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Navigating academic integrity: The role of digital information literacy in preventing plagiarism

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Abstract

This study investigates the influence of awareness, digital information literacy skills, and digital information literacy behaviors on students' propensity to engage in academic plagiarism amid increasing use of digital technology. A quantitative approach was employed using survey data collected through questionnaires. Structural equation modeling (SEM) was applied to analyze the relationships among awareness, literacy skills, literacy behaviors, and plagiarism tendencies. The findings reveal that awareness and digital information literacy skills have a significant negative effect on plagiarism behavior, indicating their role in reducing academic misconduct. In contrast, digital information literacy behavior has a positive and significant effect on plagiarism ($\beta = 0.135$), suggesting that frequent engagement with digital information sources may increase the risk of plagiarism when not accompanied by sufficient ethical understanding. The use of paraphrasing tools and ease of access to digital content may further obscure plagiarism practices. The results emphasize the need for higher education institutions to strengthen digital information literacy programs by integrating technical competencies with ethical awareness, particularly in copyright understanding and citation practices. This study contributes to the literature by highlighting the paradoxical role of digital information literacy behavior in increasing plagiarism risk, thereby underscoring the importance of balancing technical skills with ethical competencies in digital learning environments.

Keywords: Ability, Awareness, Behavior, Digital information literacy, Plagiarism.

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Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Institutional Review Board Statement: This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the Institutional Review Board of Politeknik Pelayaran Sumatera Barat. All participants were informed about the purpose of the study, and their participation was voluntary. Informed consent was obtained prior to data collection. All data were collected anonymously and treated with strict confidentiality. Informed consent was obtained from all subjects involved in the study. The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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1. Introduction

Plagiarism in academic writing is an issue that continues to be a concern in the educational environment. This practice not only reflects a low level of academic ethics awareness but also has negative implications for the overall quality of education. Maritime students, in addition to being required to have academic competence, must also uphold ethics and integrity, given that professions in the maritime field are closely related to high responsibility and discipline. However, cases of plagiarism in the academic writing of maritime students are still frequently found. This is thought to occur due to a low awareness of the importance of originality in written work, a lack of understanding of ethical behavior in scientific writing, and suboptimal digital information literacy skills.

Students' awareness and behavior regarding the importance of maintaining academic integrity also have a significant influence on their decisions to avoid or commit plagiarism [1]. The behavior of students in utilizing information is also an important factor, whether they simply copy information or can process it into original thinking [2]. Today's students, Generation Z, are considered a digital generation with strong interactions with the development of digital technology, which must be balanced with ethical awareness of its use. This emphasizes the need for an educational approach tailored to Generation Z, combining technology and modern pedagogy with digital competencies as the main determinants of success in academic preparation and future careers [3, 4].

Information literacy is a term in library and information science that refers to a person's skills in using information, including searching for information, accessing information, retrieving information, evaluating information, and managing information through various media. With the development of information and communication technology, information can be easily found through digital media, thereby developing digital information literacy skills. An individual's ability, knowledge, and skills in understanding, utilizing, using, communicating, and evaluating information from digital media presented in different multimedia formats effectively constitute digital literacy skills [5].

Digital literacy is the ability to use information and communication technology [6] to find [7] to evaluate [8] and to create and communicate information that requires cognitive and technical skills [9]. Digital information literacy behavior encompasses awareness of the importance of digital information literacy, which includes understanding the proper use of information sources and ethics in academic writing. Individuals must be able to evaluate the information obtained and understand the motivation behind the compilation of that information. In addition to awareness, the ability to critically search for, evaluate, and use information is an aspect of digital information literacy ethics. This ability plays an important role in avoiding plagiarism by ensuring that students can distinguish between original ideas and those taken from other sources. Digital information literacy skills consist of several aspects, including the ability to access, organize, and create information. Digital literacy also includes critical thinking skills when dealing with various formats of information available online [2].

Digital literacy in education refers to an individual's ability to understand, use, and evaluate [10] and actively participate in the digital world competently and efficiently [11]. This involves an understanding of information and communication technology (ICT), the ability to manage and critically analyze information, and an awareness of ethical and responsible behavior in the digital environment.

This study aims to examine the influence of students' awareness, behavior, and digital information literacy skills on plagiarism in academic writing and to formulate an appropriate approach to improving students' awareness, behavior, and digital literacy skills to minimize plagiarism. By understanding the relationship between these factors, the results of this study are expected to contribute to the design of strategies to improve digital information literacy and strengthen academic integrity values to prevent acts of plagiarism.

2. Literature Review

2.1. Digital Information Literacy Awareness

Digital information literacy awareness is the level of understanding a person has of the importance of the skills of searching for, evaluating, and using digital information critically and ethically [5, 12]. This awareness includes understanding the risks of using digital technology, such as the spread of hoaxes, privacy violations, and information manipulation [13]. Digital information literacy awareness covers five main aspects, namely awareness of digital information literacy, awareness of writing ethics, awareness of copyright and plagiarism, awareness of the use of information technology related to digital security that is capable of protecting data and privacy in online activities, awareness of the use of reference tools/applications to hide plagiarism, and awareness of the impact of plagiarism related to awareness of the disadvantages of plagiarism [14].

Digital literacy awareness involves broader cognitive and social skills, including critical reflection on the information obtained and understanding of the social implications of its use. Students with a high level of digital information literacy are better able to evaluate the accuracy of academic information and avoid plagiarism. Digital information literacy awareness influences ethical behavior in using social media and sharing information online [15].

2.2. Digital Information Literacy Behavior

Digital information literacy behavior refers to all forms of activities, attitudes, and habits of individuals in searching for, selecting, evaluating, using, and sharing digital information [16]. This behavior reflects the extent to which a person can apply information literacy skills in real-world practice with digital devices [17].

Information literacy behavior encompasses a series of processes ranging from recognizing information needs, accessing digital information sources, assessing the quality and credibility of information, to using it responsibly to solve problems. Thus, digital information literacy behavior is not only oriented towards technical skills, but also towards critical thinking, ethics, and reflection in the use of digital information [18, 19]. Low digital information literacy behavior causes students to engage in plagiarism and other academic misconduct. This shows that digital information literacy behavior has a direct impact on academic integrity.

2.3. Digital Information Literacy Ability

Digital information literacy is an individual's ability to recognize information needs, access, evaluate, manage, and use information effectively through digital media [20]. Digital information literacy encompasses the ability to search for, evaluate, and utilize digital information, as well as utilize information technology, all while adapting to technological developments [21].

In the digital context, this ability is expanded to include the use of technology, the internet, and digital platforms to obtain and process information [3]. Digital information literacy is the ability to integrate information literacy skills with digital literacy, covering technical, cognitive, and social-emotional aspects in managing information sourced from digital media [22]. Digital information literacy skills are essential 21st-century competencies for critical thinking, problem-solving, and ethical participation in the digital space [23].

2.4. Plagiarism in Academic Writing

Plagiarism is the act of taking someone else's work without giving proper credit, which can be caused by a lack of understanding of information literacy [24, 25]. The indicators of plagiarism in this study are the factors behind plagiarism, which consist of formal legal cultural factors, supervision factors, mentality factors, writing ability factors, and self-efficacy factors. Plagiarism behavior consists of the level of knowledge about plagiarism, the frequency of plagiarism, the intensity of internet use and information on the internet, and the motivation/impulse to commit plagiarism [26, 27]. Attitudes towards plagiarism committed by others and oneself consist of acceptance of plagiarism, feelings about committing plagiarism, the desire to commit plagiarism, and types of plagiarism behavior in the academic world, which consist of verbatim plagiarism, patchwork, paraphrasing, keyword plagiarism, and idea structure plagiarism [28, 29].

3. Methodology

This study is a quantitative study with an explanatory research approach, which aims to explain the causal relationship between independent variables (Awareness, Behavior, Information Literacy) and dependent variables (Plagiarism Behavior). The approach used is a survey through the distribution of questionnaires to shipping students. Survey research is a method of collecting information and data from large or small populations. The data studied is data from samples taken from the population to find beliefs, opinions, characteristics of an object, events, and variable behaviors that have occurred in the past or present [30, 31]. Survey research is conducted using questionnaires to collect data and several questions from the sample taken. The data obtained will be analyzed using inferential statistical techniques to test the influence between variables.

Table 1.

Questionnaire Variables and Dimensions.

No.	Variables	Dimension
1.	Digital Information Literacy Awareness	Understanding digital information literacy
		Awareness of copyright and plagiarism
		Awareness of writing ethics
		Awareness of the impact of plagiarism
		Awareness of information technology use
2.	Digital Information Literacy Behavior	Digital information search
		Use of information sources
		Digital information management
		Use of technology in writing
		Attitudes toward plagiarism
3.	Digital Information Literacy Ability	Ability to search for digital information
		Ability to evaluate information
		Ability to use information
		Ability to utilize information technology
		Ability to adapt to technological developments
4.	Plagiarism in Academic Writing	Frequency of plagiarism
		Motivation for plagiarism
		Attitudes toward plagiarism
		Efforts to avoid plagiarism
		Experience of receiving sanctions for plagiarism

Source: Sinha and Ugwulebo [32]; Akter and Ahmed [33]; Adarkwa [34]; Liu, et al. [35]; Lăpădat and Lăpădat [36] and Laval, et al. [37].

The respondents in this study were maritime students at the West Sumatra Maritime Polytechnic. From the data distribution, the demographics of 170 respondents were obtained. The respondents were students at the West Sumatra Maritime Polytechnic who came from the Nautical Studies program (13%), the Nautical Technology program (21%), and the Maritime Transportation program (66%).

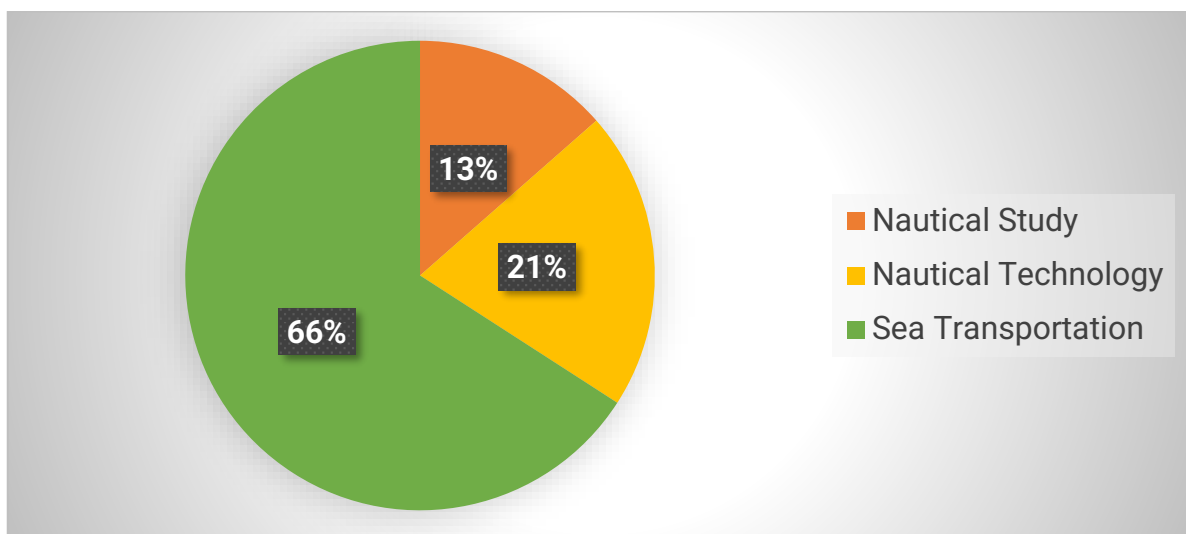


Figure 1.
Respondent Study Program.

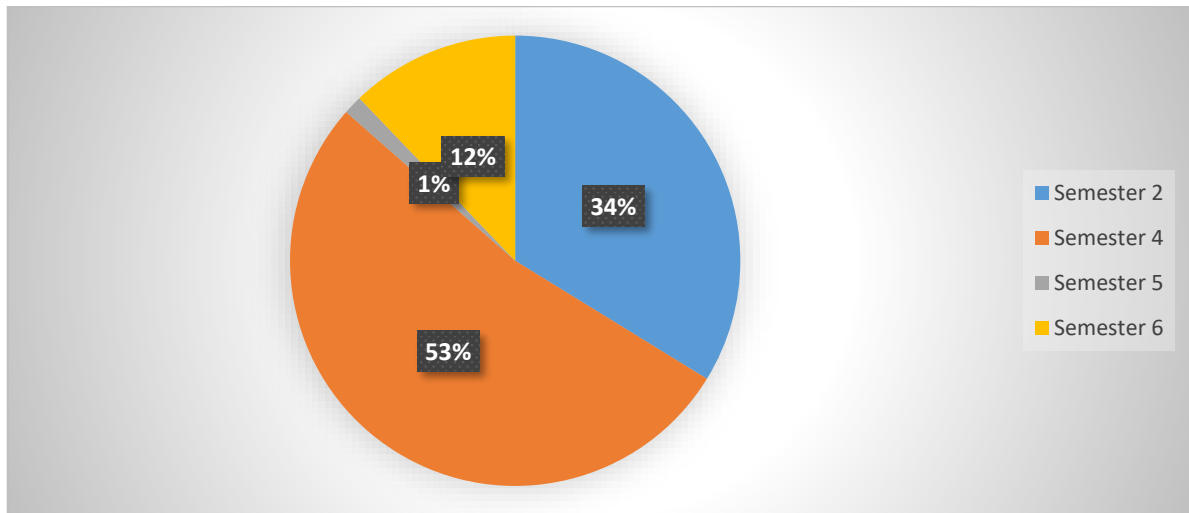


Figure 2.
Distribution of respondents based on the type of work performed.

This study uses SEM-PLS as an analytical tool to test hypotheses. This technique is used to test the influence of variables. The collected data will be tested for validity and reliability through statistical analysis before being used in hypothesis testing.

4. Results

The results from the survey questionnaire assess variables related to awareness, behavior, and digital literacy skills, covering moral, cognitive, and technological aspects.

One of the objectives of this study is to analyze the influence of shipping students' awareness, behavior, and digital information literacy skills on plagiarism in their academic writing. The data were tested using SEM PLS by first testing the measurement model (outer model) and then testing the structural model (inner model).

The path measurement model is shown in Figure 3, which states that the factor loading values of all indicators are above 0.7. The variables of awareness, behavior, and digital information literacy for all dimensions have factor loading values above 0.7. Meanwhile, in the plagiarism behavior variable, dimension 4 has a loading factor below 0.7, indicating that this dimension does not have good convergent validity and therefore needs to be eliminated. A loading factor value above 0.7 indicates that the research instrument has measured the construct consistently and accurately.

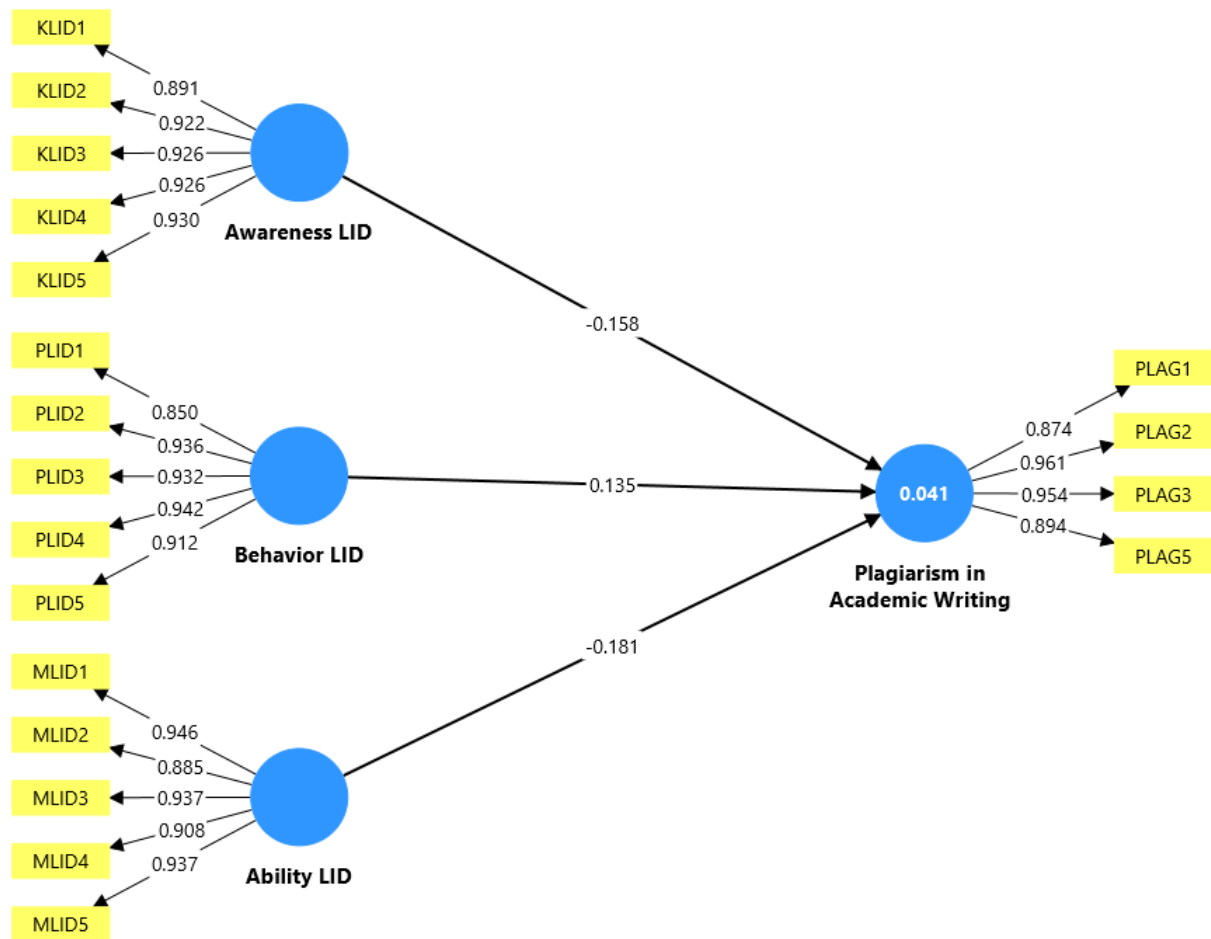


Figure 3.
Path Measurement Model.

Convergent validity testing aims to assess the extent to which indicators that are supposed to measure the same construct (latent variable) are actually highly correlated with each other. The results of the convergent validity test shown in Table 1 show that the factor loading value of each indicator is ≥ 0.70 , and in Table 2, the Average Variance Extracted (AVE) value obtained is ≥ 0.50 . This indicates that the constructed construct can explain $> 50\%$ of the variance of the indicators.

Table 2.
Outer Loading.

	Ability	Awareness	Behavior	Plagiarism
KLID1		0.891		
KLID2		0.922		
KLID3		0.926		
KLID4		0.926		
KLID5		0.93		
MLID1	0.946			
MLID2	0.885			
MLID3	0.937			
MLID4	0.908			
MLID5	0.937			
PLAG1				0.874
PLAG2				0.961
PLAG3				0.954
PLAG5				0.894
PLID1			0.85	
PLID2			0.936	
PLID3			0.932	
PLID4			0.942	
PLID5			0.912	

Table 3 shows that the AVE values for all variables are ≥ 0.50 , with a value of 0.852 for ability, 0.844 for awareness, 0.838 for behavior, and 0.849 for plagiarism.

Table 3.
Average Variance Extracted (AVE).

	Average variance extracted (AVE)
Ability	0.852
Awareness	0.844
Behavior	0.838
Plagiarism	0.849

Discriminant validity testing is intended to ensure that each construct (latent variable) in a model is truly distinct and can be differentiated from the others. The test is based on the HTMT (Heterotrait - Monotrait Ratio) method shown in Table 4. The table shows that the differences between constructs are large enough that there is no overlap between the variables of plagiarism behavior, ability, awareness, and digital information literacy behavior with < 0.90 .

Table 4.
HTMT (Heterotrait-Monotrait Ratio).

	Skill	Awareness	Behavior	Plagiarism
Ability				
Awareness	0.871			
Behavior	0.949	0.948		
Plagiarism	0.188	0.189	0.175	

Construct reliability testing is conducted to assess the extent to which indicators within a construct are consistent and stable in measuring the same concept. This test ensures that each item in the construct produces consistent results when measured repeatedly, so that the construct can be trusted (reliable) as a measuring tool with a Cronbach's Alpha value ≥ 0.70 and Composite Reliability ≥ 0.70 in Table 5. The table shows that the Cronbach's Alpha value is ≥ 0.70 , namely 0.957 for ability, 0.954 for awareness, 0.951 for behavior, and 0.941 for plagiarism.

Table 5.
Construct Reliability Test.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
Ability	0.957	0.984	0.966
Awareness	0.954	0.957	0.964
Behavior	0.951	0.963	0.963
Plagiarism	0.941	0.979	0.957

Structural model evaluation was conducted to assess the strength and direction of the relationship between latent constructs. The test conducted was the Multicollinearity test, which aims to determine whether there is a very high correlation between independent (free) variables in a regression model. This test is assessed from a VIF value ≤ 5 . The test results shown in Table 6 indicate that the VIF values of the three variables are $VIF \leq 5$, with details for the independent variable of ability being 3.643, for the variable of awareness being 3.524, and for the variable of behavior being 4.177. These results indicate that each independent variable provides unique information and does not overlap in explaining the dependent variable.

Table 6.
Multicollinearity Test.

	VIF
Ability -> Plagiarism	3.642
Awareness -> Plagiarism	3.524
Behavior -> Plagiarism	4.177

Next, we test the model's ability to explain the dependent variable. In this model, we obtain an R-Square (R^2) value or coefficient of determination of 0.41. This shows how much of the variation (change) in the dependent variable can be explained by the independent variables in the regression model. A value of 0.41 indicates that the model interpretation is moderate, meaning that the independent variables explain most of the variability and this model is considered to be good enough to represent 41% of the variation in the dependent variable explained by the independent variables in the model, while the remaining 59% is explained by other factors outside the model. These results indicate that the strength of the model is good because the R-Square (R^2) value is ≥ 0.33 .

Table 7.
R-Square.

	R-square
Plagiarism	0.41

Path significance test (Path Coefficients) is intended to assess the strength and significance of the relationship between variables in the structural model. The test is based on the path coefficient value with a criterion value between -1 and +1. The path coefficient values obtained in Table 7 for the ability variable are -0.181, the awareness variable is -0.158, and the behavior variable is 0.135. Negative values indicate that a variable construct has a negative effect on other constructs. In addition, Table 8 also shows the t-statistic value, which indicates the strength of evidence for the existence of the influence of independent variables on dependent variables. The t-statistic values of the three variables are ≥ 1.96 , indicating that the independent variables significantly influence the dependent variables. In addition to the t-values, Table 8 also shows the P-values, which indicate the probability level of the test results. The smaller the p-value, the stronger the evidence that the relationship between variables is real. If the p-value is < 0.05 , then the relationship between variables is considered statistically significant.

Table 8.
Path Coefficients.

	Original sample (O)	T statistics (O/STDEV)	P values	Conclusion
Ability -> Plagiarism	-0.181	2.269	0.004	Significant (negative impact)
Awareness -> Plagiarism	-0.158	2.958	0.038	Significant (negative impact)
Behavior -> Plagiarism	0.135	2.672	0.002	Significant (positive effect)

Furthermore, Table 9 shows the influence values obtained from the f^2 values, which indicate the magnitude of the effect of one construct on other constructs. The values obtained are an influence of ability of 0.26, an influence of awareness of 0.15, and an influence of behavior of 0.12. These results indicate that the influence of the independent latent variables has a moderate effect on plagiarism behavior.

Table 9.
F-square.

	Plagiarism
Ability	0.26
Awareness	0.15
Behavior	0.12

The model's suitability is determined by the Goodness of Fit (GoF) value, which must be ≥ 0.25 . The GoF value in this study is $\sqrt{AVE \times R^2} = \sqrt{0.89 \times 0.41} = 0.59$. The result obtained is ≥ 0.25 , which is in the high category. This indicates that the model is generally good for both outer and inner modes.

5. Discussion

The tests conducted showed that the structural equation model indicates that awareness, ability, and behavior of digital information literacy influence plagiarism behavior in the academic world of maritime students. This is indicated by the t-statistic value of the three independent variables ≥ 1.96 , which shows that plagiarism behavior is significantly influenced by awareness, ability, and behavior of digital information literacy. In testing the path significance (Path Coefficient), the results obtained show that awareness and digital information literacy skills have a negative influence on plagiarism behavior. This proves that awareness and skills in digital information literacy can reduce academic plagiarism behavior. Meanwhile, an interesting result obtained from this test is that digital information literacy behavior has a positive value on plagiarism behavior. This means that digital information literacy behavior can increase plagiarism behavior.

In this study, digital information literacy awareness has a negative effect on plagiarism behavior, which means that the higher the awareness of digital information literacy, the lower the plagiarism behavior. This awareness stems from an understanding of the importance of digital information literacy in the academic world and an awareness of the benefits of digital information literacy in the academic world. Understanding digital information literacy includes students' awareness of the basic concepts of information literacy, namely the ability to know when information is needed, how to find it, evaluate its validity, and use it appropriately and responsibly. Students who have a good understanding will be able to distinguish between the legitimate use of information and plagiarism. They understand that literacy is not only about "finding information," but also about how to integrate that information into academic work while giving credit to the source [38]. Conversely, a lack of understanding of the principles of information literacy often makes students unaware that copying sentences without citation constitutes plagiarism, even if done without malicious intent.

In addition, awareness of copyright means understanding that every intellectual work has an owner who is entitled to recognition and appreciation. Students who are aware of copyright will realize that plagiarism is a violation of the moral rights of the original author. Students' understanding of intellectual property rights and ethical responsibilities in using the work of others explains why some students often do not understand the difference between fair use and copyright

infringement. As a result, copying or quoting without permission or attribution is often done unconsciously. Some students still do not understand the limits of fair use and often use other people's work without attribution because they consider it a common practice. This lack of awareness leads to unintentional plagiarism. Therefore, strengthening the understanding of copyright and plagiarism is an important step in improving academic integrity.

Ethical awareness in writing includes an understanding of moral and professional norms in scientific writing, such as honesty, scientific responsibility, and originality of ideas. Students with high ethical awareness tend to reject dishonest practices such as copy-paste, citation manipulation, or the use of AI writing tools without declaration.

Writing ethics also reflect respect for the scientific work of others and an awareness that written work is the result of a critical thinking process. Thus, ethical awareness not only prevents plagiarism but also fosters reflective and responsible writing habits.

Awareness of the impact of plagiarism refers to students' understanding of the negative consequences of plagiarism, both for individuals and institutions. These impacts include loss of academic trust, administrative sanctions, and a decline in scientific reputation [39].

Students who understand the moral and academic consequences of plagiarism are less likely to engage in it. This awareness also includes an understanding that plagiarism hinders the true learning process because it ignores critical thinking and creativity. Therefore, strengthening awareness of the impact of plagiarism needs to be part of the academic ethics curriculum in higher education.

Technological advances such as AI writing assistants, paraphrasing tools, and plagiarism checkers bring great benefits to the academic world, but also have the potential for misuse. Awareness of information technology use includes students' ability to understand the ethical limits of using these digital tools.

Students with a high level of awareness will use technology as a tool to improve their writing style, reference management, and authenticity checking—not to replace the thinking process or copy texts. Conversely, a lack of awareness of the ethical risks of using technology increases the tendency toward covert plagiarism, such as AI-generated plagiarism. Therefore, developing critical awareness of technology is an important element in the development of digital literacy in the modern era.

In this study, digital information literacy behavior that increases plagiarism behavior can be caused by an inability to search for, use, manage, and produce information in a digital environment ethically. Thus, selective and critical information search behavior contributes to preventing plagiarism by improving the quality and authenticity of references.

Students who actively seek information but lack an understanding of copyright and citation tend to unknowingly commit plagiarism. Students with good digital literacy behaviors tend to display habits of searching for credible sources, writing in an appropriate paraphrasing style, and providing citations according to academic rules. Conversely, low digital literacy behaviors often lead to copy-paste practices, the use of invalid sources, or dependence on technology without ethical understanding, which increases the risk of plagiarism [40]. Therefore, the appropriate and responsible use of information sources is key to reducing the level of plagiarism in higher education institutions.

In addition, unbalanced digital literacy behavior between technical and ethical aspects can also increase the frequency of plagiarism because students will tend to take advantage of the ease of copying text passages without understanding or critically integrating them into their writing. This is in line with research findings that state that digital literacy behavior and academic integrity must be balanced to prevent plagiarism [26]. Therefore, systematic digital information management practices support transparent and ethical writing processes.

Another cause of the increase in plagiarism is that digital literacy in the use of digital technology can help make plagiarism more hidden, such as the use of paraphrasing tools. Therefore, digital literacy without ethical guidance can refine the form of plagiarism [41]. Therefore, digital literacy behavior must include awareness of ethical boundaries in the use of technology so as not to violate academic integrity.

Digital information literacy in this study refers to an individual's ability to access, understand, evaluate, manage, and utilize information effectively and ethically. Students with high digital literacy skills can search for information effectively, evaluate the validity of sources, and use them responsibly. Conversely, students with low skills tend to commit plagiarism because they are unable to distinguish between original ideas and the work of others.

This skill refers to students' ability to effectively find and access digital information using various online platforms such as academic databases, electronic journals, and scientific search engines. Students with good information search skills can select relevant, credible, and up-to-date sources. They understand search strategies such as the use of Boolean operators or publication year filters. Conversely, students with poor skills tend to use random sources without verification, which increases the risk of citing invalid information and leads to plagiarism [42]. Thus, good digital information-seeking skills help students find quality sources, reduce reliance on copy-paste practices, and encourage originality in academic writing.

The next digital information literacy skill is the ability to evaluate information, which reflects students' critical thinking skills in assessing the credibility, accuracy, and relevance of digital sources. Students need to be able to distinguish between evidence-based information and subjective opinions. Students with high evaluative skills will question the validity of data and the integrity of the author of the source. They are also able to recognize unverified websites or publications. When this skill is low, students are more likely to copy information without understanding its context, thereby increasing the possibility of unintentional plagiarism [43]. Therefore, the ability to evaluate information is one of the main defenses in maintaining academic integrity.

The ability to use information includes the skills of processing, synthesizing, and integrating information from various sources into academic writing in a logical and ethical manner. Students with good information literacy skills will cite sources accurately, paraphrase correctly, and understand the importance of attribution. Conversely, students with poor skills

often copy ideas directly because they are unable to transform information into original narratives. Therefore, ethical information literacy is key to preventing plagiarism and demonstrating original scientific thinking.

The ability to utilize information and communication technology is related to students' ability to use various digital tools and applications productively and responsibly. Students with high skills will use technology to help them write more efficiently, check the authenticity of texts, and manage references. Conversely, students with low skills or without digital ethics often misuse technology such as AI paraphrasing tools to generate texts without critical thinking. Thus, good information technology skills not only support writing efficiency but also prevent plagiarism resulting from unethical use of technology.

The final competency indicator is the ability to adapt to technological developments, which includes the ability to adjust to changes in digital technology and evolving academic practices. Students must be able to learn independently how to use new tools that are relevant for scientific research, management, and writing. Students who are adaptable to technology are better able to understand new standards in digital ethics, such as the transparent and declarative use of AI writing tools. Conversely, students who are not adaptable often get caught up in the misuse of technology without understanding the risks of plagiarism. Thus, the ability to adapt to technology reflects advanced digital literacy, which enables students to write innovatively without compromising scientific integrity.

Awareness, behavior, and digital information literacy skills play a major role in shaping students' academic integrity. Digital literacy awareness includes understanding ethics, copyright, and the impact of plagiarism. Digital literacy behavior describes actual actions in searching for, using, and managing information ethically. Digital literacy skills demonstrate cognitive and technical abilities in utilizing information technology correctly.

The relationship between the three variables and plagiarism behavior is explained through five indicators of plagiarism behavior. The first indicator is the frequency of plagiarism. The frequency of plagiarism reflects how often students copy other people's work, either consciously or unconsciously. Students with low levels of digital literacy awareness are more likely to commit plagiarism, especially in assignments that require speed and a high volume of writing. A lack of understanding of copyright and academic ethics causes students to consider copy-pasting as a normal practice. In addition, poor digital literacy behaviors, such as the habit of taking sources without noting or saving references, increase the likelihood of repeated plagiarism. Conversely, students with high digital literacy skills tend to plagiarize less often because they can write independently and manage sources well.

The second indicator is the motivation to commit plagiarism, which is related to internal and external pressures that cause students to copy other people's work, such as academic pressure, time constraints, or lack of confidence. Students with good digital literacy awareness have higher self-regulated learning, enabling them to manage their time and academic responsibilities without needing to copy other people's work. Conversely, students with low literacy skills often plagiarize because they have difficulty understanding and processing information from digital sources. The motivation to plagiarize increases when students do not understand the importance of originality in the context of digital ethics. A lack of literacy behaviors such as source citation or reference management also reinforces the practical motivation to copy information.

The third indicator is attitude toward plagiarism, which reflects students' values, perceptions, and moral orientation toward the practice of copying scientific works. This attitude reflects the level of internalization of academic honesty values. Students with high digital literacy awareness have a negative attitude toward plagiarism because they understand that such actions damage academic credibility and contradict the principle of integrity. Meanwhile, students with poor digital literacy behavior, such as the habit of quoting without sources or using technology unethically, show a permissive attitude towards plagiarism. A negative attitude towards plagiarism is the result of good digital literacy skills, where students can identify plagiarism in their own work through detection tools or source checking.

The fourth indicator is efforts to avoid plagiarism in the form of preventive measures taken by students to ensure the authenticity of their academic writing, such as paraphrasing correctly, using citations in a specific style, and checking the level of similarity using digital tools. Students with good digital literacy skills actively check their work using plagiarism checkers, utilize reference managers, and record all sources from the beginning of the writing process. Conversely, students with low awareness often only realize violations after their work has been checked by a lecturer. Students with active digital literacy behaviors are more proactive in avoiding plagiarism because they are accustomed to applying the principles of academic honesty at every stage of writing.

The fifth indicator is the direct experience of students receiving academic consequences for plagiarism, such as grade reductions, cancellation of scientific papers, or ethical reprimands. Students with low digital literacy awareness tend to experience sanctions more often because they do not understand the line between fair quotation and plagiarism. Conversely, students with good digital literacy skills usually avoid violations because they know how to check and correct ethical writing errors. The experience of receiving sanctions can be a reflective moment that increases digital literacy awareness and reinforces ethical behavior in the future.

Thus, strengthening students' digital literacy comprehensively (affective, behavioral, and cognitive) becomes a key strategy in building an academic culture that is honest, ethical, and has integrity. Students with a high awareness of copyright and digital ethics, ethical literacy behavior in managing information, and technical skills in using information technology tend to have a low frequency of plagiarism, weak motivation to plagiarize, negative attitudes toward plagiarism, and active efforts to avoid it.

6. Conclusion

Digital information literacy awareness reduces plagiarism behavior in the academic writing of maritime students. This means that the higher the students' awareness of digital information literacy, the lower the plagiarism behavior will be.

Digital information literacy skills have a negative effect on plagiarism behavior in the academic writing of maritime students. This means that the higher the students' digital information literacy skills, the lower the plagiarism behavior will be. Digital information literacy behavior has a positive effect on plagiarism behavior in the academic writing of shipping students. This is an interesting finding in this study. This means that student plagiarism behavior will increase along with an increase in digital information literacy behavior. The effect of digital literacy behavior on plagiarism behavior is 0.135. This can occur because students seek information but do not yet understand copyright and citation, digital literacy behavior that is unbalanced between technical and ethical aspects, and digital literacy behavior in the use of digital technology that can help plagiarism become more hidden, such as the use of paraphrasing tools. The overall influence of the three independent variables on plagiarism behavior is negative. Where increased awareness, ability, and behavior together can reduce student plagiarism behavior.

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