ENTREPRENEURIAL ORIENTATION INSTRUMENT (EOI): INTEGRATING MIXED MODE OF RESEARCH IN INSTRUMENT CONSTRUCTION

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Abstract: *There are quite a few instruments exists in the literature to measure the concepts of entrepreneurial orientation of university students. Meanwhile, the employed variables and their appropriateness to contextualize the topic within industries and the education sectors, have created confusion. These variances evidently may be observed and applicable in the context of western perspective using the existing instruments. However, they cannot apply in the context of eastern perspective when they gain validity and reliability. In this context, an instrument was developed to measure factors of entrepreneurial orientation and particularly focusing on individual factors, in the education sector. The process of instrument development was initially conducted through qualitative method and followed the by quantitative method. The study adopted various techniques including content analysis, and personal interviews with thestudents, followed by focused group discussion and Delphi technique with expert. After identifying the variables through Delphi technique,the variables were tested to meet the validity and reliability through quantitative method. This study utilized content, construct and face validity to validate sub-factors and items generated in the instrument. It was finalized that there are 39 items under 6 sub-factors of entrepreneurial orientation.*

Key Terms: *Instrument Development, Entrepreneurial Orientation, Validity, Reliability, Qualitative Research, Quantitative Research*

1. INTRODUCTION

Entrepreneurial orientation is a concept which is widely deliberated and discussed across the globe. In order to study the concept, the researchers usually adopt the instruments which are developed in the west. On several occasions, such instruments are less reliable when you apply it in thelocal context, especially in Asian countries. Further, to measure the entrepreneurial orientation among young graduates seldom any instrument that exists and matches up in the Asian context. In order to explore, explain and measure the entrepreneurial orientation

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and develop suitable measure, a study was conducted, in the Indonesian context, which further supported the development of an instrument, with the application of tools and techniques from qualitative as well as quantitative methods. This particular paper thus provides a new tool that to measure the entrepreneurial orientation of individual, especially among students, contextualizing the area of study among graduates of business from Indonesia.

This study employed qualitative method to develop an instrument and quantitative method to fine tune the variables of the study. In order to achieve the reliability of factors leading to entrepreneurial orientation, five universities under supervision of the education ministry situated in varied locations were included in this study.

2. LITERATURE REVIEW

Many previous studies have come up with an opinion in terms of entrepreneurial orientation (EO), however the definition of EO could be different to one another which means that there is no fixed definition to describe the entrepreneurial orientation (Wales, 2012). This paper discusses the issues related to entrepreneurial orientation among students contextualizing the topic within the education sector. Generally, EO can be defined as a tendency to explore new business opportunities.The expression of this inclination has led to the creation of attributes as suggested by Lumpkin andDess(1996)like innovativeness, risk-taking, pro-activeness, competitive aggressiveness and autonomy.They also admitted that the above dimensions are outstanding of entrepreneurial orientation.

In the individualcontext, Pearce II, Fritz, & Davis(2010)have pointed out that the definition of EO consists of several distinctive behavioral aspects which are interrelated, and they can enhance an individual to improve innovativeness, pro-activeness, competitive aggressiveness, risk taking, and autonomy for the sake of qualities.

In addition the above dimensions, another aspect which is pivotal in describing the entrepreneurial orientation of the individual is networking. The dimension of networking plays a substantial role to improve the entrepreneurial orientation of individuals (Taatila & Down, 2012). One will find it difficult to start up a business if they are less socialized with their community especially in the business environment. Thus, Jenssen&Greve(2002) argued that it is the fact that a business organization provides networking with members based on the business environment instead of a singular entity. In the context of a business community, people need to develop a relationship and networking with other people to optimize their capacity, especially in doing business. The network can also be defined as a gateway that adds up a competency ability and supplementary resources of an individual (Davis, 1969; Hautama¨ki, 2003; McAdam & McClelland, 2002; Myint,

Vyakarnam, & New, 2005)and in turn active networkers will be benefited from the enterprise network. Although a high level of interaction has been widely established in a networking, it is crucial to sustaining a platform of processes for interactive and sensible social networking in order to significantly achieve benefits of the existing resources from networking(Swan, Newell, Scarbrough, & Hislop, 1999).

Despite we found many existing EO measurements, those cannot be used directly on the student population because most of the EO questionnaire focused on developments within firms. In order to use this approach in a student context, the instruments need to be fixed and developed so that they ultimately focus on intentions and personal interests. This may not seem like a trivial exercise, but one should keep in mind that although entrepreneurship refers to a wider concept than the actions of single entrepreneurs, the formation of firm-level EO is based on the behavior of entrepreneurial individuals(Lumpkin & Dess, 1996; Miller, 1983).

EO has been studied extensively with numerous research instruments – for some examples, see Engle *et al.* (2010), Pruett *et al.* (2009), Reynolds *et al.* (1994), Segal *et al.* (2005), and van Eeden *et al.* (2005). In general, these surveys-based instruments measure the individual's psychological entrepreneurial traits in the cultural context in order to find their inclination, self-efficacy and likelihood of beginning an entrepreneurial career.

3. METHODOLOGY

In order to gatherenough information which supportto answer this research question posed,this study has extensively exploredrelated studies in this area to develop an instrument. This study particularly employed a mixed-method approach by utilizing both quantitative and qualitative research methods. Ivankova(2006)clearly pointed out that combining quantitative and qualitative methods can bring all issues together and provide extra dynamic analysis that will endow with strong benefits for research.

The theme of the research is related to entrepreneurial orientation in the business school. In anutshell, the qualitative research method was to identifyvariables that influence entrepreneurial orientation in business schools, while the quantitative method was to support the generalization of these outcomes through the application ofprecise statistical analysis using appropriate tools.

3.1. Qualitative Research Inquiry

1. How do you define Entrepreneurial Orientation?
2. What are the factors that closely related to entrepreneurial orientation?

4. RESEARCH METHODOLOGY: QUALITATIVE

Creswell (1998) asserted that the qualitative research aims to understand theinvestigation processby developing a comprehensive and composite picture about what is being studied, analyzing informants' point of views, texts and reports, and implementing naturally the study on a particular setting. The data collection of qualitative research is submerged into the everyday life based on thesituation in order to frame a research. The data analysiswas based on theperceived values of the informantsfor their world. Finally, Miller(2000) contended that data analysis creates an understanding about problems which are located on various contextual factors.

In particular, this study follows different qualitative research techniques to look at the topic of study. The study employeda discussion of related literature, case studies and Delphi technique in formulating the variables which influence entrepreneurial orientation of students in business schools in Indonesia.

4.1. Triangulation

Triangulation is defined as the use of two or more methods toinvestigate the research questions in order to heighten confidence in obtaining findings. Since much social research is founded on the usage of a single research method and as such may suffer from limitations associated with that method or from the specific application of it, triangulation offers the prospect of enhanced confidence. Methodological triangulation is defined as the utilization of two or more methodologies in examining the same phenomenon under investigation(Mitchell, 1986). This type of triangulation may take a part at the level of research design or data collection (Burns & Grove, 1993). This particular study followed grounded theory, case studies and Delphi technique as the triangulation methods that to identify and fix the variable and categories in relation to entrepreneurial orientation university students.

4.2. Grounded Theory

Martin & Turner (1986) stated that Grounded Theory "is an in inductive, the methodology of theory discovery that allows the researcher to advance a theoretical account of the common features of anissue or topic while simultaneously grounding the account in empirical observations or data." Grounded Theory offers a complete, rigorous, and systematic method of analysis, which canaccommodate the need for the researcher to comprehendinitial hypotheses. It, therefore, provides the greater freedom of the researcher to explore the research area and allow issues to emerge (Briant, 2002; Glaser, 1978, 1992, 1998, 2001). The process of Grounded Theory covers and acknowledges the

researcher bias, the selection of a data collection site, the data collection process, the process of coding and analysis, and the compilation of results. Coding and analysis consist of three phases: open coding, selective coding, and theoretical coding. Open coding employs constant comparison, memoing and results in themes, sub-categories, and core categories. These results guide the subsequent sampling of participants through theoretical sampling. The second stage of coding - selective coding – also uses a constant comparison and memoing. This stage results in dense and saturated key categories. The main categories are then sorted, written, theorized and cross-referenced with literature, during theoretical coding. The outcome of this last stage of coding provides a basic understanding the on concepts under study and a theoretical model. With the support ofgrounded theory methodology, this particular study identified the factors and the themes related to entrepreneurial orientation.

4.3. Case Study

In the initial stage, the researcher has conducted preliminary 4 case studies that explore factors related to entrepreneurial orientation. These case studies have supported the research to get a grip on the topic under study with the content. Thus, the first criteria used by the researchers include the short interviews with the students from different universities in Indonesia. Based on the number of students the study considered 4 students incorporating the representation from all. Through the interviews, short-cases have been developed. Case study interviews are frequently used as part of the initial assessment and arriving at explicit and implicit variables based on the topic under study. Some of the case study content, which supported the researcher to get some insight into the entrepreneurial orientation factors, has come up from case studies among students in business school.

Students 1

⊙ "There are many entrepreneurship programs offered by the campus for the students who want to take a part in entrepreneurship, and I notice quite a lot students who desire to participate in this program because they will get funding to start up a business. We simply make a proposal and submit it to one of the programs, then we are granted the funding. However, soon after the completion of the program and the funding stops andstudents continue the business. Most of the students still could not stand alone to run their business, since they failed to control all business activities independently. It looks like the students only need the money from the entrepreneurship program, instead of developing their own business."

Students 2

⊙ "This campus provides me a space and assistance to start up my own business. The staff gives me good techniques on how to do market analysis, observe market opportunities and identify the competitors, etc. But I found it difficult to take a trust of my target market to become my customers. It is probably because, my competitors have been playing in this business for a long time and already absorbed many intended customers who maintained their trust on their products. It is really hard for me to convince my target market that my product is the best available in the market."

Students 3

⊙ "I am into software application business, I have launched some good applications in the last 2 years. I have made 8 applications that can be used by users like photo editor, messenger, antivirus security, video converter, etc. However, there are a bunch of similar applications available in the market. It is likely because I am lazy to conduct research and surveys to figure out what are the latest applications available in themarket and I think I need to get more ideas to develop my products."

Students 4

⊙ "I have been running a food business for a year. I start up this business with the assistance of business incubation center and I still have 2 years remaining to have incubation assistance. In this space, I have a low-cost rent and have free water and electricity. I also have guidance and assistance in running my business. I cannot imagine what will happen to my business if I have to move out from here for the next 2 years. I could not take up a risk alone and I do not havea good number of networkingbecause I am still a new comer in thebusiness world and not ready for facing all kind of business speculations. I hope I may get along time to do my business through incubation centers.

4.4. Delphi Technique

This particular study followed Delphi method as it research design to explore categories and factors related to entrepreneurial orientation issues in variousuniversities. As it is known, the Delphi method is one of the methods, which started its usage in 1950, in order to get consensuses, which is linked to real world knowledge coming through experiences on the area related to research topics. It is pointed out by Dalkey(1963) that the consensus on decisions which is coming from heads is better than one, or… n heads are better than one. Delphi technique is considered as one of the effective communication process with the objective of making deep analysis base on deliberation on a specific problem in order to set a

goal, undertake a probe into the policy or to make effective prediction on the occurrence of future events (Kumar, 2013). Basically, the Delphi technique is conducted in the form of semi-structure interaction and interview. High concentration on the process is envisaged to ensure the rigorous. During mid of march to the middle of November 2013 Delphi process organized among the resources people carefully selected based on the expertise knit withentrepreneurial orientation and interviews thereby.

Telephonic interview is conducted to collect information from the respondents. 40 experts from the industry and academia were recognized and approached by email or telephone and were invited to take part in the study. All the clarifications related to the objective of the study were made by the researcher. However, 34 respondents were being interacted and communicated, only 20 respondents shown their willingness to participate in the discussion. Finally, 20 participants were interviewed by telephone and through email. The researcher used a tape recorder for the conversations, and manually analyzed.The process of Delphi technique can be seen as follows:

4.5. Identification of Expert Panel

The group of professionalsincludedexpertswho possess ahighlevel of knowledge and special expertise in entrepreneurial orientation. They were directly associated with industries such as owners of industries, top level managers, consultants, Entrepreneurs, Researchers, Professors and academicians.

The specialized areas of these expertscomprised of 15 male experts (75%) and 5 female experts (25%). The dynamic groups of experts in the panel were knowledgeable and familiar about the topic and they are strongly capable of providingrelevant opinions and reasonable understanding of the concept of entrepreneurial orientation.

4.6. Rounds of Delphi Technique

Round 1

The first round of Delphi process conventionally started up with open-ended questionnaires. Custer, R. L., Scarcella, J. A., & Stewart(1999) claimed that this type of questionnaire can establish a cornerstone of requested particular information from the Delphi subjects on a content area.

The Questions

1. How do you define Entrepreneurial Orientation?
2. What are the factors that closely related to entrepreneurial orientation?

Round 2

The second round concentratedon categories and the items which were interconnected with the concept entrepreneurial orientation. By following the procedure the Delphi, members were given a second questionnaire and they were accordingly required to rate or rank the order of items to establish thefirst level of preferences amongst items incorporated in the topic. In this stage, based on the decision and consideration of members, agreement and disagreement on the items were made by them regarding the entrepreneurial orientation. Care should be taken that, the number on Delphi iteration should be based on how far consensuses have been arrived at effectively on the concept of entrepreneurial orientation in the study.

Round 3

Pfeiffer (1968) contended that during the third round, Delphi panelistswere given questionnairescomprising of categories, items and ratingswhich were summed up by the researchers in the previous round and they were requested to revise their decisions and also to identify reasons for their disagreement. This round gave Delphi panelists an opportunity to additionally clarify the information and their decisions about the relative significance of categories and items. There were 191 categories were screened in the second level which have a high and low influence on entrepreneurial orientation identified with corresponding items. Further process of identification has found that 60 categorieshad high and low proximity on entrepreneurial orientation. Classification of the items in 60 categories was made into 6 factors using appropriate loaded items. The final stage was to create a thematic arrangement and the item'scategorization.

Round 4

This round is often the last round in which the researchers tried to eliminate the minority opinion in order to capture the maximum level of consensus based on their ratings on the categories and items related to entrepreneurial orientation. Crosschecking of these categories and items were thoroughly made and the suitability was clearly ascertained for fixing up the categories and items related to the factor of entrepreneurial orientation. During thethird level, the 51 categories screened into 6 factors had items with high and moderately high proximity of entrepreneurial orientation identified. This study has selected appropriateness of core factors based on experts' opinion.

5. RESULTS OF QUALITATIVE

Table 1
Entrepreneurial Orientation: Delphi application

Sl. No	Factors	Categories	No. Items	No of Expert (N=20)	%of Expert
1	**Autonomy**	Thinking without interference	2	18	90%
		Propensity to act autonomously	3	15	75%
		Ability to be self-directed	1	15	75%
		Decide on their own	2	15	75%
		Independentaction	2	18	90%
		Capacity to make adecision	1	16	80%
		Resistance to ward peopleside effect	2	14	70%
		Having self-reliance	1	15	75%
		Having access to vital information	1	15	75%
		Developing own potency	3	15	75%
2	**Competitive Aggressiveness**	Aggressive action to competitors	3	15	75%
		Ability to be at competitors	1	15	75%
		Keep competitor from entering the same market	1	15	75%
		Taking competitor'starget market	2	15	75%
		New product development	1	16	80%
		Using latesttactics	2	15	75%
		Taking aggressive approach	3	15	75%
		Analyzing market target	2	15	75%
		Determining market target	2	16	80%
		Out maneuvering the competition	2	15	75%
		Taking a bold approach in competition	3	18	90%
3	**Innovation**	Introduction of new technology	4	14	70%
		Technology development	2	18	90%
		Frequency of changing products	1	14	70%
		Adapting the new process	3	14	70%
		Marketing new product sincertain period	3	18	90%
		Trying new methods & technologies	3	16	80%
		Depart from obsolete technology	3	17	85%
		Research and development	3	16	80%
		Supporting new ideas/novelty	2	15	75%
4	**Proactiveness**	Seeking new opportunities	1	17	85%
		Intend to lead the future	2	14	70%
		Tendency to lead	2	15	75%
		Initiating action	3	18	90%
		First using the new product	3	16	80%
		Anticipating problems	3	15	75%

Sl. No	Factors	Categories	No. Items	No of Expert (N=20)	%of Expert
5	**Risk Taking**	Making decisive and risky action	3	14	70%
		Performed under risk pressure	2	15	75%
		Making decision in uncertainty	1	17	85%
		Venturing into the unknown	2	18	90%
		Borrowing heavily	1	15	75%
		Plotting the risk issue	1	15	75%
		Business speculation	3	15	75%
		Making lucrative deals	2	18	90%
		Strong proclivity for high risk	1	14	70%
		Adopting a bold/aggressive posture	2	15	75%
		Emphasis on experimentation for opportunities	1	18	90%
6	**Networking**	Level of interaction	3	17	85%
		Proactive social networking	1	18	90%
		Communicating with people.	1	18	90%
		Separating social life very-clearly from the social circle of his/her work	3	15	75%

The first factor considered for the study is the Autonomy in relation to entrepreneurial orientation. The experts acknowledged 18 items. The factor Autonomy consists of 10 categories. Major factors identified by the researcher is thinking without interference (90%) and independent action (90%) in relation to the theme entrepreneurial orientation. Other factors like capacity to make a decision (80%) is the next key factor on entrepreneurial orientation. The supplementary factors identified by the expert include propensity to act autonomously (75%), ability to be self-directed (75%), desired on their own (75%), having self-reliance (75%), having access to vital information (75%), developing own potency (75%), and resistance towards people side effect (70%). The young students need to have anorientation on these categories of entrepreneurial orientation.

The second factor measured for the study is the Competitive aggressiveness. Within the second factor, the experts identified 19 items that are closely related to entrepreneurial orientation. The major factor of competitive aggressiveness consists of 10 categories. The table showed that new product development (80%) and determining market target, as the prominent factor which closely knit with entrepreneurial orientation. Further, the study further pointed out the categories like aggressive action to competitors (75%), ability to beat competitors (75%), keep the competitor away from entering the same market (75%), taking competitors' target market (75%), using the latest tactics (75%), analyzing market target (75%), taking the aggressive approach (75%) and outmaneuvering the competition (75%),

where its knowledge indispensable to young students. The young students need to have anorientation on these categories of entrepreneurial orientation.

The third factor identified by the experts is innovation. The experts identified 27 items that closely link to young entrepreneur's ability towards innovation. Among theinnovation, major categories identified by the expert include marketing new products (90%), technology development (90%) and taking bold and innovative approach toward competition (90%). Further, the expertsconsider categories like depart from obsolete technology (85%), research and development (80%), and trying new method and technique as second prominent factors in relation to innovation. They further pointed out other categories like supporting new ideas (75%), adapting new process (70%), frequency of changing product (70%) and introduction of new technology (70%) as the category closely with innovation (70%) and their knowledge to be imparted to young students (70%). The young students need to have anorientation on these categories of entrepreneurial orientation.

The fourth factor considered by the expert group include the proactiveness of young students in relation to entrepreneurial orientation. The expert identified 14 items that explored the nature of proactiveness. Major category identified by the expert group on proactiveness is initiating action that is 90%. Seeking new opportunities (85%) and using first new product (80%) as the second prominent factors in relation to proactive orientation. Other factors like tendency to lead (75%), anticipating problems (75%)and intend to lead future (70%) are the major areas specified by the expert and their orientation to be imparted to students in correlation with entrepreneurial orientation. The young students need to have anorientation on these categories of entrepreneurial orientation.

The fifth factor considered for the study is Risk taking. The result indicates that the experts identified 19 items which come under 11 categories of Risk taking. The table showed that Venturing into unknown (90%) and making lucrative deals as the prominent factor which closely knit with entrepreneurial orientation towards young students. The experts also identified making decision in uncertainty (85%), business speculation (75%), adopting bold aggressive posture (75%), plotting the risk (75%) borrowing heavily (75%), perform under risk pressure (75%) as categories that their knowledge is very important to young entrepreneurial aspirants. The study also identified making decisive (70%) and risky action in relation to risk taking (70%). The young students need to have anorientation on these categories of entrepreneurial orientation.

The sixth factor that linked to entrepreneurial orientation is the importance of networking. The experts identified 8 items under 4 categories in relation to networking. The major categories identified by the experts are the proactive social networking (90%) and communicating with people (90%). The other categories

like level of interaction (85%) and Separating social life from social circle as second major categories that correlates with networking ability of young entrepreneurs. The young students need to have anorientation on these categories of entrepreneurial orientation.

6. QUANTITATIVE RESEARCH METHOD

In order to analyzing the data and testing the hypotheses, a number of statistical tools and methods were employed by using SPSS software version 20. The software used the tools of reliability and factor analysis to test the goodness of measures.

6.1. Factor Analysis and Reliability Test

Prior to any validity and reliability tests, the tests of assumptions for multivariate analysis will be conducted to ensure that the data met the normality, linearity, multicollinearity, and homoscedasticity assumptions. The next important step in data analysis is to understand the dimension of the variables in the proposed framework or relationships posited in empirical research(Hair, Black, Babin, & Anderson, 2010). In other words, factor analysis should be performed to identify the structure of interrelationship among a large number of items in the study. This may be done by defining common underlying dimensions, commonly known as factor (Hair *et al.*, 2010). Another purpose for performing factor analysis is to determine whether the data could be condensed or summarized into asmaller set of factors (Malhotra, 2010). The dimensions of the scale were examined by factor analyzing the items using the principal components analysis with Varimax rotation. Minimum eigenvalues of 1.0 helped determine the number of factors or dimensions for each scale(Hair et al., 2010). Although factor loadings of .30 to 0.40 are considered acceptable, however, factor loadings greater than 0.50 are generally necessary for the practical significance (Hair *et al.*, 2010). Hence, the items for a factor will be retained only when the absolute size of their factor loading is above 0.50.

To test the internal consistency of the measurement, reliability analysis is performed on the factors extracted using the benchmark suggested by Nunnally (1978). Generally, the closer reliability score gets to 1.0, the more reliable the scale would be. According to Nunnally (1978), the reliability score of.70 and above is acceptable and those above.80 are considered good. As noted by Peter (1979), reliability scores that less than.60 are still considered acceptable for social science studies. Following the literature, a reliability score of.70 is used as a benchmark for this study. It should be noted that all the negatively worded items in the questionnaire were first being reversed coded prior to the reliability test. In the case of coefficient alpha value is smaller than.70, the item with the lowest corrected item-to-total correlation is removed until then.70 levels are met(Pallant, 2001).

6.2. Ethical Considerations

In both the phases, the ethical considerations are well followed by the researchers due to the sensitive issues related to the topic. This sensitivity is perceived from an incubation management angle as well as university student's angle. Both parties aspired to ensure their anonymity during all stages of research. The students were assured that the summary data will be disseminated to the incubation management and further in no way the responses of them can be identified. It is also assured that the data will be destroyed keeping the documents after a reasonable period of time. Instead of the names of the students the data coded with numerical figures to ensure the anonymity both in case studies, as well as quantitative data collection procedures.

6.3. Validity and Reliability

Validity is the instrument's ability to measure what is supposed to measure. The validity of the instrument is the degree to which an instrument measures what is intended to be measured(Polit & Hungler, 1993). Validity tests then compare and measure the concept that a researcher supposed measure with its accuracy. Precisely the degree to which an instrument used by the researcher measures what he/she intended to measure. It is expected that the instrument should ensure the content, construct and face validity.

6.4. Dealing the Content Validity

Content validity aims at obtaining agreements from professionalsabout the concept, constructs and content of the items selected in the draft instrument of entrepreneurial orientation. To achieve the content validity, in addition to the literature review, the study incorporated triangulation method of qualitative research in which expert identifications of variables under the organizational and individual factors related to "entrepreneurial orientation" were made. The Delphi technique, content analysis, and short case study method were conducted and followed by interviews and discussion techniquesto supportthe researchers in ensuring content validity of the variables considered for the study. Especially, the Delphi Technique employed in the research aimed to obtain the precise content of each item that incorporated in each factor. Thus, in general, agreement about the constructs and the content of the items should rest onthe correction and consent from the experts. Based on their comments on each parameter anditem, itemsrecordingswere made to fine-tune the items for the development of theinstrument.

6.5. Dealing the Face Validity

The study further confirmed face validity by examining the instrument whether it actually measures what it was supposed to measure. Benson &

Clark(1983)asserted that the process of instrument development should be necessarily validated through face validity. In implementing the face validity, experts in the field of management and entrepreneurship areas, statisticians,and academicians were identified. Thus, these experts were asked to cross verify the face validity of the instrument. To end with, the construction of items based on the concepts of the constructs, sub-constructs that developed out of the literature review and case interviews was made. The experts stated that in order to develop these items into an instrument mode, factor analysis should be conducted in the later stage. The experts also suggested that the item's length, which was observed during the Delphi technique to be shortened before conducting factor analysis to ensure a better understanding of therespondents.

6.6. Dealing the Construct Validity

To test the construct validity, the instrument is well-correlated to the underpinning theory of social exchange and theory of planned behavior which were closely knit with the concept of individual factors in relation to entrepreneurial orientation in business schools.

Validation of the instrument and the concept were conducted on factors related to entrepreneurial orientation. The theory of Lumpkin and Dess (1996) and Miller (1982) and Taatila (2012) was confirmed by the researcher and experts that closely knit with the concepts, variables and items incorporated in the study.

7. RELIABILITY

Table 2
Items, theoretical range and Cronbach Alpha – Entrepreneurial Orientation instrument

No	Factors	No of Items	Theoretical Range	Standardized Alpha
1	Autonomy	6	6-60	.802
2	Competitive Aggressiveness	8	8-80	.890
3	Innovativeness	6	6-60	.877
4	Proactiveness	6	6-60	.843
5	Risk-taking	7	7-70	.821
6	Networking	6	6-60	.802

Reliability means the consistency or repeatability of the measure and the confidence we can place on the measuring instrument to give the same numeric value when the measurement will be repeated on the same subject. Creswell (2008) and Gall & Gall (1998) stated that the purpose of reliability is to keep reliable items to drop unreliable items againstthe Cronbach Alpha values. A reliable instrument is one that would provide the identical results if used recurrently by the same group.

When the researcher started qualitative research through interviews, case studies and field observation, the researchers developed good acquaintances with the students in business schools. By ensuring adequate privacy to the business students in the business schools, the researchers were assured of better physical and psychological environment for data collection.

7.1. Dealing the Item's Reliability

The study follows three stages. In the initial stage, the study considered 68 items under 6 factors and subjected to pilot testing with thirty respondents from the business schools. A bipolar interval scale was used representing with 1 as 'Strongly Disagree' and 10 representing 'Strongly Agree.' The instrument retained the same order of response categories to minimize confusion amongst respondents. Later, considering the values of Cronbach Alpha of every item in the draft instrument, some of the items, which were having less than 0.5, were dropped and others were gathered into. A 10-point interval scale with 39 items was finally considered.

8. MANAGING THE STANDARDIZATION PROCESS

In order to establish the standardization process, five business schools in various universities were identified. To make a comparative analysis, five groups of business students were selected with a size of 30 members from each university. These universities are located far from each other to ensure the representation from different places with different governance. Further, an instrument of 39 items and 10-point interval scale scales were administered into these five groups. It was observed that the values of Cronbach Alpha of the items were almost the same. Based on the inference it is further inferred that this instrument is highly reliable to be used in any group belongs to business schools in the education sector. Table 3 shows the Cronbach alpha values regarding the constructs for the five different groups when compared were more or less the same.

Table 3
Students' Entrepreneurial Orientation among Five Groups:
Factor Analysis Procedure (N=30)

No	Constructs	Cronbach Alpha % point Likert Scale	Indonesian University	Brawijaya University	Lambung Mangkurat University	Ciputra University	UNM University
			(30)	(30)	(30)	(30)	(30)
1	Autonomy	.802	.811	.832	.801	.811	.799
2	Competitive Aggressiveness	.890	.801	.803	.811	.832	.797
3	Innovation	.877	.799	.789	.801	.723	.801
4	Proactiveness	.843	.793	.801	.794	.798	.811
5	Risk Taking	.821	.801	.812	.814	.831	.800
6	Networking	.802	.798	.799	.801	.822	.800

9. FACTOR ANALYSIS PROCEDURE

The study intended to measure entrepreneurial orientation. Henceforth, the ultimate stage of the process of instrument development was to compute the factorial analysis on this draft instrument and 10-point scales. The objective of conducting factorial analysis was to ascertain if the items for every construct actually fit in the constructs. The procedure provides information about items which should be excluded or included withina construct. This was done by measuring the values of correlation among the items in the investigated constructs.

10. FACTORIAL ANALYSIS RESULTS FOR ITEMS REJECTED IN EACH CONSTRUCT

Further, during the factor analysis, those items that scored 0.5 and below were automatically rejected. Initially, the draft questionnaire consisted of 68items. The total number of items rejected based on the draft instrumentwith68 items and 10-point interval scales were 29 questions. The total variance explained for all the factors under consideration in the study is 0.635. The final instrument after rejecting the itemswhich scored more than 0.5 consists of 39 sub-variables of 6 major variables of entrepreneurial orientation which will be further mentioned below.

Table 4
Items for the Variables and Factor Analysis - Entrepreneurial Orientation

Factors and Item No	Factor Loading	α	Eigine Value	Explain Variance (%)	Total Explain Variance (%)
Autonomy					
AT1	0,793	.802	2.106	21.321	
AT2	0,703				
AT3	0,722				63.528
AT4	0,769				
AT5	0,812				
AT6	0,781				
Competitive aggressiveness					
CA7	0,716	.890	1.912	12.011	
CA8	0,770				
CA9	0,679				
CA10	0,903	.890	1.912	12.011	**63.528**
CA11	0,911				
CA12	0,870				
CA13	0,890				
CA14	0,808				

Factors and Item No	Factor Loading	α	Eigine Value	Explain Variance (%)	Total Explain Variance (%)
		Innovation			
IN15	0,795	.877	1.826	11.142	
IN16	0,799				
IN17	0,794				
IN18	0,728				
IN19	0,877				
IN20	0,734				
		Proactiveness			
PR21	0,816	.843	1.816	7.352	
PR22	0,767				
PR23	0,798				
PR24	0,820				
PR25	0,794				
PR26	0,665				
		Risk Taking			
RT27	0,841	.821	1.702	6.521	
RT28	0,717				
RT29	0,716				
RT30	0,705				
RT31	0,786				
RT32	0,782				
RT33	0,820				
		Networking			
NT34	0,856	.802	1.700	5.181	
NT35	0,848				
NT36	0,848				
NT37	0,905				
NT38	0,806				
NT39	0,752				

10. INTERPRETATION OF THE INDEX LEVEL OF STUDENTS' ENTREPRENEURIAL ORIENTATION

10.1. High Scores: At the Highest Level

A self-rating score within this range indicates that the graduate students of business schools having high entrepreneurial orientation. This indicates that the students have high risk taking ability, proactiveness, innovative ability, autonomy, competitive aggressiveness and high ability to do networking. These

entrepreneurial orientation factors will be closely linked to their orientation to become a young entrepreneur.

10.1.1. Suggestion proposed

This type of entrepreneurial orientation indicates that the business graduates have a strongorientation to become an entrepreneur. Identification of their interest and ideas on an entrepreneurial effort need to be explored and the academic institutions should take overall effort to materialize entrepreneurial intention goals.

10.2. Moderate Scores: At the Moderate Level

A self-rating score within this range indicates that the graduate students of business schools having a moderate level of entrepreneurial orientation. This indicates that the students have amoderate level of risk taking, proactiveness, innovative ability, autonomy, competitive aggressiveness and ability to do networking. These entrepreneurial orientation factors will be moderately linked to their orientation to become a young entrepreneur.

10.2.1. Suggestion Proposed

This type of entrepreneurial orientation indicates that the business graduates have the moderate level of orientation to become an entrepreneur. Identification of their entrepreneurial orientation inabilities need to be explored by the academic institutions and further effort to be made to induce better entrepreneurial orientation.

10.3. Low scores: At the Low Level

A self-rating score within this range indicates that the graduate students of business schools having low level of entrepreneurial orientation. This indicates that the students have a low level of risk taking ability, proactiveness, innovative ability, autonomy, competitive aggressiveness and ability to do networking. The students have less entrepreneurial orientation that link to their orientation to become an entrepreneur.

10.3.1. Suggestion Proposed

This type of entrepreneurial orientation indicates that the business graduates have the low level of orientation to become an entrepreneur. Identification of their low level of entrepreneurial orientation abilities needs to be further explored by the academic institutions and further effort to be made that to induce better entrepreneurial orientation.

11. CONCLUSION

The objective of conducting this study of research on entrepreneurial orientation was to identify and fix the correlated factors and answer to the question on how far it closely connected to the young graduates orientation to become an entrepreneur. Even though the factors linked to entrepreneurial orientation has been widely discussed, its presence among students, especially Indonesian business graduates where less research into. These aspectslead the researchers to initiate a study with the support of qualitative research in identifying and fixing the variables related to entrepreneurial orientation and further to confirm those factors with the support of quantitative research. The outcome of this study was the development of instruments that measure entrepreneurial orientation among business graduates especially in Indonesian scenario. The cross-comparison of the result of factor analysis among students in varied location of Indonesia indicates almost similar reliability scores. This shows that the newly developedinstrumentof entrepreneurial orientation can be utilized across Indonesia. An extensive study with this instrument across Asian countries may provide better accountability of this instrument ability to measure EO among young graduates.

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Appendix A
Entrepreneurial Orientation Instrument

In the following pages, there are number of questions that may reflect your thoughts in association with entrepreneurial orientation. By using a scale ranging from strongly disagree to strongly agree, please choose the degree of agreement with your current circumstances by ticking (✓) on the square provided in every question that most accurately reflects your perceptions. If you have trouble in understanding a question, answer to the best of your ability. You are required to answer these questions which trully describe yourself. Your answers are very important to the accuracy of this study. (Please return the completed questionnaire in the enclosed self-addressed envelope at your earliest convenience).

Appendix A1.

Questions											
Strongly Disagree	I seldom allow others to control over me.										
	1	2	3	4	5	6	7	8	9	10	Strongly Agree
	I believe myself more than others when I will go for a business venture.										
	1	2	3	4	5	6	7	8	9	10	
	I can control everything independently by myself when I will take up own business.										
	1	2	3	4	5	6	7	8	9	10	
	I am good enough to take my own decision.										
	1	2	3	4	5	6	7	8	9	10	
	I am good enough to pool resources to make effective decision.										
	1	2	3	4	5	6	7	8	9	10	
	I feel that I have great potency to start up my business										
	1	2	3	4	5	6	7	8	9	10	
Questions											
Strongly Disagree	I am good in observing market competitors and taking business decisions when I start my own business.										
	1	2	3	4	5	6	7	8	9	10	Strongly Agree
	I will figure out who are my competitors by the time I start my own business.										
	1	2	3	4	5	6	7	8	9	10	
	I will convince everyone that my product is the best available in the market.										
	1	2	3	4	5	6	7	8	9	10	
	To manage competitors, I feel new product development is a must.										
	1	2	3	4	5	6	7	8	9	10	
	I will always try to focus on my potential buyers.										
	1	2	3	4	5	6	7	8	9	10	
	I will do market analysis before starting a business.										
	1	2	3	4	5	6	7	8	9	10	

I will figure out the need for my product or service.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will determine target market before I launch a new product.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will incorporate the best technique or method to run my business.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I always have the intention to experiment with latest technical now how.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will adopt latest technology in the production process.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will conduct research and surveys regularly to develop my new product.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will absorb new ideas into business.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I always try to find new opportunities to develop my career plan as an entrepreneur.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will take proactive, often aggressive steps to face the challenges in market.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I believe I will lead a new business in future.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Questions
Strongly Disagree

I usually take initiatives to deal with others and arrive at business decision.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Strongly Agree |

Among my peer group, I will be the first one begin to use new products/services.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will be well calculated and proactive in dealing business problems.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I typically seek to avoid clashes preferring a "live-and-let-live" posture.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I seldom reluctant to take up risky decisions which may influence my start up business.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will always take the risk calmly and passionately.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I am prepared to make my decisions under uncertainties.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will control heavy dependency on financial institutions by efficient cash flow management.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I am ready for all kind of business speculations.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will do anything to attract my customers further to buy my product.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will never give up solving any risk associated with my startup firm.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will be in touch with all stakeholders of business to get an optimal results.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will update myself with the stakeholders to gain business opportunities.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

If I have more hours in a day to invest, I will invest in developing my social network to optimize start up business.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I am a people oriented person, using my time in communication with all stakeholders.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

I will always find time to engage myself into social circles that ventilate my work pressure.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Questions
Strongly Disagree I will balance my work and social life without harming my vision to be an entrepreneur.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Strongly Agree |