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MEASURING THE ENTREPRENEUR'S FINANCIAL KNOWLEDGE: EVIDENCE FROM SMALL MEDIUM ENTERPRISES IN SURABAYA

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Abstract

This study aimed to analyze the factors that measure the financial knowledge of entrepreneurs in Surabaya. Entrepreneurs with higher financial knowledge will have a growing probability of a successful business. This research was conducted by distributing questionnaires. There are 309 entrepreneurs as the samples who are living, doing business, as well as having financial knowledge about entrepreneurial finance in Surabaya. This study used exploratory factor analysis to identify the relationship between the manifest variables (attributes) or indicator variables to build a construct (factor). The results in this study are the factors that measure the financial knowledge of entrepreneurs in SMEs such as functional financial management systems, funding decisions, business information technology, financial obstacles, financial strength, and risk management.

Keywords: Financial knowledge, entrepreneurial finance, entrepreneur, small medium enterprises.

Introduction

The role of entrepreneurs is increasing in the era of globalization. This is due to entrepreneurs play an important role in economic development. Thus, the greater number of entrepreneurs in a country, the economic growth will be higher. Entrepreneurs will help to boost the country's economy, to increase employment, and ultimately to improve the quality of people's welfare (Puspayoga, 2015). In addition, the welfare distribution in economic growth (GDP) will also be high.

According to Iqbal and Hazliansyah (2014), based on data from the Central Bureau of Statistics in 2014, the number of entrepreneurs in Indonesia increased in February 2014. Central Bureau of Statistics survey showed that the number of entrepreneurs reached 44.20 million from 118.17 million of working people in Indonesia, compared to February 2013 there were 44.01 million entrepreneurs. The number of entrepreneurs in Indonesia is only 1.56% from the total population (240 million people in 2014). Furthermore, the Minister of Cooperatives and SMEs of Indonesia, Puspayoga (2015) said that the number of entrepreneurs in Indonesia is only about 1.65% of the population in 2015. It is about 98% of businesses are Small Medium Enterprises (SMEs), either walking alone as big personal business or incorporated with the cooperative.

On the contrary, according to Hasan (2014), the number of entreprenuer in Indonesia is still low. Based on the theory of David McCelland, the economy of the country will increase by at least 2% of the population is an entrepreneur (Hasan, 2014). The increasing of entrepreneur about 1.65% in 2015 is still lower than other developing countries. The number of entrepreneurs in the Malaysia, Thailand, and Singapore are at least 4% from the total population for each country in 2015. Meanwhile, as the developed countries, the amount of entrepreneurs in Japan and USA are about 10% and 12% from the total population for each country. This can be due to the entrepreneur's financial knowledge. Lower level of entrepreneurial finance knowledge can significantly contribute to the number of entrepreneurs.

Financial knowledge of entrepreneurs will show the person's ability to understand and to use information relating to personal finance and business. The low of knowledge and the low of compentence in financial management will be one factor in the failure of an entrepreneur (Naqvi, 2011). Then, the financial knowledge can be measured through the understanding of entrepreneurs in setting personal finance, the financial awareness in financial reporting, the business terminology, the use of technology business support, and the risk management (Naqvi, 2011). Higher financial knowledge will support the advancement of the business. An entrepreneur who has a higher financial knowledge will be able to take good financial decisions in business, so that businesses can achieve success. Thus, an entrepreneur must have the financial knowledge, especially in entrepreneurial finance.

According to *Otoritas Jasa Keuangan* (OJK) as the financial services authority in Indonesia stated that financial literacy index in Indonesia in 2013 is only 21.84% for well literate, 75.69% for sufficient literate, 2.06% for less literate, and 0.41% for not literate. Compared with people in Singapore have their financial knowledge level of 96%, Malaysia is 81%, and Thailand is 76%. This evidence indicates that the understanding about well literate in financial knowledge for Indonesia is still very weak. Hence, Indonesian society needs to address this problem with a better understanding in financial knowledge by OJK, especially for women entrepreneurs, young entrepreneurs, and entrepreneurs who have SMEs (Benjamin, 2015)

Based on the above phenomenon, the researcher is interested in knowing the factors that can measure the entrepreneur's financial knowledge. This research was conducted through a questionnaire survey method to the respondents who have formal or non-formal financial knowledge about entreprenuerial finance. It is intended to obtain a representative image of knowledge regarding financial management of the entrepreneurs.

The respondent who will fill out the questionnaire is an entrepreneur who opened the business and domiciled in Surabaya. Surabaya is selected as the research region due to the increasing number of entrepreneurs. According Rismaharini (2014) as the Mayor of Surabaya stated that the entrepreneurs who are engaged in the small medium enterprises alone had grown to 2,300 in 2014 from 20,000 working people and this number will grow until 2016. In addition, the municipal government of Surabaya is also very concerned about the development of entrepreneur's financial knowledge. This is demonstrated by not only the presence of several online business training and good business management training for small enterprises with various types of businesses, but also a special attention such as the government established Bank SMEs of East Java based in Surabaya. It started when the East Java government issued a policy in credit to encourage small business development by establishing The Rural Credit Business Loan for the marginal people. This municipal government's attention for the entrepreneurs is expected to boost economic growth in Surabaya, so it remains the economic center in East Java, especially in Surabaya, in the face of ASEAN Economic Community (AEC). Thus, it is necessary to investigate the factors that can measure the financial knowledge of entrepreneurs in Surabaya.

Financial knowledge has different definitions based on the context. Generally, financial knowledge is defined as a basic or general understanding in terms of financial management such as understanding financial planning in general include liquid assets, income, and spending money (Mendari & Kewal, 2013). According Sebstad, Cohen, and Stack (2006), financial knowledge can be defined within the understanding of budgeting, savings, debt management, financial negotiations, and bank services.

In this study, financial knowledge is defined as an understanding of the entrepreneurial finance. ANZ (2008) stated that financial knowledge can be measured from a good business financial management. Furthermore, ANZ (2011) shows that financial knowledge can be measured from an entrepreneur's understanding of the historical records of financial transactions, financial planning, financial product, financial information, and financial control. Robb and Woodyard (2011) stated that more knowledgeable people were also more likely to keep financial record. Moreover, locus of control internal and external may mediate the financial knowledge (Perry & Morris, 2005). The greater financial knowledge also improve someone behavior to be more responsible, so they will show a better financial planning (Borden, Lee, Seriode, & Collins, 2008). According to Mitchell and Lusardi (2015), the more sophisticated young people in financial knowledge will make them have better knowledge in financial products, financial services, along with financial information than their parents do.

In addition, according Banking Association of South African examined factors that measure the financial knowledge as the understanding of entrepreneurs in some ways such as (Fatoki, 2014):

1. The functional financial management systems will show entrepreneurial competencies in personal financial skills (Collins, 2007) and business management skills (Hilgert, Hogart, & Beverly, 2003).
2. The life cycle funding will show the understanding about the source of funding (capital structure) at each stage of the growth of a business (Lusardi & Tufano, 2009).
3. The financial needs and the financial operations that show an understanding of funding needs (Lusardi & Tufano, 2009) and business operations for the day to day activities (Carswell, 2009).
4. The financial risk shows the understanding of financial risk management (Porter & Garman, 1993).
5. The understanding about financial regulation (i.e. taxes and government regulations) (Fatoki, 2014).
6. The financial obstacle that is an understanding of the financial difficulties and bankruptcy (Robb & Woodyard, 2011 and Demirguc-Kunt, Maksimovic, Beck, & Laeven, 2006).

Previous researchers have conducted studies on entrepreneur's financial knowledge. Oseifuah (2010) and Wise (2013) used several factors include mathematical and computer knowledge, financial attitude, basic financial knowledge, and financial behavior to measure entrepreneur's financial knowledge. According to Tijani and Mohammed (2013), using computerized accounting systems shows the basic knowledge and skills of accounting and finance, so the lack of IT will pressure the ability of owner to manage the business. Meanwhile, Mitchell and Lusardi (2015), states that financial knowledge can be seen from the entrepreneur's knowledge on the financial market, knowledge of purchasing power, as well as the economic calculation. According Fatoki (2014), entrepreneur's financial knowledge can be measured from an understanding of financial planning (Borden et al, 2008), financial strength analysis (Mitchelmore & Rowley, 2013), financial control (Perry & Morris, 2005), recording business transactions (Robb & Woodyard, 2011), understanding the source of funding (Lusardi & Tufano, 2009), business terminology, the skills of finance and access to get financial information, information technology (Tijani & Mohammed, 2013), also business risks management (Porter & Garman, 1993). An understanding of the financial planning, financial analysis, and financial supervision should be owned by business owners. It is aimed to reach better management, higher benefit, and minimize business losses.

Most of the entrepreneurs do not have financial knowledge properly, so that the business would easily run into financial difficulties (Bruhn & Zia, 2011; Dahmen & Rodriguez, 2014). Furthermore, the system of business transactions recording more has done manually rather than using the computer or using the technology (Tijani & Mohammed, 2013). The business transaction recording is also rarely implemented, because many entrepreneurs do not understand about financial accounting knowledge through the accounting system. When the entrepreneurs do not have a good bookkeeping system through the preparation of financial statements, it will cause the difficulties to access funding from the bank. Moreover, entrepreneurs must be able to manage risk because it can be useful for entrepreneur to transfer the business risks to other parties such as insurance and to minimize losses due to the risks covered.

Financial knowledge is needed by the entrepreneur to achieve the effectiveness of money management (Carswell, 2009). The business owners with higher financial knowledge will have a better performance and sales (Bruhn & Zia, 2011). Moreover, according to Wise (2013), the increasing of financial knowledge will lead the entrepreneurs more often make the financial statements. More often the entrepreneurs make financial reports will lead the business to have higher probability of loan payments and to avoid the bankruptcy. Financial knowledge is an excellent base for the entrepreneur as a significant barometer for the success and growth of business (Fatoki, 2014). Meanwhile, having lower financial knowledge causes negative impact on financial management and will get higher business failure.

The United State Agency for International Development (2009) determines the aspects of financial knowledge for micro enterprises in South Africa from 25 stakeholders through interview. The research approach is qualitative and completed with descriptive statistics. The result showed that the financial knowledge of the business owner or manager can be identified through an understanding of financing that best suits the business and financial management options at various stages of business growth, product, or financial service that is appropriate, and interaction with suppliers.

ANZ *(Australia and New Zealand Banking Group Limited)* (2011) analyzes the financial knowledge for working people to determine the change aspects of financial knowledge compared to prior studies in 2008. This research has done in the state of New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania, the Australian Capital Territory, and the Northern Territory. The research method was conducted by randomly telephone survey (interview) and questionnaires with 3,502 people. The factors measuring financial knowledge in this study are the historical financial records, financial planning, financial product, financial information, and financial control with regression analysis. The results showed that a very strong impact from financial product on the financial knowledge, while the historic recording of finance, financial planning, financial information has weak influence on financial knowledge. Financial control has no effect on financial knowledge.

Fatoki (2014) conducts study on financial knowledge entrepreneurs in micro-enterprises. This research was conducted by distributing questionnaires to 34 respondents in the retail sector of entrepreneurs in the Johannesburg Central Business District, Gauteng Province, South Africa. This study used financial planning, financial analysis, financial supervision, the use of technology, and risk management to measure the financial knowledge of entrepreneurs in South Africa with the combination of nominal data scale, Likert-type scale, and descriptive statistical methods. The results showed that the level of financial knowledge of entrepreneurs is very low, so it is recommended to improve the financial knowledge through those factors.

Hypothesis

According to the theoretical basis and the previous studies, the hypothesis of this study is stated that there are five factors measuring financial knowledge entrepreneurs are often considered include the functional financial management systems, the business funding, the business information technology, the financial information, and the risk management.

Research Method

This study use factor analysis as the statistical tool. According to Manly (2005), as the principal component analysis, factor analysis is a multivariate used for data reduction. This research will represent a set of variables by a smaller number of variables that are called factors. Those factors will underlie the constructs that cannot be measured by single variable. This study analyzes the factors that measure the entrepreneur's financial knowledge. According Manly (2005), factor analysis model is expressed by the following formula:

$$X_i = a_{i1}F_1 + a_{i2}F_2 + \ldots + a_{im}F_m + e_i \quad (1)$$

Where, the X_i is variable i, a_{im} is the factor loadings for variable i on common factor m, F_m is common factor m, and e_i is the part of variable X_i that cannot be explained by the factors (unique factors).

$$e_i = V_i.U_i \quad (2)$$

Where, U_i is the unique factor for variable i and V_i is standardized multiple regression coefficient of variables i on unique factor i. Unique factors correlate with each other and correlate with the common factor. Common factor can be expressed as a linear combination of the variables, thus:

$$F_i = W_{i1}X_1 + W_{i2}X_2 + W_{i3}X_3 + \ldots + W_{ik}X_k \quad (3)$$

Where, F_i is the estimated factor i, W_i is the weight or the coefficient score from the factor i, and X_k is the number of variables X at factor k.

This study uses a quantitative approach that using numerical data through a survey to gather information. The survey was conducted by distributing hardcopy questionnaires to the respondents in several shopping centers and business centers in the Surabaya. Knowing the factors that measure the entrepreneur's financial knowledge in Surabaya is the purpose in this research survey.

The population in this study is the entrepreneurs who have a business as SMEs and live in the Surabaya. The respondents shall have one or both of the following criteria such as the entrepreneurs have financial knowledge concerning in entrepreneurial finance from formal education (school or college) and non-formal education (courses, seminars, workshops, or trainings on entrepreneurial finance) before the entrepreneurs started the business. In Indonesia, entrepreneurial finance knowledge can be acquired from formal educational by the graduates of faculty economics and vocational high school. According to Lemeshow, Hosmer, Klar, and Lwanga (1990), the following formula explains how to calculate the number of research samples, thus:

$$n = \frac{Z^2_{1-\alpha/2} * p * (1-P)}{d^2} = \frac{1.96^2 * 0.5 * 0.5}{0.1^2} = 96.04 \approx 97$$

(the minimum respondents) (4)

Where, n is the minimum sample size, $Z_{1\text{-}\alpha/2}$ is the value of the standard normal distribution (Z tables) at α 5%, P is the population proportion, and d is the error (absolute) that can be tolerated.

Variables in the Research

The factors were made up in the form of 29 attribute statements (variables) to build the factors that measure the financial knowledge. Those attributes are determined from several previous researchers about financial knowledge such as (01) financial objectives determination, (02) business planning, and (03) budget preparation (Perry & Morris, 2005; Abanis, Sunday, Burrani, & Eliabu, 2013; as well as Warue & Wanjira, 2013), (04) assets recording, (05) debt recording, (06) capital recording, (07) sales recording, (08) costs recording, (09) profit or loss recording, (10) business transactions recording, and (11) transaction bookkeeping (Robb & Woodyard, 2011; Amoako, 2013), (12) the use of computers for businesses, (13) recording via computer, (14) holdings email, (15) having internet access, (16) web page ownership, and (17) online business systems (Tijani & Mohammed, 2013; Fatoki, 2014), (18) financial statements analysis, (19) financial ratios analysis, (20) business growth analysis, and (21) profit analysis (Mitchelmore & Rowley, 2013 as well as Sucuahi, 2013), (22) losses analysis and (23) financial difficulty analysis (Demirguc-Kunt *et al*., 2006; Robb & Woodyard, 2011; as well as Dahmen & Rodriguez, 2014), (24) having insurance policy (Porter & Garman, 1993), (25) personal banking accounts ownership, and (26) holdings business banking account (Banks & Oldfield, 2007; Lusardi & Mitchell, 2007; and Alessie, Lusardi, & Rooji, 2007), (27) personal credit card ownership, (28) company credit card ownership, and (29) personal and business credit cards ownership (Moore, 2003; Campbell, 2006; Robb & Sharpe, 2009).

Respondents were asked to select one of the answers for all variables. Number 01–13 and number 18–23 used five Likert scale measurement such as never, rarely, sometimes, often, and always. Meanwhile, number 14–17 and number 24–29 using nominal scale, such as do have (code 1) and do not have (code 0). This research standardized the data using the z-score. This is intended to avoid the data from the biased effect, because this study used Likert scale data and nominal data.

Definition of Operational Factors

Functional Financial Management Systems

This factor showed the entrepreneurial skills related to financial management in general, such as financial planning until financial evaluating of the business. It can be shown from the variables include the ability of entrepreneurs doing business plan preparation, transaction records, financial statements, also financial statement analysis (Fatoki, 2014).

Knowledge about Funding Decisions

This factor demonstrates the entrepreneur's ability to find out the source of funding, to use the fund, and to negotiate the terms of funding (Sebstad *et al*., 2006). According to Robb and Sharpe (2009), it is shown from the variables such as the ownership of bank account (savings, soft loans, or credit cards).

Business Information Technology

It is the knowledge of business information technology which demonstrates entrepreneur's ability to use technology and to improve the information for supporting the financial aspects in the business. This can be demonstrated through the variables such as the use of a computer for financial transactions (Tijani & Mohammed, 2013), e-mail, web page, as well as an online trading system (Oseifuah, 2010).

Financial Information

Financial information factor shows entrepreneurial skills in using the results of the financial statements as the information business conditions (Wise, 2013). This is done by using the variables such as the analyzing business growth, assets, sales, profits, losses, and financial difficulties businesses (Dahmen & Rodriguez, 2014).

The Understanding of Risk Management

This factor demonstrates how entrepreneurs manage the uncertainty. Risk management is done in several stages such as identify risks, quantify risks, and evaluate risk (Porter & Garman, 1993). It begins by using variables such as writing the financial goal, analyzing the financial performance ratio, and managing risk (Fatoki, 2014).

Results and Discussion

Deployment questionnaire begins with providing pre-test to 30 respondents to test the ease of interpretation of the questions on the questionnaire. Pre-test results show there are still some ambiguous questions. Once rebuilt, the questionnaire is redistributed to 350 respondents. There are only 309 eligible respondents that have answered 29 variables proposed in the questionnaire. This is due to 41 respondents did not qualify to have the financial knowledge about entrepreneurial finance (formal or non-formal).

General overview of the respondents in this study can be explained by the descriptive analysis. Most respondents are male, have already more than 40 years old, have experienced over 10 years of doing the business, and have the form of business as the sole proprietorship. The majority of respondents have financial knowledge about entrepreneurial finance in non-formal education are 184 respondents (59.5%), compared with formal education are 123 respondents (39.8%) and entrepreneurs who have both formal and non-formal education about entrepreneurial financial are two respondents (0.7%). This statement indicates that more respondents have very good financial knowledge through the experience of doing business. On average, respondents have more than one business and financed with their own equity.

Before the data is processed using factor analysis, it has tested the validity and reliability test. The validity test of Likert data scale used Pearson correlation, but for the nominal data scale used the Spearman Correlation (Ghozali, 2005). Variables declared valid, if the significance of the correlation value is less than 5%. The results show that all variables have a significance value is 0.000. It is less than 0.05, so that the data is valid. Furthermore, the reliability test will check the consistency of the measuring instrument by using Cronbach's Alpha. Variables declared reliable, if the value of Cronbach's Alpha is more than 0.6 (Ghozali, 2005). The results showed that Cronbach's Alpha value that is 0.873, so the data is reliable. The research can be continued into the process of analyzing the factors as the following:

Tabel 1
Kmo and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.877
Bartlett's Test of Sphericity	Approx. Chi-Square	5.493E3
	Df	406
	Sig.	0.000

Tabel 2
Measures of Sampling Adequacy (MSA)

Variabel	MSA	Variabel	MSA	Variabel	MSA	Variabel	MSA	Variabel	MSA
Var01	0.838	Var07	0.937	Var13	0.887	Var19	0.914	Var25	0.833
Var02	0.887	Var08	0.934	Var14	0.898	Var20	0.783	Var26	0.904
Var03	0.942	Var09	0.934	Var15	0.878	Var21	0.770	Var27	0.863
Var04	0.950	Var10	0.928	Var16	0.783	Var22	0.546	Var28	0.806
Var05	0.921	Var11	0.866	Var17	0.770	Var23	0.552	Var29	0.766
Var06	0.911	Var12	0.877	Var18	0.939	Var24	0.854		

Tabel 3
Communalities

Variabel	Initial	Extraction	Variabel	Initial	Extraction	Variabel	Initial	Extraction
Var01	1	0.593	Var11	1	0.561	Var21	1	0.681
Var02	1	0.602	Var12	1	0.718	Var22	1	0.925
Var03	1	0.642	Var13	1	0.695	Var23	1	0.910
Var04	1	0.665	Var14	1	0.674	Var24	1	0.449
Var05	1	0.563	Var15	1	0.715	Var25	1	0.558
Var06	1	0.703	Var16	1	0.615	Var26	1	0.497
Var07	1	0.712	Var17	1	0.691	Var27	1	0.555
Var08	1	0.692	Var18	1	0.668	Var28	1	0.512
Var09	1	0.708	Var19	1	0.597	Var29	1	0.696
Var10	1	0.711	Var20	1	0.762			

Note: Extraction Method is Principal Component Analysis

Table 1 is the results of KMO and Bartlett's Test. The results showed that the value of KMO Measure of Sampling Adequacy is more than 0.5 as well as the significance of Bartlett's Test is less than 0.005, so the variables and the samples can be analyzed.

Table 2 is the results of Measures of Sampling Adequacy (MSA). The MSA values on all variables are greater than 0.5. The table shows that all the variables have a fairly high correlation with other variables, so that 29 variables are feasible to be processed.

Table 3 is the result of Communalities. The Communalities show the percentage variance of the original variables that can be explained by factors that exist (Santoso, 2002). For example, the Extraction Value of Var01 (financial goal setting) is 0.593. It means that 59.3% of variance of the variable (financial goal setting) can be explained by factors that are formed, and reciprocally for the other variables. Based on these results, all variables can be explained by formed factors. The larger value of communalities, the more closely relationship of variables concerned with formed factors.

Furthermore, in this section shows the Table 4 about Total Variance Explained. It produced 6 groups of factor from 29 variables (attributes). This is shown by the component factors which have Total Initial Eigenvalues is greater than 1. From the Rotation Sums of Squared Loadings, the percentage of variance in Factor1 is 22.67%, variance in Factor 2 is 12.84%, variance in Factor3 is 8.35%, variance in Factor4 is 7.94 %, variance in Factor 5 is 7.12%, and variance in Factor6 is 6.85%. The variables that incorporated in Factor1 are the most dominant variable.

Table 5 about Rotated Component Matrix shows the distribution of the variables that are grouped into several factors that are simpler and easier to interpret, with the hope that significant value of each factor and the percentage of variance values of each factor will not change. It used Rotation Method: Varimax with Kaiser Normalization Procedures. This method will minimize the number of variables with high loading factor, so the ability to interpret the existing factors will increase.

Based on the results of Rotated Component Matrix, the variable group still consists of six factors. Grouping has built up by the highest factor loading of each variable. The result of groups include: Factor 1 (for variable number 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, and 18), Factor 2 (for variable number 12,13, 14, 15, 16, and 17), Factor 3 (for variable number 01, 19, and 24), Factor 4 (for variable number 25, 26, 27, 28, and 29), Factor 5 (for variable number 22 and 23), also Factor 6 (for variable number 20 and 21).

The result of factor analysis forms 6 new factors from 29 variables (attributes). This result is difference with five factors that previously hypothesized (only 5

Table 4
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Var.	Cum. %	Total	% of Var.	Cum. %	Total	% of Var.	Cum. %
1	9.164	31.599	31.599	9.164	31.599	31.599	6.573	22.665	22.665
2	3.216	11.091	42.690	3.216	11.091	42.690	3.724	12.841	35.506
3	2.403	8.287	50.978	2.403	8.287	50.978	2.421	8.349	43.855
4	1.728	5.958	56.935	1.728	5.958	56.935	2.303	7.940	51.796
5	1.447	4.989	61.924	1.447	4.989	61.924	2.065	7.120	58.915
6	1.114	3.842	65.766	1.114	3.842	65.766	1.987	6.850	65.766
7	0.979	3.375	69.141						
8	0.835	2.878	72.020						
9	0.793	2.736	74.756						
10	0.759	2.616	77.372						
11	0.666	2.296	79.668						
12	0.623	2.147	81.815						
13	0.555	1.913	83.727						
14	0.502	1.733	85.460						
15	0.451	1.556	87.015						
16	0.426	1.469	88.484						
17	0.423	1.458	89.942						
18	0.393	1.355	91.297						
19	0.350	1.205	92.503						
20	0.326	1.125	93.628						
21	0.296	1.020	94.648						
22	0.268	0.924	95.572						
23	0.255	0.879	96.451						
24	0.253	0.871	97.322						
25	0.226	0.779	98.101						
26	0.184	0.634	98.736						
27	0.168	0.579	99.315						
28	0.157	0.540	99.855						
29	0.042	0.145	100.00						

Extraction Method: Principal Component Analysis

factors). Thus, new factors will be given a label or a name that is representative for the variables included in the group of those factors. So, this is the determination of the factors label in this research such as Factor1 is the functional financial management systems (22.67%), Factor2 is the business information technology (12.84%), Factor3 is the risk management (8.35%), Factor4 is the funding decision (7.94%), Factor 5 is the financial obstacle (7.12%), and Factor6 is the financial strength (6.85%).

The amount of Cumulative Variance in Initial Eigenvalues is 65.77%. It is less than 100%, so it suggests that there are other factors that have not been revealed in this study to explain the variability in the measurement of entrepreneur's financial knowledge. It may be consist of the other factors such as the understanding of the financial regulations, financial market, financial service needs, and others.

Factor analysis also has a fit model testing. This is done by looking at the differences in the observed correlation value (The Correlation Matrix) with reproduced estimated Correlation Matrix of Factors, namely Residual Value. There is only 28% non-redundant residuals with absolute values greater than 0.05. A small residual amount indicates that the model of the factors considered feasible for use.

Discussion of Research Findings

This study aims to investigate the factors that measure the entrepreneur's financial knowledge. The scope of this research is Small Medium Enterprises (SMEs) in Surabaya. Compared with the previous studies, this research used exploratory factor analysis to identify the manifest variable (attributes) or indicator variables to form the constructs or factors that measure the entrepreneur's financial knowledge. The

Table 5
Rotated component matrix

Rotated Component Matrix[a]						
	Component					
	1	2	3	4	5	6
Var01	0.349	-0.179	0.523	-0.046	0.070	0.398
Var02	0.449	-0.292	0.413	-0.061	0.109	0.360
Var03	0.678	-0.041	0.295	-0.097	0.074	0.280
Var04	0.697	-0.173	0.365	-0.094	-0.081	0.018
Var05	0.655	-0.061	0.324	-0.059	0.059	-0.132
Var06	0.776	-0.017	0.310	-0.041	0.035	0.043
Var07	0.832	-0.096	-0.018	-0.044	0.029	0.090
Var08	0.810	-0.089	0.076	-0.116	0.041	0.084
Var09	0.814	-0.139	-0.006	-0.061	-0.020	0.148
Var10	0.800	-0.105	0.088	-0.179	-0.018	0.145
Var11	0.701	0.087	-0.154	-0.120	0.101	0.119
Var12	0.254	-0.721	0.337	-0.138	-0.041	0.013
Var13	0.334	-0.591	0.451	-0.154	-0.075	-0.017
Var14	-0.090	0.746	-0.260	0.187	-0.075	0.018
Var15	-0.125	0.800	-0.011	0.230	0.043	0.055
Var16	0.040	0.774	0.056	-0.024	-0.068	-0.081
Var17	0.048	0.763	0.230	-0.026	-0.132	-0.187
Var18	0.667	-0.104	0.326	-0.085	0.060	0.309
Var19	0.407	-0.146	0.525	-0.214	0.100	0.281
Var20	0.229	-0.019	0.088	-0.109	-0.165	0.814
Var21	0.258	-0.063	-0.027	-0.071	-0.288	0.723
Var22	0.099	-0.071	0.059	0.032	0.936	-0.175
Var23	0.131	-0.072	0.070	-0.005	0.928	-0.147
Var24	-0.135	-0.010	-0.643	0.107	-0.041	0.069
Var25	-0.246	0.298	0.196	0.550	0.234	0.112
Var26	-0.205	0.341	-0.200	0.515	0.179	-0.022
Var27	-0.222	0.122	-0.031	0.698	0.050	-0.004
Var28	0.025	0.002	-0.408	0.552	-0.104	-0.173
Var29	-0.018	0.030	-0.137	0.796	-0.137	-0.156

result of this study is different from previous researchers. This result gains 6 new factors which can measure the financial knowledge, whereas the previous studies have only five factors. Furthermore, this research also found that the dominant factor that can measure the financial knowledge is the understanding of entrepreneur in functional financial management systems. Thus, the business owner must pay more attentions into it, when they running the company.

This research results gained grouping six factors that measure the financial knowledge of entrepreneurs with two types of correlation such as positive correlation and negative correlation. Some of the variables included in each factor have a positive correlation. It indicates that the greater of loading factor, so the tendency level of financial knowledge entrepreneurs will be higher. Meanwhile, a variable that has negative correlation would indicate the greater of loading factor, so the tendency level of financial knowledge entrepreneurs will be lower. The following is an explanation of each factor that measure entrepreneur's financial knowledge.

Functional Financial Management Systems Factor

Functional financial management systems factor showed an understanding of entrepreneurs about the information system obtained from one or several activities in the management of personal finances and business. It consists of collecting, processing, maintenance, transmission, and reporting of data that relating to the financial; supporting financial planning or budgeting activities; collecting and reporting of cost information; also supporting the preparation of financial statements (United State Department of Veterans Affairs, 2013).

In this study, variables that include in functional financial management systems are business planning (0.449), budget preparation (0.678), assets recording (0.697), debt recording (0.655), capital recording (0.776), sales recording (0.832), costs recording (0.810), profit or loss recording (0.814), business transactions recording (0.800), transaction bookkeeping (0.701), as well as the financial statements analysis (0.667). The values within the brackets show the score of Rotated Component Matrix (the appendix).

Positive correlation value on each factor loading variables showed a higher understanding of entrepreneurs about each of these variables, the higher the financial knowledge entrepreneurs.

From the result above, we know that business planning is the initial phase when developing a business. If the business plan fails, then the entrepreneur will plan to fail. This result is in line with Borden *et al*. (2008). They stated that the greater knowledge in finance will improve the responsibility behavior through financial planning. Business plan is very important especially make a business budget preparation. Budgeting is an income and an expenditure planning to support business operations and business processes (Sebstad *et al*., 2006). In this study, the respondents make budgeting, but they more concerned about the ability to generate cash flow. It is in line with Hilgert *et al*. (2003).

Furthermore, the entrepreneur must be able to conduct financial records at least through the bookkeeping. Most respondents perform regular financial records. By recording of all types of transactions can help entrepreneurs in making financial decisions, because business owners cannot depend on memory to recall all business transactions every day. This recording attempted to form financial statements (United State Department of Veterans Affairs, 2013). Primary financial statement for understanding the financial condition within a specific time accounting period is the fundamental financial knowledge for business owner. It consists of the assets, liabilities, and equity analysis.

Business Information Technology Factor

Business information technology factor showed an understanding of entrepreneurs on the use of technology to obtain information to support financial decisions. In this study, the understanding of information technology can be seen from the possession or the use of a computer for financial transactions, e-mail, web page, as well as online trading systems to support the business. Factor analysis result showed that using computer for business (-0.721), recording through a computer (-0.591), email ownership (0.746), internet access (0.800), possession of a web page (0.774), as well as online business system (0.763) can explain the factors of business information technology.

Entrepreneurs will have lower financial knowledge, when they do not use computers for business and recording via computer. This research finding is consistent with Tijani and Mohammed (2013). The majority respondents have old business and they are over 40 years old. Entrepreneurs who have such characteristics are likely to be weak in terms of technology. This could be due to the entrepreneurs did not understand the progress of technology in old age. They just recall the information from their experiences. On the other hand, young entrepreneurs that tend to have e-mail, web page, and internet access as well as online business systems will be easier and faster to access the crucial business information. Business information technology will provide more clues, so it can improve the efficiency and the business performance. The use of technology offers a significant improvement over financial transactions (Naqvi, 2011). Strategic information technology creates opportunities to minimize costs, makes accounting applications, down scales organizational structure, cuts supply chain distribution, and supports the input of financial information to improve business decisions faster (Fatoki, 2014).

Risk Management Factor

Risk management factor showed the understanding of entrepreneurs in managing the risks that may happen in the business. An entrepreneur must be able to anticipate the occurrence of such risks. This can be done by knowing the possible risks to be faced, measuring the value of risk, as well as having an alternative to reduce the risk.

The results of this study stated that setting financial goals (0.523), analyzing financial ratio analysis (0.525), and having insurance policy (-0.643) can form the risk management factors. If an entrepreneur increases the frequency of setting the financial goals and analyzing financial ratio, it will indicate the higher a person's financial knowledge. It is because the financial ratios show the signal of financial condition in the company as a benchmark of business success with similar companies or comparable historical (period) (Ross, Westerfield, & Jordan, 2008). Comparing this business ratio with the average ratio of similar industries will be able to demonstrate risk management. This research's result is consistent with Porter and Garman (1993). Entrepreneurs will be realized through the evaluation of the value of financial ratios, such as the business position is being above or below the average industry. Yet, the entrepreneur's evaluation also can be based on their subjective perception of business conditions.

Risk management is very important for the business survival. A way to decrease the risk is by transferring the risk to the insurance (Naqvi, 2011). Through ownership of this insurance, a businessman required to make premium payments in the period and with a certain amount. This premium payment causes the majority of businessmen have not the insurance to save the business against the risk. In this research, the respondents know the benefits of insurance, but they think that having the insurance will waste their money because the possibility of the risk's occurrence is very small. So, those statements describe that entrepreneurs underestimate the benefits of insurance ownership and tend not to do anything related to the business risks. Thus, when the entrepreneurs do not have insurance will represent the lower entrepreneur's financial knowledge (Fatoki, 2014).

Funding Decisions Factor

Funding decision factor demonstrated the ability of entrepreneurs to obtain funding source. In general, the selection of the funding source comes from owner equity or family funds (Leach & Melicher, 2012). When the attempt to enter the new life cycle level is higher, the business will use external funding from banks. Entrepreneurs will attempt to negotiate the terms of funding according to the needs and the business capabilities. In this study, the funding decision is indicated by the variable such as personal account banking ownership (0.550), business account banking ownership (0.515), possession of personal credit card (0.698), possession of a credit card for business (0.552), as well as ownership of credit cards for personal and business (0.796). Based on Lusardi and Mitchell (2007), Banks and Oldfield (2007), as well as Alessie *et al.* (2008), the higher financial knowledge will indicate that someone have more bank accounts to saving, to get more interest rate.

The positive correlation at each value of factor loading variables indicate that entrepreneur's financial knowledge will improve, when they have bank accounts and credit card for personal and for business purposes. This result is in line with prior studies such as Moore (2003), Campbell (2006), also Lusardi and Tufano (2009). The other way, the use of external funding sources will have consequences to pay the principal by installment or cash and also the interest on the loan on time (Sebstad *et al*., 2006). This is due to the awareness of the impact the payment of fines and other surcharges.

However, there are many entrepreneurs who do not have knowledge in separating business loan and personal loan. Financial principles affirm that business transactions must be separated from the owner transaction and this principle applies to all types of organizations of entrepreneurs (Ross *et al*., 2008). Based on the research's result, the respondents tended to have a personal bank account and credit cards for personal purposes. Low levels of ownership of a bank account in the name of business and credit card complicate access to business funding, but entrepreneurs also have to avoid the risk when they have more than two credit card accounts. Moreover, respondents prefer having short-term loans to the families rather than borrowing at banks, credit companies, and credit card companies. This could be due to the entrepreneurs do not too concerned about the interest rate, but they are worry about the loan approval.

Financial Obstacle Factor

Financial obstacle factor demonstrated the entrepreneur's financial knowledge in analyzing the financial difficulties being faced by the business (Bruhn & Zia, 2011). Every entrepreneur wants to achieve success at the beginning phase, with a number of new opportunities. In this case, they should be cautious to not get stuck on the potential for new opportunities only. The precautionary principle causes entrepreneur must be able to identify the position of the business's financial difficulties (financial obstacle). In this study, the variable that shows the financial obstacle factors are the understanding of the entrepreneur in analyzing losses (0.936) and the analysis of financial difficulty (0.928).

An entrepreneur who has an understanding of the financial obstacle shows higher financial knowledge. This research is consistent with Demirguc-Kunt *et al.* (2006) and Dahmen & Rodriguez (2014). The entrepreneur with competence in the financial difficulties analysis will tend to be cautious on the business performance (Ross *et al*., 2008). So, they must follow the rules of funding and manage the liquidity, so that the debt growth can be controlled, the ability of business operational will be higher, and the entrepreneur can avoid the losses (Lusardi & Tufano, 2009).

Financial obstacles can be seen from the financial constraints of business. When entrepreneurs experience the difficulties and get losses in financial statement, it can be identified that they are having financial barriers. An entrepreneur must know the source of these financial barriers. One cause of this financial barrier is the need for external funds (Leach & Melicher, 2012). If external funding is not managed properly, then there is a specific financial problem that may affect the operations and business growth. Some factors that can be considered to reduce the financial obstacles through external funding are the collateral requirements, the interest rates, the bank's bureaucracy, as well as the information on the inadequate of funding. Thus, understanding the financial obstacle will make the entrepreneurs have fairly good financial knowledge to help make decisions on business financing.

Financial Strength Factor

Financial strength factor demonstrated the ability of entrepreneurs in analyzing the financial success of the business. This is done by analyzing the growth of assets, sales, and profits. In this study, the variables that make up the financial strength factor are the understanding of entrepreneurs in analyzing the business growth (0.814) as well as business profits (0.723). Understanding of the financial position of business strength is very important for owners, managers, investors, lenders, and other stakeholders (Leach & Melicher, 2012). This result's study is consistent with Mitchelmore & Rowley, (2013) that when the entrepreneur has financial competencies, it will impact on the firm performance and growth. Entrepreneurs who have an understanding of financial strength indicate better financial knowledge. It will lead the business owner can control the effectiveness and the cost efficiency. Through the understanding of profit growth and sales growth in the business, the entrepreneur can estimate the financial planning. Understanding financial strength would also give benefit for financial performance relative to the industry and the similar businesses in order to compete in local and international markets.

In general, financial strength can be measured by profitability, business growth, and liquidity (Fatoki, 2014). Furthermore, financial metrics analyze the financial position from the information on financial strength. Sucuahi (2013) stated that a good financial basic of the entrepreneur is the significant measurement of the firm growth. This metric shows the key drivers of business success such as growth in sales and profit, cost control, and liquidity measurement. Business owners need to monitor the financial strength relative to the market continuously, because they cannot simply manage the business by instinct alone. Through the increasing focus on profitability, growth, and liquidity, they will have positive impact on the financial strength of the business to success.

Conclusions and Implications

This study aims to investigate the factors that measure the financial knowledge of entrepreneurs in Surabaya. The results from this study show that there are six factors can measure the financial knowledge. Every factor will consist of several attributes to build a construct or factor. Factor1 is functional financial management systems that consists the understanding of business planning, budget preparation, assets recording, debt recording, capital recording, sales recording, costs recording, profit or loss recording, business transaction recording, transaction bookkeeping, and financial statements analysis. Factor2 is a business information technology that consists of the use of computers for business, recording via computer, the ownership of email, internet access, ownership web page, and online business system. Factor3 is risk management that consists the understanding of financial goal setting, financial ratio analysis, and insurance ownership. Factor4 is funding decision that consists of personal banking account ownership, ownership of business banking accounts, personal credit card ownership, ownership of the credit card for business, as well as ownership of credit cards for personal and business. Factor5 is a financial obstacle that consists of the understanding of financial losses analysis and the financial difficulty analysis. Factor6 is financial strength that consists of understanding the entrepreneur in analyzing business growth and business profits. Meanwhile, the most dominant variable to measure financial knowledge level for entrepreneurs is the understanding of functional financial management systems.

This study documents the empirical findings of the factors that can measure financial knowledge, thus the research contributes to the theoretical review of entrepreneurial in various ways. Firstly, it confirms Hilgert *et al.* (2003) that someone with good financially literate will not to be intimidated by the complexity of the financial management system, so they will make appropriate decisions. Second, the computerized system will facilitate the financial transactions, so it indicates that the entrepreneur has better financial knowledge to manage financial statements (Tijani & Mohammed, 2013). Third, the entrepreneurs have well knowledge in finance when they can manage the possibility risk that will happen in the company by analyzing the firm performance and having insurance. Fourth, the financial knowledge about funding decisions will not cause the costly borrowing (Lusardi & Tufano, 2009). Fifth, by knowing financial difficulties indicates that the business owner aware the financial barrier for the business (Leach & Melicher, 2012). Sixth, well financial basic of the entrepreneur is the significant measurement of the firm strength.

The implication of this research also adds the managerial information through the understanding of this study area like Surabaya which has a growing number of entrepreneurs rate. Entrepreneurs with higher financial knowledge will have the possibility of well managed to be a successful business. Financial knowledge of entrepreneur can include the literacy and the skills to manage financial of the firm effectively for focusing on financial economics as well as to make information assessment that relating to the business and personal circumstances. This leads the entrepreneurs who have a higher financial knowledge to make better financial decisions in accordance with business needs.

Limitations of the Study and Suggestion

In this study, there are a lot of respondents who still have poor financial knowledge. Some respondents have not made the documentation for certain types of transactions and financial planning. The use of technology and risk management for business support has not been optimal. Based on these results, the entrepreneurs can deepen financial knowledge to follow the non-formal financial education seminars as needed to increase the financial knowledge for entrepreneurial finance. Furthermore, entrepreneurs can start the documentation of all business transactions.

Furthermore, based on the previous theories, there are many variables (attributes) are used to form factor of financial knowledge. In this study, the researcher only used 29 variables with the specific criteria of the respondents such as the entrepreneurs who lived and had a business in Surabaya, so the scope of the research is focused on the Surabaya area only. Thus, such was the case, for the next researchers can measure the entrepreneur's financial knowledge with different variables as well as can have the other criteria of the respondents that live and have business outside Surabaya to capture the new phenomena in the different area of business.

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