An Evaluation of Financial Literacy of Micro and Small Enterprise Owners in Iligan City: Knowledge and Skills

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Abstract: The primary purpose of the study is to evaluate the financial literacy of Micro and Small Enterprise owners in Iligan City which focuses on financial knowledge and skills. Also, this study aims to identify the factors that could affect the quality and level of financial knowledge, skills and financial literacy as a whole. A total of 100 respondents with heterogeneous types of business were asked to answer 38 questions that were divided into three parts. Results showed that college education is the only significant factor and is positively related to financial knowledge while years in operation negatively affect the financial skills of the entrepreneurs. Moreover, this research showed that college education increases the likelihood of having a higher level of financial literacy relative to high school education. Based on the mean percentage ratings of financial knowledge, this study found out that most of the owners of these enterprises have low levels of financial knowledge in taxation, time value of money, financial institutions and investment securities. Also, the financial skills of the respondents displayed low mean percentage ratings in savings and record keeping yet planning and budgeting skills posted a fair mean percentage rating. Thus, results showed that in general, these entrepreneurs have low levels of total financial literacy based on the measurements used. Furthermore, the correlation between financial knowledge and skills is positive yet very low. The findings have practical relevance to MSMEs and policy makers to be able to determine the interventions necessary to help the MSME sector. It is recommended that future studies be made to substantiate the results of this study considering other municipalities and cities in the Philippines.

Key Words: Financial literacy; MSMEs; Iligan

1. INTRODUCTION

Studies on financial literacy have grown in importance in the recent years. Based on the search results using EBSCOhost Online Research Databases, more than 2,600 Academic Journals were published with financial literacy as keywords from January 2009 until December 2014. This goes to show that many academic researchers saw the importance of financial literacy to the security of the financial sector especially after the United States of America's (U.S.A) financial meltdown. According to Kell (2014), "financial literacy has gained prominence since the global financial crisis as an important complement to financial market regulation, consumer protection and financial inclusion policies" (p. 685). As earlier contended by Greenspan (2005), the financial world today is much more complex than it was before. Thus, it is a must to gain more comprehensive knowledge on a range of products and services offered by financial institutions including the impact of interests and the consequences of mismanaging credit accounts. According to Remund (2010), the operational definition of financial literacy is "having the knowledge, skills and confidence to make responsible financial decisions" (p. 278). This means that financial knowledge alone is not enough to become financially literate, but one needs to have financial skills and confidence which could translate to responsible decision making. Financial literacy is indeed essential as argued by Klapper, Lusardi

and Panos (2013). Their study revealed that individuals with higher financial literacy are significantly less likely to experience an adverse income shock and have greater unspent income leading to higher spending capacity. Taft, Hosein, Mehrizi and Roshan (2013) also claimed that "Higher financial literacy leads to greater financial well-being and less financial concerns. Finally, financial wellbeing leads to less financial concern" (p. 63).

Another global topic that has also grown at an exponential pace in the recent decade is on the significance of Micro, Small and Medium Enterprises (MSMEs) to the growth of economy and employment generation. According to the Senate Economic Planning Office or SEPO (2012), a Philippine enterprise is defined as Micro Enterprise if its asset size does not exceed PhP 3,000,000.00 and its employment size does not exceed nine employees. A Small Enterprise has an asset base of more than PhP 3, 000,000.00 but not exceeding PhP 15, 000,000.00 and its employment size is within 10-99 employees. An enterprise is classified as Medium if its assets size is above PhP 15,000,000.00 but not exceeding PhP 100,000,000.00 with an employment size of 100-199 employees. Department of Trade and Industry or DTI (2014) claimed that there are 944,897 businesses operating in the Philippines as of 2012 and MSMEs account for 940,886 or 99.58%. Out of this number, micro enterprises encompassed 89.78% of the total

number of MSMEs while small and medium accounted for 9.78% and 0.44% respectively. Furthermore, 47.0% or 2,316,664 jobs were generated by micro enterprises; 2,061,090 or 41.8% by small enterprises; and 553,097 or 11.2% by medium enterprises (DTI, 2014). Collectively, MSMEs generated 64.97% of the total jobs in 2012. These data prove the importance of MSMEs to the country's economic progress. Thus, the degree of financial literacy of the owners is vital in the operation of these enterprises. According to Dahmen and Rodriguez (2014), "small business is the backbone of the U.S. economy; when the financial literacy skills of entrepreneurs fall short of those needed to operate a successful business, it is more than the individual business at risk" (p. i). Hence, failure to effectively and efficiently manage MSMEs due to inadequate financial literacy of key people would not only harm the individual businesses but could also negatively transcend to the aggregate economy.

Based on a study made by Alhenawi and Elkhal (2013), survey responses from US households presented a positive yet low correlation between financial knowledge and financial planning. The results of the study made by Alhenawi and Elkhal (2013) showed that surveyed households are financially knowledgeable but displayed low financing skills. Dahmen and Rodriguez (2014) also contended that those owners who do not regularly review their financial statements nor perform financial analysis were experiencing financial difficulties. These authors argued that the reason for not reviewing or performing financial analysis was because of the "lack of understanding of what to look at and how to look at it – in other words, inadequate FL (financial literacy) and QL (quantitative literacy) in relation to business management" (p. 8). In addition, Kehiaian and Williams (2012) studied the financial literacy and characteristics of Chapter 13 debtors. They found a positive association between financial literacy and financial education, years of work experience and level of personal income. Gender is also said to affect the level of financial literacy based on the studies of Ford and Kent (2009), Fornero and Monticone (2011) and Sarigül (2014). The findings of these authors revealed that females compared to males have lower level of financial literacy. Also, Lusardi (2012) found out that age and gender caused a difference in the level of financial literacy. Lusardi (2012) contended that older adults (50 years old and above) and that women, relative to men, tend to be less financially literate as most of them would answer "don't know" when asked about inflation, risk diversification and interest rates. A recent study by Moon, Ohk and Choi (2014) support the findings of Lusardi (2012) that there exist distinct gender differences whereby men are more financial literate than women. Moon et al. (2014) reasoned that Chinese female students have fewer opportunities for financial education and financial transactions making them less financial literate than men. Luksander, Béres, Huzdik, and Németh (2014) also revealed that in both theoretical and practical financial knowledge, "males, older people, those who pursue economic studies or who are attending these kinds of courses at university know more about financial matters" (p. 220). Nonetheless, Fonseca, Mullen, Zamarro, Zissimopoulos (2012) tried to explain the gender gap in financial literacy. These authors reasoned that women tend to be less financially literate than men

because "men specialize in making household financial decisions thereby acquiring financial knowledge and women specialize in other household functions" (p.105). These authors further argued that their results showed that the gender gap is eliminated once women and men have similar education and are carrying the same number of responsibilities. These authors were trying to argue that gender alone is not a direct variable affecting financial literacy but can be mediated or moderated by the variables pertaining to level of education and the roles they take in the financial decision making. On one hand, results of the study of Monticone (2010) indicated that "wealth has a positive but small effect on the degree of financial knowledge" (p. 403). Bhushan and Medury (2013) also found out that financial literacy level is not only affected by gender and education but also associated to income, nature of employment and place of work. Nonetheless, Bhushan and Medury (2013) found out that financial literacy is not related to age and geographic region. In the study of Akben-Selcuk and Altiok-Yilmaz (2014), their results showed that formal finance education in college was significantly associated with higher financial literacy scores. Literatures suggest that lower level of financial literacy is associated with lower level of education (Almenberg and Säve-Söderbergh , 2011; Bucher-Koenen and Lusardi , 2011; Lusardi and Mitchell, 2011). In the Philippine context, Sucuahi (2013) found out that educational attainment showed a positive and significant influence on financial literacy yet gender cannot predict the financial literacy level among micro entrepreneurs in Davao City.

This study aims to investigate the determinants of financial knowledge, skills and aggregate financial literacy of the owners MSMEs in Iligan City. It should be noted that this study will employ the operational definition of Remund (2010) that is why it focuses on both financial knowledge and skills. Also, this study intends to assess the level of aggregate financial literacy of MSME owners so that proper interventions might be provided to this growing business sector. It is proposed that there is no significant relationship between higher education, higher business income and more years of operation with respect to financial knowledge, skills and aggregate financial literacy. This study also assumes that women relative to men are less financially literate while older individuals are less financially literate than younger individuals. Furthermore, this research will investigate whether a higher education increases the likelihood of having a higher level of aggregate financial literacy. Finally, this study also presumes a weak correlation between financial knowledge and financial skills.
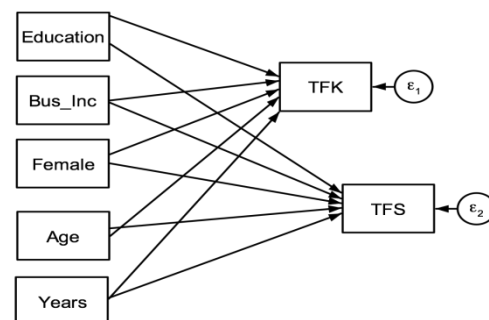
FRAMEWORK

Figure 1. Proposed Conceptual Framework

Translating the conceptual framework to equations would result to:

Equation 1:
$$TFK = \alpha + \beta_1 X_1 + \beta_2 X_2 - \beta_3 X_3 - \beta_4 X_4 + \beta_5 X_5 + \varepsilon_t$$

Equation 2:
$$TFS = \alpha + \beta_1 X_1 + \beta_2 X_2 - \beta_3 X_3 - \beta_4 X_4 + \beta_5 X_5 + \varepsilon_t$$

Where:
TFK = The sum of the scores of financial knowledge questions
TFS = The sum of the scores of financial skills questions
X_1 = Educational attainment
X_2 = Annual Business Income
X_3 = Female
X_4 = Age
X_5 = Years (in operation)
β_n = Coefficeint of X_n

2. METHODOLOGY

A total of 100 Micro and Small Enterprise owners in Iligan City participated in this study with heterogeneous types of businesses (i.e., merchandising, manufacturing and service) of which 59 respondents were women and 41 were men. This study uses a questionnaire with multiple choice questions designed to gauge financial knowledge. In addition, there were also questions intended to assess the financial skills of the owners by answering either "yes", "no" or "I don't know". The participants were asked to answer 38 questions that were divided into three parts. Part I includes seven questions on financial and demographic data. Part II of the questionnaire contains 16 multiple choice questions about financial knowledge (four questions for each subtopic on taxation, time value of money, financial institutions, and investment securities). Lastly, Part III includes 15 questions about financial skills (five questions per subtopic on planning/budgeting, savings and record keeping) using a scale of yes, no and I don't know. The questions included in the instrument were inspired by Remund's (2010) definition of financial literacy that primarily highlights the significance of having both financial knowledge and skills. Most of the questions were aggregately lifted from different studies; thus, the questionnaire has to be tested. Part II and Part III questions (questions 1-31) were collectively tested using Cronbach Alpha and results showed a high scale reliability coefficient of 0.8951 which means that the questions pertaining to financial literacy as a group is reliable and internally consistent. Items 1-31 were also tested for any possibility of correlation higher than 0.90 and results showed that these items are below the 0.90 rule of thumb thus all questions were retained and no changes were made. The variables *Education, Business Income, Female, Age and Years* were tested using the Shapiro-Wilk test to verify if these variables adhere to the assumption of normality yet results showed that *Years and Age* violated the assumption of normality. However, *Years and Age* were kept at its identity since the statistical tests showed no best transformation possible for the non-normal variables.

Following how Alhenawi and Elkhal (2013) evaluated the respondents' answers, this study will also employ a strict grading system for questions on financial

knowledge. A correct answer gets a value of one and zero if otherwise. To make the scoring of the financial skills questions relatively comparable to the scoring of the financial knowledge questions, the researcher used a rating of one if the answer is a "yes", zero if "no" and negative one if the answer is "I don't know". The scoring is based on the premise that a "no" answer is a much better answer than "I don't know" because it is possible that they have the knowledge but do not necessarily practice it as compared to not practicing it because they do not know anything about it. The sum of the scores for each subtopic is then divided by the highest possible score for that subtopic to get the respective percentages. For example, if the respondent scored three correct answers out of four questions for a subtopic, then his/her rating is 75%. This method is used so that the researcher can evaluate the level of the respondents' financial knowledge and skills. Consistent with the paper of Alhenawi and Elkhal (2013), ratings below 60% is considered to be low; fair (medium) when it falls within the range of 60-80%; and high when the rating is over 80%. In assessing what are the factors affecting the financial knowledge and skills of the respondents, the two linear equations will be utilized as shown in the previous pages.

Equation 1 was tested for any possibility of outliers, specification errors, problems of multicollinearity, and heteroskedasticity. Results showed using linktest that the hat-squared does not have a predictive value while the Ramsey RESET test showed that the equation has no omitted variables. The Maximum Variance-Inflation-Factor (VIF) is only 2.11. The minimum VIF is 1.17 and the VIF mean is 1.62. This means that based on the rule of thumb, the model has no problem of instability nor does it have an issue on multicollinearity. In addition, the equation was tested to check for any problems on heteroskedasticity using Cameron & Trivedi's decomposition of IM-test. Results showed that the p-value is equal to 0.6894, i.e., greater than 0.05, which means that heteroskedasticity was probably not a problem (or at least that if it was a problem, it wasn't a multiplicative function of the predicted values). The graph of residual-versus-fitted plot displayed no obvious outliers although the residuals seem to be leptokurtic using the kernel density estimate but it did not deviated so much from the normal curve. Equation 2 was also tested for regression diagnostics. The model passed the linktest, Ramsey-RESET test and the Cameron & Trivedi's decomposition of IM-test with a p-value of 0.2757 which means that heteroskedasticity is not a problem. The VIFs for all independent variables were below 2.11; hence, multicollinearity is also not a problem.

It is also intended in this study to get the total picture of aggregate financial literacy and not just per category of financial knowledge and skills. Thus, the raw scores for each respondent in both categories (knowledge and skills) were added and divided by 31 (since there were 31 questions) to obtain the percentage of their total scores. Again, consistent with the study of Alhenawi and Elkhal (2013) in classifying low, fair (medium), high; each respondent's total percentage was then appropriately labeled with low, fair (medium) and high. If the percentage of the total score falls in the bracket categorized as low, it will take the value of one; two if fair and three if high. The purpose of doing this is to see

how well that response can be predicted using ordered logistic regression. The proposed ordered logistic model is to only include the variables pertaining to gender and education to be consistent with the variables used by Sucuahi (2013). The proposed ordered logistic model passed the linktest and the prob>chi2 was lower than 0.05 which means that model has no specification errors and is considered to be satisfactory.

3. RESULTS AND DISCUSSION

Table 1 and 2 shows the descriptive statistics of the financial and demographic variables. Results showed that most of the respondents are women, college graduates and that most of their ages fell in range of the 30-44 years old. In addition, results showed that the annual business income of the respondents usually fell within the income brackets of PhP 30,000 - 69,999, PhP 70,000 – 139,999 and PhP140, 000.00 – P 249,999.00. Also, results showed that on the average, the respondent's business has been in operation for the last 9 ½ years and that the type of business is often into merchandising. Nonetheless, no enterprise was qualified as a Medium Enterprise since the range of values of the number of employees is only within 1 - 51 suggesting that the respondents belong to Micro and Small Enterprises.

Table 1. **Summary of Descriptive Statistics of Un-Coded Demographic Variables**

Demographic Variables	Mean	Range of Values	Number of Unique Values
Years in Operation	9.5099	0.02 - 68	31
Number of employees	5.28	1 - 51	16

Table 2. **Summary of Descriptive Statistics of Coded Demographic Variables**

Variables	Codes	Frequency	Cumulative Frequency
Female (mean = 0.59)	Male =0	41	41
	Female =1	59	100
Educ. Attain-ment (mean = 1.95)	High School Graduate =1	15	15
	College Graduate =2	75	90
	Post graduate studies = 3	10	100
Age (mean = 1.98)	18 - 29 years old = 1	34	34
	30 – 44 years old = 2	41	75
	45 -59 years old = 3	18	93
	60 years old or more = 4	7	100
Annual business income (mean = 4.05)	<PhP 10,000 = 1	14	14
	PhP 10,000 – 29,999 = 2	11	25
	PhP 30,000 - P 69,999 = 3	17	42
	PhP 70,000 - P 139,999 =4	17	59
	PhP 140,000 - P 249,999 =5	18	77
	PhP 250,000 - P 499,999 =6	8	85
	PhP 500,000 – P 999,999 =7	8	93
	PhP 999,999 or more =8	7	100
Type of business (mean = 1.92)	Merchandising = 1	51	51
	Manufacturing = 2	6	57
	Service = 3	43	100

Table 3 shows the mean of the ratings (in percentage) of the (1) financial knowledge subtopics; (2) subtopics on skills; and (3) aggregate financial literacy. Based on the results, respondents on the average have low levels of financial knowledge on the topics of taxation, time value of money, financial institutions and investment securities. Based on the results of financial skills, respondents on the average possessed medium level of financial skills on questions related to planning /budgeting. Also, respondents on the average possessed low level of financial skills when it comes to savings and recordkeeping. Thus, it can be inferred from the results that respondents, on the average, have low level of aggregate financial literacy with a percentage of only 47.52%. Results of this study conform to the claims of Bhushan and Medury (2013) that levels of financial literacy are very low not only in India but even in the rest of the world.

Table 4 presented the regression results of financial knowledge. Only the variable *Education_2* (college graduate) relative to *Education_1* (high school graduate) was found to be statistically significant at the 95% confidence level. All other independent variables turned out to be statistically insignificant in relation to the financial knowledge of micro and small entrepreneurs in Iligan City. Meanwhile, table 5 displayed the regression results with respect to financial skills. Only

the variable *years in operation* was found to be statistically significant yet negatively correlated.

Table 3. **Mean of the Ratings (in Percentage) of the (1) Financial Knowledge, (2) Financial Skills (3) Aggregate Financial Literacy**			
	Levels of Financial Knowledge and Skills		
	Low <60%	Medium 60-80%	High >80%
Financial Knowledge			
Taxation	38.00%		
Time Value of Money	48.75%		
Financial Institutions	54.25%		
Investment Securities	51.75%		
Average of financial knowledge	48.19%		
Skills			
Planning and Budgeting		63.6%	
Savings	50.2%		
Record Keeping	26.6%		
Average of financial skills	46.8%		
Financial Literacy (both knowledge & skills)	47.52%		

Table 4. **Regression Results of Financial Knowledge**		
Total Score of Financial Knowledge	Coefficient	P>|t|
_IEduc_2	1.7765	0.048*
_IEduc_3	1.1767	0.356
_Ibus_inc_2	0.3599	0.771
_Ibus_inc_3	-0.8806	0.409
_Ibus_inc_4	-0.7803	0.471
_Ibus_inc_5	-0.4242	0.698
_Ibus_inc_6	-.8139	0.539

_Ibus_inc_7	-1.8047	0.185
_Ibus_inc_8	1.5796	0.266
Female	-0.6545	0.305
Years	0.0119	0.664
_IAge_2	0.2894	0.680
_IAge_3	0.0719	0.938
_IAge_4	-1.474	0.273
_cons	6.923	0.000
significant at 95% confidence level		

Table 5. **Regression Results of Financial Skills**		
Total Score of Financial Skills	Coefficient	P>|t|
_IEduc_2	2.5624	0.338
_IEduc_3	-1.1981	0.754
_Ibus_inc_2	3.1296	0.400
_Ibus_inc_3	-1.4285	0.656
_Ibus_inc_4	2.4500	0.451
_Ibus_inc_5	1.8037	0.584
_Ibus_inc_6	4.0396	0.312
_Ibus_inc_7	-2.7406	0.502
_Ibus_inc_8	1.8191	0.669
Female	-0.4225	0.825
Years	-0.1706	0.040*
_IAge_2	0.9483	0.653
_IAge_3	1.7392	0.531
_IAge_4	1.1976	0.766
_cons	5.2299	0.152
significant at 95% confidence level		

The regression results were consistent with the results of Altintas (2011) that there is a positive relation between educational attainment and financial knowledge. On one hand, the regression results do not provide support to Monticone (2010) and Dahmen and Rodriguez (2014) between the association of financial wealth/strength and financial literacy since the annual business income was not found to be statistically significant. The variable age in this study follows same direction of Lusuardi (2012) where older adults tend to have lower financial literacy and that younger adults tend to have higher level of financial literacy, only that, it is statistically insignificant in this study. Thus, the variable

age still could not predict financial literacy. Consequently, the results do not provide strong and significant support to the study made by Lusardi (2012) between the association of age and the level of financial literacy.

The findings between the negative correlation between years in operation and financial skills can be argued that there could be a gap that was left unexplored on why it deviated from the usual presumption. Normally, when you have more years in operation you also have more experience running the business which could lead to higher financial skills just like the findings of Kehiaian and Williams (2012). One possible explanation on the deviation of the presumed relationship between years in operation and financial skills is on the aspect whether the respondent was the one who managed the business from its existence thereby increasing the likelihood of higher financial literacy or was it a "passed-on" family business thus the years in operation posed a negative relationship to financial skills. This aspect of the research is suggested to be explored in further studies.

Table 6 shows the results that a college graduate relative to a high school graduate increases the expected ordered log odds by 1.8887 as you move to the next higher level of financial literacy. Simply stated, having a college degree relative to being a high school graduate increases the likelihood of having a higher level of financial literacy. Tables 4 to 6 consistently showed that the variable *Female* has no significant relationship to financial knowledge, financial skills and to the level of aggregate financial literacy. Fonseca, et al. (2012) reasoned that the gender gap is eliminated once women and men have similar education and are carrying the same number of responsibilities. Hence, it is possible that the gender gap in this study is also eliminated given that both men and women in the Philippines have access to education. Results of this study also conform to the findings of other authors that there is no relationship between gender and financial literacy (Wagland and Taylor, 2009; Jorgensen and Savla, 2010; Altintas, 2011 and Sucuahi, 2013).

Table 6. **Results of the Ordered logistic regression**			
Iteration 0: log likelihood = -92.782699 Iteration 1: log likelihood = -88.684748 Iteration 2: log likelihood = -88.601438 Iteration 3: log likelihood = -88.601123 Iteration 4: log likelihood = -88.601123			
Log likelihood = -88.601 Number of observation = 100 LR Chi^2(3) = 8.36 Prob > Chi^2 = 0.0391 Pseudo R^2 = 0.0451			
Level of Percentage of Total Score of Financial Literacy	Coefficient	Std. Error	P> |z|
Female	-0.0836	0.4089	0.838
Education			

2	1.8887	0.7946	0.017 *
3	1.3451	0.9790	0.169
/cut1	1.8363	0.8138	
/cut2	3.7224	0.8659	
significant at 95% confidence level			

Table 7. **Pairwise Correlation of Financial Knowledge and Financial Skills**		
	Total Financial Knowledge	Total Financial Skills
Total Financial Knowledge	1.0000	
Total Financial Skills	0.2218*	1.0000
* *significant at 95% confidence level*		

Findings shown in table 7 lend support to the study made by Alhenawi and Elkhal (2013) that survey responses from US households presented a positive yet low correlation between financial knowledge and financial planning/skills.

4. CONCLUSIONS

The study was able to evaluate the level of financial knowledge and skills of micro and small entrepreneurs in Iligan City. It was found out that most of the owners of these enterprises have low levels of financial knowledge and skills thus they also have low levels of financial literacy. This study was also able to find a positive and significant relationship between college education and financial knowledge while years in operation posed a negative relationship to financial skills. Also, a college degree relative to being a high school graduate increases the likelihood of having a higher level of financial literacy. The correlation between financial knowledge with financial skills is positive yet relatively low. The findings of this study have practical relevance to MSMEs and policy makers to be able to determine what are the interventions necessary to help the sector that contributes much to the economy's growth and employment generation. It is recommended that future studies be made to validate the results of this study considering other municipalities and cities in the Philippines. It is also recommended that future studies will be conducted to find out the reasons for the possible gap(s) why the variable *years in operation* is negatively related to financial skills. Moreover, it is suggested that a research be made to find out why there is no gender gap in relation to financial literacy in the Philippine context. It also encouraged that future studies be conducted why some variables were not found significant nor conform to the results of the other authors.

5. ACKNOWLEDGMENTS

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