Constructing A Measuring Instrument For Entrepreneurial Characters In Universitas Jambi

Nofrans Eka Saputra, Yun Nina Ekawati, Verdiantika Annisa, Agus Syarif

Abstract: This study aims to perform a validity construct by using a factor analysis on the measuring instrument of entrepreneurial characters in Universitas Jambi. Students following the Program of Entrepreneur Students of Universitas Jambi were the population of this study. A random sampling was used as the sample collection technique by involving 123 students. The measuring instrument of entrepreneurial characteristics is categorized into three skill categories, namely personal skill (critical thinking, creative thinking, problem-solving, spiritual and religious scales), interpersonal skill (negotiation and communication scale), and group skill (cooperation and leadership scale). The results of this study showed that the construct validity by using the Principal Component Analysis with orthogonal rotation and varimax extraction produced several factors that were successfully extracted into each component of the scales on the measuring instrument of entrepreneurial characters. The results of the reliability test on the internal consistence with Guttman's method showed satisfactory reliability scores on all scales with 0.700 of average reliability score. The norm of the measuring instrument used the hypothetical standard of deviation both for each component or the whole measuring instrument. The instrument has been supported by satisfactory construct validity and reliability, thus it can be used to assess the potential of entrepreneurial characters owned by students.

Index Terms: Measuring Instrument Construction, Character, Entrepreneur

———————————————— ◆ ————————————————

1 INTRODUCTION

The availability of employment is an essential indicator of the economic growth of a country. Entrepreneurship is a means to answer the broader needs of employment (Foos & Klein, 2018). As a developing country, Indonesia still lacks entrepreneurs. This condition is affected by many factors, including the state of education in Indonesia. Indonesia's education system has not fully facilitated the development needs in the economic sector (Rakib, 2010). This condition causes a gap between education and the preparation of individuals in business sectors. Universities are the facility in embodying entrepreneurial education (Hasni, 2018) because students have a bigger opportunity in self-development and exploring their future needs (Duffy & Atwatter, 2005). By embedding elements or values of entrepreneurship in the education curriculum, students can be encouraged to be ready for business sectors because, at present, people do not only need universities as a preparation for the employment world but also create employment. Universitas Jambi (UNJA) is one of the universities that tries to answer the needs regarding the economic and entrepreneurship sectors. In 2018, UNJA conducted an update on their vision and applied the vision as "a world-class Entrepreneurship University." Entrepreneurship University focuses on the independence that UNJA is capable of producing graduates with soft skills, hard skills, and competitiveness as well as tough and professional entrepreneurs in their sectors while also capable of satisfying stakeholders (UNJA's Strategic Plans, 2017).
The effort of UNJA in accomplishing its vision is by formulating its missions that include conducting quality education and developing the creativity of entrepreneurs based on their interests and talents, while also producing competitive graduates who can apply their knowledge based on the sectors they are engaged in professionally. The formulated missions principally need to be prepared by each education

————————————————————
- *Nofrans Eka Saputra, Department of Psychology, Universitas Jambi, PH-081366825828. Email: nofransekasaputra@unja.ac.id*
- *Yun Nina Ekawati, Departmen of Psychology, Universitas Jambi, PH-081804504411. E-mail: yun_nina.e@unja.ac.id*
- *Verdiantika Annisa, Departmen of Psychology, Universitas Jambi, PH-085266335405. Email: verdiantikaannisa@unja.ac.id*
- *Agus Syarif, Department of Economic and Management, Universitas Jambi*

executor and administrator in Universitas Jambi. This effort is expected to create graduates who cannot only compete in the employment sector but also provide contributions in building employment through the entrepreneurship capacities they have. Specifically, UNJA implemented three achievement indicators that determine the graduates' competitiveness, namely 1) academic skills that are related to the science they are engaged with; 2) generic/life skills that refer to a set or type of skills acquired during the education period which can be applied at work that include many things; 3) technical skills related to specific professions that require knowledge and expertise to perform well in a sector of employment (UNJA's Strategic Plans, 2017). According to these achievement indicators, some skills are required by UNJA's graduates, including creative-critical thinking, problem-solving, communication, negotiation, teamwork, and leadership skills (UNJA's Strategic Plans, 2017). Skills are principally can be developed through individual experiences when connecting to others and through the individual's need (Whetten & Cameron, 2011). When an individual is able to plan and prepare the skills he/she wanted, it's possible that such skills can be established. This is because skills can be organized actively by individuals and can be developed into a pattern of behaviors. Therefore, it would be better if there's an external platform that can encourage the establishment of such behaviors. Thus, the creation of a system in a university can become the reference in promoting skills associated with entrepreneurship.
If referring to the concept proposed by Whetten and Cameron (2011), who divided skills into three categories, namely personal, interpersonal, and group skills, thus, the graduates of Universitas Jambi could have these skills during their education. Personal skill is related to developing self-development skills, interpersonal skill is related to the proficiency in establishing a relationship with others, and group skill is associated with building teamwork. These three skills become the core foundation in forming entrepreneurial characters in UNJA's students. The details can be seen in Table 1.

Table 1. *Entrepreneurial Characters of Students in Universitas Jambi*

Skill	Entrepreneurial	References

Categories	Characters	
Personal skill	Problem-solving, creative-critical thinking, spiritual-religious	Marliani (2013); Whetten & Cameron (2011); Rachmawati & Kurniati (2010); Paul & Elder (2002)
Interpersonal skill	Negotiation, communication skills	Zohar (2015); Dawson (2004); Souza, et al (2017); Rakib (2010); Fitriati & Hermiati (2010)
Group skill	Leadership, cooperation	Sanyal & Hisam (2018); Greenberg, et al (2012); Whetten & Cameron (2011); Parker (2007); Fernald et al (2005)

Concerning these skills, an effort to recognize students' skills since the early day or before engaging in the employment sector is needed. This effort is necessary to determine appropriate actions or interventions for universities in developing entrepreneurial characters in UNJA's students. Until present, students' entrepreneurial characters are polished in the special class of entrepreneurship and through entrepreneurship activities, including the entrepreneur student program (PMW). Students who participate in PMW have the opportunity to optimize the growth of entrepreneurial characters before they graduate. Formulating the measuring instrument for entrepreneurial characters is the means to evaluate the level of skills and preparedness of UNJA's students in facing the employment world and building their businesses. Until present, the psychological measuring instrument in the UNJA's environment that can assess individual skills related to entrepreneurial characters validly and measurably has not been available. In Indonesia itself, the formulation of the measuring instrument for entrepreneurial characters still requires development. Concerning this matter, the researcher considers that the development of a measuring instrument for entrepreneurial characters is still necessary, especially in Universitas Jambi's environment. The development of this measuring instrument is also expected to become an illustration for universities or other sectors related to entrepreneurship.

2 RESEARCH METHOD

The stages of research that have been conducted were building the construct and the analysis of psychometric properties on the measuring instrument. In addition, the researcher also arranged norms and interpretations of the entrepreneur's measuring instrument that will be formulated.

2.1 The Construct of the Entrepreneur Measuring Instrument

In the construction process of this measuring instrument, several stages have to be done, including:

a. Determining the Construct, Aspect, and Indicator of Behaviors

The formulation of constructs and aspects was referring to the concept of skills from Whetten & Cameron (2011) and adjusted to the strategic plans of Universitas Jambi in 2018 regarding the skills that have to be mastered by the graduates. The components of skill that became the construct consist of personal, interpersonal, and group skills. Of these components, the researcher arranged the indicators of behavior derived into items and produced the measuring instrument's blueprint for entrepreneurial

characters. The blueprint of the measuring instrument was initially reviewed with a Subject Matter Expert (SME), involving the judgment from experts in the construction of psychological measuring instruments and entrepreneurship. This process aimed to obtain the internal validity and construct of the formulated measuring instrument. The researcher also revised the blueprint according to the evaluation results of evaluators to conduct the trial for the measuring instrument.

b. The Scaling Format

Scaling is the process of determining the position of response categories on respondents regarding the created statement items in a pre-determined psychological continuum (Azwar, 2017). The scaling format will determine the score acquired from respondents who fill the measuring instrument. The scaling format used the Likert method with five-answer choices, consisting of Very Compatible (SS), Compatible (S), Neutral (N), Incompatible (TS), and Very Incompatible (STS).

c. Item Writing

There was a total of 188 initial statement items consisted of leadership scale (24 items), creative-thinking scale (15 items), communication skill scale (33 items), teamwork scale (24 items), negotiation skill scale (24 items), critical-thinking scale (14 items), problem-solving skill scale (13 items), religious scale (25 items), and spiritual scale (16 items). The types of items consisted of favorable and unfavorable items. The items reviewed by the researcher and expert judges were revised before tested toward the subject group. The researcher assured that the formulated items could discover things according to the indicators, and the subjects understand the items' statement through writing that was based on the proper spelling of Indonesian Language.

2.2 The Scale Psychometric Properties Analysis

After obtaining the data from the test of the formulated measuring instrument, the next step was conducting the scale psychometric properties analysis or construct analysis. The construct analysis in this study used the factorial validity test with Principal Component Analysis (PCA), orthogonal rotation, and varimax extraction. PCA aims to summarize the correlation pattern between observed variables to reduce some observed variables into a small number of factors to provide an operational definition (a regression equation) for the underlying process using observed variables (Tabachnick & Fidell, 2014). PCA is basically summarizing several independent variables indicated as correlating or depending on each other into one or more new variables independent of other variables. The varimax extraction was performed to analyze the formation of factors on a set of existing components. The reliability test of the measuring instrument used Gutmann's method. The formulation of norms and interpretations is conducted by creating hypothetical norms both for the scoring of all scales or the scoring of per component scales. The population of this study was Universitas Jambi's students. Respondents made as the sample in this study involved 123 undergraduate students participated in the Entrepreneur Program of Universitas Jambi.

3   RESULTS

The study of the construction of entrepreneur's measuring instrument produced some products, including 1) the final measuring instrument of entrepreneurial characters, 2) the scores of scale's psychometric properties that generate validity and reliability of the measuring instrument, and 3) the normalization and interpretation of the measuring instrument.

3.1 The Final Measuring Instrument of Entrepreneurial Characters

Referring to the concept proposed by Whetten and Cameron (2011) and the strategic plans of Universitas Jambi (2018), thus, the measuring instrument for Entrepreneurial Characters is divided into three (3) categories of scale, namely personal skill, interpersonal skill, and group skill. Personal skills consisted of problem-solving, critical thinking, creative thinking, religious and spiritual scales. Interpersonal skills consisted of communication and negotiation scales. Group skills consisted of leadership and teamwork scales. Each scale has several constructing components acquired through several stages of psychometric analysis test. At the first stage, the construct's factorial validity was performed on the test results of the measuring instrument. Principal Component Analysis (PCA) was the technique used in performing the construct's factorial validity. Principal Component Analysis (PCA) is useful to observe or confirm factors underlying a scale construct by reducing the components of data without reducing the characteristics of scale's construct significantly. This PCA technique was chose because it can prevent the possibility of the uncertainty of the established factors or components compared to other factor analyses (Harrington, 2009). The process of this PCA technique is summarizing several independent variables indicated as correlating or depending on each other into one or more new variables independent of other variables so each component of the analysis can be determined as independent. Orthogonal rotation and varimax extraction analyses were performed to analyze the formation of factors on a set of components that exist on each scale. Of the results of orthogonal rotation and varimax extraction, the scale-forming components on the measuring instrument for Entrepreneurial Characters were obtained. Of the old constructing components, it is acquired that the components as the result of the combination of observable variables were correlated with the constructing factor. New established components can be seen in the table as follows.

Table 2. The Analysis Results of the Scale-Constructing Components on The Measuring Instrument for Entrepreneurial Characters

SCALE GROUPS	SCALES	THE NUMBER OF OLD COMPONENT	THE NUMBER OF NEW COMPONENT
PERSONAL SKILL	CREATIVE THINKING	5	3
	CRITICAL THINKING	3	3
	PROBLEM SOLVING	4	3
	RELIGIOUS	11	3
	SPIRITUAL	5	3
INTERPERSONAL SKILL	COMMUNICATION	11	4
	NEGOTIATION	8	2
GROUP SKILL	LEADERSHIP	8	3
	TEAMWORK	8	2

Most of the scale have components reduced to several smaller components because there were components that similar or correlated with other observable variables. In the formulation of the final scale items, there are components' loading coefficient values of each scale group, namely:

a. The Components' Loading Coefficient Value in Personal Skill Category

The personal skill category consisted of creative-critical thinking, problem-solving, religious, and spiritual scales. The creative-thinking scale consisted of the skills in problem-solving, drawing conclusion, and making causality. The problem-solving scale consisted of the skills in implementing and processing solutions, finding problems and solutions as well as finding alternative solutions. The religious scale consisted of the components of religious value internalization, doing religious activities, and being committed in doing religion. The spirituality scale consisted of the components of taking meanings, giving good impacts, providing and maintaining values. These are the components' loading coefficient value of one of the scales in personal skill:

Table 3. The Component of Creative-Thinking Scale in the Category of Personal Skill

Items	Statements	Component Loading I	II	III	Uniqueness
1	I can immediately generate ideas when…	0.518	.	.	0.625
11	I play an active role in the group…	0.595	.	.	0.591
12	I'm the right person for…	0.683	.	.	0.511
2	I have many solutions for…	0.670	.	.	0.510
14	I can produce measures for …	0.666	.	.	0.495
4	I actively follow things that…	0.591	.	.	0.534
15	I love responding to issues that…	0.732	.	.	0.434
5	I feel capable in helping…	0.652	.	.	0.559
*10	I need some time to grasp…	.	0.668	.	0.487
*6	I'm not a person who easy to…	.	0.656	.	0.491
*7	Passive in facing problems…	.	0.690	.	0.497
*8	I'm a difficult person…	.	0.773	.	0.321
*9	It's better to follow someone else's ideas…	.	0.752	.	0.418
13	Most of my ideas are different with others'	.	.	0.775	0.329
3	Most of the ideas I have are…	.	.	0.834	0.277

Table 4. The Matrix of Component Correlation in the Creative-Thinking Scale

	FLUENCY IN THINKING	FLEXIBILITY IN THINKING	ORIGINALITY IN THINKING
FLUENCY IN THINKING	1.000	-	-
FLEXIBILITY IN THINKING	0.000	1.000	-
ORIGINALITY IN THINKING	0.000	0.000	1.000

The analysis results of the five scales' component in the category of personal skill indicated negative and positive correlations among some components. The scales of creative-thinking and problem-solving have positive correlations among their components. While the critical, religious, and spirituals scales have negative correlations. Regardless, all components on each scale have a 0.000 score of correlation coefficient. It means that, each scale did not correlate to each other, in a meaning that each component was independent.

b. The Components' Loading Coefficient Value in the Interpersonal Skill Category

The interpersonal skill category in the measuring instrument of entrepreneurial characters consisted of two scales: negotiation and communication scales. The communication scale consisted of the components of giving support, strengthening a relationship, giving feedback, writing, and speaking. The negotiation scale consisted of the skill of influencing and understanding others. These are the results of construct validity test of one of the scales in the interpersonal skill category:

Table 5. The Component Factor Analysis of the Negotiation Scale in the Interpersonal Skill Category

Items	Statements	Component Loading I	Component Loading II	Uniqueness
1	I tend to find detail information…	0.676	.	0.631
17	I prepare alternatives…	0.656	.	0.569
18	Mutual cooperation for me is…	0.741	.	0.446
19	I tend to start building my comfort in…	0.584	.	0.646
2	In my opinion, it is better for the negotiation results if …	0.716	.	0.465
20	I process new information quickly…	0.618	.	0.603
21	For me, trust is the most important thing…	0.582	.	0.602
22	It's better to prove things directly to others…	0.655	.	0.534
23	In business, patience has to be prepared…	0.614	.	0.608
24	I am a type of person that quick to…	0.645	.	0.582
3	I can make other people understand…	0.687	.	0.523
4	I can see the acceptance of others…	0.672	.	0.539
5	My honesty has been proven to…	0.629	.	0.608
6	Others feel safe doing business with me	0.678	.	0.506
7	Managing emotion during a business negotiation…	0.680	.	0.534
8	I tend to do preliminary study…	0.644	.	0.505
*10	I feel satisfied with the negotiation result…	.	0.680	0.548
*11	People seem to be difficult in getting…	.	0.694	0.481
*13	Honesty and trust in a business…	.	0.758	0.353
*14	I tend to lose trust from…	.	0.750	0.390
*15	The patience in business should has it limit	.	0.585	0.657
*16	I haven't been sensitive in catching "eye-contact"…	.	0.567	0.675
*9	Planning is not a crucial thing in negotiating	.	0.726	0.445

Table 6. The Matrix of Component Correlation in the Negotiation Scale

	INFLUENCING OTHERS	UNDERSTANDING OTHERS
INFLUENCING OTHERS	1.000	-
UNDERSTANDING OTHERS	-0.000	1.000

Similar to the personal skill category, the interpersonal category that consisted of negotiation and communication scales has positive and negative correlations. The components in this scale also have a 0.000 score of the correlation coefficient, which indicated that each scale's components did not correlate to each other or were separated from the others.

c. The Components' Loading Coefficient Value in Group Skill Category

There were two scales in the group skill category in the measuring instrument of entrepreneurial characters: leadership and teamwork scales. Leadership scale consisted on the pro-active, resilient, and the skill to motivate others. These are the results of construct validity test of one of the scales in the group skill category:

Table 7. The Component Factor Analysis of the Leadership Scale in the Group Skill Category

Items	Statements	Component Loading I	Component Loading II	Component Loading III	Uniqueness
	I can direct people to…	0.488	.	.	0.648
	I can see and read opportunities…	0.458	.	.	0.629
	I can assure people about..	0.599	.	.	0.570
	Acting quickly responding to changes…	0.526	.	.	0.607
	I am active in finding ideas about…	0.607	.	.	0.539
	I am willing to bear the possibility of…	0.507	.	.	0.698
	I am willing to be directly involve in running…	0.597	.	.	0.542
	I am persistent in passing every obstacle…	0.553	.	.	0.568
	I wait for the right time…	0.485	.	.	0.734
	I am still reluctant in describing the business…	.	0.634	.	0.462
	I tend to be passive in reading opportunities…	.	0.655	.	0.527
	Giving liberty to other people to create…	.	0.503	.	0.704
	It is better for me to individually running the task …	.	0.436	.	0.585
	I am vulnerable to work pressures	.	0.673	.	0.539

*16	I tend to be reckless in taking…	.	0.578	.	0.604
*9	Become the obstacle in the work environment...	.	0.617	.	0.588
17	Boosting the work morale of others in the environment…	.	.	0.595	0.506
18	I tend to tell others …	.	.	0.412	0.819
20	My job is to encourage others to become…	.	.	0.468	0.624
21	I am being accurate in calculating losses…	.	.	0.514	0.622
22	I accept and willing to replace the plan…	.	.	0.647	0.546
23	Acting concretely is the thing I do…	.	.	0.587	0.597
24	I have a second thought in taking and…	.	.	0.651	0.559

Table8. The *Matrix of Component Correlation in the Leadership Scale*

	PROACTIVE	RESILIENT	MOTIVATE OTHERS
PROACTIVE	1.000	-	-
RESILIENT	0.000	1.000	-
MOTIVATE OTHERS	0.000	0.000	1.000

The constructing components of leadership and teamwork scales showed positive correlations with each other. Each scale's components have a 0.000 score of the correlation coefficient, which indicated that each component didn't have any significant correlation. It can be interpreted that leadership and teamwork scales have components that were independent or separated from other components.

3.2 Psychometric Properties Analysis

As an effort to complete the requirement of a proper measuring instrument, an analysis of psychometric properties was required on the measuring instrument of entrepreneurial characters. In this study, the content validity test on the existing items wasn't the only requirement; the construct validity and reliability tests were also conducted.

a. Construct Validity Test

A construct validity test aims to discover the extent to which a measuring instrument is capable of measuring the theoretical construct that is wanted to be assessed (Azwar, 2017). The construct validity testing was performed by observing the correlation among the construction components of each scale in the measuring instrument for entrepreneurial characters. The scales' construction components in the measuring instrument should be supportive of each other because they reveal the same thing. However, it is possible that the components in a measuring instrument to not supportive of each other. This condition might occur if the components that principally reveal the same thing are revealing different or even contradictory things (Periantalo, 2015). According to the results of the factorial analysis with principal component analysis, it is known that all components in the scales of the measuring instrument for entrepreneurial characters produced the correlation of components that are independent or not related to each other. The arranged items have decent observable variable values; thus, they

were excellent to explain the main component. Therefore, it can be determined that the items in the measuring instrument for Entrepreneurial Characters can measure or predict the potentials of entrepreneurial characters owned by individuals..

b. Reliability Test

The reliability test was performed to discover the extent to which a measuring instrument has consistency or accuracy in the measurement if being conducted in a different or repetitive time (Azwar, 2017). Reliability test is one of the conditions to produce a good and standardized measuring instrument. The results of the reliability test on each scale of the measuring instrument for Entrepreneurial Characters can be seen in the table shown below.

Table 9. *The Reliability of Scales in the Measuring Instrument for Entrepreneurial Characters*

SCALE CATEGORIES	NAMES OF SCALE	McDONALD'S Ω	CRONBACH'S A	GUTMANN'S ʌ6
PERSONAL SKILL	CREATIVE-THINKING	0.839	0.831	0.859
	CRITICAL THINKING	0.760	0.715	0.801
	PROBLEM-SOLVING	0.694	0.674	0.724
	RELIGIOUS	0.931	0.919	0.949
	SPIRITUAL	0.818	0.806	0.860
INTERPERSONAL SKILL	COMMUNICATION	0.892	0.879	0.923
	NEGOTIATION	0.902	0.891	0.924
GROUP SKILL	LEADERSHIP	0.854	0.841	0.873
	TEAMWORK	0.870	0.850	0.896

Results of the reliability tests based on the reliability analysis techniques by McDonaldω, Cronbach's α, and Gutmann's λ were acquired. According to De Vaus, a measuring instrument is satisfying if it has an above 0.700 coefficient score. The reliability test results based on the reliability analysis technique of Gutmann's λ showed that the whole coefficient scores of the scales were above 0.700. Therefore, it can be defined that the entire scales exist in the measuring instrument for Entrepreneurial Characters have satisfactory reliability score with a high level of confidence. High-reliability scores were acquired from religious, negotiation, and communication scales.

3.3 Norms and Interpretation

The subjects' responses on the measuring instrument will generate quantitative or numeric values/scores. However, quantitative scores are not sufficient to interpret individual characteristics. Therefore, quantitative data need to be converted into qualitative data through scale normalization. Norm is the way to give meaning to the researcher or the subject's response to the measurement result (Azwar, 2017). The norms and interpretations of the measuring instrument of Entrepreneurial Characters were divided into three categories.

a. The Norms in The Personal Skill Category

Personal skill is skills related to self-capability or skills in the area of personal development(Whetten & Cameron, 2011). The norms of personal skill consisted of critical-thinking, , problem-solving, spiritual, and religious scales. Each scale has its constructing component that has its respective norm.

These are the example of the components' norm in the personal skill category.

Table 10. *Hypothetical Norms of the Constructing Components of Creative-Thinking Skill in Personal Skill Category*

The Classification of the Fluency in Thinking	Scores
Thinking very fluently	≥28
Thinking fluently	≥24 – 27
Thinking quite fluently	≥16 – 23
Not thinking Fluently	≥12 – 15
Totally Not Thinking Fluently	<12
The Classification of the Flexibility in Thinking	Scores
Thinking very flexibly	≥18
Thinking flexibly	≥15 – 17
Thinking quite flexibly	≥10 –14
Not Thinking Flexibly	≥8–9
Totally Not Thinking Flexibly	<8
The Classification of the Originality in Thinking	Scores
Very Original	≥7
Original	≥6
Quite Original	≥4 –5
unoriginal	≥3
Very unoriginal	<3

b. The Norms in The Interpersonal Skill Category

Interpersonal skill is individual skills in establishing a relationship with others (Whetten & Cameron, 2011). The norms of interpersonal skill consisted of communication and negotiation skills. The communication skill has constructing components consisted of giving support, strengthen relationship, giving feedback, and writing and speaking skills. The negotiation skill consisted of the components of influencing and understanding others. These are the example of the components' norm in the interpersonal skill category.

Table 11. *Hypothetical Norms of the Constructing Components of Negotiation Skill in Interpersonal Skill Category*

The Classification of Influencing Others	Scores
Very capable of influencing others	≥56
Capable of influencing others	≥ 48 –55
Quite capable of influencing others	≥32 – 47
Incapable of influencing others	≥24 – 31
Very incapable of influencing others	<24
The Classification of Understanding Others	Scores
Very capable of understanding others	≥25
Capable of understanding others	≥21 – 24
Quite capable of understanding others	≥14 – 20
Incapable of understanding others	≥11 – 13
Very incapable of understanding others	<11

c. The Norms in the Group Skill Category

Group skill is skills in interacting and building teamwork (Whetten & Cameron, 2011). Group skill category consisted of leadership and teamwork skills. The leadership skill has constructing components consisted of proactive, resilient, and motivating skill. The teamwork scale consisted of the components of supporting and developing others. These are the example of the components' norm in the group skill category

Table 12. *Hypothetical Norms of the Constructing Components of Leadership Skill in Group Skill Category*

The Classification of Proactive	Scores
Very Proactive	≥ 32
Proactive	≥27 – 31
Quite Proactive	≥18 – 26
Not Proactive	≥14 – 17
Very Not Proactive	<14
The Classification of Resilience	Scores
Very Resilient	≥25
Resilient	≥21 – 34
Quite Resilient	≥14 – 20
Not Resilient	≥11 – 13
Very Not Resilient	<11
The Classification of Motivating Skill	Scores
Very Motivating to Others	≥25
Motivating to Others	≥21 – 24
Quite Motivating to Others	≥14 – 20
Not Motivating to Others	≥11 – 13
Very Not Motivating to Others	<11

4 DISCUSSION

The measuring instrument for entrepreneurial characters in Universitas Jambi is a psychological measuring instrument arranged to help recognize entrepreneurial characters' potential on students in universities. This measuring instrument is divided into 3 (three) categories of skill based on the concept of Watten & Cameron (2011) and the Strategic Plans of Universitas Jambi (2018) that consist of personal, interpersonal, and group skills. Personal skill is related to self-development skills, interpersonal skill is related to the skill in establishing a relationship with others, and group skill is related to the skill of interacting and building teamwork. This measuring instrument has been proved as having a high validity and reliability, which means that the component of psychological characters in this measuring instrument can measure one's entrepreneurial potentials. Entrepreneurial characters in this measuring instrument consist of nine scales of characters. In the personal skill category, there are five constructing characters that consist of critical thinking, creative thinking, problem-solving, religious, and spiritual skills. The components in the critical-thinking scale area basically involving the intellectual capacity and experience on the situation around individuals. An entrepreneur needs to have skills in understanding situations deeply and comprehensively. The critical-thinking skill affects individuals in finding, selecting, relating, and comparing various sources of information on problems that lead to the conclusion drawing (Paul & Elder, 2002). The characteristics encompass the constructing components of entrepreneurs' critical-thinking scale. Creative-thinking and problem-solving are also categorized as personal skills that involve cognitive skills. Guildofrd (1995) revealed that creative-thinking has five indicators regarding the creative-thinking scale, including sensitiveness, fluency in thinking, flexibility in thinking, originality, and elaboration. Three of those indicators are the constructing component of the creative-thinking skill of entrepreneurs in this scale. The problem-solving skill also become a crucial part that can improve the interest of someone in entrepreneurship (Kuntowicaksono, 2012). Religiosity is also a personal character that needs to be conceived by an entrepreneur. Individuals with a strong religious value tend to have matured plans and self-preparation in achieving their career, including the career to become an entrepreneur (Saputra, Ekawati & Annisa, 2019). This condition is affected by the discipline behavior in doing their religion, so it also affects the discipline in running other activities. In addition, the religiosity value also

264

gives the confidence for an entrepreneur to act in realizing the formulated plan. This is due to the presence of a strong belief in a positive achievement and evaluation of one's strengths and weaknesses (Marliani, 2013). Besides religiosity, the spiritual character is also included as the strongest aspect required by an entrepreneur. Spirituality tends to provide an energy or motivation for individuals to work better in doing the activity they are interested in while also willing to help others and themselves (Dowling et al., 2003). This condition became a crucial component that makes an entrepreneur have the chance to be a success in running his/her activity and career as an entrepreneur. In the interpersonal skill category, the constructing characters consisted of communication and negotiation scales. According to Mamun et al. (2017), the skill to establish a network through a good communication skill is the main thing that needs to be owned by an entrepreneur. Essential skills that need to be owned include the skills of giving support, strengthening a relationship, and giving feedback. In relation to communication components, the technical skill in writing is a considerable skill in anticipating and answering business challenges. By writing, an entrepreneur adjusts himself to read a lot of documents or references and practices the communication skill to be more appealing (Spartz & Weber, 2015). In line with the communication skill, the negotiation skill is a crucial interpersonal character that has to be owned by an entrepreneur. An entrepreneur must be accustomed to the persuasion process or conduct a simple alliance with others related to his business. This skill is basically established from a broad social environment (Cohen & Katz, 2016). It can be understood that the intensity of social interactions, such as understanding the surrounding people and affecting others, can build sufficient negotiation skills. This matter is in line with the components established in the negotiation skill scale. In the group skill category, the constructing characters consisted of leadership and teamwork characters. Koryak et al. (2015) revealed that the will to move dynamically and the capability to motivate are the important indicators in entrepreneurial leadership. These indicators can make a company grow and give unique competitiveness. In addition, a persistent personality that can also accept risks will become a path of success for an entrepreneurial leader (Chen, 2007). This statement substantiates the importance of proactive components, resilience, and the ability to motivate others in establishing the effective entrepreneurial leadership character. The other character in the group skill, namely teamwork, is a unique character owned by an entrepreneur. An entrepreneur who has a stand-out leadership character can stimulate and affect others (Suharyono, 2017). Therefore, a good teamwork, both internal and external, becomes a must to have character. An entrepreneur has the intention to interact positively with other people so he can share positive experiences or give supports to others (Cohen & Katz, 2016). Therefore, the skill to support and develop people become the component required by an entrepreneur in cooperating. Nine entrepreneurial characters that have been described into three categories of entrepreneurial skills (personal, interpersonal, and group skills) are the scales exist in the psychological measuring instrument for entrepreneurs in Universitas Jambi. These scales can be the basis of assessment to discover the level of entrepreneurial skills owned by individuals from the character perspective. This measuring instrument also provides a description for intervention to improve entrepreneurial skills

owned by students, both through development or coaching. The hope is, university graduates who have sufficient entrepreneurial potentials will have the preparation to build business or employment in the future.

5 CONCLUSION

The results of this study show that the psychological measuring instrument of Entrepreneurial Characters has the psychometric properties with satisfactory scores. This measuring instrument is divided into three categories, namely personal, interpersonal, and group skills. There are five scales in the interpersonal skill that consist of creative-thinking, critical thinking, problem-solving, religious, and spiritual scales. The interpersonal skill category consists of negotiation and communication scales, and the personal skill category consists of leadership and cooperation scales. The results of validity and reliability tests show that this measuring instrument has a high level of confidence. The availability of this measuring instrument for entrepreneurial characters is expected to become the assessment tool for universities or other stakeholders, especially Universitas Jambi, to give a proper intervention in developing the potentials of entrepreneurial characters in students.

REFERENCES

[1] Azwar, S. (2017). Psychology Scale Compilation (in Indonesia). Yogyakarta: Pustaka Pelajar

[2] Chen (2007). Entrepreneurical Leadership and New Ventures: Creativity in Entrepreneurial Teams.Creativity and Innovation Management. Vol. 16, No. 3, pp. 239 – 249

[3] Cohen, H., Katz, H. (2016). Social Entrepreneurs Narrating Their Careers: A Psychodinamic-Existensial Perspective. Australian Journal of Career Development. Vol. 25, No. 2, pp. 78 – 88

[4] Dowling, E. M., Gestsdottir, S., Anderson, P. M., Von Eye, A., Lerner, R. (2003). Sprituality, religiosity, and thriving among adolescents: identification and comfirmation of factor structures. Applied Develompmental Science. Vol 7, 4, 253-260.http://dx.doi.org/10.1207/S1532480XADS0704_4

[5] Duffy, K.G and Atwater E. (2005) Psychology for Living: Adjustment, Growth and Behavior Today. New York: Prentice Hall

[6] Foss, N., & Klein, P. (2012). Organizing entrepreneurial judgment: A new approach to the firm. New York: Cambridge University Press.

[7] Guilford, J.P. (1995). Traits of Creativity, Creativity and Its Cultivation. John Wiley: New York

[8] Harrington, D. (2009). Confirmatory factor analysis. Oxford: University Press

[9] Hasni (2018). The Urgency of Entrepreneurship Education in Producing Young Entrepreneur at Higher Education (in Indonesia. Journal Ekspose Vol 17, No.2

[10] Koryak, dkk (2015). Entrepreneurial Leadership, Capabilities, and Firm Growth. International Small Business Journal. Vol. 33, No. 1 pp. 89- 105

[11] Kuntowicaksono (2012). The Impact of Entrepreneurial Knowledge and the Ability to Solve Problems on the Entrepreneural Interest of Vocational High School Students (in Indonesia). Journal of Economic Education. Vol. 1 No.1, Hal. 45 – 52

[12] Mamun, A. A dkk (2017). Establishing a Valid Instrument to Measure Entrepreneurial Knowledge and Skill. Business Perspective and Research. Vol. 6, No. 1, pp. 13 – 26.

[13] Marliani, R. (2013). The Relation Between Religiosity with Future Orientation in the Field of Work in Senior College Students. Journal of Psychology. Vol, 9, Nomor 2, Hal 130-137.

[14] Saputra, N. E., Ekawati, Y. N., Annisa, V. (2019). Characteristics of Entrepreneurial Students in Jambi (in Indonesia). The Proceeding of National Seminar of Master Psychology of Universitas Ahmad Dahlan . August 08 2019. Page. 14 – 26

[15] Paul, R.W., Elder, L. (2002). Critical Thingking: Tools for Taking Charge of Your Professional and Personal Life, 2nd edition. New York: Financial Times Prentice Hall.

[16] Periantalo, J. (2015). Validty of Psychological Measurement Tools: Practical Applications (in Indonesia). Yogyakarta: Pustaka Pelajar

[17] Rakib, M. (2010). The Influence of Entrepreneural Communication Models, Entrepreneural Learning and Entrepreneural Attitudes on the Performance of Small Business. Jurnal of Education Science. Vol. 17 No, 2, Page 121-129

[18] Strategic Plans of Universitas Jambi 2015-2019. (2017). Jambi : Universitas Jambi

[19] Spartz, J. M., Weber, R.P. (2015). Writing Entrepreneurs: A Survey of Attitudes, Habits, Skills, and Genres. Journal of Business and Technical Communication. Vo. 29, No. 4, Hal. 428 – 455

[20] Suharyono (2017). Attitudes and Behavior of Entrepreneur. Journal of Cultural Sciences , Vol. 40, No. 56

[21] Tabachnick, B. G., & Fidell, L. S. (2014). Using Multivariate Statistics Sixth Edition. Boston: Pearson

[22] Whetten, D.A., Cameron, K.S. (2011). Developing Managements Skills, 8th edition. New Jersey: Pearson Education, Inc.