

# The development of an instrument to measure the college student entrepreneurship skills

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# **The Development of an Instrument to Measure the College Student Entrepreneurship Skills**

## **Abstract**

This study aims to (1) produce an instrument for measuring college student entrepreneurial skills; (2) describe the quality of the measurement instrument for college students' entrepreneurial skills; (3) describe the practicality of the measurement instrument for college students' entrepreneurial skills. The method used in this study is the development of the Retnawati procedure (2017). The steps in this research are instrument planning, instrument testing, and measurement. This research was conducted at four universities in Yogyakarta, Indonesia. With the number of respondents as many as 300 college students. The characteristics of the assessment instrument developed were based on content validity, construct validity, and the reliability and practicality of using the instrument. Content validity uses expert judgment with the Aiken V formula and is calculated using Ms. Excel. Construct validity was carried out using two methods, namely EFA and CFA. Reliability using Cronbach's Alpha formula. The results showed that (1) the college student's entrepreneurial skills measurement instrument has five aspects, namely technopreneur, ecopreneur, sociopreneur, edupreneur, and entrepreneur management that will be developed; (2) the quality of the instrument was tested well by using two approaches, namely content and construct validity; The test results of the content validity instrument > 0.7 so that the results of the validity test are declared valid. Construct validity, the result of KMO value is 0.960 > 0.05. Criteria for the model fit test (good of fit) because the p-value is 0.16722 (p 0.05), the RMSEA is 0.016 (RMSEA). 0.08). Reliability 0.919 (≥ 0.7); (3) practicality in developing the instrument has a very practical value in terms of clarity of instructions, use of instruments, clarity of sentences/language, adequacy of time, skills to be measured, and clarity of scoring instructions. Instruments practicaly test show 85% very practical, 11% practical, 3% quite practical, 1% impractical, and 0% very impractical category

**Key words:** College Student, Entrepreneurship, Measurement, Skills

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2

1 **Introduction**

2 Entrepreneurship education is widely recognized as the driving force behind the  
3 establishment of new businesses. <sup>11</sup> A systematic framework for promoting effective learning  
4 in entrepreneurship education in higher education institutions as a means of developing  
5 successful entrepreneurs (Ghina, 2013). As a driving force for the establishment of new  
6 businesses, entrepreneurship education inevitably has to keep up with changes in human life  
7 in the 21st century, namely challenges over the boundaries of space, time, geography, and  
8 increasingly rapid changes. Education which is an agent of change will help improve the  
9 quality of human life (Idris et al., 2012). Intuitively, this drive should naturally bring  
10 universities and employers together for the mutual benefits that collaboration can provide.  
11 However, only a few universities have succeeded in collaborating with their local  
12 communities and benefiting greatly from these actions. Some universities are still reluctant  
13 to work with employers due to lack of experience by faculty in such collaborations, lack of  
14 company guidelines, and lack of support from university administration (Jehanzeb & Bashir,  
15 2013).

16 The problem of developing academic entrepreneurs in universities for developing countries  
17 is still hampered by the scarcity of resources, ineffective incentive structures, new  
18 entrepreneurial culture in the early stages of formation (Tampubolon, 2020). Another  
19 problem is that the results and research products produced by universities are numerous,  
20 but most of them are still exposed to ideas or the highest inventions (findings) (Raharja,  
21 2018). Furthermore, the problems faced by universities, the experience that has been  
22 passed by universities related to start-ups is still lacking (Kemkominfo, 2020).

23 Entrepreneurship education in higher education that is currently being implemented is  
24 something that needs to be developed to provide solutions to unemployment for graduates.  
25 In the past ten years, entrepreneurship education (entrepreneurship) in Indonesia has  
26 become a trend (Kasih, 2013). This is an effort for universities to include entrepreneurship  
27 courses in the curriculum as compulsory subjects in 2 semesters (Nugraha & Rifa'i, 2019). As  
28 evidence of the spirit of the entrepreneurial movement, entrepreneurship education is  
29 generally given in the form of entrepreneurship courses with a weight of 2-3 credits.

1 Entrepreneurship curriculum is an important thing to be developed in higher education  
2 (Hasbi & Mahmudah, 2020).

3 In line with the ongoing implementation of entrepreneurship education Irwansyah &  
4 Tripalupi (2018) stated the results in the field that most college graduates were still oriented to  
5 find work and experienced a long waiting period for work even though they had completed  
6 entrepreneurship courses. This shows that entrepreneurship education is not as simple as  
7 imagined (Wardani & Surabaya, 2021). To foster an entrepreneurial spirit and spirit,  
8 especially to produce graduates who are able to create jobs, it cannot be done only in the  
9 short term (one or two semesters) let alone only 2-3 credits, but must be done continuously  
10 through continuous education and development activities (Murtini, 2020).

11 The problems that exist in the field, students and college graduates in building an  
12 entrepreneurial spirit are not easy problems because this cannot be separated from  
13 mentality (Ruswanti et al., 2013), culture (Santosa, 2014), norms (Wiratno, 2012), tradition  
14 (Mavianti, 2019), the principle of life and the value of the social-society view that being a  
15 worker (Zeng & Honig, 2016). In line with these problems, entrepreneurship education must  
16 be directed to increase the spirit and develop skills and knowledge among students so that  
17 they have the provisions after becoming a graduate. So it is important for all academics to  
18 invest in improving their understanding and skills (Mahmudah & Putra, 2020).

19 Another problem that occurs related to entrepreneurship education in universities is related  
20 to the old mindset regarding the relevance between the educational process at universities  
21 and the needs of the labor market (Cui et al., 2021), become a new mindset to fulfill the  
22 ability of universities to produce job creator graduates (Raposo & Paço, 2011). The  
23 entrepreneurship curriculum needs to be relevant to the current need to produce graduates  
24 who are able to create job opportunities by practicing theories through home industry  
25 practices. From these problems, the need to strengthen innovation and entrepreneurship  
26 education will be one of the most important directions for future higher education reform,  
27 underscoring the deep impact innovation and entrepreneurship education have  
28 comprehensively improved the quality of higher education (Zhu et al., 2017).

1 From the description of the problems of entrepreneurship education in universities,  
2 entrepreneurship education is not a new concept. Policies often seek more  
3 entrepreneurship, and policymakers are eyeing the education sector to fulfill this. The  
4 pedagogical challenge is that entrepreneurial competencies are more holistic and  
5 psychologically oriented than traditional subject-matter skills. Entrepreneurial skills are  
6 learned through pragmatic real-life development projects. Therefore the importance of  
7 measuring college student skills instrument. The development of this instrument is a novelty  
8 of various existing problems. The various problems above, the research questions of this  
9 study are:

- 10 1. What is the instrument for measuring college student entrepreneurship skills that  
11 can be used?
- 12 2. How big is the quality of the measurement instrument for college students'  
13 entrepreneurial skills?
- 14 3. How high is the practicality of the measurement instrument for college students'  
15 entrepreneurial skills?

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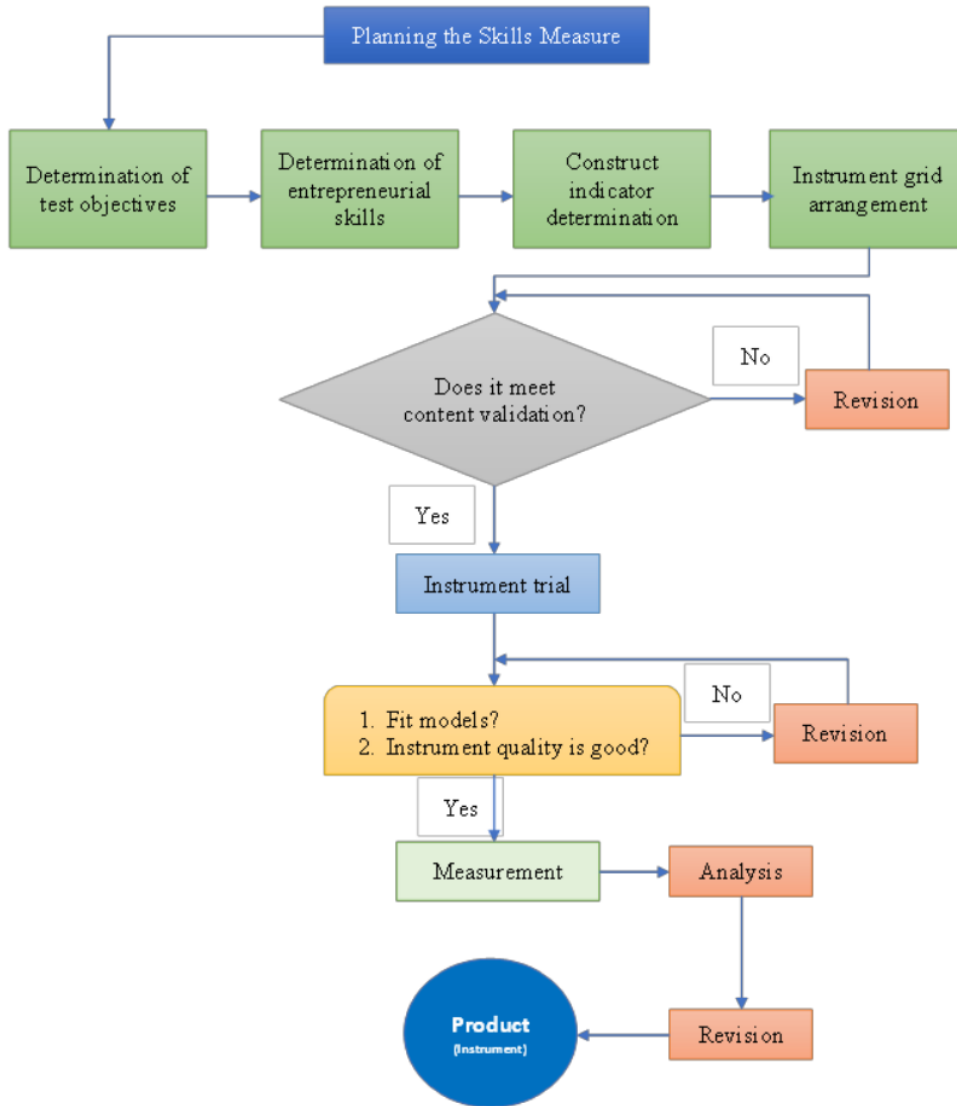
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## Method

### Research Design and Procedure

- 33
- 1 The type of research used is the development of an instrument for measuring the
  - 2 entrepreneurial skills of college students. The reason for choosing this type of research is to
  - 3 determine the reliability of the instrument that will be used in measuring the
  - 4 entrepreneurial skills of college students. This research uses development Retnawati (2017)
  - 5 which consists of (1) determining the purpose of the instrument preparation; (2) search for
  - 6 relevant theories; (3) developing indicator constructs; (4) compiling instrument items; (5)

- 1 content validation (expert judgment); (6) revision based on validator input; (7) conduct trials
- 2 on respondents; (8) perform analysis; (9) assemble the instrument. The nine steps of
- 3 research and development above are described as follows:



4 Figure 1. Research Procedure

- 5 This research procedure includes:



- 1 1. Planning the Skills Measure, the researcher carried out activities for the preparation  
2 of the initial draft of the development of the college student entrepreneurial skills  
3 measurement instrument. This plan consists of:
- 4 a. Determination of test objectives, carried out by seeking university information  
5 and reviewing literature reviews related to entrepreneurial skills. The purpose of  
6 this test is to measure the extent of problem solving skills related to  
7 entrepreneurship faced by college students.
- 8 b. Determination of entrepreneurial skills, in this step researchers determine the  
9 basic competencies and skills that college students need to have in  
10 entrepreneurship.
- 11 c. Construct indicator determination, this stage is the compiler of the indicator  
12 construct used in testing the test instrument. The preparation of the indicator  
13 construct is as follows:

14 Table 1.

15 Construct Indicator

No.	Component	Indicator	Item
1.	Technopreneur	Utilization of technology	2
		E-commerce	2
		Innovation technology	2
			6
2.	Sosiopreneur	Relationship development	2
		Consumption culture shift	2
			4
3.	Ecopreneur	Environmental progress	2
		Regional potential development	2
			4
4.	Edupreneur	Entrepreneurial attitude	2
		Entrepreneurial leadership	2
		Emotions of independence	2
			6
5.	Edupreneur Management	Planning	2
		Development	2
		ROI	2
			6

1

2 d. Instrument grid arrangement, the next step is compiling an instrument grid  
3 based on an assessment of the indicator construct. For each indicator that  
4 already exists, one item of questions will be made and indicators that have a  
5 wider scope will be made up of more than one item.

6 2. Content validation, this step is carried out to examine entrepreneurial skills,  
7 indicators, grids, and sola items through expert judgment. This activity is carried out  
8 to obtain content validity <sup>26</sup> in order to meet the requirements in terms of concept,  
9 construction, and language.

10 3. Repair of instruments, carried out to rearrange instruments that have been validated  
11 by expert judgment. It aims to improve the quality of the instruments that have been  
12 compiled.

13 4. Instrument trial, the procedure carried out at this stage is to test the instrument  
14 developed in a limited way to obtain the empirical data needed to test whether the  
15 entrepreneurship instrument developed is included in the validity criteria based on  
16 empirical data, reliability, and good item parameters. The implementation of the trial  
17 aims to obtain an estimate of college students' entrepreneurial skills in  
18 understanding test items, knowing the fit of the model, estimating item parameters,  
19 and possible obstacles in the implementation of the test.

20 5. Measurement, the last procedure of developing this research instrument is  
21 measurement. This procedure is carried out to determine the entrepreneurial skills of  
22 college students. This measurement was carried out in Yogyakarta, Indonesia.

23

#### 24 **Sample and Data Collection**

25 This research was conducted in Yogyakarta, Indonesia. The subject of the trial was carried  
26 out at one university and the subject of the measurement was carried out at three  
27 universities in Yogyakarta. The trial subjects and measurement subjects were 300 college  
28 students. The technique of selecting test subjects and measurement subjects in this study  
29 was using purposive random sampling. This technique is used because it has the aim of

1 determining college students who already have a business/do entrepreneurship both on a  
2 small scale and in development and are carried out randomly. This is as conveyed by  
3 Mahmudah (2021) that purposive random sampling is the determination of research  
4 subjects who already have clear objectives and are carried out randomly.

5 The technique used in collecting data on the test subjects and measurements is a  
6 questionnaire. Questionnaires are one of the data collection techniques that are often used  
7 in research (Gall et al., 2003). Often also referred to as a questionnaire (Hadi, 2015). The  
8 questionnaire used in this study is closed. The reason for using a closed questionnaire is that  
9 the answer in the statement has been determined by the researcher and the respondent  
10 chooses one answer according to the actual opinion and conditions. The dissemination  
11 technique in this study was carried out in two ways, namely offline and online through the  
12 google form platform. Alternative answers in this questionnaire include "strongly agree",  
13 "agree", "disagree", "disagree", "strongly disagree". The scale used in the questionnaire is  
14 the Likert scale.

15 The questionnaire used in this study was prepared to determine the practicality of using the  
16 instrument in measuring college student entrepreneurial skills. Practicality in question is the  
17 ease of use of the instrument, the clarity of the instructions for using the instrument, the  
18 effectiveness of the use of language, and the adequacy of the time provided. This research  
19 questionnaire consists of 5 indicators and 26 items.

20

## 21 **Analizing of Data**

### 22 *Instrument Content Validity*

23 Content validity is carried out to test the test items as a whole by contacting expert  
24 judgment. According to Mardapi (2008) validity is defined as a test conducted to test the test  
25 items as a whole. Validation is done by proving between the grids that have been prepared  
26 and the items that have been prepared. The assessment is done by giving a mark on the  
27 validator's assessment. The results of this validation aim to be evidence that the content of  
28 the test is in accordance with the material to be measured and tested. The validity formula  
29 used is the Aiken V Index (Aiken, 1980).

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2

$$V = \sum s [n(c - 1)]$$

3 Information:

4 s = r-lo

5 lo = lowest score of validity assessment (in this case – 1)

6 c = highest score of validity assessment (in this case – 5)

7 r = the number given by an appraiser

8

9 Construct Validity

10 Construct validity in this study is used to test the extent to which the instrument can  
11 measure certain constructs. There are two kinds of construct validity, namely EFA  
12 (exploratory factor analysis) and CFA (confirmatory factor analysis). The analytical tool used  
13 in the EFA construct is SPSS version 23 and CFA uses Lisrel 8.80.

14 EFA was conducted to test the adequacy of the model using the Kaiser-Meyer-Olkin (KMO)  
15 value, the analysis can be continued if the decision of KMO 0.5 (Sarstedt & Mooi, 2012).  
16 Then the Bartlett test (Bartlett test of sphericity) was carried out. The purpose of the Bartlett  
17 test is to determine whether there is a correlation between variables or not. The analysis can  
18 be continued if the Bartlett test value is significant 0.05. The next step is unidimensional  
19 analysis by knowing the scree plot on the most dominant graph (Hanlbleton et al., 1991).

20 The CFA in this study was conducted to test the suitability of the construct model used to  
21 measure the entrepreneurial skills of college students. The results of the model fit test are  
22 seen in the chi square which measures the model fit. The chi square value of 0 indicates that  
23 the model has a perfect fit. The chi square probability is expected to be significant at the p-  
24 value 0.05 (Toit & Toit, 1939). In this CFA analysis, it can also be seen the results related to  
25 the criteria, namely the Root Mean Square Error of Approximation (RMSEA) value measuring  
26 the deviation of parameter values in a model with a population covariance matrix. The  
27 RSMEA value 0.08 indicates the fit model, while 0.08 indicates the model does not fit (Toit &  
28 Toit, 1939).

1

2 *Instrument Reliability*

3 Reliability is the level of consistency or constancy between two measurement results on the  
4 same object (Sarstedt & Mooi, 2012). Reliability is indicated by the value of the correlation  
5 coefficient between the two observed scores obtained from the measurement results using  
6 parallel instruments (Ambrosio, Prato, & Mennucci, 2011). Reliability estimation aims to  
7 determine whether the instrument is consistent and stable for measuring constructs. The  
8 reliability of the instrument from the reliability index, which is calculated statistically, is  
9 referred to as the reliability coefficient. Estimation of reliability using the Cronbach's Alpha  
10 formula using SPSS version 23. The instrument is said to be reliable if it has a general  
11 reliability coefficient 0.7 (Sarstedt & Mooi, 2012). The formula used is as follows:

12

$$\alpha = \left( \frac{k}{k-1} \right) \left( 1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right)$$

14 Information:

15  $\sigma$  = instrument reliability coefficient

16  $k$  = the number of questions in the instrument

17  $\sum \sigma_i^2$  = total variance of instrument items

18  $\sigma_t^2$  = total score variance

19

20

21 *Instrument Practicality Test*

22 The practicality test in this study was conducted to make it easy for college students to  
23 measure entrepreneurial skills. Criteria meet practicality, among others, the instrument has  
24 been validated by an expert, the user can use the instrument, and the user can use it easily  
25 (Akker et al., 2017). The practicality test in this study assessed the entrepreneurial skills of  
26 college students whose questionnaires were distributed via google form to all college  
27 students in four universities in Yogyakarta, Indonesia. The practicality of this instrument can  
28 be assessed if 60%.

1

2 Table 2.

3 Practical Analysis of College Student

4

Questionnaire score	Criteria
$X \geq 48$	Very Practical
$48 > X \geq 36$	Practical
$36 > X \geq 24$	Practical enough
$24 > X \geq 12$	Not Practical
$X < 12$	Very Impractical

5

6

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### Findings

8 Based on the analysis that has been done, the following are the results obtained related to  
9 the development of the instrument used to measure the entrepreneurial skills of college  
10 students:

11 *Instrument content validity*

12 <sup>34</sup> The validity of the content of this instrument is done by contacting expert judgment to  
13 assess the instrument grid and items to be used in developing the instrument. There are  
14 three experts involved in the assessment. Items assessed in content validity consist of 26  
15 items using a Likert scale (1-5 scale). The following are the results of content validity:

16

17 Table 3.

18 Instrument Content Validity Results

19

No	Rater			S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	Σs	n(c-1)	V	Information
	1	2	3							
1	4	5	4	3	4	3	10	12	0,833	Valid
2	4	5	5	3	4	4	11	12	0,917	Valid
3	4	5	5	3	4	4	11	12	0,917	Valid



4	3	5	5	2	4	4	10	12	0,833	Valid
5	3	5	5	2	4	4	10	12	0,833	Valid
6	4	5	5	3	4	4	11	12	0,917	Valid
7	3	5	5	2	4	4	10	12	0,833	Valid
8	3	5	5	2	4	4	10	12	0,833	Valid
9	3	5	5	2	4	4	10	12	0,833	Valid
10	4	5	5	3	4	4	11	12	0,917	Valid
11	4	5	5	3	4	4	11	12	0,917	Valid
12	4	4	5	3	3	4	10	12	0,833	Valid
13	4	5	5	3	4	4	11	12	0,917	Valid
14	4	5	5	3	4	4	11	12	0,917	Valid
15	4	4	5	3	3	4	10	12	0,833	Valid
16	4	5	4	3	4	3	10	12	0,833	Valid
17	3	5	5	2	4	4	10	12	0,833	Valid
18	3	5	5	2	4	4	10	12	0,833	Valid
19	4	5	5	3	4	4	11	12	0,917	Valid
20	4	5	5	3	4	4	11	12	0,917	Valid
21	4	4	5	3	3	4	10	12	0,833	Valid
22	4	5	5	3	4	4	11	12	0,917	Valid
23	4	5	5	3	4	4	11	12	0,917	Valid
24	4	5	5	3	4	4	11	12	0,917	Valid
25	4	4	5	3	3	4	10	12	0,833	Valid
26	4	5	4	3	4	3	10	12	0,833	Valid
<b>Average Aiken V Index</b>									<b>0,872</b>	<b>Valid</b>

1

- 2 Based on <sup>9</sup>table 2 above, it can be concluded that the 26 items assessed by expert judgment  
3 have a high category. This means that the range of the number V from the analysis results

1 has a range between 0 to 1.00, then all the values of the V results above have good  
2 coefficient values. So that the item has good content validity and supports the overall test  
3 content validity.

4

5 *Construct Validity*

6 EFA

7 The EFA in this study was to test <sup>5</sup> the adequacy of the sample used in the analysis of the  
8 development of the entrepreneurial skills instrument. Existing data were analyzed using SPSS  
9 version 23. The sample was 300 college students with a test length of 26 items. The  
10 following are <sup>23</sup> the results of the EFA analysis that has been carried out:

11

12 <sup>37</sup> Table 4.

13 **KMO and Bartlett's Test Results**

<sup>10</sup> **KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,960
Bartlett's Test of Sphericity	Approx. Chi-Square	3411,485
	df	325
	Sig.	,000

14

15 The results of the above analysis can be concluded that the KMO value is  $0.960 > 0.05$ . This  
16 means that the instrument used has a sufficient model. So it can be continued for analysis.  
17 The result of the next analysis is to see the number of factors contained in the instrument  
18 can be known from the scree-plot. <sup>22</sup> The following are the results of the scree plot analysis:



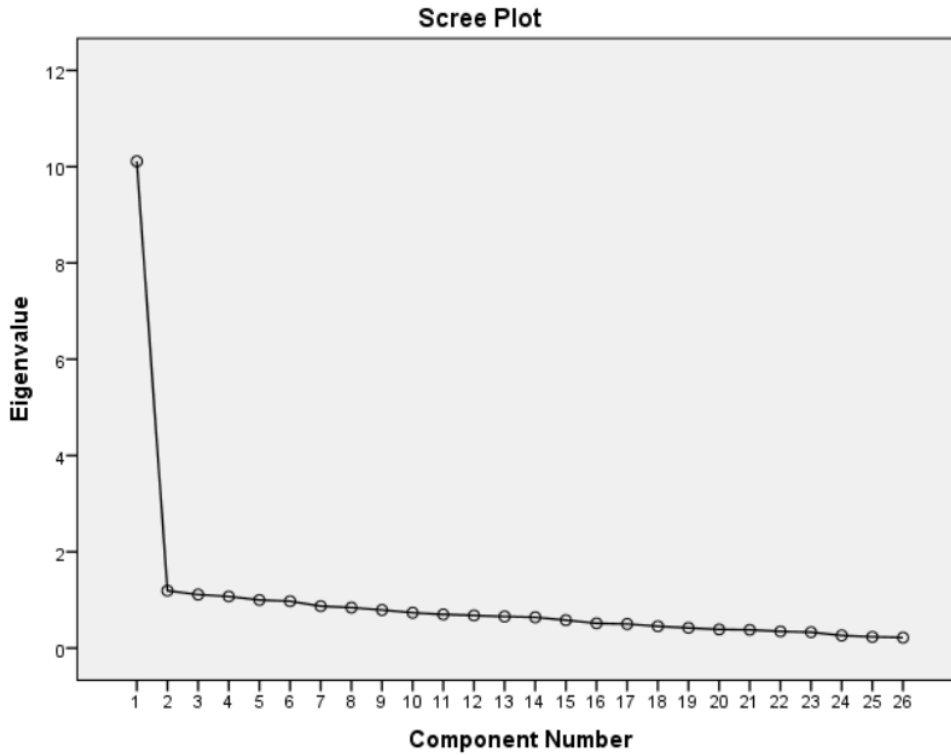


Figure 1. EFA result scree plot

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2 Based on the picture above, it can be concluded that the eigenvalues start to slope at the  
3 2nd factor. This shows that there is a dominant factor in the student college entrepreneurial  
4 skills measurement tool. These results prove that the instrument meets the unidimensional  
5 assumption or in other words only measures 1 dominant factor. Furthermore, the  
6 eigenvalues can be seen in the following table:

7 Table 5.

8 Unidimensional Test Analysis Results of Development Instruments

9

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	10,112	38,891	38,891

2	1,192	4,585	43,476
3	1,111	4,275	47,751
4	1,071	4,120	51,871
5	1,000	3,846	55,717
6	,973	3,742	59,459
7	,871	3,351	62,810
8	,841	3,235	66,045
9	,792	3,045	69,090
10	,734	2,822	71,912
11	,699	2,690	74,601
12	,678	2,608	77,209
13	,656	2,524	79,733
14	,640	2,460	82,193
15	,580	2,230	84,423
16	,516	1,984	86,407
17	,501	1,926	88,333
18	,454	1,746	90,079
19	,419	1,613	91,692
20	,388	1,494	93,186
21	,380	1,461	94,647
22	,348	1,337	95,984
23	,331	1,272	97,255
24	,263	1,011	98,266
25	,233	,896	99,163
26	,218	,837	100,000

2  
1 Based on the results of the analysis in table 4, it can be concluded that the cumulative  
2 percentage of the first factor eigenvalues is 38.891%. This percentage has exceeded 20% of  
3 the criteria, so the instrument against the facilitators is proven to only measure one factor or  
4 unidimensionality.

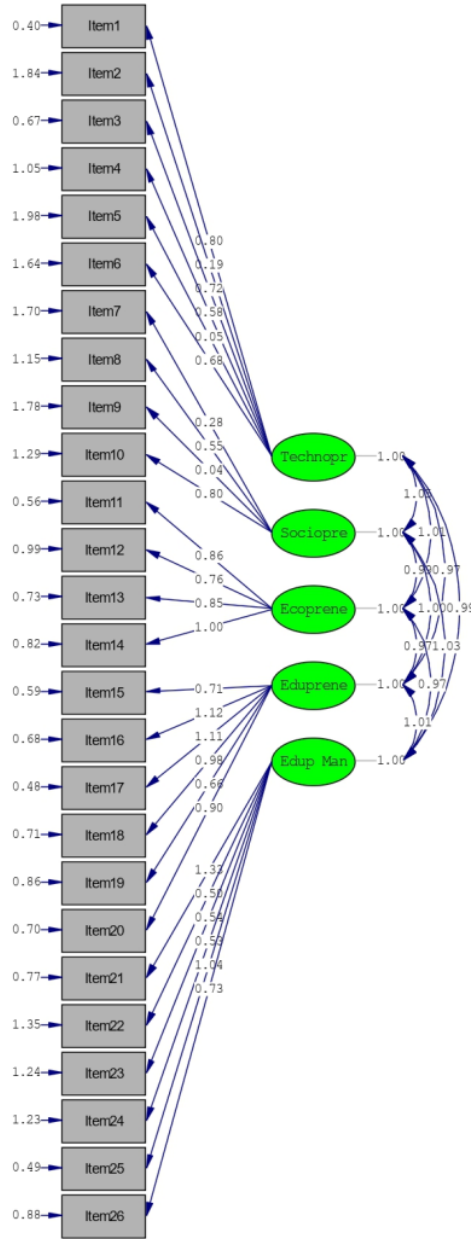
5 CFA

6 The CFA test of the entrepreneurial skills measurement instrument was developed to  
7 measure the instrument's construct consisting of five indicators, namely (1) technopreneur;  
8 (2) sociopreneur; (3) ecopreneurs; (4) edupreneur; and (5) edupreneur management. The  
9 five indicators were tested through the CFA. This construct validity test was conducted to  
10 answer research questions related to the quality of the instrument that met the validity and  
11 reliability. The CFA in the measurement instrument of entrepreneurial skills developed  
12 consists of 26 items. Here are the test results:

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12 Based on the results of the analysis in Figure 3 above, the results of the fit test of the instrument measuring the entrepreneurial skills of college students meet the criteria for the model fit test (good of fit) because the p-value is 0.16722 (p 0.05), the RMSEA is 0.016 (RMSEA). 0.08) (Jöreskog & Sörbom, 1993). Thus, the instrument for measuring college students' entrepreneurial skills based on theoretical studies is compatible with empirical data in the field.

7

#### 8 *Instrument Reliability*

9 The reliability test was carried out using the Allfa formula from Cronbach. The steps taken by researchers in determining this reliability are estimating each item and the total variance.

31 The results of the next reliability coefficient are as follows:

12 Table 6.

13 Instrument Reliability Test Results

Reliability Statistics

4 Cronbach's Alpha	N of Items
,919	26

14

15

16 Based on the results of the reliability analysis above, it is 0.919 ( $\geq 0.7$ ). Obtaining the results of the reliability analysis shows that the level of reliability of the test instrument measuring the entrepreneurial skills of college students is in a very good category.

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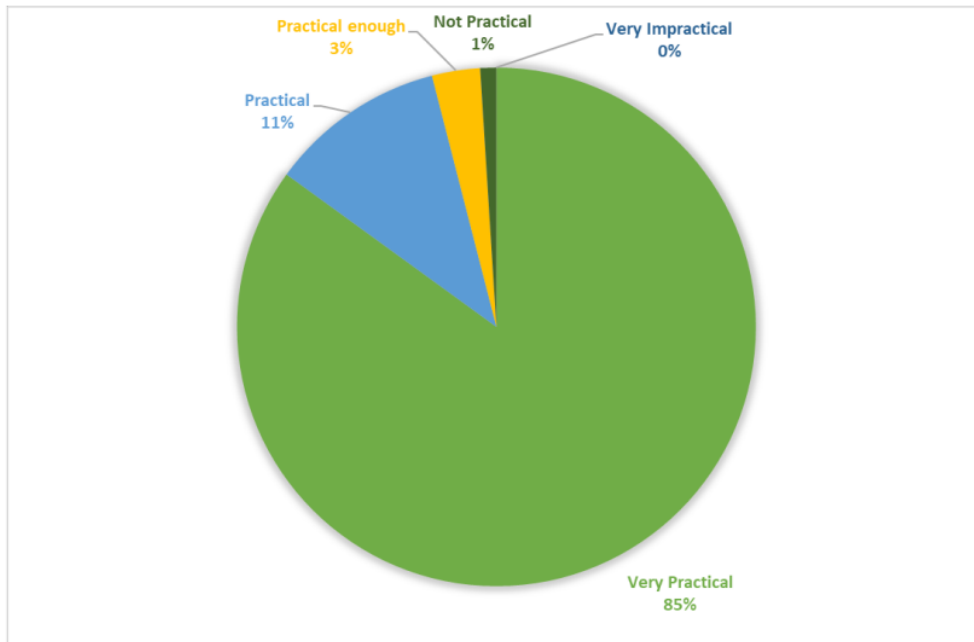
#### 20 *Instrumental Practicality*

21 The results of the questionnaire that have been distributed through the google form consist of aspects of the practicality of the instrument instructions, ease of use of the instrument,

22

1 and the practicality of using the instrument as many as 26 items. The practicality test in the  
2 instrument for measuring college student entrepreneurial skills is as follows:

3



4

5 Figure 3. Practicality Test Results of Developed Instruments

6

7 The calculation results from the picture above show that college students' responses to the  
8 use of entrepreneurial skills measurement instruments show 85% very practical, 11%  
9 practical, 3% quite practical, 1% impractical, and 0% very impractical category.

10

11

### Discussion

12

13 Based on the results of the analysis above, it can be understood that the instrument for  
14 measuring the entrepreneurial skills of college students has complied with the rules for  
compiling items in a comprehensive and proven fit and can be used to measure

1 entrepreneurial skills. The results of measuring the entrepreneurial skills of college students  
2 on 300 people who were processed using program R showed that students were located in  
3 the interval -4 to 4. This showed that the entrepreneurial skills of college students were very  
4 varied. This conversion process uses the skills presented in Hambleton's theory that abilities  
5 generally lie in the interval -4 to 4 . After being converted using the formula, college students  
6 worked on a closed questionnaire that had been prepared by the researcher. With scores  
7 presented in the form of very high, high, moderate, low, and very low categories (Miller et  
8 al., 2009). The value of entrepreneurship skills of college students with the highest  
9 frequency is sufficient. This is influenced by several factors that need to be developed by  
10 college students, especially those related to entrepreneurial attitudes.

11 The entrepreneurial attitude of students is the foundation for the development of  
12 knowledge and actions in entrepreneurship. In general, this attitude becomes a strength for  
13 college students to develop themselves in entrepreneurship (Fitzsimmons & Douglas, 2010).  
14 There are several indicators that affect the entrepreneurial skills and attitudes of college  
15 students such as innovation, vision, research taking, and self confidence (Dewi & Christian,  
16 2017). Education, especially entrepreneurship is the process of building or shaping attitudes  
17 or skill to learners (Widayat & Ni'matuzahroh, 2017). Entrepreneurial competence can be  
18 developed through skills taught by lecturers and practiced directly by college students  
19 (Soltysiak, 2019). These various entrepreneurial attitude skills support the preparation of  
20 the college student skill measurement instrument. In this measurement instrument, the  
21 attitude of the college student's entrepreneurial skills is also an important reference in  
22 developing the instrument used. So that comprehensively the preparation of the  
23 measurement instrument has indicators that can be used as a reference in improving the  
24 entrepreneurial skills of college students.

25 In this regard, the quality of this measurement has been tested with good results. The  
26 quality of the instrument consisting of content validity, reliability, construct validity, and  
27 item characteristics of the instrument has been tested theoretically and practically. The  
28 validity of the instrument consists of three things, namely content, construct, and criteria  
29 (Nunnally & Bernstein, 1994). The content validity of the development of the instrument for  
30 measuring the entrepreneurial skills of college students uses expert judgment and is tested



1 with Aiken V which has met the standard index. Meanwhile, the construct validity of the  
2 measurement instrument has also met the standard. The validity of the criteria was not  
3 carried out in the development of this instrument because the researcher did not answer the  
4 question of how far the test predicts the entrepreneurial skills of college students. The  
5 content validity of the instrument development is obtained from the decisions of each  
6 validator. Validity is said to be valid if 99% of the instruments are ready to be used (Lawshe,  
7 1975). It is said to be valid if 0.75 (Aiken, 1980). The preparation and development of this  
8 instrument was also carried out several times after going through the revision of the  
9 suggestions from the experts, so that the quality of the instrument could be accounted for.

10 The next validity test is construct. Using CFA with Lisrel 8.80 software tools. This proof sees  
11 the standardized loading factor (SLF) number with an accuracy of > 0.3, then the item has  
12 been able to compile the instrument construct (Sarstedt & Mooi, 2012). Theoretically, the  
13 construct of the college student entrepreneurship measurement instrument has been  
14 logically arranged by the items. Content and construct validity is a very important  
15 requirement in the development of the instrument. With the fulfillment of the validity, the  
16 instrument is expected to meet the standard test requirements. So that the fulfillment of  
17 validity proves that the instrument can be used by lecturers to measure the entrepreneurial  
18 skills of college students.

19 The development of an instrument for measuring college students' entrepreneurial skills also  
20 resulted in a practical instrument. Aspects assessed for practicality are clarity of instructions,  
21 use of instruments, clarity of sentences/language, adequacy of time, entrepreneurial skills to  
22 be measured, and clarity of scoring instructions for both lecturers and college students. This  
23 is in accordance with research conducted by Zahro' (2020) that the practicality of product  
24 development is determined from the opinion of college students who state that the  
25 resulting instrument can be used. The practicality of the instrument includes the ease  
26 obtained in using the measurement instrument (Cahyono et al., 2021). The results show  
27 that the developed instrument is feasible to use. An instrument is feasible to use if it is  
28 declared practical (Akker et al., 2017). A practical measurement instrument if it is able to  
29 meet the valid, easy-to-use, and in accordance with the purpose of the instrument  
30 designation.



1 **Conclusion**

2 The conclusion of this research is that the development of instruments for measuring college  
3 students' entrepreneurial skills can be continued well. This is in line with the results of tests  
4 that have been carried out both when measuring the quality of the instrument and the  
5 practicality of using the instrument. Indicators of developing entrepreneurial skills  
6 instruments have also been compiled based on theoretical studies so that supporting and  
7 valid evidence of empirical test results is the result of the research process for developing  
8 this instrument.

9

10 **Recommendations**

11 This research is recommended to lecturers who teach entrepreneurship education in  
12 universities to be used in the process of measuring college students' entrepreneurial skills.  
13 Likewise, the indicators compiled in the development of this instrument also need to be  
14 carefully considered by college students. It aims to be able to develop attitudes, skills, and  
15 knowledge about entrepreneurship, so that the college student entrepreneurship process  
16 can be profitable and provide significant experience with the conditions of each skill pursued  
17 by college students.

18 **Limitations**

19 This research is still in the form of developing instruments, meaning that this research has  
20 only prepared an instrument for measuring entrepreneurial skills that is valid, reliable,  
21 quality, and practical as well as theoretically and empirically proven to be of good quality.  
22 There is a need for further research that can be used to measure college student skills in a  
23 diffuse and intact manner so that this instrument can be used as a standard in the  
24 implementation of skills measurement.

25

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