bull. 2020;

[12] Wang H, Zhang Y. The effects of personality traits and attitudes towards the rule on academic dishonesty among university students. Sci Rep. 2022 Dec 1;12(1).

[13] Baran L, Jonason PK. Academic dishonesty among university students: The roles of the psychopathy, motivation, and self-efficacy. PLoS One. 2020 Aug 1;15(8 august).

[14] Bacon AM, McDaid C, Williams N, Corr PJ. What motivates academic dishonesty in students? A reinforcement sensitivity theory explanation. British Journal of Educational Psychology. 2020 Mar 1;90(1):152–66.

[15] Zhao L, Mao H, Compton BJ, Peng J, Fu G, Fang F, et al. Academic dishonesty and its relations to peer cheating and culture: A meta-analysis of the perceived peer cheating effect. Educ Res Rev. 2022 Jun 1;36.

[16] Hendy NT, Montargot N, Papadimitriou A. Cultural Differences in Academic Dishonesty: A social learning perspective. J Acad Ethics. 2021 Mar 15;19:49–70.

[17] Ridwan R, Diantimala Y. The positive role of religiosity in dealing with academic dishonesty. Cogent Business and Management. 2021;8(1):1–29.

[18] Błachnio A, Cudo A, Kot P, Torój M, Oppong Asante K, Enea V, et al. Academic dishonesty: An in-depth investigation of assessing measurable constructs and a call for consistency in scholarship. Ethics Behav. 2022;32(1):44–89.

[19] Kaplan A, Haenlein M. Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. Bus Horiz. 2019 Jan 1;62(1):15–25.
[20] Nguyen HM, Goto D. Unmasking academic cheating behavior in the artificial intelligence era: Evidence from Vietnamese undergraduates. Educ Inf Technol (Dordr). 2024 Aug 1;
[21] Sweeney S. Who wrote this? Essay mills and assessment – Considerations regarding contract cheating and AI in higher education. International Journal of Management Education. 2023 Jul 1;21(2).
[22] Dergaa I, Chamari K, Zmijewski P, Saad H Ben. From human writing to artificial intelligence generated text: examining the prospects and potential threats of ChatGPT in academic writing. Biol Sport. 2023;40(2):615–22.
[23] Cotton DRE, Cotton PA, Shipway JR. Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. Innovations in Education and Teaching International. 2024;61(2):228–39.
[24] Dehouche N. Plagiarism in the age of massive Generative Pre-trained Transformers (GPT-3). Ethics Sci Environ Polit. 2021;21:17–23.
[25] Li C, Xing W. Natural language generation using deep learning to support MOOC learners. Int J Artif Intell Educ. 2021 Jun 1;31(2):186–214.
[26] Passow HJ, Mayhew MJ, Finelli CJ, Harding TS, Carpenter DD. Factors influencing engineering students' decisions to cheat by type of assessment. Res High Educ. 2006 Sep;47(6):643–84.
[27] Hopp C, Speil A. How prevalent is plagiarism among college students? Anonymity preserving evidence from Austrian undergraduates. Account Res. 2021;28(3):133–48.
[28] McKibban AR, Burdsal CA. Academic dishonesty: An in-depth investigation of assessing measurable constructs and a call for consistency in scholarship. J Acad Ethics. 2013 Sep 1;11(3):185–97.
[29] Bashir H, Bala R. Development and validation of academic dishonesty scale (ADS): Presenting a multidimensional scale. International Journal of Instruction. 2018 Apr 1;11(2):57–74.
[30] Akbulut Y, Şendağ S, Birinci G, Kiliçer K, Şahin MC, Odabaşi HF. Exploring the types and reasons of Internet-triggered academic dishonesty among Turkish undergraduate students: Development of Internet-Triggered Academic Dishonesty Scale (ITADS). Comput Educ. 2008 Aug;51(1):463–73.
[31] Dawkins RL. Attributes and statuses of college students associated with classroom cheating on a small-sized campus. 2004;
[32] Iyer R, Eastman JK. The impact of unethical reasoning on academic dishonesty: Exploring the moderating effect of social desirability. Marketing Education Review. 2008 Jul;18(2):21–33.
[33] Yang SC, Huang CL, Chen AS. An investigation of college students' perceptions of academic dishonesty, reasons for dishonesty, achievement goals, and willingness to report dishonest behavior. Ethics Behav. 2013;23(6):501–22.
[34] Jones LR. Academic integrity & academic dishonesty: A handbook about cheating & plagiarism. Evans Library Publications [Internet]. 2011; Available from: https://repository.fit.edu/library_publications
[35] Rodolfo Neiva de S, Conti V klein, Salles AA, Mussel I de CR. Academic dishonesty: Effects on the ethics education of health professionals. Revista Bioética. 2016 Dec;24(3):459–68.
[36] Zietman AL. Falsification, fabrication, and plagiarism: The unholy trinity of scientific writing. Vol. 87, International Journal of Radiation Oncology Biology Physics. 2013. p. 225–7.
[37] Kaiser HF. An index of factorial simplicity. Psychometrika. 1974 Mar;39(1).
[38] Hair JF, Black WC, Babin BJ, Anderson RE. Multivariate data analysis [Internet]. 8th ed. 2019. Available from: www.cengage.com/highered
[39] Furr RM. Psychometrics: An introduction. 4th ed. California: SAGE Publications; 2022.

[40] Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Struct Equ Modeling. 1999;6(1):1–55.
[41] Schumacker RE. Goodnessof fit criteria in structural equation models. In: American Educational Research Association. 1992. p. 1–22.
[42] Campbell DT, Fiske DW. Convergent and discriminant validation by the multitrait-multimethod matrix. 1959 Mar;56(2):81–105.
[43] Heale R, Twycross A. Validity and reliability in quantitative studies. Vol. 18, Evidence-Based Nursing. BMJ Publishing Group; 2015. p. 66–7.
[44] de Souza AC, Alexandre NMC, Guirardello E de B. Psychometric properties in instruments evaluation of reliability and validity. Epidemiol Serv Saude [Internet]. 2017 Jul 1 [cited 2025 May 16];26(3):649–59. Available from: https://doi.org/10.5123/S1679-49742017000300022
[45] Rust J, Kosinski M, Stillwell D. Modern psychometrics. Modern Psychometrics. Routledge; 2020.