More Knowledge, More Experience, Less Debt? The Mediating Role of Money Management on the Effects of Financial Knowledge and Experience on Consumer Debt

Pallapa Srivalosakul
Martin de Tours School of Management and Economics, Assumption University, Thailand
E-mail: Pallapaptc@msme.au.edu

Issara Suwanragsa
Martin de Tours School of Management and Economics, Assumption University, Thailand
E-mail: Issaraswn@au.edu

Nopphon Tangjitprom
Martin de Tours School of Management and Economics, Assumption University, Thailand
E-mail: tnopphon@gmail.com

Abstract
The present study aims to serve two major purposes. The first purpose is to examine whether individuals with better financial knowledge and experience are less likely to be indebted. The second purpose is to examine whether money management acts as a mediator between the influences of financial knowledge and financial experience on consumer debt. Data were collected from questionnaire survey of 440 individuals at working age in Bangkok. Results from regression analysis indicated that individuals who have better financial knowledge and experience do not have less debt. Financial knowledge has insignificant direct impact on consumer debt, while financial experience is associated with higher debt. Financial experience reduces fear and caution when using credit, hence lead to more debt. In addition, when testing the mediating effects of money management, findings revealed that money management does not mediate the influence of financial knowledge on debt, but it mediates the effect of financial experience on debt. Individuals, who can manage their money well, have lower debt, regardless of financial knowledge. Individual who can use their financial experience to better manage their money have lower debt. This study shed lights on policy implementation in reducing debt problem. Financial education that emphasizes only on numeric calculation and mathematic formula may not sufficient to reduce debt burden problem. Policies should aim at shaping consumers' money management behavior, particularly the behaviors in managing their cash, expenditure, budget, saving, credit, and insurance to reduce their debt burden problems.
Keywords: Financial Knowledge, Financial Experience, Money Management, Debt

Introduction
After the 1990s financial crisis, economic and finance scholars have paid more attention on financial knowledge and financial experiences as crucial factors to reduce excessive debt burden. Previous literatures (e.g. Lusardi & Tufano, 2015; Norvilitis, Merwin, Osberg, Roehling, Young, & Kamas, 2006; Robb, 2011) have proposed that a lack of financial knowledge and experience is a major cause of consumer debt. Individuals with high knowledge and experience tend to make better financial decisions and are less likely to be indebted (Norvilitis et al., 2006).

However, empirical studies on the influences of financial knowledge and experiences on consumer debt have yielded inconsistent results. Avard, Manton, English, and Walker (2005), Braunsberger, Lucas, and Roach (2005), and Norvilitis et al. (2006), had confirmed that high financial knowledge was associated with less future financial problems and less being indebtedness. In contrast, Borden, Lee, Serido, and Collins (2008), Robb and Sharpe (2009), and Lachance, Beaudoin, and Robitaille (2006) had revealed that greater financial knowledge was associated with higher consumer debt. High financial knowledge and experience reduce the fear and caution of using credit, resulting in higher debt (Borden et al., 2008).

The inconsistency in previous empirical studies have raised the question of whether individuals with better financial knowledge and experience are less likely to be indebted. To fill in this research gap, the present study has two main objectives. The first objective is to examine whether high financial knowledge and financial experience lead to lower debt level. Secondly, the present study aims at incorporating and examining money management as a mediating factor between the effects of financial knowledge and financial experience on consumer debt. It is contended that the inconsistent findings in the previous literatures may result from the lack of mechanism in explaining the effects of financial knowledge and experiences on consumer debt. The improvement in financial knowledge and experience do not guarantee the better financial decision (Braunstein & Welch, 2002). The influence of financial knowledge and experience on consumer debt may be mediated by consumers' behavioral factor, such as money management (Zinman, 2015; French & McKillop, 2016). Money management acts as a safeguard against consumer debt (Ksendzova, Donnelly, & Howell, 2017). Consumers who manage their money well tend to save more money, are less likely to shop compulsively, and have lower credit card debt (Donnelly, Ksendzova, & Howel, 2013; Lea, Webley, & Walker, 1995).

By incorporating money management into the analysis, findings from the present study reported that the effect of financial knowledge on consumer debt is not mediated by money management since the direct influence of financial knowledge on debt is insignificant. Individuals who possess high financial knowledge do not necessarily have less debt. Nevertheless, individuals who manage their money well have less debt, regardless of their financial knowledge levels. In addition, findings from the present study revealed that money management partially mediates the influence of financial experience on consumer debt. Without good money management, individuals who have experiences in borrowing tend to have good attitude toward debt. They are more likely to borrow and being indebted. However, individuals who have financial experiences and can use those experiences to manage money well tend to have less debt. This study shed lights on policy implementation in reducing debt problem. A policy attempting to improve only consumers' financial knowledge may not be sufficient to reduce debt problem. Financial education that emphasizes only on numeric calculation and mathematic formula cannot safeguard individuals from being indebted. Policies should aim at shaping consumers' money management behavior, particularly behaviors relating with managing their cash, expenditure, budget, saving, credit, and insurance in order to reduce debt burden problem. Financial counselors or trainers may be necessary to help shape individuals' behavior on how to manage money effectively.

Literature Review and Hypotheses

Before the 1990s, most of the literatures regarding debt based their studies on "Life Cycle Hypothesis Theory" (Ando & Modogliani, 1963; Modigliani, 1966; Fan, Chang, & Hanna, 1993; Hanna, Fan, & Chang, 1995) which supported the benefit of debt in that it can smooth individual consumption over a life time, improve household's standard of living, resulting in higher economic growth and stability at macro level. However, after the 1990s financial crisis, there has been concerned on the adverse impacts of debt. Literatures have revealed that high level of debt deters future consumption, increase probability of financial crisis, distract economic growth, hence, trigger economic recession (Charpe & Flaschel, 2013; Lombardi, Mohanty & Shim, 2017). At micro level, debt can increase default incidences (Lusardi & Mitchell, 2009), self-control lapses (Peltier et al., 2016), feeling of failure (Robb & Pinto, 2010), financial stress (Xiao, Sorhaindo, & Garman, 2006), family conflict (Kerkmann, Lee, Lown, & Allgood, 2000), and poor health or anxiety (Norvilitis, Szablicki, & Wilson, 2003).

Since the negative influences of debt have been well documented, policy makers and scholars have paid more attention on factors influencing consumer debt in an attempt to reduce negative effects of debt at micro level. Several researchers (e.g. Lusardi & Tufano, 2015; Norvilitis et al., 2006; Robb, 2011) have proposed that a lack of financial knowledge and experience is a major determinant of consumer debt. Without knowledge and experience, consumers tend to make poor financial decisions and being indebted (Norvilitis et al., 2006).

Financial Knowledge and Consumer Debt

Financial knowledge refers to the competency in making simple financial decisions regarding the basic knowledge in interest compounding, debt payment, time value of money, and diversification of risk which partly require mathematic calculation (Lusardi & Mitchell, 2014, French & McKillop, 2016). Consumers who financially educated are able to make sound financial decisions which ultimately lead to benefits of themselves, families, and societies (Hilgert, Hogarth, & Beverly, 2003). Disney and Gathergood (2013)'s study has highlighted that consumers with superior financial knowledge have higher incomes and savings. Robb & Sharpe (2009) and Lusardi & Tufano (2009) also indicated that people with superior financial knowledge has lower debt than those with less financial knowledge. On the other hand, poor financial literacy lead to lower savings and increase reliance on debt (Disney & Gathergood, 2013; Duca & Kumar 2014; Lusardi & Tufano, 2015; French & McKillop, 2016; Limbu, 2017), delay mortgage repayment (Hirad & Zorn, 2001) and experience bankruptcy (Anderson, Zhan, & Scott, 2004; Lusardi & Mitchell, 2009). Therefore, it is hypothesized that:

Hypothesis 1: Financial knowledge negatively affects consumer debt.

Financial Experience and Consumer Debt

Financial experience refers to individual's experience with financial transactions including traditional borrowing, saving, retirement planning, and investment (Hilgert et al., 2003; Lusardi & Tufano, 2015). According to Experiential Learning Theory (Kolb, 1984), people gain knowledge through experiences (or learning by doing). Experience is used to improve decision making. Consumers may gain financial experiences through owning a stock or bond, having parents with financial experience, and receiving financial training. These experiences are crucial in enhancing their knowledge and skills, hence, improving their financial decision-making (Bradley, Hirad, Perry, & Zorn, 2001; Weiner, Baron-Donovan, Gross, & Block-Leib, 2005; Johnson & Sherraden, 2007; Mandell, 2008). An empirical study of Lyons et al. (2007) indicated that personal financial experience affected personal management of credit and debt. The higher the financial experience, the lower the debt is expected. Therefore, it is hypothesized that:

Hypothesis 2: Financial experience negatively affects consumer debt.

A Mediating Role of Money Management

Money management refers to skills of individuals in dealing with saving, spending, investing, and budgeting (Godwin & Koonce, 1992). It is recognized as an important shield against one's excessive consumption and one's debt (Ksendzova et al., 2017). Previous study (i.e. Braunstein & Welch, 2002) indicated that the improvement in financial knowledge and experience do not guarantee the improvement in financial behavior or decrease debt. There must be an intervening factor which mediates the relationship between financial knowledge and financial outcomes (Robb & Sharpe, 2009; Xiao, Tang, Serido, & Shim, 2011; Hancock et al., 2013; Limbu, 2017). Money management is proposed as a mechanism that mediates the relationships between financial knowledge and financial experience and debt. Money management is supported by scholars (Collins, 2007; Carswell, 2009; Haynes-Bordas, Kiss, & Yilmazer, 2008; Scott, 2010) that it relates financial knowledge to financial outcomes.

Money management skill consists of four major components, i.e. cash management, credit management, saving/investment management, and insurance management (Hilgert, et al., 2003; Ksendzova et al., 2017). All of these four components of money management are assessed through brief money management scale (BMMS) developed by Ksendzova et al. (2017). Firstly, cash management refers to individuals' behavior to estimate their income, follow a monthly budget, record monthly expense, and evaluate spending on a regular basis (Ksendzova et al., 2017). Secondly, credit management refers to individuals' behavior to manage their debt financing (i.e. max out the limit of credit card, get into more and more debt each year) and debt repayment (i.e. pay the total balance or make only partial payment on loan) (Ksendzova et al., 2017). Thirdly, saving/investment management refers to individuals' behavior to set aside money for saving, emergencies, unexpected expenses, and long-term expenses such as home and education (Ksendzova et al., 2017). Fourthly, insurance management refers to individuals' behavior to maintain or purchase adequate health insurance, life insurance, property insurance, and retirement saving plan (Ksendzova et al., 2017). The BMMS is widely used for money management behavior assessment because of its reliability in predicting hypothetical debt behavior, its internal consistency, and concurrent validity with both self-report and behavioral assessment.

Financial Knowledge and Money Management

Financial knowledge encompasses ability to understand relating personal and broader finance matters. With financial knowledge, people acquire skills including self-assured confidence to make essential financial decisions in daily life. Financial knowledge is found to positively relate to money management. Consumers with good financial knowledge have better plan for retirement, saving, wealth accumulation, and investment decisions (French & McKillop, 2016; Limbu, 2017; Lusardi & Tufano, 2015). An empirical study of Bernheim, Garrett, and Maki (2001) and Hastings and Mitchell (2010) have shown the significant positive relationship between financial knowledge and individuals' saving. In addition, Hilgert et al. (2003) examined the relationship between financial knowledge and credit management, cash-flow management, investments, savings, mortgage and other financial management topics in the United States. Findings confirmed the positive relationship between financial knowledge and money management. Therefore, it is hypothesized that:

Hypothesis 3: Financial knowledge positively affects money management.

Financial Experience and Money Management

Experiential Learning Theory (Kolb, 1984) posited that people learn from their experiences which, in turn, help improve their decision makings. Thus, when people gain experiences through opening saving or checking account, buying a stock or bond, having or using credit, and receiving financial training, they learn and accumulate knowledge from their financial experiences. These experiences supervise them to make better financial management decisions, thus, better money management. Findings from previous studies (i.e. Frijns et al., 2014; Tang & Peter, 2015) confirmed the significant influences of financial experiences on money management. An empirical study of Lyons et al. (2007) also indicated that personal financial experience affected personal credit management. Braunstein and Welch (2002) also confirmed that the financial experiences through training programs had positive influence on financial decision-making regarding money management. Thus, it is hypothesized that:

Hypothesis 4: Financial experience positively affects money management.

Money Management and Consumer Debt
Money management is crucial in that it acts as a safeguard against excessive consumption and consumer debt (Ksendzova et al., 2017). Previous studies have revealed that people who manage their money well tend to save more (Antonides, de Groot, and van Raaij, 2011), are less likely to shop compulsively (Donnelly, Ksendzova, & Howell, 2013), and have less financial stress (Xiao et al., 2006). In addition, a survey of Lea et al. (1995) classified respondents into non-debtors, mild debtors and serious debtors. Results indicated that there were significant differences between these groups of respondents. Variance between groups was accounted for by people's money management skills. Non-debtors had higher money management abilities and money management facilities (e.g. bank accounts) than both mild and serious debtors. Lea et al. (1995) also confirmed that persons who managed money well had lower credit card debt in various economic conditions. Consistently, Donnelly, Iyer, and Howell (2012) also indicated that money management assisted in lowering accumulation of debt beyond the effect of relevant factors, such as financial responsibility or financial knowledge factor. Therefore, it is hypothesized that
Hypothesis 5: Money management negatively affects consumer debt.

Research Methodology

Sample and Collection of Data
Data regarding financial knowledge, financial experience, money management practices and consumer debt were collected through questionnaire survey. Questionnaire was developed based on items adapted from previous studies. The survey was conducted in Thailand; thus, the questionnaire was translated into Thai by English professionals and experts in finance field. Then, the process of back-translation into English was conducted in order to ensure concept equivalence and accuracy of the questionnaire.
To ensure the reliability of the questionnaire, thirty sets of questionnaires were distributed as a pretest. Results from pretest verified internal consistency among the items representing money management variable with Cronbach’s Alpha coefficient higher than minimum requirement of 0.7 (Hair, Black, Babin, & Anderson, 2010).
According to Yamane (1967), it was recommended that sample size with a population of more than 100,000 with 5% confidence limit is no less than 400. Labor force in Bangkok is approximately 5.3 million (National Statistical Office Thailand, 2016). Finally, 440 sets of questionnaires were distributed to individuals at working age in Bangkok during March 2018. Data were collected using a self-administered questionnaire by field workers. Workers collected the questionnaires mostly in business areas in Bangkok. Respondents were randomly selected based on ease of access to the targeted respondents. The respondents were people of working age with regular income and were available to answer questionnaires. In collecting data by employing field workers, the data collection process recommended by Maholtra (2010) was employed. The researcher recruited experienced field workers by coordinating with a research organization. These field workers were supervised and trained to ensure the high quality of collected data.
Measurement of Variables
Financial Knowledge: Financial knowledge was measured by three questions adopted from the seminal work of Lusardi and Tufano (2015). These questions were designed to assess respondents’ knowledge in interest compounding, debt repayment, and time value of money, respectively. The example of question was as followed (Lusardi & Tufano, 2015):
“Suppose you owe $1000 on your credit card and the interest rate you are charged is 20% per year compounded annually. If you did not pay anything off, at this interest rate, how many years would it take for the amount you owe to double?”

The correct answer of each question received one score. The incorrect answer received a score of zero. Then, the score of these three questions were summed up and used as data input into the model.

Financial Experience: The present study measures respondents' financial experience with borrowing, saving, and investment by utilizing nine questions from the seminal work of Lusardi and Tufano (2015)'s. To assess the respondents' financial experience, respondents were asked to indicate whether they have ever engaged in various financial activities, such as take a student loan, auto loan, home equity loan, mortgage, open saving or checking account, buy bond or other investments. With the answer "no", respondents received a score of zero, while the answer "yes" received a score of one. Then, the score of the nine questions were summed and used as data input into the model.

Money Management: Money management was measured through 18 items developed by Ksendzova et al. (2017). Respondents were asked to indicate how often they had engaged in the money management activities (1 = never done to 5 = always do). For example, reviewing and evaluating spending on a regular basis, setting money aside for emergencies, maintaining or purchasing an adequate health insurance policy, and maxing out the limit on one or more credit cards. The score of these items were averaged to form money management variable.

Consumer Debt: Consumer debt refers to the total outstanding amount of all borrowings by consumer that has not yet been paid off (Harari, 2017). It includes debts on credit cards, mortgage, loans for personal uses, loans for properties, auto loans, loans on durables, loans on home improvement, loans on medical expenses, and other personal loans. Other borrowing types such as borrowing from friends or families were excluded. Adapted from the study of Achtziger, Hubert, Kenning, Raab, and Reisch (2005)'s, respondents were asked to estimate the sum of their current debt burden that they have to pay in each month (including real estate debt, auto debt, credit card debt, and other formal debts). Then, the value of outstanding debt was divided by disposable income to form consumer debt variable.

Control Variables

The present study includes five control variables, i.e. age, gender, disposable income, education and marital status into the analysis because previous literatures had affirmed that these variables influenced consumer debt.

Model Specification and Statistic Treatment of Data

The present study aimed at determining the significant influence of financial knowledge and financial experience on consumer debt by employing money management as a mediator. Three regression models were proposed for testing the significance of mediation followed Baron and Kenny (1986)'s Four-step approach (Table 1).

Table 1 Models testing the effects of financial knowledge and financial experience on consumer debt

Model	Model Specification	Dependent Variable	Remark
1	$Y_i=b_0+b_1Fin\_Know_i +b_2Fin\_Exp+ b_3X_i+e_i$	Consumer Debt	Direct effect of Financial Knowledge and Financial Experience on Consumer Debt
2	$Y_i= b_0+b_1Fin\_Know_i +b_2Fin\_Exp+ b_3X_i+e_i$	Money management	Direct effect of Financial Knowledge and Financial Experience on Money management
3	$Y_i = b_0+b_1Fin\_Know_i +b_2Fin\_Exp +b_3MM +b_4X_i + e_i$	Consumer Debt	Effects of Financial Knowledge, Financial Experience and Money Management on Consumer Debt

Note: Xi are the control variables. MM is Money Management. Fin_Know is Financial Knowledge. Fin_Exp is Financial Experience.

Research Results

The 440 sets of questionnaires were distributed. Only 409 questionnaires were usable. Data analysis was conducted by SPSS version 23. Sample characteristics and results from hypothesis testing were presented in the next section.

Descriptive Statistics of the Sample

From 409 respondents, 67% of the respondents were female and 33% were male. The age of respondents ranged from 20 to 65. Mean and median of respondents' age were 30 and 28 years respectively. Majority of the respondents held Bachelor degree (70.4%) followed by Master degree (13.7%), high school graduated or vocational training (13.2%), lower than high school (1.7%), and Doctorate degree or above (1%). There were more of respondents who are single (74.6%) than married ones (25.4%). Disposable income per month reported by respondents ranged from 7,000 baht to 1 million baht[1]. Majority of the respondents' disposable income ranged from 15,000 to 80,000 baht (80.4% of total respondents). Only few respondents had disposable income greater than 200,000 baht (1.7% of total respondents). Mean and median of respondents' income were 45,935 baht and 30,000 baht, respectively.

Regarding financial knowledge, there were 138 respondents who cannot answer any question correctly regarding financial knowledge (33.7% of total respondents). There were only three respondents who can answer all questions correctly (0.7% of total respondents). Most of the respondents could answer only one question correctly (51.1% of total respondents). Mean of financial literacy was equal to 0.82 with standard deviation at 0.693 while median of financial literacy was equal to 1.

Majority of the respondents had experienced two financial activities (24.2% of total respondents). This was followed by respondents who had experienced in one activity (18.6% of total respondents) and three activities (17.4% of total respondents). There were 4.6% of total respondents who never had experienced in any financial activity. Three persons, 0.7% of respondents, reported to have experience in all nine financial activities. Mean of financial experience was equal to 2.93 with standard deviation at 1.775 while median of financial experience was equal to 3.

Mean and Median of money management were ranked higher than mediocre level, at 3.40 and 3.30, respectively. The dimension that was ranked the highest was "Credit management" dimension with mean score 3.87. This was followed by "Saving/ investment" management dimension with mean score 3.50. The standard deviation of all the money management items ranged from 1.069 to 1.341. Reliability test was conducted on the money management scale. Its Cronbach's alpha coefficient was 0.897 which was above minimum requirement of 0.7 (Hair et al., 2010).

Respondents indicated that mean of their outstanding debt was approximately equal to 6,332 baht per month. Median of the outstanding debt was 2,000 baht per month. The minimum debt outstanding was zero, while the maximum debt outstanding being reported was 100,000 baht per month.

Results from Regression Analysis

Regression analysis by OLS (Ordinary Least Square) method was employed for testing the five hypotheses. Model 1 was employed to test the direct effects of financial knowledge and financial experience on consumer debt (Hypothesis 1 and 2). Model 2, and model 3 were employed to test the influences of money management as a mediator of the influences of financial knowledge and financial experience on consumer debt (hypothesis 3, 4 and 5). Variables including age, gender, marital status, education, and disposable income were included as controlled variables in the study. Multicollinearity was tested for all models.

[1] Exchange rate between Thai and US dollar was quoted approximately at 31.5 Baht per one US dollar by the time the analysis was conducted (as of March 2, 2018).

Findings reported no problem of multicollinearity (VIF > 10) (Ho, 2006). However, positive skewness for disposable income variable was detected. Disposable income in log form was utilized instead in the analysis to solve the skewed distribution problem.

Financial Knowledge and Consumer Debt

Results from the analysis showed that consumer debt was influenced by the proposed factors. The first model (Table 2) indicated that the financial knowledge insignificantly affected consumer debt at 0.05 significance level. Therefore, Hypothesis 1 was not supported.

Table 2 Results from regression analysis

Independent Variables	Model 1		Model 2		Model 3	
	Consumer Debt		Money Management		Consumer Debt	
	Coefficient	St. error	Coefficient	St. error	Coefficient	St. error
Intercept	0.618***	0.149	2.018***	0.482	0.742***	0.150
Age	0.005***	0.002	0.008	0.005	0.006***	0.002
Disposable income	-0.066***	0.016	0.040	0.052	-0.064***	0.016
Gender	-0.025	0.022	0.048	0.071	-0.022	0.021
Marital Status	0.026	0.028	-0.097	0.089	0.020	0.027
Education	-0.003	0.018	0.166***	0.057	0.015	0.018
Financial Knowledge	-0.006	0.015	0.124**	0.048	0.001	0.015
Financial Experience	0.027***	0.006	0.046**	0.021	0.029***	0.006
Money Management	-	-	-	-	-0.061***	0.015
$\mathbf{R^2}$	**11.8**		**8.9**		**15.3**	

Note: Consumer debt = Debt/Disposable income, Disposable income = ln (Disposable income). *** p < 0.01, ** p < 0.05, * p < 0.10.

Financial Experience and Consumer Debt

Finding from Model 1 (Table 2) indicated that financial experience significantly and positively affected consumer debt at 0.01 significance level. The higher the financial experience, the higher the consumer debt. This finding was contradicted to the hypothesis. Therefore, Hypothesis 2 was not supported.

Financial Knowledge and Money Management

Finding from Model 2 (Table 2) indicated that financial knowledge significantly and positively affected money management at 0.05 significance level. The more financial knowledge people possess, they can better manage their money. Therefore, Hypothesis 3 was supported.

Financial Experience and Money Management

Finding from Model 2 (Table 2) indicated that financial experience significantly and positively affected money management at 0.05 significance level. People learn from their financial experience, with more experiences, they possess higher money management skills. Therefore, Hypothesis 4 was supported.

Money Management and Consumer Debt

Model 3 (Table 2) revealed the significant influence of money management on consumer debt. Money management significantly and negatively affected consumer debt at 0.01 significance level. The better skill in money management results in lowering consumer debt. Therefore, Hypothesis 5 was supported.

The Role of Money Management as a Mediator

The effects of predictors on consumer debt were classified into the direct and indirect effects. According to Baron & Kenny (1986), the significance of mediator was observed via the three paths in the relationships which are the significant influence of the independent variable on dependent variable, significant influence of independent variable on mediator and the significant influence of mediator on dependent variable. By assuming the significant influence of independent variable on dependent variable (model 1), the significant impacts of the two paths, independent variable on mediator and mediator on dependent variable, implied significant role of mediator (model 2 - 3). Additionally, once the mediator was controlled, if the influence of independent variable on dependent variable was statistically insignificant, this supports the full mediation of mediator (Baron & Kenny, 1986).

Did Money Management Mediate the Effect of Financial Knowledge on Debt?

No, it did not. Financial knowledge significantly and positively influenced money management (Model 2, Table 2) while money management significantly and negatively influenced consumer debt (Model 3, Table 2). Nonetheless, financial knowledge had no significant direct influence on consumer debt (Model 1, Table 2). Thus, it is concluded that financial knowledge was not mediated by money management.

Did Money Management Mediate the Effect of Financial Experience on Debt?

Yes, it did. Financial experience significantly and positively influenced money management (Model 2, Table 2) while money management significantly and negatively influenced consumer debt (Model 3, Table 2). From Model 3 (Table 2), once the money management was controlled, financial experience remained significant. Thus, it is concluded that financial experience was partially mediated by money management.

Discussion and Conclusion

The present study was conducted to serve two major objectives. The first objective was to investigate whether financial knowledge and financial experience result in lower consumer debt. The second objective was to examine whether money management acts as a significant mediating factor between its antecedents and consumer debt.

Did people with higher financial knowledge have less debt? The answer was no, they did not. Findings revealed that financial knowledge had no direct effect on consumer debt when other demographic factors were being controlled. In other words, people who possess greater financial knowledge did not necessarily have less debt. This is consistent with the previous studies (Xiao et al., 2011; French & McKillop, 2016; Limbu, 2017).

Regarding the mediating effect, money management did not mediate the relationship between financial knowledge and debt since the direct influence of financial knowledge on consumer debt was not significant. However, the positive influence of financial knowledge on debt through money management was observed. Financial knowledge assists individuals in making essential financial decisions in daily life, resulting in better money management behavior. Individual with better financial knowledge can better manage their cash, credit, saving, investment, and plan for retirement (French & McKillop, 2016; Hilgert et. Al., 2003: Limbu, 2017; Lusardi & Tufano, 2015), hence resulting in lower debt (Iyer, and Howell, 2012). Findings are consistent with the Behavioral Finance Theory (Barberis & Thaler, 2003) which supported that the simple processes of money management, such as forward planning and budgeting (Forsyth & Burt, 2008; French & McKillop, 2016), and making uninformative reminder (Stango & Zinman, 2014), help people match their money in-flow and out-flow, help reduce problematic spending behavior (O' Donoghue & Rabin, 1999), thus, reducing consumer debt.

Did people who had experienced in financing have less debt? The answer was no, they did not. Results from hypotheses testing revealed that people with greater financial experience accrue more debt. This finding was consistent with Borden et al. (2008) who stated that people with experience have less fear and caution toward credit usage which results in accumulating greater debt.

By incorporate money management as a mediator between the influence of financial experience on consumer debt, findings revealed that money management partially mediated the influence of financial experience on consumer debt. Without money management, people with high financial experience might accrue more debt. However, people who have financial experience and use their experience to improve their money management practices were more likely to have less debt (Frijns et al., 2014; Lyons et al., 2007; Tang & Peter, 2015).

Implication

Results from the present study provide important implications for policy makers. Money management behaviors are crucial determinants of debt, regardless of financial knowledge and experience. Therefore, a policy attempting to improve consumers' financial knowledge may not sufficient to reduce debt problem. Financial education in schools and universities that emphasize on those mathematic models and numeric calculation of interest rate, inflation, and so on may not be effective in reducing consumer debt. Financial education should aim at shaping consumers' money management behavior. Education that emphasize on how to manage cash, budget, expenditure, saving, credit, and insurance is suitable in reducing debt burden problem. For example, to effectively manage money, education should emphasize on how to keep a record of monthly expense, how to do monthly budget, and how much to save and set aside for emergencies. Financial counselors or financial trainers may be necessary in this regard to help individuals to shape their behavior on how to manage cash, credit, saving and investment.

Limitations and Future study

The present study encounters some limitations. Firstly, this study lumped real estate debt and other type of consumer debt into a single dependent variable. Individuals' intention to accrue real estate debt and consumer debt may vary critically. Real estate mortgage may be perceived as an investment objective or a symbol of success, while other consumer debts are recognized as financial strain. There is a need for future research to decompose these types of debt to clearly identify the behaviors of individuals' decision toward debt. Further study might also take into account those debt incurred from informal borrowing such as borrowing from friends or families as these debts appear widely in many societies.

Secondly, all of the data were collected from questionnaire survey. Self-assessed questionnaire survey may be subjected to bias since respondents may answer questions in the desirable ways. Particularly, when the questions ask about some sensitive personal information, some respondents may be unwilling to disclose due to their embarrassment (Malhotra, 2010). Thus, future study may incorporate information from other secondary source such as financial institutions to yield more accurate results from the analysis.

Finally, the present study only emphasizes the impact of financial knowledge and financial experience on consumer debt. The observed explanatory power of the model might be limited since there are other economic factors, demographic factors, social factors, and psychological factors which can also affect the consumer debt. Therefore, future study may include more factors affecting debt into the analysis.

References

Achtziger, A., Hubert, M., Kenning, P., Raab, G., & Reisch, L. 2015. "Debt out of control: The links between self-control, compulsive buying, and real debts." **Journal of Economic Psychology** 49: 141-149.

Anderson S., Zhan M., & Scott J. 2004. "Targeting financial management training at low income audiences: Bits, briefs, and applications." **Journal of Consumer Affairs** 38: 167-177.

Ando, A. & Modogliani, F. 1963. "The ''life cycle'' hypothesis of saving: Aggregate implications and tests." **The American Economic Review** 53 (1): 55-84.

Antonides, G., de Groot, M., & van Raaij, F. 2011. "Mental budgeting and the management of household finance." **Journal of Economic Psychology** 32: 546-555.

Avard, S., Manton, E., English, D., & Walker, J. 2005. "The financial knowledge of college freshmen." **College Student Journal** 39 (2): 321-338.

Barberis, N., & Thaler, R. 2003. "A Survey of behavioral finance" in G. Constantinides, M. Harris, & R. Stulz (eds.). **Handbook of Economics and Finance.** Amsterdam: Elsevier Science B.V.

Baron, R. & Kenny, D. 1986. "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations." **Journal of Personality and Social Psychology** 51: 1173-1182.

Bernheim, B., Garrett, D., & Maki, D. 2001. "Education and saving: The long-term effects of high school financial curriculum mandates." **Journal of Public Economy** 80: 435-465.

Berthoud, R., & Kempson, E. 1990. **Credit and debt in Britain. Report of first findings from the PSI survey**. London: Policy Studies Institute.

Borden, L., Lee, S., Serido, J., & Collins, D. 2008. "Changing college students' financial knowledge, attitudes, and behavior through seminar participation." **Journal of Family Economic Issues** 29 (1): 23-40.

Bradley, D., Hirad, A., Perry, V., & Zorn, P. 2001. **Is experience the best teacher? The relationship between financial knowledge, financial behavior, and financial outcomes.** Philadelphia: University of Pennsylvania.

Braunsberger, K., Lucas, L., & Roach, D. 2005. "Evaluating the efficacy of credit card regulation." **The International Journal of Bank Marketing** 23 (3): 237-255.

Braunstein, S. & Welch, C. 2002. "Financial literacy: An overview of practice, research and policy." **Federal Reserve Bulletin** 11: 445-457.

Charpe M., & Flaschel, P. 2013. "Workers' debt, default and the diversity of financial fragilities." **Structural Change and Economic Dynamics** 27: 48-65.

Collins, J. 2007. "Exploring the design of financial counseling for mortgage borrowers in default." **Journal of Family and Economic Issues** 28 (2): 207-226.

Carswell, A. 2009. "Does housing counseling change consumer financial behaviors? Evidence from Philadelphia." **Journal of Family and Economic Issues** 30 (4): 339-356.

Disney, R. & Gathergood, J. 2013. "Financial literacy and consumer credit portfolios." **Journal of Banking and Finance** 37: 2246-2254.

Donnelly, G., Iyer, R., & Howell, R. 2012. "The Big Five personality traits, materialistic values and financial well-being of self-reported money managers." **Journal of Economic Psychology** 33 (1): 1129-1142.

Donnelly, G., Ksendzova, M., & Howell, R. 2013. "Sadness, identity, and plastic in over-shopping: The interplay of materialism, poor credit management, and emotional buying motives in predicting compulsive buying." **Journal of Economic Psychology** 39: 113-125.

Duca, J. & Kumar, A. 2014. "Financial literacy and mortgage equity withdrawals." **Journal of Urban Economics** 80: 62-75.

Fan, X., Chang, Y., & Hanna, S. 1993. "Real income growth and optimal credit use." **Financial Services Review** 3 (1): 45-58.

Forsyth, D. & Burt, C. 2008. "Allocating time to future tasks: The effect of task segmentation on planning fallacy bias." **Memory and Cognition** 36: 791 -798.

French, D. & McKillop, D. 2016. "Financial literacy and over-indebtedness in low-income households." **International Review of Financial Analysis** 48: 1-11.

Frijns, B., Gilbert, A., & Tourani-Rad, A. 2014. "Learning by doing: The role of financial experience in financial literacy." **Journal of Public Policy** 34 (1): 123-154.

Godwin, D. & Koonce, J. 1992. "Cash flow management of low-income newlyweds." **Journal of Financial Counseling and Planning** 3: 17-43.

Gudmunson, C. & Danes, S. 2011. "Family financial socialization: Theory and critical review." **Journal of Family and Economic Issues** 32: 644-667.

Hair, J., Black, W., Babin, B., & Anderson, R. 2010. **Multivariate data analysis: A global perspecive**. 7th ed. New Jersey: Prentice Hall.

Hancock, A., Jorgensen, B., & Swanson, M. 2013. "College students and credit card use: The role of parents, work experience, financial knowledge, and credit card attitudes." **Journal of Family and Economic Issues** 34 *(*4): 369-381.

Hanna, S., Fan, X., & Chang, Y. 1995. "Optimal life cycle savings." **Financial Counseling and Planning** 6: 1-15.

Harari, D. 2017. **Household debt: Statistics and impact on economy.** Retrieved from researchbriefings.files.parliament.uk/documents/CBP-7584/CBP-7584.pdf.

Hastings, J., & Mitchell, O. 2010. **How financial literacy and impatience shape retirement wealth and investment behaviours.** (University of Michigan Retirement Research Center Working Paper No. 2010-233).

Haynes-Bordas, R., Kiss, D., & Yilmazer, T. 2008. "Effectiveness of financial education on financial management behavior and account usage: Evidence from a "second chance" program." **Journal of Family and Economic Issues** 29 (3): 362-390.

Ho, R. 2006. **Handbook of univariate and multivariate data analysis and interpretation with SPSS**. Boca Raton: Chapman & Hall.

Hilgert, M., Hogarth, J., & Beverly, S. 2003. "Household financial management: The connection between knowledge and behavior." **Federal Reserve Bulletin** 87: 309-322.

Hirad, A., & Zorn, P. 2001. **A little knowledge is a good thing: Empirical evidence of the effectiveness of pre-purchase homeownership counseling.** Virginia: Freddie Mac.

Johnson, E., & Sherraden, M. 2007. "From financial literacy to financial capability among youth." **Journal of Sociology and Social Welfare** 34: 119-146.

Kerkmann, B., Lee, T., Lown, J., & Allgood, S. 2000. "Financial management, financial problems and marital satisfaction among recently married university students." **Journal of Financial Counseling and Planning** 11 (2): 55-65.

Kolb, D. 1984. **Experiential Learning: Experience as the Source of Learning and Development**. New Jersey: Prentice-Hall, Inc.

Ksendzova, M., Donnelly, G., & Howell, R. 2017. "A brief money management scale and its associations with personality, financial health, and hypothetical debt repayment." **Journal of Financial Counseling and Planning** 28 (1): 62-75.

Lachance, M., Beaudoin, P., & Robitaille, J. 2006. "Quebec young adults' use of and knowledge of credit." **International Journal of Consumer Studies** 30 (4): 347-59.

Lea, S., Webley, P., & Walker, C. 1995. "Psychological factors in consumer debt: Money management, economic socialization, and credit use." **Journal of Economic Psychology** 16: 681-701.

Limbu, Y. 2017. "Credit card knowledge, social-motivation, and credit card misuse among college students: Examining the information-motivation-behavioral skills model." **International Journal of Bank Marketing** 35 (5): 842-856.

Lombardi, M., Mohanty, M., & Shim, I. 2017. **The real effects of household debt in the short and long run.** (Bank for International Settlements Working Papers No 607).

Lusardi, A. & Mitchell, O. 2009. **How Ordinary Consumers Make Complex Economic Decisions: Financial Literacy and Retirement Readiness.** Retrieved from: www.nber.org/papers/w15350.

Lusardi, A. & Tufano, P. 2015. "Debt literacy, financial experiences, and overindebtedness." **Journal of Pension Economics & Finance** 14 (4): 332-368.

Lyons, A., Rachlis, M., & Scherpf, E. 2007. "What's in a score? Differences in consumers' credit knowledge using OLS and quintile regressions." **Journal of Consumer Affairs** 41: 223-249.

Malhotra, N. 2010. **Marketing research: An applied orientation**. New Jersey: Pearson Education.

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: University of Washington and the Aspen Institute.

National Statistical Office Thailand. 2016. **Labor force survey whole Kingdom quarter 3 July-September 2016.** Bangkok: National Statistical Office Thailand.

Norvilitis, J. & MacLean, M. 2010. "The role of parents in college students' financial behaviors and attitudes." **Journal of Economic Psychology** 31: 55-63.

Norvilitis, J., Merwin, M., Osberg, T., Roehling, P., Young, P., & Kamas, M. M. 2006. "Personality factors, money attitudes, financial knowledge, and credit-card debt in college students." **Journal of Applied Social Psychology** 36 (6): 1395-1413.

Norvilitis, J. M., Szablicki, P. B., & Wilson, S. D. 2003. "Factors influencing levels of credit-card debt in college students." **Journal of Applied Social Psychology** 33 (5): 935-947.

O' Donoghue, T., & Rabin, M. 1999. "Doing it now or later." **American Economic Review** 89: 103-124.

Peltier, J., Dahl, A., & Schibrowsky, J. 2016. "Sequential loss of self-control: Exploring the antecedents and consequences of student credit card debt." **Journal of Financial Services Marketing** 21 (3): 167-181.

Robb, C. 2011. "Financial knowledge and credit card behavior of college students." **Journal of Family Economics Issues** 32: 690-698.

Robb, C. & Sharpe, D. 2009. "Effect of personal financial knowledge on college students' credit card behavior." **Journal of Financial Counseling and Planning** 20 (1): 25-40.

Robb, C. & Pinto, M. 2010. "College students and credit card use: An analysis of financially at-risk students." **College Student Journal** 44 (4): 823-835.

Scott, R. 2010. "Credit card ownership among American high school seniors: 1997-2008." **Journal of Family and Economic Issues** 31 (2): 151-160.

Sobel, M. 1982. "Asymptotic intervals for indirect effects in structural equations models." in S. Leinhart (ed.). **Sociological methodology.** San Francisco: Jossey-Bass, pp. 290-312.

Stango, V. & Zinman, J. 2014. "Limited and varying consumer attention evidence from shocks to the salience of bank overdraft fees." **Review of Financial Studies** 27 (4): 990-1030.

Tang, N. & Peter, P. 2015. "Financial knowledge acquisition among the young: The role of financial education, financial experience, and parents' financial experience." **Financial Services Review** 24: 119-137.

Weiner, R., Baron-Donovan, C., Gross, K., & Block-Leib, S. 2005. "Debtor education, financial literacy and pending bankruptcy education." **Behavioural Sciences and the Law** 23: 347-366.

Xiao, J., Sorhaindo, B., & Garman, E. 2006. “Financial behaviors of consumers in credit counseling.” **International Journal of Consumer Studies** 30 (2): 108-121.

Xiao, J., Tang, C., Serido, J., & Shim, S. 2011. “Antecedents and consequences of risky credit behavior among college students: Applications and extensions of the theory of planned behavior.” **Journal of Public Policy and Marketing** 30 (2): 239-245.

Yamane, T. 1967 **Statistics: An introductory analysis**. New York: Harper & Row.

Zinman, J. 2015. “Household debt: Facts, puzzles, theories, and policies.” **Annual Review of Economics** 7: 251-276.