

Development of a Questionnaire to Measure Entrepreneurial Interest among Vocational High School Students

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Abstract: - This study aimed to develop and validate a psychometrically sound questionnaire to measure the entrepreneurial interest of Vocational High School (SMK) students. The research employed a development design consisting of four stages: planning, reconstruction, quantitative analysis, and validation. The participants were 85 eleventh-grade students from SMK Negeri 3 Buru Selatan representing five study programs: Tourism Services, Multimedia, Electricity, Construction, and Accounting. The instrument development process resulted in a 30-item questionnaire constructed based on three theoretically grounded dimensions: economic growth, personal character, and technological development. Reliability analysis using Cronbach's Alpha produced a coefficient of 0.976, indicating excellent internal consistency. From a measurement theory perspective, this high reliability coefficient suggests strong homogeneity among items in representing the underlying construct of entrepreneurial interest. Item validity was examined using Pearson product-moment correlations at the 5% significance level. The results show that all items had significant positive correlations with the total score ($r > 0.213$), confirming that each item meaningfully contributes to measuring the construct. These findings indicate that the developed instrument demonstrates strong internal consistency and satisfactory item-level validity. Therefore, the questionnaire can be used as a reliable measurement tool for assessing entrepreneurial interest among vocational students. Future research is recommended to conduct further construct validation using advanced factor-analytic procedures and larger samples to strengthen empirical support for the instrument's dimensional structure.

Key-Words: - entrepreneurial interest, entrepreneurship education, vocational education, vocational high school.

Received: March 6, 2026. Revised: June 8, 2026. Accepted: July 9, 2026. Available online: October 5, 2026.

1 Introduction

Unemployment refers to someone who is part of the labour force aged 15 to 64 who does not have a job and is actively seeking employment or preparing to start a new business. Additionally, those who are not seeking employment because they believe it is unlikely they will find a job. Those who have been offered a job but have not yet started working are

also classified as unemployed, [1]. In relation to a country's economy, unemployment is one of the main issues that requires special attention from the government, including in Indonesia, which had a population of 284,438,800 people by mid-2025 and an unemployment rate of 4.76%. The unemployment rate in February 2025 increased by 1.11% or around 83 thousand people compared to

the data in February 2024, [2]. The unresolved issue of unemployment will certainly have a negative impact on the country's economy, which can lead to a decrease in economic growth and per capita income, an increase in poverty rates that may result in criminal activities, a rise in mortality rates, conflicts within the community, and health problems.

According to [3], the increase in unemployment is caused by the addition of a large number of new employees each year, while the growth of job opportunities is very small. The economic crisis further exacerbates this situation by necessitating layoffs. The gap between the workforce and the availability of jobs has prompted the government to implement various policies that are considered capable of solving this problem. One of the long-term programs established by the government, particularly in the field of education, is the integration of entrepreneurship courses in schools, especially vocational high schools, with the aim of preparing vocational high school (SMK) graduates to become competent entrepreneurs who can create jobs for themselves while also providing new job opportunities for other segments of the workforce. More specifically, in [4] explain that entrepreneurship competency learning in schools provides opportunities for prospective graduates to gain knowledge about business, encompassing cognitive, affective, and psychomotor skills. It is hoped that after studying the field of entrepreneurship, prospective vocational school graduates will have a high interest in it, either as a primary career choice or as an additional source of income to improve their standard of living.

Entrepreneurial interest is the desire, interest, willingness, and strong determination of an individual to start their own business with the aim of meeting their living needs. This entrepreneurial interest is also inseparable from the courage to create new things, the willingness to take risks, and the determination to learn from failures, [5]. According to [6], this entrepreneurial interest can grow if students have a good understanding of entrepreneurship. The knowledge that needs to be learnt in the field of entrepreneurship consists of: 1) basic concepts of entrepreneurship such as definitions, functions, and roles of entrepreneurship, 2) characteristics of entrepreneurs which include having high commitment, discipline, leadership spirit, self-confidence, willingness to take risks, ability to collaborate with others, and perseverance, 3) product development starting from goal setting to product sales to consumers, 4) marketing which includes knowledge about effective marketing

strategies, planning, and development, 5) Financial management, which includes planning, usage, acquisition, and management of funds. According to in [7]; in [4], the components mentioned above are critical to teach students so that they can explore their untapped potential, which refers to the development of self-confidence that they are capable of creating their own job opportunities, thereby consciously increasing their interest in entrepreneurship.

In addition to the knowledge of entrepreneurship mentioned above, several other factors can influence students' interest in entrepreneurship [8], including 1) income expectations. A person's desire to earn more income and live a more prosperous life can be a strong motivator to become an entrepreneur. 2) Family and community environment. A positive family and community environment, especially one that supports a person's intention to become an entrepreneur, will motivate them to start their own business. If family and community don't support the desire to be an entrepreneur, the interest will also decline. 3) Education. Someone will be more confident and motivated to create job opportunities for themselves if their education is adequate.

The background description above clearly shows that entrepreneurial interest plays an important role in achieving national development goals, namely, improving society's and the country's economic well-being. Thus, to determine whether students studying entrepreneurship subjects have an interest in entrepreneurship, this research develops a valid and reliable questionnaire to measure entrepreneurial interest among Vocational High School (SMK) students.

2 Methodology

This research uses a quantitative approach within the Research and Development (R&D) framework, which is a type of research used to develop a specific product and test its effectiveness, [9]. The research method used in this study aims to develop a valid and reliable questionnaire to measure students' interest in entrepreneurship. The stages of this development research follow the research instrument design stages outlined by Creswell, consisting of 4 stages (Figure 1): planning, construction, quantitative evaluation, and validation, [10].

Figure 1 explains the stages of research, which consist of the first stage, namely planning, which includes setting test objectives, determining the target group, defining testing dimensions,

determining research variables and indicators, and determining the questionnaire format. The results of the research at this planning stage are presented in a questionnaire blueprint on students' interest in entrepreneurship. Next, the second stage in this research is the construction stage. The activity conducted in this construction stage is the construction of the questionnaire based on the designed questionnaire grid. The outcome of this construction stage includes both the questionnaire and its scoring guidelines. The third stage is the quantitative evaluation

table, then the instrument is reliable. However, if the Alpha value $< r$ table, then the instrument is not reliable. If the developed questionnaire is unreliable, it will be revised. If the developed questionnaire is reliable, then the research instrument will proceed to the validation test stage. Additionally, in this study, the questionnaire's reliability will be examined using Guilford's [11] classification, as shown in Table 1.

Table 1. Classification of Reliability According to Guilford

Reliability Value	Reliability Category
0,8 – 1,0	Very High
0,6 – 0,8	High
0,4 – 0,6	Medium
0,2 – 0,4	Low
0,0 – 0,2	Very Low

Source: [11]

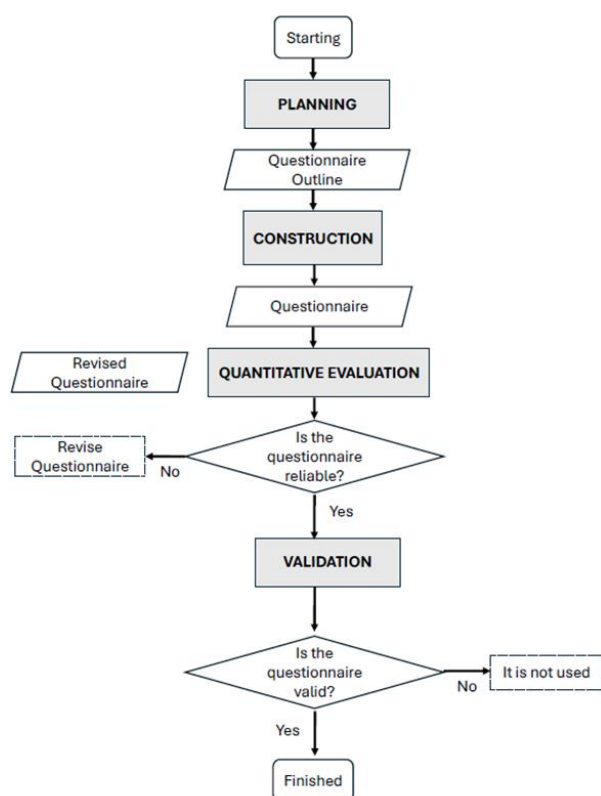


Fig. 1: Research Stages adapted from Creswell & Inoue

Source: [10]

At this stage, the first trial of the successfully created questionnaire was conducted. The testing was conducted on 85 eleventh-grade students from the Tourism Business Services, Multimedia, Electrical, Construction, and Accounting Departments at SMK Negeri 3 Buru Selatan, Maluku Province. The test results' reliability will be determined. Reliability testing for this questionnaire uses the Cronbach's alpha technique with a significance level of 5%. The Alpha Cronbach technique in this study uses SPSS 25. The determination of reliable decisions using the Alpha Cronbach technique is based on comparing the Alpha value with the r table. If the Alpha value $> r$

3 Result and Discussion

According to the stages of this development research, the results are presented accordingly. The first stage in this development research is the planning stage. In accordance with the activities carried out at this planning stage, the results include determining the questionnaire objectives, the target group, the testing dimensions, the variables, and the questionnaire. The purpose of this questionnaire is to measure students' interest in entrepreneurship. The target group for this questionnaire is the 11th-grade students of SMK Negeri 3 Buru Selatan, totaling 85 individuals. The testing dimension of this questionnaire concerns students' attitudes towards entrepreneurship. The research variables consist of 1) economic growth, divided into 4 indicators: improvement in personal living standards, improvement in family living standards, job creation, and the role in national economic growth, and personal character. 2) personal character, which consists of 7 indicators, namely independence, self-confidence, responsibility, innovation and creativity, communication skills, adaptability, and the ability to collaborate. 3) Technological development, which consists of 3 indicators, namely communication platforms, e-commerce platforms, and digital payment platforms. The format of this questionnaire consists of statements with five response options: strongly agree (SA), agree (A), neutral (N), disagree (D), and strongly disagree (SD). The questionnaire uses a Likert scale ranging from 1 to 5, [12]. Since all the statements in the questionnaire are positive, the

more positive the students' responses, the higher the scores, [13].

After determining the questionnaire's objectives, target group, dimensions, variables, and questionnaire format, a questionnaire grid was created, which is also the result of the planning stage activities. The format of the questionnaire grid for assessing student entrepreneurship interest consists of 6 columns, namely: 1) dimension, 2) variable, 3) indicator, 4) measurement scale, and 5) supporting theory source, [10]. The scope of this research is students' attitudes towards entrepreneurial interest. Assessing students' attitudes is very important for learning, as it helps teachers understand students' behavioral tendencies, both emotionally and socially. Students' interest in entrepreneurship is part of the students' attitude tendencies shown during or after the entrepreneurship learning process, [14]. The determination of the domain of students' interest attitudes is based on theories related to the factors that influence a person's interest in entrepreneurship. This means that based on these theories, the domain of attitudes is further broken down into three variables: 1) Economic growth, which consists of four indicators: improvement in personal living standards, improvement in family living standards, creation of new job opportunities, and contribution to economic growth [15], creation of new job opportunities [16], [17], [18], [19], 2) Personal character, which consists of seven indicators: independence, self-confidence, responsibility, innovation and creativity, communication skills, adaptability, and teamwork ability. These characters are the ideal traits required by an entrepreneur and have also been studied by the respondent students [15], [16], [17], [19]. 3) The development of technology includes three indicators: attitudes towards communication platforms, e-commerce, and digital payments. The conveniences offered by digital technology today have become a strong attraction for business actors in running their enterprises. Various platforms have been developed to enhance the effectiveness and efficiency of services in the business sector. This is certainly also one of the driving factors for students' interest in entrepreneurship, [16], [20], [21], [22]. The outline of the student entrepreneurship interest questionnaire is shown in Table 2 (Appendix).

Next, the development of the questionnaire continues with the second stage: the construction stage. At this stage, the questionnaire framework is constructed into a questionnaire about students' interest in entrepreneurship. This questionnaire is generally divided into 4 sections, namely: 1) title of

the questionnaire, 2) respondent's identity, 3) instructions for filling out the questionnaire, and 4) statements of the questionnaire. This questionnaire consists of 30 statements developed based on dimensions, variables, and indicators grounded in supporting theories. The statements consist of 8 statements to determine students' responses from the perspective of economic growth, 19 statements to determine students' responses from the perspective of individual personal character, and 3 statements to determine students' responses from the perspective of technological development.

**QUESTIONNAIRE TO MEASURE ENTREPRENEURIAL INTEREST
AMONG VOCATIONAL HIGH SCHOOL STUDENTS**

1. RESPONDENT IDENTITY

a. Name :

b. Age :

c. Gender :

d. Class/Major :

2. INSTRUCTION

a. This sheet contains statements that you must complete. It is expected that you will answer them honestly and truthfully.

b. There is no incorrect response to these questions. Therefore, please try not to leave any questions unanswered.

c. Please choose the answer that you think best suits your condition. Do this by ticking (✓) the available answer choices.

d. Additional Information:

SA : Strongly Agree (5 points)

A : Agree (4 points)

N : Neutral (3 points)

D : Disagree (2 points)

SD : Strongly Disagree (1 point)

No	Statement	SA	A	N	D	SD
1	I would like to become an entrepreneur because it would enable me to earn a higher income.					
2	The reason for my aspiration to become an entrepreneur is the ability to fulfil all my life needs.					
...	...					
10	I love being an entrepreneur because it allows me to manage my own finances.					
...	...					
20	My passion for entrepreneurship stems from a desire to address unmet consumer needs through innovation.					
...	...					
25	I love being an entrepreneur because I am not afraid to try new things or overcome challenges.					
...	...					
30	I am interested in becoming an entrepreneur because of the various digital payment platforms available, such as GoPay, Dana, OVO and ShopeePay, which enable fast and secure online transactions.					

Fig. 2: Questionnaire to Measure Students' Entrepreneurial Interest

Source: created by the authors

The questionnaire measuring students' interest in entrepreneurship is shown in Figure 2. After constructing the questionnaire, the process moves to the third phase: the quantitative evaluation stage. At this stage, the first trial of the developed questionnaire was conducted. This first trial was conducted on 85 students of SMK Negeri 3 Buru Selatan, Class XI, majoring in Tourism Services Business, Multimedia, Electricity, Construction, and Accounting. In this trial phase, the questionnaire's reliability was determined using SPSS 25. This reliability test used Cronbach's alpha at the 5% significance level. The reliability test for the 30 questionnaire items is based on the alpha value reported in the SPSS output table. The results of the

Cronbach's Alpha test are shown in Table 3, Table 4 and Table 5.

Table 3. Case Processing Summary

		N	%
Cases	Valid	85	100.0
	Excluded ^a	0	.0
	Total	85	100.0

a. Listwise deletion based on all variables in the procedure.

Source: created by the authors

Table 3 presents the Case Processing Summary generated by SPSS. The results indicate that all 85 respondents (100%) were included in the analysis, with no cases excluded. This means that all participants completed the questionnaire without missing responses across the 30 items.

The analysis was conducted using listwise deletion, which excludes cases with missing data on any included variable. However, since no missing values were identified, all responses were retained in the dataset. This ensures that the reliability and validity analyses were conducted with the full sample, thereby maintaining statistical power and minimizing bias from incomplete data.

The absence of excluded cases also indicates that the questionnaire was clearly understood and properly administered to the respondents. Consequently, the dataset used for reliability and validity testing can be considered complete and suitable for further statistical analysis.

Table 4. Reliability Statistics

Cronbach's Alpha	N of Items
.976	30

Source: created by the authors

Based on the SPSS output presented in Table 4, the overall Cronbach's Alpha coefficient of the 30-item entrepreneurial interest questionnaire is 0.976. According to reliability classification criteria, a Cronbach's Alpha value above 0.90 indicates excellent internal consistency. Therefore, the instrument demonstrates a very high level of reliability. A reliable and valid entrepreneurial interest instrument is necessary to support empirical evaluation of such pedagogical interventions, [23].

This result indicates that the questionnaire items are highly consistent in measuring students' entrepreneurial interest. A high alpha value suggests that the items share substantial covariance and measure the same underlying construct.

Furthermore, the number of items (30) contributes to the reliability coefficient's stability. Thus, the developed questionnaire is reliable and suitable for measuring students' entrepreneurial interest.

Although the Cronbach's Alpha value is very high (0.976), which indicates excellent internal consistency, extremely high reliability coefficients may also suggest potential redundancy among items. Therefore, future studies are recommended to examine the instrument's dimensional structure further to ensure optimal construct representation.

Table 5. Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	133.8588	116.361	.913	.974
Item 2	133.8471	116.798	.874	.974
Item 3	133.7765	118.557	.731	.975
Item 4	133.7529	117.879	.812	.975
Item 5	133.8471	117.393	.817	.975
Item 6	133.8000	118.114	.763	.975
Item 7	133.7529	117.879	.812	.975
Item 8	133.7176	119.205	.702	.975
Item 9	133.7647	117.801	.812	.975
Item 10	133.6941	119.834	.655	.975
Item 11	133.8118	118.369	.734	.975
Item 12	133.8353	116.544	.903	.974
Item 13	133.8118	116.702	.896	.974
Item 14	133.7529	118.474	.752	.975
Item 15	134.0000	119.048	.599	.976
Item 16	133.8235	117.052	.857	.974
Item 17	133.8353	118.163	.746	.975
Item 18	133.9882	118.797	.619	.976
Item 19	133.7882	120.526	.507	.976
Item 20	133.7412	118.742	.733	.975
Item 21	133.7294	119.438	.670	.975
Item 22	133.8706	116.471	.900	.974
Item 23	134.0353	119.701	.549	.976
Item 24	133.7294	118.866	.728	.975
Item 25	133.8235	119.861	.558	.976
Item 26	133.7059	119.234	.708	.975
Item 27	133.7294	119.104	.704	.975
Item 28	133.8471	117.536	.803	.975
Item 29	133.8000	116.900	.882	.974
Item 30	133.8118	118.083	.762	.975

Source: created by the authors

The item-total statistics presented in Table 5 indicate that the corrected item-total correlations for all 30 items range from 0.507 to 0.913. All items exceed the minimum acceptable threshold of 0.30, indicating that each item has a strong correlation with the overall scale score and contributes meaningfully to the measurement of students' entrepreneurial interest. This finding suggests that the instrument demonstrates good internal consistency and stability. Therefore, the questionnaire can be reused, as stated in [24], provided that the measured aspects remain unchanged and consistent results are obtained across repeated implementations.

Furthermore, the "Cronbach's Alpha if Item Deleted" values range between 0.974 and 0.976, which are not higher than the overall Cronbach's Alpha coefficient (0.976). This indicates that removing any item would not significantly improve

the instrument's reliability. Thus, all items demonstrate satisfactory internal consistency and are retained in the questionnaire.

Additionally, based on Guilford's classification of reliability levels (Table 1), the overall reliability coefficient of 0.976 falls into the *very high* category. This confirms that the instrument possesses excellent internal consistency. Although the corrected item-total correlations are very high, indicating strong internal homogeneity, these high inter-item correlations may also suggest potential overlap among items. Therefore, future research is recommended to conduct additional construct validation procedures, such as factor analysis, to more comprehensively examine the instrument's dimensional structure.

At this validation stage, an item validity test was conducted for each of the 30 questionnaire items using Pearson's product-moment correlation in SPSS 25, with a total of 85 respondents. The results of the questionnaire validity test are presented in Table 6.

The data presented in Table 6 indicate that the *r*-table value at a 5% significance level for a sample size of 85 respondents is 0.213. Item validity was determined by comparing the calculated *r*-values (*r*-count) obtained from the Pearson product-moment correlation with the *r*-table value. An item is considered valid if the calculated *r*-value exceeds the *r*-table value (*r*-count > *r*-table).

The results show that the calculated *r*-values for all 30 items range from 0.540 to 0.921, all of which exceed the *r*-table value of 0.213. Therefore, all questionnaire items are declared valid at the 5% significance level. The validity of an item is reflected in its correlation with the total score, which shows the extent to which it contributes to measuring the intended construct. The Pearson product-moment correlation was used to assess the relationship between individual item scores and the overall questionnaire score. A higher correlation coefficient indicates stronger support of the item for the construct being measured.

Thus, the entrepreneurial interest questionnaire consisting of 30 items can be considered a valid measurement instrument for analysing students' entrepreneurial interest. This finding is consistent with the principles of instrument validation as stated in [25], [26], which emphasize that items demonstrating significant correlation with total scores can be regarded as valid indicators of the measured construct. Accurate measurement of students' entrepreneurial interest is essential for designing appropriate instructional interventions. As emphasized in technology-enhanced learning

research, instructional media should align with learners' cognitive needs to ensure effective learning outcomes, [27].

Table 6. Results of the Questionnaire Item Validity Test

Item	<i>r</i> hitung	<i>r</i> tabel	Keterangan
Item 1	0.921	0.213	Valid
Item 2	0.884	0.213	Valid
Item 3	0.750	0.213	Valid
Item 4	0.826	0.213	Valid
Item 5	0.831	0.213	Valid
Item 6	0.781	0.213	Valid
Item 7	0.826	0.213	Valid
Item 8	0.722	0.213	Valid
Item 9	0.826	0.213	Valid
Item 10	0.677	0.213	Valid
Item 11	0.754	0.213	Valid
Item 12	0.911	0.213	Valid
Item 13	0.905	0.213	Valid
Item 14	0.770	0.213	Valid
Item 15	0.629	0.213	Valid
Item 16	0.869	0.213	Valid
Item 17	0.765	0.213	Valid
Item 18	0.648	0.213	Valid
Item 19	0.540	0.213	Valid
Item 20	0.752	0.213	Valid
Item 21	0.692	0.213	Valid
Item 22	0.908	0.213	Valid
Item 23	0.582	0.213	Valid
Item 24	0.747	0.213	Valid
Item 25	0.589	0.213	Valid
Item 26	0.728	0.213	Valid
Item 27	0.724	0.213	Valid
Item 28	0.818	0.213	Valid
Item 29	0.892	0.213	Valid
Item 30	0.780	0.213	Valid

Source: created by the authors

4 Conclusion

Based on the research findings, analysis, and discussion, it can be concluded that the entrepreneurship interest questionnaire, consisting of 30 statement items, demonstrates strong psychometric properties, including internal consistency and item validity. The reliability analysis results show a very high Cronbach's Alpha coefficient (0.976), indicating excellent internal consistency among the items. Furthermore, all items meet the validity criteria based on the Pearson product-moment correlation test at the 5% significance level, confirming that each item significantly contributes to measuring the intended construct.

The validated instrument, therefore, has potential applications beyond cross-sectional measurement. Given its strong internal consistency and item-level validity, the questionnaire may be used in longitudinal studies to examine changes in students' entrepreneurial interest over time. Additionally, the instrument can support comparative research across different schools, regions, or demographic groups, enabling researchers to investigate contextual influences on entrepreneurial attitudes in vocational education settings.

However, as this study focuses on initial instrument development and internal validation,

further research is recommended to conduct advanced construct validation procedures, such as exploratory or confirmatory factor analysis, using larger and more diverse samples to strengthen empirical support for the underlying dimensional structure.

Declaration of Generative AI and AI-assisted technologies in the writing process:

The authors wrote, reviewed and edited the content as needed and has/have not utilised artificial intelligence (AI) tools. The authors take full responsibility for the content of the publication.

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APPENDIX

Table 2. Overview of Included Studies

Dimension	Variable	Indicator	Measurement Scales	Sources of Theory
The domain of students' attitudes towards entrepreneurial interest	1.Economic growth	1.1 Improving personal living standards. 1.2 Improving the family's standard of living 1.3 creating new job opportunities 1.4 Contribute to the country's economic development	Likert Scale : Strongly Agree (score:5) Agree (score:4) Neutral (score:3) Disagree (score:2) Strongly Disagree (score:1)	(Aloulou in Hidayat et al. (2021:269), Wardana et al. (2020:3) Anjum et al (2022:599) Rico et al. (2020:2) Verawati & Yacoob (2024:27)
	2.Personal character	2.1 Independent 2.2 self-confident 2.3 responsible 2.4 Innovative & Creative 2.5 Communicative 2.6 Adaptable 2.7 Capable of Working in team		Wardana et al. (2020:3) Hidayat et al. (2021:270) Anjum et al (2022:591) Verawati & Yacoob (2024:32), Meoli et al. in Verawati & Yacoob (2024:34)
	3.Technological development	3.1 Communication Platform 3.2 E-commerce Platform 3.3 Digital Payment Platform		Wardana et al. (2020:5) Herrera, et al. (2023:2), Gao in Herrera, et al. (2023:11) Phan et al. In Liu & Lin (2025:1) Liu & Lin (2025:6) Tetep et al. (2022:1)

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

The authors equally contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

Sources of Funding for Research Presented in a Scientific Article or the Scientific Article Itself

The research is funded by DIPA UNY (Yogyakarta State University) Indonesia.

Conflict of Interest

The authors have no conflicts of interest to declare that are relevant to the content of this article.

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