

## FACTOR ANALYSIS OF STUDENT'S STARTUP BUSINESS EXECUTION IN CIPUTRA UNIVERSITY

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### ABSTRACT

*This research has purpose to know what factors form the start up business of Ciputra University' students. Those factors are: planning factor, competencies factor, funding source factor, business environment factor, education factor, family factor, and technology factor. This research is using quantitative method with the respondents are students in Ciputra University. There are some criterias for the chosen of sample which are the respondent must be Ciputra University' students that already have executed business and they must already taken the entrepreneurship education for more than five semesters in Ciputra University.*

*The result of this research by spreading the questionnaire, students of Ciputra University which are the respondents in this research agreed that those seven factors can form the execution of the start up business. The respondents agreed that all of planning factor, competencies factor, funding source factor, business environment factor, education factor, family factor, and technology factor form the execution of the start-up business.*

**Keywords:** factor analysis, execution, start-up business, student of Ciputra University

### INTRODUCTION

Entrepreneurship is an important profession for advancing Indonesian economy (Kodrat and Christina, 2015:5). More entrepreneurs will be more new businesses. Increasing in new businesses can make entrepreneurs hiring people to help to run the business. The impact of an increase in job vacancies, the unemployment rate at Indonesia can be suppressed. Decrease in the number of unemployed in Indonesia can advances the Indonesian economy (Ciputra, 2009: 7).

According to statistic brain which are an online statistic database managed by Seth Harden and based at Los Angeles, there are 25% of the total start-up business failed to continue its execution in the first year, 27% of total startup business Who failed to continue its execution in the second and 21% of the year Total start-up business that failed to continue its execution in the third year. Based on that phenomenon regarding the decline in the number of start up businesses that are able to sustain, it need some factors to help the businesses to sustain to keep executing the businesses. Based on several studies and literature, there are several factors that

form business execution. These factors include: **Planning Factor, Competency Factor, Source of Funding Factor, Business Environment Factor, Educational Factor, Family Factor and Technology Factor**. The limitation of this research is Ciputra University environment. The reason researchers use Ciputra University as a research area because Ciputra University is an officially registered entrepreneurship education institution. All students of Ciputra University are required to have a business project and project process activities monitored from the process of ideation to the execution of the business project.

## **LITERATURE REVIEW**

### **Previous Research**

Research from Hormozi et al. (2011) entitled "Business plans for new or small business: paving the path to success" has the purpose of demonstrating that business planning can help run a business and drive the success of a business. Research by Cai et al. (2010) with a research entitled "Research on the affecting mechanism of entrepreneurial environment on new firm performance" has the purpose to know the environmental relationship to the new business performance of SMEs scale. Competency factors are evidenced by Mitchelmore and Rowley (2013) with a study entitled "Entrepreneurial competencies of women entrepreneurship pursuing business growth". It was also one of the factors forming a business execution evidenced by Mitchelmore. Research by Atherton (2012) with the title of research "Cases of start-up financing: An analysis of new venture capitalization structures and patterns" has the purpose to know the diverse funding issues and useful to support the execution of a business. Research conducted by Setyawati (2015) with a study entitled "Exploration of the determinants of the success of start-up business in Surabaya city", has the purpose to prove that education factors affect business execution. Family factors also become one of the factors that form the business execution as has been said by Koranti (2013) through research entitled "Analysis of the influence of external and internal factors on entrepreneurship interest". Technological factors are also one of the factors that form business execution, this is evidenced by research from Watkins et al. (2014).

### **Entrepreneurship**

Entrepreneurship in terminology refers to the nature, character, and attributes of a person who has a strong willingness to realize innovative ideas applied to the real world and can develop the idea with firmness. According to Ciputra (2012) an entrepreneur is someone who is able to use maximally all existing resources both human and natural resources and with creative and innovative process able to create a product or service useful for society.

### **Business Stages**

Uman et al. (2011) explains that the implementation of entrepreneurship concept passes through several stages as follows:

- 1) Start-up, in this stage someone has a very strong desire to be able to prepare everything related to new business opportunities.
- 2) Execution stage, empowering the aspects contained in a business. These aspects are aspects of human resources, capital aspects, organizational aspects, and aspects of leadership. In addition to empowering these aspects, employers must begin to take risks and take decisions and evaluate them.
- 3) The stages of sustaining the business, the results that have been achieved are used as a reference for conducting further developmental analyzes in accordance with circumstances and conditions so that the turnover, quantity, and quality of sales can survive.

4) Developing stage, in this stage there is an effort to expand the business or increasing quantity and quality of products and services.

### **Start-Up Business**

According to Ries (2013) start-up companies or pioneering companies are newly established companies and are in a development and research phase to find the right and most appropriate market that has been planned before the business executes.

From the result of theoretical study and empirical study about business execution start up hence can be formulated factors and indicators used in research as follows:

1. Planning factors with indicators of knowledge about the market, products, business procedural, and competitors
2. Competency Factor with indicators of communication, management and business, entrepreneurial, and internal relations
3. Source of Funding Factor with indicator of funding source from capital, debt, and venture capital.
4. Business Environment Factors with indicators can share information on the business world, share business networks, and business community activities.
5. Educational Factors with curriculum indicators of educational institutions, mentors from educational institutions, facilities provided by educational institutions, and atmosphere of entrepreneurship in educational institutions.
6. Family factors with family support, family-owned information support, and the experience felt by family members in the business world.
7. Technological factors with indicators of social media and website usability for the marketing process and ordering of products or services, the use of management information systems to facilitate business activities, as well as the importance of technology in facilitating business operational processes.

### **RESEARCH METHODS**

This research uses a quantitative approach. The notion of quantitative is a research based on systematic, planned, structured and using numbers as the main data (Sugiyono, 2011). The place of study is at Ciputra University as a University or an authorized educational institution that uses an entrepreneurship curriculum that is appropriate to this research topic. The population in this study has several criteria, among others:

1. Ciputra University' student at sixth semester who has business project
2. Ciputra University students who have received regular education of entrepreneurship for more than two years
3. Ciputra University students who routinely conduct consultations with business mentors that have been provided by Ciputra University
4. Project business in the stage of execution: there are activities and routine business activities
5. A stable business project in the execution process
6. The business project recommended by the project lecturer / assistant lecturer of the project in accordance with the five criteria above.

From those criterias, the total population in this study is 352 students from 147 business projects (SEP, 2016). According to Martono (2011), the total population of 352 students, for determining the number of research samples can use slovin formula with 78 respondents as a sample. For primary data collection, the researcher will use the research instrument using Likert scale to measure the agree or disagree attitude of the respondent (Herlanti, 2014). Likert scale is also

used to measure the level of approval of a statement or option in accordance with predetermined criteria (Amir, 2015).

### Data Analysis Method

In this study, the method used to analyze the data is by using factor analysis using SMARTPLS software (Aprilia & Ghozali, 2013). The purpose of using factor analysis methods is to summarize and reduce existing variables into smaller numbers (Abdillah & Jogiyanto, 2015). Factor analysis model according to this research is using confirmatory factor analysis by using second order confirmatory factor analysis. The second order confirmatory factor analysis method is done in two stages. The first stage by performing a latent latent construct test into its indicator. The second stage by testing the latent construct to dimensional construct (Sarjono & Julianita, 2015)

### Confirmatory Factor Analysis

This research uses Confirmatory Factor Analysis. Confirmatory factor analysis is a factor analysis technique in which a priori based on known theories and concepts understood or predetermined, then made a number of factors to be formed, as well as what variables are included into each factor that is formed and is definitely the goal. The formation of confirmatory factors (CFA) is deliberately based on theories and concepts, in an attempt to derive a new variable or factor representing some item or sub-variable, which is an observable variable or an observable variable. Basically the purpose of confirmatory factor analysis is: first to identify the relationship between variables by conducting a correlation test. The second objective is to test the validity and reliability of the instrument. In testing of the validity and reliability of the instrument or questionnaire to obtain valid and reliable research data with confirmatory factor analysis.

### First Order Construct

According to Abdillah and Jogiyanto (2015) on the first order construct, test the measurement model from the latent-dimensional construct to the indicator. Here are the steps:

#### 1. Validity Test

Table 1: Validity Test Requirement

Validity	Parameter	Requirement
Convergent Validity	<i>loading factor</i>	>0,7
	AVE	>0,5
Discriminant Validity	<i>Cross Loading</i>	>0,7

#### 2. Reliability Test

Table 2: Reliability Test Requirement

Parameter	Requirement
Cronbach's Alpha	>0,7
Composite Reliability	>0,7

### 3. Significance Test of Reflective Indicators

Test the significance of the reflective indicator by using outer loading test. If the t-statistic value has a greater value than the t-table (t-table = 1.96 with the alpha value = 5% or 0.05) then the measurement model is acceptable.

### Second Order Construct

In the second order construct, the test of measurement model from the latent construct to its formative dimension construct by using outer weight test. In the second construct, it is necessary to evaluate the bound construct using the coefficient of determination (R<sup>2</sup>) and the t-statistic value for the significance test between the constructs.

**Table 3: Second Order**

<b>Coefficient of Determination (R<sup>2</sup>)</b>	<b>t-statistic</b>
<b>Sig. Level 10%</b>	>1,65
<b>Sig. Level 5%</b>	> <b>1,96</b>
<b>Sig. Level 1%</b>	> 2,68

## RESULT AND DISCUSSION

### Evaluation of Measurement Models

Figure 1 shows a confirmatory factor analysis test for a second order construct that will be done through two levels, that is, the analysis of the latent-dimensional construct to its indicators and analysis is done from the latent construct to its dimensional construct. The measurement model in this research uses first order reflective indicator and latent formative latent construct. In analyzing second order confirmatory factor analysis, it is suggested to use repeated indicator approach (hierarchical component model). Using this approach, each indicator of the latent construct will be used as an indicator of the second order construct.

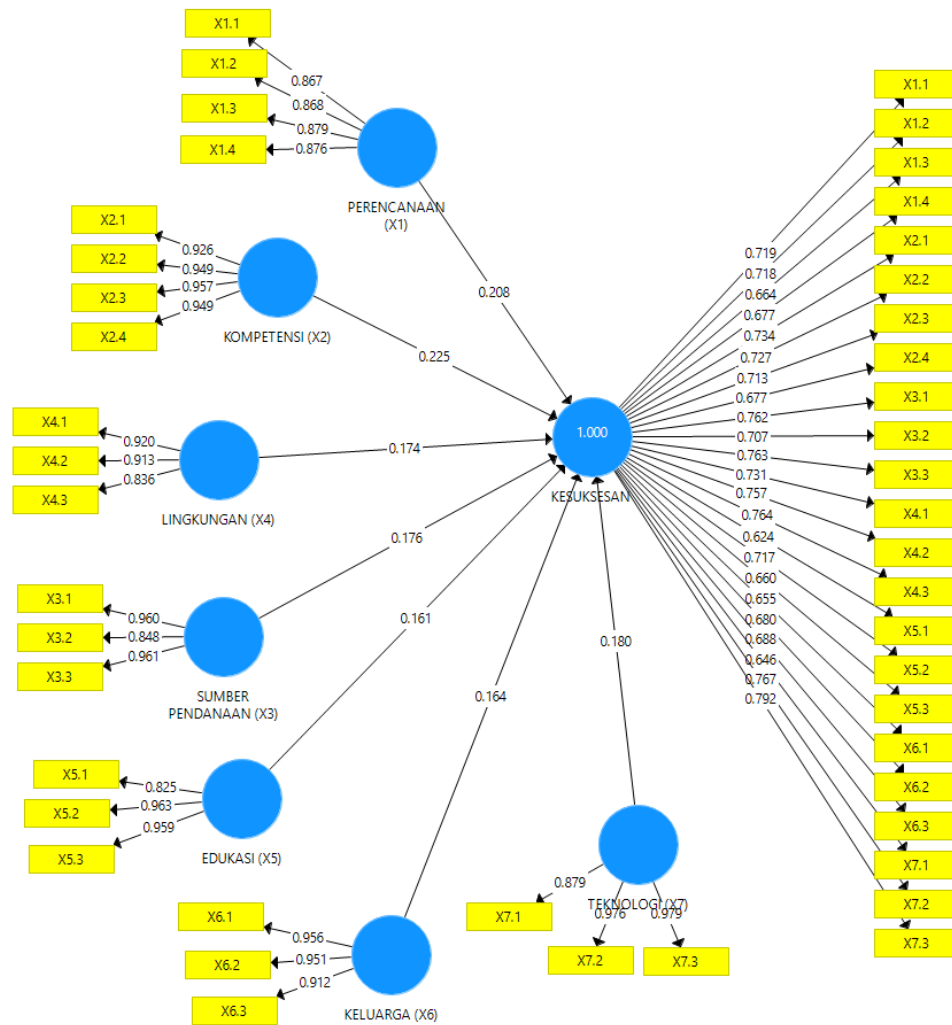


Figure 1: Measurement Model in Partial Least Square (PLS)

### First Order Testing

The first order test will be performed on the first order reflective indicator by using convergence validity test (factor loading and AVE), discriminant validity, reliability (cronbach's alpha and composite reliability) and t-statistic first order test. Here is an evaluation of measurement models for reflective indicators that include validity and reliability tests:

### Convergent Validity

Convergent validity includes factor loading and Average Variance Extracted (AVE) as a form of validity test. Below is the explanation:

**A. Loading Factor**

Testing of Loading Factor is done on seven variables, among others, as follows:

**Table 4: Loading Factor**

Measurement Model	Result		Critical Value	Model Evaluation
	Indicator	Loading Factor		
Convergent Validity	X1.1	0,867	≥ 0,7	Acceptable
	X1.2	0,868		Acceptable
	X1.3	0,879		Acceptable
	X1.4	0,876		Acceptable
Measurement Model	Result		Critical Value	Model Evaluation
	Indicator	Loading Factor		
Convergent Validity	X2.1	0,926	≥ 0,7	Acceptable
	X2.2	0,949		Acceptable
	X2.3	0,957		Acceptable
	X2.4	0,949		Acceptable
Measurement Model	Result		Critical Value	Model Evaluation
	Indicator	Loading Factor		
Convergent Validity	X3.1	0,960	≥ 0,7	Acceptable
	X3.2	0,848		Acceptable
	X3.3	0,963		Acceptable
Measurement Model	Result		Critical Value	Model Evaluation
	Indicator	Loading Factor		
Convergent Validity	X4.1	0,920	≥ 0,7	Acceptable
	X4.2	0,913		Acceptable
	X4.3	0,836		Acceptable
Measurement Model	Result		Critical Value	Model Evaluation
	Indicator	Loading Factor		
Convergent Validity	X5.1	0,825	≥ 0,7	Acceptable
	X5.2	0,963		Acceptable
	X5.3	0,959		Acceptable

Measurement Model	Result		Critical Value	Model Evaluation
	Indicator	Loading Factor		
Convergent Validity	X6.1	0,956	≥ 0,7	Acceptable
	X6.2	0,951		Acceptable
	X6.3	0,912		Acceptable
Measurement Model	Result		Critical Value	Model Evaluation
	Indicator	Loading Factor		
Convergent Validity	X7.1	0,879	≥ 0,7	Acceptable
	X7.2	0,976		Acceptable
	X7.3	0,979		Acceptable

### B. Average Variance Extracted (AVE)

Table 5: Average Variance Extracted (AVE)

Variable	AVE	Critical Value	Conclusion
Planning Factor (X1)	0,761	≥ 0,5	Acceptable
Competency Factor (X2)	0,893		Acceptable
Source of Funding Factor (X3)	0,855		Acceptable
Business Environment Factor (X4)	0,793		Acceptable
Educational Factor (X5)	0,843		Acceptable
Family Factor (X6)	0,884		Acceptable
Technology Factor (X7)	0,895		Acceptable
Execution (Y)	0,507		Acceptable

### C. Discriminant Validity

The following is an explanation of the validity of the discriminant that includes the value of cross loading

Table 6: Cross Loading

Indicator	(X1)	(X2)	(X3)	(X4)	(X5)	(X6)	(X7)
X1.1	0,867	0,378	0,518	0,757	0,470	0,412	0,482
X1.2	0,868	0,327	0,502	0,778	0,501	0,441	0,482
X1.3	0,879	0,374	0,444	0,626	0,412	0,369	0,462
X1.4	0,876	0,386	0,463	0,623	0,442	0,378	0,472
X2.1	0,480	0,926	0,637	0,522	0,370	0,434	0,514
X2.2	0,410	0,949	0,695	0,498	0,417	0,423	0,460



X2.3	0,379	0,957	0,752	0,504	0,379	0,362	0,433
X2.4	0,309	0,949	0,734	0,474	0,360	0,344	0,405
X3.1	0,525	0,704	0,960	0,540	0,488	0,416	0,468
X3.2	0,480	0,648	0,848	0,532	0,552	0,384	0,373
X3.3	0,528	0,712	0,961	0,522	0,543	0,389	0,455
X4.1	0,686	0,439	0,455	0,920	0,615	0,405	0,468
X4.2	0,701	0,457	0,538	0,913	0,658	0,407	0,457
X4.3	0,747	0,514	0,537	0,836	0,530	0,458	0,517
X5.1	0,510	0,361	0,408	0,624	0,825	0,346	0,370
X5.2	0,494	0,405	0,601	0,644	0,963	0,404	0,462
X5.3	0,440	0,344	0,549	0,592	0,959	0,368	0,426
X6.1	0,397	0,364	0,405	0,434	0,365	0,956	0,709
X6.2	0,463	0,355	0,380	0,461	0,408	0,951	0,748
X6.3	0,434	0,449	0,424	0,448	0,374	0,912	0,743
X7.1	0,429	0,401	0,338	0,418	0,351	0,728	0,879
X7.2	0,537	0,463	0,475	0,534	0,476	0,742	0,976
X7.3	0,569	0,494	0,503	0,570	0,465	0,750	0,979

**Reliability**

The following values are observed in the reliability test which includes values of cronbach's alpha and composite reliability.

**Table 7: Reliability Test**

Variable	Cronbach's Alpha	Critical Value	Conclusion
Planning Factor (X1)	0,904	≥ 0,7	Acceptable
Competency Factor (X2)	0,934		Acceptable
Source of Funding Factor (X3)	0,955		Acceptable
Business Environment Factor (X4)	0,960		Acceptable
Educational Factor (X5)	0,868		Acceptable
Family Factor (X6)	0,896		Acceptable
Technology Factor (X7)	0,913		Acceptable
Execution (Y)	0,962		Acceptable
Variable	Composite Reliability		Conclusion
Planning Factor (X1)	0,941		Acceptable
Competency Factor (X2)	0,958		Acceptable
Source of Funding Factor (X3)	0,959		Acceptable
Business Environment Factor (X4)	0,971		Acceptable
Educational Factor (X5)	0,920		Acceptable
Family Factor (X6)	0,927		Acceptable
Technology Factor (X7)	0,946	Acceptable	

Execution (Y)	0,962	Acceptable
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**Outer Loading (First Order)**

**Table 8: First Order Outer Loading**

Indicator	t-statistic	Indicator	t-statistic	Indicator	t-statistic
X1.1	19,565	X2.4	28,810	X5.1	11,935
X1.2	20,214	X3.1	68,867	X5.2	76,293
X1.3	12,080	X3.2	12,844	X5.3	52,573
X1.4	11,760	X3.3	60,653	X6.1	70,006
X2.1	30,649	X4.1	27,274	X6.2	59,344
X2.2	41,628	X4.2	26,349	X6.3	34,078
X2.3	27,212	X4.3	13,986	X7.1	15,431
				X7.2	179,713
				X7.3	196,522

**Second Order Testing**

The second order test will be done on the latent formative second order construct by using hypothesis test through resampling method (bootstrapping).

**Hypothesis Test of Formative Indicators**

Table 5.23 shows that all first order constructs are construct construct dimensions of successful execution constructs (second order) with t-statistic > 1.96. The latent variables that constitute the successful execution constructs are planning variables, competence variables, funding source variables, environmental variables, educational variables, family variables, and technological variables.

**Table 9: Second Order t-Statistic**

Indicator	t-statistic
Planning Factor (X1)	4,879
Competency Factor (X2)	5,324
Source of Funding Factor (X3)	6,765
Business Environment Factor (X4)	7,375
Educational Factor (X5)	4,588
Family Factor (X6)	8,717
Technology Factor (X7)	7,725

**Table 10: Second Order R Square**

Variable	R Square
Planning Factor (X1)	0,635
Competency Factor	0,570

(X2)	
Source of Funding Factor (X3)	0,648
Business Environment Factor (X4)	0,714
Educational Factor (X5)	0,530
Family Factor (X6)	0,515
Technology Factor (X7)	0,609

The conclusion of this analysis is that if the result of hypothesis testing on the outer model is significant, all first order constructs constitute construct dimension of success execution (second order).

### Conclusion

Based on the results of the analysis conducted by the researchers, all research variables in the form of Planning Factors, Competency Factors, Funding Source Factors, Education Factors, Family Factors, and Technological Factors formed the start-up business execution of students at Ciputra University.

Based on the measurement model in Partial Least Square (PLS) the sequence of factors that shape the start-up business execution of students at Ciputra University ranging from the highest to the lowest are: Competency Factor (X2), Planning Factor (X1), Technology Factor (X7) Source of Funding (X3), Environmental Factor (X4), Family Factor (X6), and Education Factor (X5).

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