

FINANCIAL LITERACY OF COLLEGE STUDENTS: DETERMINANTS AND IMPLICATIONS

Oleh:

Amelina Apricia Sjam

Fakultas Ekonomi Jurusan Manajemen U.K Maranatha

Abstrak: Penelitian ini melakukan survei terhadap 150 orang mahasiswa untuk menilai literasi keuangan mereka; keterkaitan antara tingkat literasi dengan karakteristik mahasiswa; dan dampak literasi terhadap perilaku keuangannya. Hasil survei menunjukkan bahwa mahasiswa menjawab pertanyaan dengan benar rata-rata sebesar 49.32%. Pria, mahasiswa tingkat awal, tidak tinggal bersama orang tua, dan memiliki IPK kurang dari 2,50 memiliki tingkat literasi keuangan yang paling rendah. Mahasiswa dengan pengetahuan keuangan yang kurang memadai cenderung menunjukkan perilaku keuangan yang tidak tepat, terutama dalam mempersiapkan dana darurat. Dapat disimpulkan bahwa pengetahuan mahasiswa akan pengelolaan keuangan pribadi tidak memadai. Rendahnya tingkat literasi keuangan akan membatasi kemampuan mereka dalam membuat keputusan keuangan.

Kata-kata kunci: literasi keuangan, perilaku keuangan, mahasiswa.

BACKGROUND

Consumers must confront complicated financial decisions at a young age in today's demanding financial environment, and financial mistakes made early in life can be so costly. Young people often find themselves carrying large amounts of loans or credit card debt, and such early entanglement can hinder their ability to accumulate wealth. To aid younger consumers, it is critical for researchers to explore how financially knowledgeable young adults are. Understanding the factors that contribute to or detract from the acquisition of financial knowledge can help policymakers design effective interventions targeted at the young population.

The ability to manage personal finances has become increasingly important in today's world. People must plan for long-term investments for their retirement and children's education. They must also decide on short-term savings and borrowing for a vacation, a down payment for a house, a car loan, and other big-ticket items. Additionally, they must manage their own medical and life insurance needs.

Unfortunately, Indonesia's financial penetration was still below other ASEAN countries, though Indonesia has the greatest number of people in Southeast Asia. Financial literacy index in Indonesia was only 21.7 percent while penetration in the Philippines was above 30 percent and 60-70 percent in Malaysia. Low level of financial literacy in Indonesia is caused partly because of the imbalance between the rate of growth of the financial industry and public awareness. Low level of financial literacy can lead to poor access to financial institutions and will hamper prosperity (Prayogi, 2014). In addition to the survey addressed to adults, the FSA (Financial

Services Authority) also surveyed the level of financial literacy to youth, namely the high school student. FSA survey conducted showed that the level of financial literacy of students was only reach 28 percent.

Previous research has found that financial literacy can have important implications for financial behaviour. People with low financial literacy are more likely to have problems with debt (Lusardi and Tufano, as cited in Lusardi et al., 2010), less likely to participate in the stock market (van Rooij, Lusardi & Alessie, as cited in Lusardi et al., 2010), less likely to choose mutual funds with lower fees (Hastings and Tejeda-Ashton, as cited in Lusardi et al., 2010), less likely to accumulate wealth and manage wealth effectively (Hilgert, Hogarth & Beverly; Stango & Zinman, as cited in Lusardi et al., 2010) and less likely to plan for retirement (Lusardi & Mitchell, as cited in Lusardi et al., 2010). Financial literacy is an important component of sound financial decision making, and many young people wish they had more financial knowledge.

Understanding financial literacy among young people is thus of critical importance for policymakers in several areas; it can aid those who wish to devise effective financial education programs targeted at young people as well as those writing legislation to protect younger consumers. Therefore, the present study extends the literature in three important ways. First, it provides evidence of personal finance literacy among college students. Second, it examines why some college students are relatively more knowledgeable than others. The analysis may help us identify factors that determine the level of competency possessed by college students. The third purpose is to examine how a student's knowledge influences his/her behaviour on personal financial issues.

A REVIEW OF THE EVIDENCE RELATING TO FINANCIAL LITERACY

Financial literacy is positively associated with the way individuals manage their finances over time (Braunstein & Welch, as cited in Danes et al., 2013). For example, higher financial literacy is associated with less credit card debt, higher savings rates, and fewer personal bankruptcies (Bernheim, Garrett & Maki, as cited in Danes et al. 2013). Mandell (2006) defined financial literacy as is what people must know in order to make important financial decisions in their own best interest. However, this working definition appears to be somewhat inadequate since it has been applied to young people. Teenagers who are age 17 or 18 years old tend to not make many important financial decisions and, as a result, tend not to retain much of what they learn in formal courses about buying a house, investing in securities, purchasing insurance or saving for retirement.

This disconnect causes a lot of problems for well-meaning adults who want youngsters to be financially literate enough to avoid severe difficulties. They know that it is virtually impossible to reach people who have completed their mandatory school years with education that takes more than a few minutes to impart. Yet this does not stop them from hoping that personal finance classes will deliver financial literacy that is "sticky" enough to persevere to adulthood (Mandell, 2006).

Garman, Leech and Grable; Joo and Grable (Mandell, 2009a) have found that poor financial decisions can hurt productivity in the workplace. Volpe, Chen and Liu (Mandell, 2009a) surveyed corporate benefit administrators who identified basic personal finance as a critical area in which employee knowledge is deficient

and recommended educational programs that focus on improving knowledge of basic personal finance.

Lusardi and Mitchell (Mandell, 2009a) used the 2004 US Health and Retirement Study (HRS) to test basic financial knowledge of adults over the age of 50. They developed questions related to an understanding of interest compounding, the effects of inflation, and risk diversification and found that financial illiteracy is widespread and particularly severe among females, the elderly, and those without much education. These results were particularly surprising since most respondents over age 50 have had experience with bank accounts and credit cards, and have taken out at least one mortgage.

Studies by the Organization for Economic Co-operation and Development (OECD) and Lusardi and Mitchell (Mandell & Klein, 2009) reviewed international evidence on financial literacy and found that financial illiteracy is common in many developed countries such as Australia, Japan, and Korea, as well as developed countries in Europe. These findings are similar to those of Christelis, Jappelli, and Padula (Mandell & Klein, 2009) who found that most respondents in Europe score low on financial literacy scales.

Financial Literacy and Financial Behaviour

Financial literacy has been positively related to self-beneficial financial behaviour in some studies. For example, Hilgert, Hogarth and Beverly (Mandell, 2009a) formed a Financial Practices Index based upon self-benefiting behaviour in cash-flow management, credit management, saving and investment practices. When they compared the results of this index with scores on a financial literacy quiz, they found a positive relation between financial literacy scores and Financial Practices Index scores. Their results suggest that financial knowledge is related to self-beneficial financial practices.

Van Rooij, Lusardi and Alessie (Mandell, 2009a) found in a study of Dutch adults that those with low financial literacy are more likely than others to rely on friends and family for financial advice and are less likely to invest in stocks. Using the 2006 Jump\$art survey, Mandell (Mandell, 2009a) found that high school seniors who never bounced a check or who balanced their check book had substantially higher financial literacy scores than others with checking accounts.

Huddleston and Danes (Shih & Ke, 2014) concluded that personal finance could indeed be taught and, moreover, have a positive impact on financial behaviour. Consumers who are financially knowledgeable are more likely to behave in financially responsible ways (Hilgert et al.; Fox et al., as cited in Shih & Ke, 2014), are aware that cost-reduction is not saving behaviour (Mandell, as cited in Shih & Ke, 2014), and are more likely to budget, save and plan their finances (Perry & Morris; Perry, as cited in Shih & Ke, 2014). Research has confirmed that abundant financial literacy results in more effective financial decisions.

DATA AND METHODOLOGY

The results of the current study are based on a survey administered to a matched sample of college students in Faculty of Economics, Maranatha Christian University, Bandung. The survey was designed to examine the relationship between personal financial literacy and respondents' characteristics. Consequently, the

surveys reports extensive information on respondents' socio demographic and family characteristic. In order to gather the information, the survey used proportionate stratified random sampling in which the sample was segmented by department (Sekaran & Bougie, 2010).

Table 1. Total full-time college students was conducted in June, 2015

Academic Year	Department		Total
	Management	Accounting	
2011	344	371	715
2012	346	312	658
2013	418	355	773
2014	452	259	711
Total	1,560	1,297	2,857

The population was first divided into mutually exclusive groups, i.e. Management and Accounting Department. With the intention of getting minimum sample size, the overall sample size was calculated using Slovin formula ($e=0.10$) (Nababan & Sadalia, 2013).

$$n = \frac{N}{1 + Ne^2}$$

The sampled students ($n=97$) then drawn for each department proportionate to the number of students in each department. The minimum sample size in Management Department was 53 respondents while Accounting Department was 44 respondents. However, the survey collected questionnaires from 86 respondents in Management Department and 64 in Accounting Department ($n=150$).

This study uses a comprehensive questionnaire designed to cover major aspects of personal finance. The questions contained in the questionnaire were divided into four initial categories, i.e. basic personal finance, money management, saving and investing, and risk management. The questions concerning the importance of financial knowledge, a decision to seek higher education, knowledge about single and compound interest, and impact of inflation on certain group of people, are used as indicators of having basic personal finance. Meanwhile, the students were asked about influencing income factors, source of income, emergency fund, and budgeting to indicate their knowledge about money management. In order to imply students' understanding about saving and investing, this study used the questions such as short and long-term savings and investment strategies, financial institutions and their policy, and investment instruments. Finally, the questions such as the importance of insurance, the truth about insurance, and the greatest need of life insurance, were used as students' knowledge of risk management.

The questionnaire was adapted from the previous researches (Chen & Volpe, 1998; Mandell, 2008). The survey participants are asked to answer 36 questions including 23 multiple-choice questions of their knowledge on personal finance, seven questions on socio demographic data, and six questions of their behaviour. Since all students in the college survey were legally adults and most had

considerable experience with financial instruments, their financial behaviour could be measured (Mandell, 2008).

The responses from each participant are used to calculate the mean percentage of correct scores of each question and the entire survey. Consistent with the existing literature (Danes & Hira; Volpe, Chen, & Pavlicko, as cited in Chen & Volpe, 1998), the mean percentage of correct scores is grouped into (1) more than 80%, (2) 60% to 80%, and (3) below 60%. The first category represents a relatively high level of knowledge. The second category represents a medium level of knowledge. The third category represents a relatively low level of knowledge.

Several considerations guided the selection of the variables for the analysis. First, this study included standard demographic characteristic, i.e. gender, to see whether this was related to financial literacy. Second, this study also included respondent's academic discipline, years of study, and GPA (Grade Point Average). The study was interested in examining whether financial knowledge might be related to educational experiences during the college years. Third, this study also added variables measuring exposure to financial knowledge via family and peers. Much prior work has argued that individuals learn via interaction with others, in particular, family and friends (Lusardi et al., 2010). For instance, Mandell (2008) reported that financially literate high school students were disproportionately those whose parents had college degrees. This current research analysis therefore included parents' educational attainment.

Because this study was interested in the influences of family financial circumstances, it also examined the respondent's parent income. This variable was indicator of family wealth. In light of research by Hong, Kubik, and Stein (Lusardi et al., 2010) showing that churchgoers are more likely to invest in stocks, Lusardi et al. (2010) also looked at whether the respondent's parents attended church regularly as a proxy for social interactions with non-family members. This current study analysis improved upon previous work by using residence as a proxy for social interaction with others. Therefore, it allowed this research to assess whether the interaction with others influences financial knowledge, which in turn affects financial behaviour.

In order to assess the connection between financial literacy and financial behaviour, the sample is partitioned into two groups of students with relatively more knowledge and those with relatively less knowledge. The section mean percentage of correct answers is used to classify the sample. Students with section scores equal to or higher than 60% are classified as those with relatively more knowledge. Students with scores below 60% are classified as those with relatively less knowledge. The classification was based on the previous study conducted by Chen and Volpe (1998).

Afterwards, cross-tabulations are used to determine if the difference of the two groups' behaviour are significant (Chen & Volpe, 1998). Cross-tabulation helps understanding how two different variables are related to each other. This study aims to analyse the responses of the students on each of the six financial behaviour questions based on their financial literacy. Thus, to conduct the comparisons is to use cross-tabulation as a statistical tool.

OVERALL RESULTS OF THE SURVEY

The overall results are presented in Table 2 and Table 3. The overall mean percentage of correct scores is 49.32%, indicating on average the participants answered less than half of the survey questions correctly. The median percentage of correct scores is 48.00%. The mean percentage of correct scores is grouped into three categories: (1) over 80, (2) 60 to 80, and (3) below 60. The high score is presented first, which is followed by lower scores. The findings suggest that college students' knowledge on personal finance is inadequate.

Table 2. The Overall Financial Literacy of College Students

N	Minimum	Maximum	Mean	Median	Std. Deviation
150	13.00	87.00	49.32	48.00	15.12

Table 3. The Level of College Students' Financial Literacy

	Frequency	Percentage
High (>80)	2	1.3
Moderate (60 to 80)	42	28.0
Low (<60%)	106	70.7
Total	150	100.0

One reason for the low level of financial literacy is the systematic lack of a sound personal finance education in college curricula. Most of the higher education institutions put little emphasis on students' personal finance education (Danes & Hira, as cited in Chen & Volpe, 1998). Even business schools do not require students to take a Personal Finance course (Bialaszewski, Pencek & Zietlow, as cited in Chen & Volpe, 1998). Given the lack of personal finance education, it is not surprising the results show that college students have inadequate knowledge on personal finance.

Analysis of Results by Subgroups of the Sample

While the overall level of financial literacy was low among the young, there were differences according to socio demographic and family characteristics. Table 4 tabulates the differences in means between different subgroups of research sample.

The surveys have found little difference in financial literacy by gender. Men were less likely to respond correctly to each of the survey questions, and there was a 2.57% gap for correct response rates. This finding is not corroborated by Lusardi and Tufano (Lusardi et al., 2010), who explored debt literacy for a representative U.S. sample; in studies of other countries (van Rooij, Lusardi, & Alessie; Lusardi & Mitchell; Smith & Stewart, as cited in Lusardi et al., 2010). Consequently, there is now no fairly robust evidence confirming that in many women do not do well in financial calculations.

Table 4. Test Results of College Students by Background

	N	Mean	Median	Std. Deviation
Gender				
1. Male	66	47.88	48.00	16.14
2. Female	84	50.45	48.00	14.24
Academic discipline				
1. Accounting	64	49.30	48.00	14.48
2. Management	86	49.34	48.00	15.65
Academic year				
1. 2011	4	59.75	61.00	2.50
2. 2012	35	56.77	56.00	14.25
3. 2013	79	45.32	44.00	15.22
4. 2014	32	49.75	48.00	13.16
GPA				
1. <2.50	25	40.20	39.00	11.09
2. 2.50 – 3.00	30	44.40	44.00	15.53
3. ≥3.00	93	53.53	52.00	14.26
Residence				
1. Independent	60	46.65	44.00	15.14
2. Nesting with parents	88	51.42	52.00	14.75
Highest level of parents' education				
1. Elementary	1	30.00	30.00	-
2. Junior H.S.	7	41.57	35.00	13.48
3. Senior H.S.	65	47.69	48.00	15.41
4. College	60	52.23	52.00	14.39
5. Master	13	55.85	61.00	11.10
6. Doctorate	2	28.00	28.00	15.56
Parents' income				
1. 1,000,000 – 5,000,000	34	49.91	50.00	13.56
2. 5,000,000 – 10,000,000	61	49.28	48.00	14.25
3. >10,000,000	48	50.44	48.00	16.37

Table 4 also reveals no differences in financial literacy according to Management and Accounting students. The findings also suggest that participants with different GPA have different levels of financial knowledge. Generally, the students with higher GPA know more than the students with lower GPA.

There were also differences in the response according to length of study in college. The results for the survey clearly show that senior students are more knowledgeable than freshmen. On average, the senior answered 59.75% of the survey questions correctly; the freshmen, 49.75%. The finding is not surprising because curriculum requirements give them more opportunity to take finance and related course. Participants who are more senior in class rank have earned higher scores in the survey. One explanation is that by staying in universities longer, students will naturally pick up more about personal finance (Chen & Volpe, 1998).

Some of the difference is probably also due to the fact that college seniors are several years older than college freshmen and, thus, have had a great deal more experience with the use of financial instruments. The fact that financial literacy increases with the number of years of higher education, to the point where college seniors are fairly financially literate, is also an indication that financial literacy really a measure of problem-solving ability rather than possession of a body of time-limited financial facts (Mandell, 2008).

Parents' education was strongly associated with financial literacy, especially if a respondent's parents graduated from Master degree. The survey has a parents' education of "Doctorate degree". However, the number of parents' participants in this category is very small and, therefore, the mean percentage of financial literacy for this category might not be representative.

Residence as a proxy for social interactions with other is associated with financial literacy. Students who live with parents are more knowledgeable than those who live independently. This finding illuminated the importance of parental influences on young people's acquisition of financial knowledge (Lusardi et al. 2010). *Youth and money survey* administered by American Savings and Education Council (ASEC, as cited in Varcoe et al., 2005) states that 90% of the students reported that they were getting their financial education from family and friends rather than from school.

Finally, it seems that parents' income tends to be a weak predictor of financial literacy. This finding is consistent with the existing literature. Whenever financial literacy scores are regressed on family income and a number of other explanatory variables, income shows no significant relationship to financial literacy (Mandell, 2008).

Consequences of Having Inadequate Financial Literacy

This section examines how a student's knowledge affects his/ her behaviour about some personal finance issues. To determine the impact of financial literacy possessed by the participants on their behaviour, students are asked to give response only one most appropriate answer for each behaviour questions. The three categories are used to measure the behaviour: almost never, seldom, and almost always.

Table 5. Frequencies of College Students' Financial Behaviours

	Almost Never (%)	Seldom (%)	Almost Always (%)
1. Paying bills on time (e.g. electricity, phone credit, etc)	4.7	18.7	76.7
2. Maintaining budget & spending plan (daily, monthly, yearly, etc)	20.0	66.0	14.0
3. Maintaining spending records	22.7	60.7	16.7
4. Maintaining adequate emergency fund	10.0	36.7	52.7
5. Saving regularly	2.7	61.3	36.0
6. Comparison shops for purchases	6.7	32.7	60.7

The sample is partitioned into two groups of students with relatively more knowledge and those with relatively less knowledge. The section mean percentage

of correct answers is used to classify the sample. Students with section scores equal to or higher than 60% are classified as those with relatively more knowledge. Students with scores below 60% are classified as those with relatively less knowledge. Cross-tabulations are used to determine if the difference of the two groups' behaviour are significant.

Participants' responses to their actual financial behaviour are reported in Table 6. When asked what they actually do in everyday life, about 75% of students with more knowledge almost always paying bills on time and 77.4% of the less knowledgeable group almost always to pay such bills on time. About 14.2% of the less knowledgeable group almost always maintain budget and spending plan, while the number is 13.6% for the more knowledgeable group. The more knowledgeable participants (13.6%) almost always maintain spending records while the less knowledgeable group is 17.9%.

In terms of saving and comparison shops, more participants from less knowledgeable group almost always saving regularly and compare price before purchasing than participants from the more knowledgeable group. When provided with a hypothetical situation of a correct financial behaviour, the more knowledgeable participants select the incorrect choice. However, more participants from the more knowledgeable group act correctly than the participants from the less knowledgeable group regarding maintaining adequate emergency fund.

Table 6. Impact of the College Students' Financial Literacy on Their Financial Behaviour

Financial Behaviour	Financial Literacy					
	Low (N=106)			High (N=44)		
	Almost Never	Seldom	Almost Always	Almost Never	Seldom	Almost Always
1. Paying bills on time (e.g. electricity, phone credit, etc)	7 6.5%	17 16.0%	82 77.4%	0 0.0%	11 25.0%	33 75.0%
2. Maintaining budget & spending plan (daily, monthly, yearly, etc)	21 19.8%	70 66%	15 14.2%	9 20.5%	29 65.9%	6 13.6%
3. Maintaining spending records	28 26.4%	59 55.7%	19 17.9%	6 13.6%	32 72.7%	6 13.6%
4. Maintaining adequate emergency fund	13 12.3%	38 35.8%	55 51.9%	2 4.5%	18 40.9%	24 54.5%
5. Saving regularly	3 2.8%	64 60.4%	39 36.8%	1 2.3%	28 63.6%	15 34.1%
6. Comparison shops for purchases	6 5.7%	32 30.2%	68 64.2%	4 9.1%	17 38.6%	23 52.3%

The above analysis suggests that the level of financial literacy tends to influence people's behaviour though the influence is not always on to positive direction. In 1999, the American Savings Education Council (ASEC) administered the *youth and money survey* that asked 1000 students aged 16-22 about personal finance which

included questions on their views, attitudes, and behaviour (Varcoe et al., 2005). The students stated that they felt confident about understanding saving, investing, credit, budgeting, and basic personal knowledge, but their behaviour and attitudes did not reflect this. The 21% students who had taken personal finance class believed they were more knowledgeable about finances, but were no more likely to think that it is important to save on a regular basis than the students who did not take the class. In addition, they were no more likely to budget income or compare prices before purchasing. On the other hand, two-thirds of all the students surveyed admitted that they need more lessons in ways to manage their money.

Over 90% of the students reported that they were getting their financial education from family and friends rather than from school (ASEC, as cited in Varcoe et al., 2005). ASEC followed up on this survey by looking at whether or not parents are good role models and teachers of money management. Their findings indicate that parents do not appear to be adequately prepared to be teachers and role models to their children with respect to financial matters. Just 25% of the parents felt they were very effective when it comes to providing their children with financial guidance (ASEC, as cited in Varcoe et al., 2005).

CONCLUSIONS AND IMPLICATIONS

This study surveys 150 students from two academic disciplines, i.e. management and accounting, to examine college students' knowledge of personal finance; the relationship between the financial literacy and participants' characteristics such as gender, academic discipline, GPA, and family characteristics; and the consequences of having inadequate knowledge.

Results suggest that college students need to improve their knowledge of personal finance. Although the questions included in the survey are fairly basic, the overall mean of correct answers for the survey is about 49%. Lower levels of financial literacy are found among subgroups. They include those who are in the early college year, men, GPA less than 2.50, and do not live with their parents. It is also found that participants with less knowledge tend to make incorrect decision in the area of maintaining adequate emergency fund. While participants with higher financial literacy choose incorrect decisions regarding paying bills on time, maintaining budget and spending records, saving regularly, and comparison shops.

The other result of this study implies that the level of financial literacy owned seems to be a weak predictor for financial behaviour. Although financial literacy and financial behaviour appear to be positively correlated, the findings of this study do not demonstrate such result. The outcome is in accordance with many previous studies. Many of those who study the issue have found that financial literacy and financial behaviour was not correlated. However, there is some promising evidence that school-based personal finance education may positively influence long-term behaviour even without affecting financial literacy. Two studies document a delayed but positive impact of financial education on the financial behaviour of students, years later, even when this education may have had little or no impact on financial literacy. Bernheim, Garrett & Maki (Mandell, 2009b) showed that students who took a high school course in personal finance tended to save more of their income in middle age than those who did not take such a course, in spite of

the fact that many respondents could not remember that they had ever had such a course.

Mandell (2009b) used a recent national sample of college students to find that while those who had taken a high school course in personal finance were no more financially literate than others in college, they did exhibit significantly better financial behaviour. It appears that such education may have its greatest effect on financial behaviour by reaching young people emotionally, which results in changing attitudes rather than knowledge. The paper concludes that there is little evidence showing that full-time high school (or college) courses in personal finance increase financial literacy. However, there is compelling evidence that such courses improve future financial behaviour.

The predictive ability of personal finance knowledge shows that improving college students' knowledge is important. Youths' lack of financial literacy raises concerns about their financial futures and their ability to be effective consumers. Young people often fail at their first consumer purchase, saving, banking, or credit experience, and may continue to make bad financial decisions into adulthood. Habits that begin at a young age may carry on to adulthood and can cause financial problems unless there is some type of effective educational intervention (Varcoe, 2005).

If the ultimate purpose of personal financial education is to positively influence financial behaviour, there is reason to believe that such education may be delivered more effectively to younger children than to their older counterparts. Many positive habits are instilled in young children well before they are capable of understanding the reasons (Mandell, 2009b). This challenging issues needs to be addressed.

REFERENCES

- Chen, H., Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*, 7 (2), 107-128.
- Danes, S. M., Rodriguez, M. C., & Brewton, K. E. (2013). Learning context when studying financial planning in high schools: Nesting of student, teacher, and classroom characteristics. *Journal of Financial Counselling and Planning*, 24 (2), 20-36.
- Lusardi, A., Olivia, S.M., Curto, V. (2010). Financial literacy among the young. *The Journal of Consumer Affairs*, 44 (2), 358-380.
- Mandell, L. (2006). *Financial literacy: If it's so important, why isn't it improving?* [Policy brief]. Network Financial Institute, 2006-PB-08, 1-11.
- Mandell, L. (2008). The financial literacy of young American Adults. Results of the 2008 National Jump\$tart Coalition survey of high school seniors and college students. Washington, D.C.: The Jump\$tart Coalition for Personal Financial Literacy.
- Mandell, L. (2009a). The impact of financial education in high school and college on financial literacy and subsequent financial decision making. Presented at the American Economic Association Meetings. San Francisco, CA.
- Mandell, L. (2009b). Two cheers for school-based financial education. Initiative on financial security. New York: The Aspen Institute.

- Mandell, L., Klein, L. S. (2009). The impact of financial literacy education on subsequent financial behavior. *Journal of Financial Counseling and Planning*, 20 (1), 15-24.
- Nababan, D., Sadalia, I. (2013). Analisis personal financial literacy dan financial behavior mahasiswa strata 1 fakultas ekonomi Universitas Sumatera Utara. *Media Informasi Manajemen*, 1 (1), 1-15.
- Prayogi. (2014, August 23). Literasi keuangan di Indonesia rendah. *Republika*. Retrieved from <http://www.republika.co.id/berita/ekonomi/keuangan/14/08/23/naqyc4-literasi-keuangan-di-indonesia-rendah>.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach* (5th ed.). United Kingdom: John Wiley & Sons.
- Shih, T.Y., Ke, S.C. (2014). Determinates of financial behavior: Insights into consumer money attitudes and financial literacy. *Serv Bus*, 8: 217-238. doi:10.1007/s11628-013-0194-x
- Varcoe, K., Martin, A., Devitto, Z., & Go, C. (2005). Using a financial education curriculum for teens. *Journal of Financial Counselling and Planning*, 16 (1), 63-71.