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Financial Literacy of SME Managers in Developing Economy: A Case of Tanzania

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Abstract—. Developing economies particularly in Africa suffer from many financial system impediments. The general issue has a permeable impact on the way SMEs managers act on the role of firm financial management, therefore having well placed financial literacy level becomes an issue at stake. In this study of financial literacy for SMEs managers based in Tanzania, we use descriptive statistics, ANOVA and logistic regression to analyze the level of financial knowledge and behavior in different constructs. We discover the medium level of financial literacy and the differences between the levels of financial literacy of various groups shows the importance of financial education provision and enablement of access to financial education and financial products for firm managers. The study calls for integrated efforts by the government, regional and multilateral organizations, funders and individuals to curb the situation.

Index Terms— Developing Economy, Financial Behavior, Financial Knowledge Financial Literacy,

1 Introduction

The study of financial literacy makes a meaningful inference when studied in context particular focus people. SMEs managers/owners in developing economies offer us a cluster of interest as they are open to various avenues of experiential learning as they manage their firm. In developing economies issues like low wages, long working hours, uncertain income flow, women disadvantaged labor market, and the low employment capacity of public and private sector has forced many individual to form their own businesses [1]. These SMEs has become an important pillar of economies in developing economies, its contribution cannot be underrated [2],[3],[4]. Therefore having managers who are well placed to make appropriate financial management becomes an inevitable issue. There is ample evidence of positive relationship of SMEs managers' financial literacy and performance of the firm [5],[6],[7],[8]. Therefore understanding of basic financial concepts, having a good financial attitude and behavior, are profound amours to equip firm managers in making decisions related to sound financial management. SMEs managers' who are financially literate have the ability to make informed financial choices regarding saving, investing, borrowing, moreover, financial literacy is especially important in this era where increasingly complex financial products are easily available to a wide range of the population.

Up to this moment there is a very limited evidence financial literacy studies in African continent [9]. This study therefore has been undertaken to explore the level of financial literacy of SMEs managers in developing economies, specifically in Tanzania setting whereby there is a dearth of financial literacy studies focusing on a particular cadre.

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2 Literature

2.1 Definition of Financial Literacy and Related Issues

The US financial literacy and education commission stipulates that 'financial literacy is the ability to make informed judgments and take effective actions regarding the current and future use of money[10]. [11] explicate that the basic definition of financial literacy stems on a person's base on competency money management. Based on their review they discovered that the conceptual definition of financial literacy falls into the following categories; knowledge of financial concepts, ability to communicate the financial concepts, aptitude in managing personal finances, skills in managing appropriate financial decisions and confidence in planning effectively for future financial needs. The Financial Service Authority [12] also stipulate that, "for a person to acquire financial literacy need to develop numeracy and IT skills in the context of personal finance, understanding the nature and use of money it its various forms including credit and debts, learn how to access, interpret and evaluate financial information, be knowledgeable about the consequences of financial decisions, consumer rights and responsibilities and risk management. [13] Defines financial literacy as an individual's ability to obtain, understand and evaluate the relevant information necessary to make decisions with awareness of the likely financial consequences.

2.2 SME Financial Literacy

A financial literate SME owner or manager knows what are the most suitable financing and financial management options for business at various growth stages; knows where to obtain the most suitable products and services; and is familiar with the legal and regulatory framework, rights and recourse[14]. As consumer financial literacy stem its focus on individual ability and confidence to manage personal financial decision SME financial literacy focus on an individual's ability to translate the concepts into business endeavor.

Financial literacy in the new business reality is defined as the capability to adequately oversee financial resources over the lifecycle and effectively connect with financial products and

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services.[15]. The ability of a small business owner/managers to harvest information from financial statement has a big role to play in business success, because it helps them to detect symptoms of failure, and overall health status of the venture [16]

2.3 SME Financial Education

Recognizing the importance of SMEs in the economy various avenues of obtaining financial education has arisen and this may account from; formal schools, funders, various regional and global programs , NGOs, and Governmental programs. SME financial education emphases services related to financial management and accounting such as the development of income forecasts, financial statements, book keeping and accounting [14]. Therefore the issue of ability of the manager to transfer their financial understanding into their businesses is at stake.

2.4 Importance of Financial Literacy

Clearly the importance of financial literacy to individuals and businesses is laid down in an attempt to define it. A financially literate person is able to devise budget appropriately to meet expenditures, able to identify financial products or services that meet his/her needs, can independently obtain and assess any financial advice and be more likely curb the impact of impact of abusive exploitative practices and scams [17]. In overall view scholars consent on the correlation of financial literacy and enhanced financial behavior.[18]. Financial literacy has been known to have positive impact on planning[19],[20], has a positive correlation with stock market participation [21] and [22] also states that endogenizing financial literacy has important implications for welfare as well as policy for financial knowledge for the wider population.

3.0 Methodology

Data were collected using an administered survey questionnaire. SMEs in the regions of Morogoro and Dar es Salaam in Tanzania were involved in this survey. The researcher used convenient sampling considering the limiting factors of easy accessibility, geographical proximity, given time availability and willingness of the SME managers to participate in our study [23]. This study uses a comprehensive questionnaire designed to cover the importance aspects of financial literacy, individual and firm demographic information, financial knowledge, financial attitude and financial behavior. The choice of question was carefully balanced to harness the relevant information from managers' individual and firm level. The survey uses a mix of multiple choice and likert scale questions. The validity and clarity of the survey was examined by expert in financial literacy. And the quality and reliability of the survey were further assessed using the Chronbach's alpha.
Financial literacy of SMEs managers in various groups has to be further analyzed using analysis of variance (ANOVA), and then further examined using a logistic regression model. The median percentage score was used as a cut-off point to group the scores into two sub categories, those with score below the median were termed to relative low level of financial literacy and those with percentage scores above the median were termed to have relatively high financial literacy. The subdivision was used in further analysis.
Gender, level of education and location of the business are the independent variables used in the logistic regression model, the other firm demographic variables could make a better theoretical connectivity with dependent variable.
The logistic model takes this form:

$$\text{Log}[p/(1\text{-}p)] = B_0 + B_1(\text{Gender1}) + B_2(\text{Gender2}) + B_3(\text{Edu1}) + B_4(\text{Edu2}) + B_5(\text{Edu3}) + B_6(\text{Edu4}) + B_7(\text{LocF1}) + B_8(\text{LocF2}) + e_1 \quad (1)$$

Where by:
P= the probability of manager possessing high financial literacy
Gender1=1 if a respondent is female, 0 otherwise
Gender 2=1 if a respondent is male, 0 otherwise
Edu1=1 if a respondent has completed primary school, 0 otherwise
Edu2=1 if a respondent has completed secondary school. 0 otherwise
Edu3= 1 if respondent has completed college education, 0 otherwise
Edu4=1 if respondent has completed university education
LocF1= 1 if the firm located in rural area, 0 otherwise
LocF2= 1 if a firm is located in urban area, 0 otherwise
e_1= error term

4.0 Analysis and Results

Table 1 display the demographic information of the managers and the firms they manage. The table shows a depiction of fair gender imbalance on the firm owner/managers (52.9% and 47.1%) ad difference of 5.8% male and female respectively. Most of these managers studied above the primary level education and only 3.5% of them were primary school certificate holder, the rest have gone through secondary schools, college and university education. Whole sale and retail firms with 32.2% are the most featured type of businesses in this studies, complimented with agricultural, constructions, food and accommodation, manufacturing and other businesses involved. The percentage number of firms involved in the study situated in urban area exceed those in rural areas by 8%. The table also shows a high percentage of firms at the age of 1-10 years showing that most of these firms were in their early growth stages and fair number of startups making 12.6%. According to the definition of SMEs in Tanzania SME guide [24]very few firms (6.1) interviewed were medium, the rest are micro (46.5%) and small (47.4%) enterprises.
The responses from each participants were used to calculate the weighted mean percentage scores for each question, section and the complete survey and then grouped into low level (below 60%), medium level (60-80%) and high level (80% and above) [25],[26].

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TABLE 1.
SUMMARY OF RESPONDENTS' DEMOGRAPHICS

		Number	Percentage
Gender	Male	164	52.9%
	female	146	47.1%
Education level	Primary	11	3.5%
	Secondary	87	28.1%
	College	134	43.2%
	University	78	25.2%
Business type	Wholesale and Retail	101	32.2%
	Agricultural	56	18%
	Construction	31	10.0%
	Food and Accommodation	31	10.0%
	Manufacturing	30	9.7%
	Others	61	19.1%
Location	Rural	127	41%
	Urban	183	59%
Firm Age	Below 1 Year	39	12.6%
	1-5 Years	132	42.6%
	6-10 Years	100	32.3%
	More than 10 Years	39	12.6%
Number of employees	1-5 Micro	144	46.5%
	6-49 Small	147	47.4%
	50-99 Medium	19	6.1%

4.1 Financial Literacy Level

Overall Financial Knowledge Results of the Survey

Table 2 presents the overall financial knowledge of firm managers in developing economies. The mean percentage of correct scores is categorized in three groups: above 80 (high level), 60-80 (medium level), and below 60 (low level). The overall mean percentage of correct scores is 64.25%, indicating a medium level of financial knowledge by the managers. The median percentage of correct score is 60%. The reliability of the questions in the survey is 0.69 Cronbach alpha, enough to justify the reliability of the questionnaire, hence increasing its validity. The findings suggest that firm manager's level of financial knowledge is medium. Although still almost half of the questions percentage scores were still below the median. Therefore the knowledge of finance still not adequate.

The minimal level of financial literacy may be attributed from lack of financial education which is a result of limited access to education, the informality of the labor market, high poverty rate and low level access to financial products [9]

TABLE 2
MEAN PERCENTAGE OF CORRECT RESPONSES TO SURVEY QUESTION

		Level of financial Knowledge		
		Low (below60%)	Medium (60-80%)	High (Above 80%)
Financial Knowledge	Time value of money		61.9	
	Savings account	58.1		
	Compound interest			86.8
	Inflation		75.2	
	Cash balance	53.9		
	Earnings before Interest and tax	58.1		
	Balance sheet	51		
	Income statement		69	
Mean financial knowledge level			64.25	
Median financial knowledge level			60	

The relationship between managers' financial knowledge and managers' gender, education level and location was also examined. Table 3 shows the results, where by ANOVA was used to examine whether managers from various cadre has different level of financial knowledge.

The results shows a relatively general high financial knowledge of men managers than female managers. Averagely men managers answered 65.6% correctly, while their female counterparts scored 63% average correct response, even though the difference is not so big. The ANOVA results for the entire sample is significant at 0.05 level.

TABLE 3
MEAN PERCENTAGE OF CORRECT SCORES TO EACH QUESTION BY CHARACTERISTICS OF SAMPLE AND RESULTS OF ANOVA

		TVM	Saving Accounts	Compound interest	Inflation	Cash balances	EBIT	BS	IS	Sample
Gender	Male	63	58	88	80	51	61	53	71	65.58
	Female	59	59	85	71	57	55	49	68	62.8
F statistic		4.831*	0.323	5.991*	30.682**	11.247**	9.469**	6.643**	2.954*	8.750*
Education level	Primary	36	50	84	73	36	49	45	67	55
	Secondary	57	57	87	75	51	60	51	71	63.63
	College	64	64	90	74	57	63	55	67	66.75
	University	68	67	100	76	55	64	55	82	70.88
F statistic		19.570**	16.611**	11.620**	0.45	7.372**	13.451**	7.537**	4.931*	4.941*
Location	Urban	63	60	87	77	56	56	52	71	65.23
	Rural	57	55	87	73	51	61	50	66	62.50
F statistic		10.963**	7.644*	0.521	4.283*	6.243**	5.75*	1.59	8.383**	16.440**

**, ** significant at 0.05 and 0.01 respectively*
TVM=time value of money, EBIT=earnings before interest and tax, BS=balance sheet, IS=income statement

Also our findings suggest that there are differences of managers' educational background impact on their financial knowledge. Generally university level mean scores ranks higher means they are more knowledgeable than the managers with lower level of education. The college graduates are also shown to have more knowledge than secondary school graduates and the pattern follow on secondary school graduate having more knowledge than the primary school leaver.

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The results of ANOVA are significant except on the question of inflation.

On a question on whether a business being urban or rural area has an impact on financial knowledge level. The results display a relatively higher financial knowledge of managers with businesses in urban area than those in rural area. The results are statistically significant in all questions except on the question of compound interest and balance sheet. The reason for the low level for relatively high level of financial literacy of managers in urban area can be attributed by the proximities towards various information, technology and financial services.

Further analysis we use logistic regression model, where we classify the respondents into two subgroups using the sample median percentage scores [25]. In this case we consider managers with scores higher than the median to relatively high level of financial literacy and those who are below the median percentage scores considered to have relatively low level of financial literacy. These dichotomous groups are then further used in the logistic regression.

TABLE 4

LOGISTIC REGRESSION ANALYSIS OF THE IMPACT OF PARTICIPANTS' EDUCATION AND DEMOGRAPHIC CHARACTERISTICS ON THEIR FINANCIAL KNOWLEDGE

	TVM	Saving A/C	Compound Interest	Inflation	Cash Bal.	EBIT	BS	IS	Sample
Gender1	-.218*	.137*	-.335*	-.525*	.241*	-.144*	-.142*	-.128	-.200*
Gender2									
Edu1	1.323*	-.613*	-1.987	.144*	.717*	-.577	-.014	-.819	-.261*
Edu2	.183*	-.769*	.318**	.089	.099	-.538**	-.207*	.001	-.134*
Edu3	.515**	-.312	0.607*	-.002	-.121*	-.410	-.393	-.184*	-.254*
locF1	.245*	.38*	.023	.176**	.165	-.140*	.103*	.231*	.363
LocF2									
Constant	-1.275**	1.432*	.345*	1.099*	-.763	1.664*	.439*	1.635*	.863
-2log likelihood	814.140	830.088	478.708	686.512	848.218	833.86	853.584	762.002	817.922
Overall Chi-square	30.572**	26.428**	23.416**	17.156*	15.128*	18.884*	11.368*	10.728*	11.742*
Correct classifications	61%	58.1%	86.8%	75.2%	54.5%	58.7%	55.8%	69%	61.6%

**, ** significant at 0.05 and 0.01 respectively*
TVM=time value of money, A/C=account, EBIT-earnings before interest and tax, BS=balance sheet, IS=income statement

The logistic regression results are as shown in table 4. The Chi-square results indicate sufficient explanatory power of the model coupled with examination of ability of the model to correctly classify observations. The coefficient of gender for the entire sample is negative and significant at 0.05 level. Consistent with ANOVA findings the results suggest that male managers' are more likely to be knowledgeable in financial literacy than their female managers' counterparts.

Also with few exceptions the results indicate that managers with primary school level possess the lowest financial knowledge as it is compared to other groups in secondary, college and university level. The coefficient in secondary school and colleges are positive and are statistically significant at the level of 0.05.

In terms of business location the logistics shows contrary to ANOVA results, that managers' in rural area are more likely to be knowledgeable than those in urban area with a positive coefficient but the sample result is not statistically significant.

The results on gender are consistent with the previous studies results, for instance [19],[21],[27],[29] all these studies confirms the presence of hypothetical high knowledge for male than the female colleagues.

Also [30],[32] confirm the likeliness of lower class leavers to possess low level of financial knowledge compared to the high class graduates is consistent with the findings of many studies, consistent with our findings.

TABLE 5

IMPACT OF PARTICIPANTS' FINANCIAL KNOWLEDGE ON SOME FINANCIAL ATTITUDES AND BEHAVIOR

1. Number and percentage of participants who consider how money managed affect future

	Never	Rarely	Sometimes	Often	Always	Total
Managers with low financial Knowledge	0	14	49	39	17	119
	0%	11.8%	41.2%	32.8%	14.3%	100%
Managers with high Financial Knowledge	1	4	75	83	28	191
	0.5%	2.4%	39.3%	43.5%	14.7%	100

Chi-square 14.632 significant at 0.01 level

2. Number and percentages of participants who consider keeping organized financial records as an important practice

	Never	Rarely	Sometimes	Often	Always	Total
Managers with low financial Knowledge	11	3	60	11	34	119
	9.2%	2.5%	50.4%	9.2%	28.6%	100%
Managers with high Financial Knowledge	6	17	26	41	101	191
	3.1%	8.9%	13.6%	21.5%	52.9%	100%

Chi-square 11.58 significant at 0.05 level

3. Number and percentage of participants who compare their financial objectives and performance

	Never	Rarely	Sometimes	Often	Always	Total
Managers with likelihood financial Knowledge	2	12	49	42	13	118
	1.7%	10.2%	41.5%	35.6%	11%	100%
Managers with high Financial Knowledge	4	15	52	94	26	191
	2.1%	7.9%	27.2%	49.2%	13.6%	100%

Chi-square 10.535 significant at 0.05 level

4. Number and percentages of managers who perform financial analysis

	Never	Rarely	Sometimes	Often	Always	Total
Managers with low financial Knowledge	12	44	41	19	3	119
	10.1%	37%	34.5%	16%	2.5%	100%
Managers with high Financial Knowledge	1	17	23	91	59	191
	0.5%	8.9%	12%	47.6%	30.9%	100%

Chi-square 10.832 significant at 0.05 level

5. Number and percentage of managers who consider re-investing cash balances

	Never	Rarely	Sometimes	Often	Always	Total
Managers with low financial Knowledge	11	71	30	7	0	119
	9.2%	59.7%	25.2%	5.9%	0%	100
Managers with high Financial Knowledge	3	23	95	17	53	191
	1.6%	12%	49.7%	8.9%	27.7%	100%

On this part we examine the managers' financial knowledge impact on some important financial attitudes and behaviors related to the firm financial management. As it was stated earlier our sample was split into two groups namely, those with low financial knowledge level and those with high financial knowledge level taking the median score as a cut-off point. With some missing values causes the sample to vary from 309 to 310.

Managers' responses on the managing money and how it affect future in part 1 of table 5, about 58.2% of participants from the group of high knowledge they often or always consider money management and its effect on individual and firm financial health, the rest of them responded otherwise. For the group with low financial knowledge 46.1% consider often and always managing money and its effect in future. The differences in responses between the groups is statistically significant at 0.01 level.

Also in part 2 of table 5, managers who often or always keep organized financial records from the group of high financial knowledge is 74.4% whilst it is 37.8% from the low financial knowledge group. The differences in the opinions between these groups is statistically significant at the level of 0.05.

The same picture and trends is exemplified in part 3, 4 and 5, where by the important behavior of firm financial management of comparing objectives and performance, performing financial analysis and considering re-investing the cash balances were compared between the two groups of managers who are considered to have low and high financial literacy. The general picture shows that the more knowledgeable group has more percentage of often or always participating into these firm financial management practices. In all these cases the results shows a statistical significant differences of financial knowledge between the groups.

5.0 Conclusion

Our survey of financial literacy for managers' of firm in Tanzania as one of the developing economy, the area specifically where there is dearth of personal and firm financial literacy draws an enlightening conclusion on managers' lack of financial literacy, the overall mean score of financial literacy is at moderate level, however most of the constructs mean of correct responses are below the 60, whereby the managers performed poorly on the financial statement question which is a financial report base for firm's internal and external evaluation.

Results also gives a glimpse of the importance of financial literacy in improving the financial attitudes and behavior of managers. This is proved by the presence of enhanced financial attitudes and behaviors for managers who were considered to have high level of financial literacy.

We therefore put forward that firm managers in the developing economy are not knowledgeable enough about financial matters, and this may attribute them to failure to make appropriate financial decisions for their firm. Decisions like financing, debt management, transactional logistics, cash management, preparing and keeping sound financial records and the like needs managers who are well equipped to carry up these duties effectively. The lack of appropriate financial literacy level for managers may be one of the factor that accelerate failure rate of SMEs in developing economies, may be one of the factor for poor performance of many SMEs in developing economies, ultimately considering the contribution its economic contribution in the countries, when they fail the entire economy is affected. Improved financial literacy hypothetically can enhance the efficiency of the financial market because of having well informed consumers about financial risks and opportunities.

A need to integrate the effort towards improving financial literacy level in developing economies. In a cadre like of firm managers, has ample avenues to acquire some experiential knowledge of finance, like when dealing with financing bodies (banks, microfinances, NGOs), supervisory government bodies, transactional based experience and formal short term and long term studies probably this might be the reason of the overall moderate mean score. All these need to come up with means devised on enhancing understanding of financial matters hence positively improving the financial attitudes and behavior.

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References

[1] Fields, G.S., Labor market analysis for developing countries. Labour Economics, 2011. 18: p. S16-S22.
[2] Vrgovic, P., et al., Open innovation for SMEs in developing countries–An intermediated communication network model for collaboration beyond obstacles. Innovation, 2012. 14(3): p. 290-302.
[3] Jasra, J.M., et al., Determinants of business success of small and medium enterprises. 2012.
[4] Aremu, M.A. and S.L. Adeyemi, Small and medium scale enterprises as a survival strategy for employment generation in Nigeria. Journal of sustainable development, 2011. 4(1): p. 200.
[5] Adomako S, D.A., Financial Literacy and firm Performance: the Moderating role of financial Capital availability and Resource Flexibility. International Journal of Management and Organizational studies, 2014. 3(4).
[6] Chepngetich, P., Effect of Financial Literacy and Performance SMEs. Evidence from Kenya. 2016.
[7] Kimani, P.M. and J. Ntoiti, Effects of Financial Literacy on Performance of Youth LedEnterprises: A Case of Euity Group Foundation Training Program in Kiambu County. International Journal of social Management and entrepreneurship, 2015. 2(1): p. 218-231.
[8] Waithaka J.M, N.A., Effects of Informal Finance on the Performance of Small and Medium Enterprises in Kiambu County. International Journal of Scientific and Research Publications, 2015. 5(11).
[9] Messy, F.-A. and C. Monticone, The status of financial education in Africa. 2012.
[10] Basu, S., Financial literacy and the life cycle. Washington, DC: Financial Planning Association, 2005.
[11] Remund, D.L., Financial literacy explicated: The case for a clearer definition in an increasingly complex economy. Journal of Consumer Affairs, 2010. 44(2): p. 276-295.
[12] FSA, Consumer education, A strategy for promoting public understandng of the financial system. 1999: London.
[13] Mason, C.L. and R. Wilson, Conceptualising financial literacy. 2000:

© Loughborough University.
[14] USAID, Development of Strategy options for SME financial Literacy, F.s. program, Editor. 2009.
[15] Eniola, A.A. and H. Entebang, SME Managers and Financial Literacy. Global Business Review, 2017: p. 0972150917692063.
[16] Dahmen, P. and E. Rodríguez, Financial literacy and the success of small businesses: An observation from a small business development center. Numeracy, 2014. 7(1): p. 3.
[17] Rugimbana, R. and E. Kojo Oseifuah, Financial literacy and youth entrepreneurship in South Africa. African journal of Economic and management studies, 2010. 1(2): p. 164-182.
[18] Hilgert, M.A., J.M. Hogarth, and S.G. Beverly, Household financial management: The connection between knowledge and behavior. Fed. Res. Bull., 2003. 89: p. 309.
[19] Lusardi, A. and O.S. Mitchell, Financial literacy and planning: Implications for retirement wellbeing. 2011, National Bureau of Economic Research.
[20] Van Rooij, M.C., A. Lusardi, and R.J. Alessie, Financial literacy and retirement planning in the Netherlands. Journal of Economic Psychology, 2011. 32(4): p. 593-608.
[21] Van Rooij, M., A. Lusardi, and R. Alessie, Financial literacy and stock market participation. Journal of Financial Economics, 2011. 101(2): p. 449-472.
[22] Lusardi, A. and O.S. Mitchell, The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 2014. 52(1): p. 5-44.
[23] Etikan, I., S.A. Musa, and R.S. Alkassim, Comparison of convenience sampling and purposive sampling. American Journal of Theoretical and Applied Statistics, 2016. 5(1): p. 1-4.
[24] Tanzania, U.r.o., Small and Medium Enterprises Dvelopment Policy, M.o.i.a. Trade, Editor. 2003: Tanzania.
[25] Chen, H. and R.P. Volpe, An analysis of personal financial literacy among college students. Financial services review, 1998. 7(2): p. 107-128.
[26] Robb, C.A., Financial knowledge and credit card behavior of college students. Journal of family and economic issues, 2011. 32(4): p. 690-698.
[27] Chen, H. and R.P. Volpe, Gender differences in personal financial literacy among college students. Financial services review, 2002. 11(3): p. 289.
[28] Wagland, S.P. and S. Taylor, When it comes to financial literacy, is gender really an issue? Australasian Accounting, Business and Finance Journal, 2009. 3(1): p. 3.
[29] Fonseca, R., et al., What explains the gender gap in financial literacy? The role of household decision making. Journal of Consumer Affairs, 2012. 46(1): p. 90-106.
[30] Lusardi, A. and O.S. Mitchell, Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. Journal of monetary Economics, 2007. 54(1): p. 205-224.
[31] Lusardi, A., O.S. Mitchell, and V. Curto, Financial literacy among the young. Journal of consumer affairs, 2010. 44(2): p. 358-380.
[32] Lusardi, A., Household saving behavior: The role of financial literacy, information, and financial education programs. 2008, National Bureau of Economic Research.