



A LOGISTIC REGRESSION ANALYSIS OF FACTORS AFFECTING THE SPENDING BEHAVIOR OF MAEJO UNIVERSITY STUDENTS, CHIANGMAI PROVINCE

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Abstract

The Bank of Thailand's study on the development of Household Debt (HHD) provides insight into Thais' borrowing behavior. More than 58% of Thais start accruing debt as soon as they join the job. Notably, inadequate precautionary savings are present in almost 62% of Thai households. If an incident results in a 20% or greater drop in income, these households would find it difficult to pay off debt. Individually, the consequences lead to wealth loss and unstable finances, which in turn cause a host of societal issues. This research aims to study factors influencing spending behavior (SB), Financial Knowledge (FK), and Financial Attitude (FA) of students at Maejo University (MJU), Chiang Mai Province. The data was collected from 400 MJU students through a questionnaire and analyzed by using percentages and Binary Logistic (BL) Regression Analysis. The research findings indicated that the majority of students are female, 20- years- old, in their first year of the Business Administration faculty, do not borrow money from the Student Loan Fund (SLF), have never received scholarships, receive income from parents, and live with both parents. The research revealed that FK, FA, and SB are at a good level. Further analysis using BL Regression showed that factors related to FK and FA influence the SB of MJU students. Specifically, the Odds Ratio for FK is 0.40, indicating that students with poor FK are less likely to have good SB by more than 0.40 compared to students with good FK. Similarly, the Odds Ratio for FAs is 0.076, suggesting that students with poor FA are less likely to have good SB by more than 0.076 compared to students with good FA at 0.05 significant level. The model's suitability was tested by using the Hosmer-Lemeshow test and found to be appropriate.

Keywords: Spending Behavior, Financial Knowledge, Financial Attitude,
Logistic Regression Analysis



Introduction

The level of Household Debt (HHD) to Gross Domestic Product (GDP) is an indicator that reflects a country's economic growth, showing the proportion of HHD compared to the GDP. If the HHD to GDP ratio is high and the debt is incurred solely to meet consumer needs without including investment purposes for development, it can lead to problems in debt repayment capability in the future. Conversely, if the mentioned debt burden is aimed at investment and development, it indicates an opportunity for the country to have resources ready to support economic growth in the future. According to the results of the survey on the HHD situation in Thailand in the first quarter of the year 2023, it was found that there was an expansion of HHD by 11.5%, equivalent to a debt value of 559,408 Thai Baht per household. It is anticipated that the rate of increase will be at its highest in the year 2024 due to economic uncertainties (Kaewka, 2023). Furthermore, based on Thailand's previous study of the HHD situation, it is observed that there has been a continuous and accelerated increase, particularly during the COVID-19 pandemic. This surge is attributed to the decline in income, leading to a trend where the HHD to GDP ratio surpasses 80%, a level that raises concerns as it could have long-term implications for GDP growth. It is crucial to monitor and address this high level of HHD, as it may impact the sustained growth of the GDP in the long run.

The post-1997 New Generation, influenced by changing socioeconomic factors and societal shifts, experiences a rising consumerist culture. Evolving lifestyles, social trends, and online financial services contribute to increased spending and debt. Addressing these issues requires focused efforts to promote financial literacy and provide solutions for Thailand's household debt problem. The majority of students at MJU are the new generation. This group is a good representation of the financial perspectives and spending behavior. Financial strain can be prevented by appropriate financial management (Dwiastanti, 2015), good financial perspective and behaviors are part of effective financial management (Topa et al., 2018).

Therefore, the researchers are interested in studying the factors influencing the spending behavior of the younger generation, using a case study from MJU students in Chiang Mai Province. This study aims to identify the factors that impact spending behavior. The research findings will be beneficial for establishing guidelines to prevent issues arising from spending behavior, as well as addressing HHD problems in the country.



Research Objectives

1. To explore the level of FK at MJU students
2. To explore the level of FAs at MJU students
3. To investigate the factors influencing the spending behavior of MJU students

Literature Review

Financial Knowledge and Spending Behavior

Financial knowledge (FK) refers to the acquisition of skills that lead to understanding financial information and the ability to make wise and appropriate financial decisions (Rootman and Antoni, 2015). Financial education plays a crucial role in shaping attitudes and responsible spending behavior (SB) at the individual level. FK is a key component of a successful adult life (Potrich et al., 2015). Importantly, financial education is not confined to adulthood; financial literacy can be cultivated from a young age, covering basic financial principles such as understanding the value of coins and banknotes, spending, price comparison, and value assessment during primary school years. In secondary school, financial responsibility, budget planning, the importance of saving, and emergency fund management should be emphasized. In university, students should be taught to manage their accounts for educational purposes, gain knowledge about borrowing, using credit cards, and calculating interest (Bank of Thailand, 2023). A high level of FK enables individuals to make quality financial decisions, contributing to improved financial well-being (Garg and Singh, 2018). Moreover, FK can drive individuals to adopt positive SB (Narmaditya and Sahid, 2023).

Several studies have demonstrated the relationship between FK and SB. Kritlertkul (2021) studied the impact of FK and FA on financial planning behaviors among bank customers. The research found that FK positively influences financial behavior, aligning with the findings of (Lomtaku et al., 2023). They discovered that FK has a positive effect on saving behaviors. This aligns with Andreou and Philip's (2018) findings that FK significantly influences students' understanding of credit card management. Additionally, Herawati et al. (2018) explored factors influencing the financial behavior of accounting students in Bali, Indonesia, and found that FK and self-perceived financial abilities had a



significant positive impact on financial behavior. In summary, there is a consistent positive relationship between FK and SB in various contexts.

Financial Attitudes and Spending Behaviors

FA involves an individual's thoughts, feelings, and opinions about financial matters (Sebstad et al., 2006). It represents an emotional commitment to learning financial information and adopting financial concepts to prepare individuals for a positive response to financial issues (Potrich et al., 2016). Positive FA serves as a crucial foundation for influencing various SB, including income generation, spending, saving, financial planning, and investment decisions to enhance returns (Permsook, 2019).

In previous research, the relationship between FA and FB has been studied. Agarwal et al. (2015) explored the connection between FA and FB regarding FK. The study found a positive relationship between FA, FB, and FK among working women. Similarly, Adiputra and Patricia (2020) investigated the impact of FA, FK, and income on financial management behaviors. The research demonstrated that both FK and FA significantly influenced financial management behaviors. Furthermore, a study by Obagbuwa and Kwenda (2020) examined factors influencing the spending behavior of university students. The research revealed that FA played a role in shaping the spending behavior of university students. Consistent with these findings, Nuris et al. (2023) studied factors influencing the SB of undergraduate students. The results indicated that various factors, especially FA and financial education, had a significant impact on spending behavior. In summary, the reviewed literature suggests a positive relationship between FA and SB. FA, along with other factors such as FK and education, play a crucial role in shaping the SB of individuals, including university students.

Conceptual Framework

According to the research background, a conceptual framework was developed accordingly as follows.

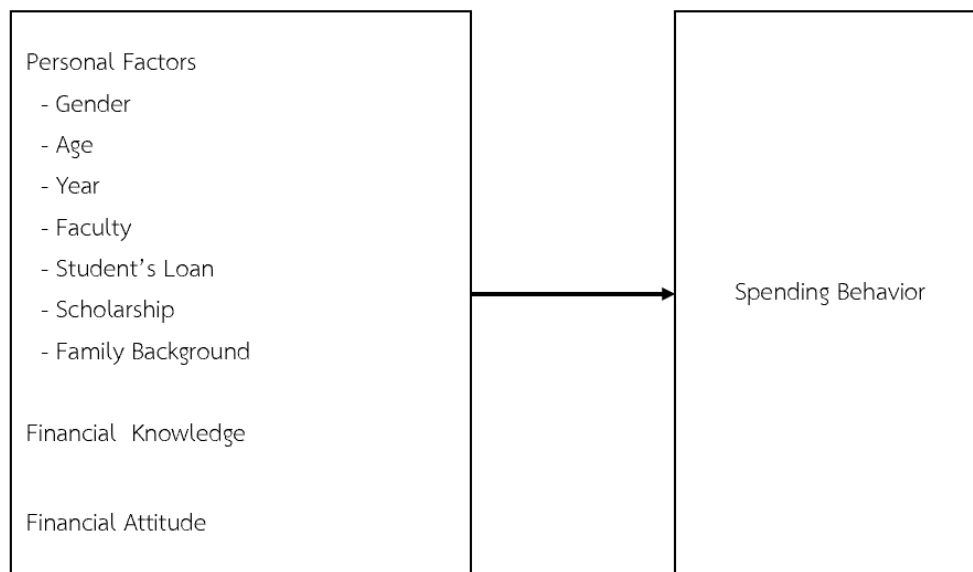


Figure1: Conceptual Framework of the Research

Personal factors encompass characteristics such as gender, age, year, faculty, financial aid status (such as student's loan and scholarship), and family background. Financial knowledge pertains to the development of skills enabling comprehension of financial information and the capacity to make prudent financial choices. Financial attitudes encompass an individual's beliefs, emotions, and attitudes toward financial matters. Spending behavior pertains to the process of making decisions regarding how money is spent.

Research Methodology

Population, Sample Group, and Data Collection

This study, utilizing a quantitative methodology, emphasizes the 16,244 undergraduate students of Maejo University in Chiang Mai (Office of Academic Administration and Development, 2023). The sample group is based on accessibility. Given that Logistic Regression Analysis requires a sample size greater than or equal to 30 times the number of independent variables (Vanichbuncha, 2009), and with a total of 9 independent variables in this study, the sample size needs to be $9 \times 30 = 270$. Hence, the study collects data from a sample group of 400 individuals, which is considered sufficient for statistical analysis.



Instruments

The research questionnaire, developed after a thorough literature review and research, is crucial for this study. It consists of four parts: 1. Personal Information gathering demographic data. 2. FK Part assessing financial knowledge. 3. FA Part evaluating financial attitudes. 4. SB Part measuring spending behaviors. The Likert Scale is utilized for responses. The questionnaire underwent expert scrutiny, achieving high congruence values (0.67 to 1.00) through the Index of Objective Congruence (IOC). Reliability was assessed via Cronbach's Alpha Coefficient, with an overall coefficient of 0.941, indicating high reliability. Specific sections also demonstrated strong reliability: FK (0.787), FA (0.923), and spending behavior (0.880).

Data collection and data analysis

The sampling was utilized in this study to distribute questionnaires to 400 Maejo University students in Chiang Mai—two main components comprised the data analysis. In the first part, the frequency and percentage of the data were analyzed using descriptive statistics from the SPSS software. The second part was dedicated to evaluating the student's financial literacy. In the FK questionnaire, each accurate answer was worth 1 point; all wrong answers were worth 0 points. FK was divided into two levels in this study using criteria that were modified from Obagbuwa and Kwenda (2020) and Andreou and Philip (2018). A total score of four or more was regarded as indicating a good degree of financial understanding, whereas a score of less than four indicated a low level. The third and fourth parts involved analyzing FAs and SB. The Likert Scale was used for the questions, ranging from 1 to 5. The mean was calculated, and the results were categorized into two levels based on the criteria modified from Bloom, B.S., et al. (1971), as interpreted by Sithikan (2017) as shown in Table 1. The two levels were "good," indicating a high level of agreement, and "not good," indicating a moderate to low level of agreement

Table 1 shows FA and SB ratings

Mean Score Range	Interpretation	Category
4.21 – 5.00	Strongly agree	Good level
3.41 – 4.20	Agree	
2.61 – 3.40	Neutral	Not good
1.81 – 2.60	Disagree	
1.00 – 1.80	Strongly disagree	



This table interprets the participants' responses by categorizing the mean scores into different levels of agreement or disagreement. The levels are then further classified as either "good" or "not good" based on the specified criteria.

The analysis of the relationship between variables in this study has gone through various steps: 1. Checking for abnormal data of independent variables (Multicollinearity): Used Tolerance and Variance Inflation Factor (VIF) to examine the relationships among all independent variables in the model. If Tolerance is close to 1 and VIF does not exceed 4, it indicates that the variables are independent (Miles & Shevlin, 2001). 2. Analysis of data to identify factors influencing spending behavior: Used Chi-Squared Test statistics to select variables significantly related to spending behavior. Used Binary Logistic Regression to analyze the relationship between independent variables (factors) and spending behavior.

Results

Basic information about the sample group

The sample group consists of 400 participants, predominantly female with 199 individuals (49.80%). Participants with an age of 20 years old are 110 people (27.50%). Students in the first academic year are 135 individuals (33.75%). The majority of the participants are from the Faculty of Business Administration, accounting for 200 individuals (50%). Those who have not applied for loans from the Student Loan Fund (SLF) are 243 people (60.75%). Participants who have not received any scholarship are 238 individuals (59.00%). The majority of participants, 299 individuals (74.75%), live with both parents.

The level of Financial Knowledge, Financial Attitudes, and Spending Behavior

The study reveals that, based on questionnaire scores, 55.30% of MJU students exhibit a good level of financial knowledge, with 221 out of 400 meeting the criteria, and their financial attitudes, measured through questionnaire responses, indicate a favorable level with 63.70%, or 225 out of 400, meeting the set standards, while the majority also demonstrate good spending behavior.



The factors influencing the spending behavior of MJU students

Multicollinearity Test

This study employs tolerance and VIF to test collinearity among independent variables. The results show that two variables, Age and Academic Year, have Tolerance values of 0.156 and 0.151, and VIF values of 6.427 and 6.629, respectively. This indicates a multicollinearity issue. Since high intercorrelation among independent variables can lead to inaccuracies in the model, these two variables were excluded from the logistic regression analysis.

Chi-Squared Test

To test the appropriateness of predictor variables, this study employs the Chi-squared test. The results reveal that variables FK, FA, Faculty, and Family Background are statistically significant predictors of students' FB, as indicated by their p-values less than 0.05. These variables were used in the subsequent binary logistic regression analysis.

Binary logistic regression and The Hosmer-Lemeshow test

This study employs binary logistic regression to test the relationship between FK and FA to FB. The results indicate that FK and FA are significant predictors of students' FB, as their p-values are less than 0.05. The odds ratios for FK and FA are 0.400 and 0.076, respectively. This suggests that students with higher FK and a positive FA are less likely to exhibit certain FB. Faculty and Family Background, on the other hand, are not significant predictors. From Table 2, it was found that the two predictive variables, namely FK and FA, significantly influence the likelihood of having "good" or "not good" levels of spending behavior at the 0.05 significance level, with P-values of 0.013 and 0.000, respectively.

For the Odds Ratio, which indicates the likelihood of an event occurring compared to the likelihood of it not occurring, a value greater than 1 implies a greater likelihood of the event occurring (Vanichbuncha, 2009). Regarding FK, the Odds Ratio is 0.400 as shown in Table 2, meaning that students with poor FK are inclined to have less favorable spending behavior by a factor of 0.400 compared to students with good FK. 2. Regarding FA, the Odds Ratio is 0.076, indicating that students with a less favorable FA are inclined to have less favorable spending behavior by a factor of 0.076 compared to students with a good FA. Therefore, having a good FK and a positive FA has an impact on increasing the likelihood of having good spending behavior among students. However, variables such as Faculty and Family Background do not significantly influence the



prediction of spending behavior among students who receive education at Maejo University in Chiang Mai, as presented in Table 2

Table 2 presents the results of the binary logistic regression analysis:

FACTOR	B	S.E.	Wald	Df	Sig	Odds Ratio
FK	-.917	.370	6.160	1	.013*	.400
FA	-2.582	.387	44.441	1	.000*	.076
Faculty	.090	.354	.064	1	.800	1.094
Family Background	-.391	.322	1.472	1	.225	.677
Constant	3.765	.706	28.415	1	.000	43.158

Note: * indicates statistical significance at the 0.05 level.

The Hosmer-Lemeshow test

The Hosmer-Lemeshow test is a statistic used to assess the goodness of fit of a model. The Chi-square value is 8.999 with a significance level of 0.174, which is greater than .05. Therefore, it can be concluded that this model is considered a good fit. The researcher can formulate the logistic regression equation for predicting the odds of having good spending behavior as follows:

$$\text{Prob (Good Spending Behavior)} = \frac{1}{(1+e^z)} \quad \text{Where } z = 3.765 - 0.917 * \text{FK} - 2.582 * \text{FA}$$

Discussion

Financial literacy has a major impact on spending behavior, according to a study on the variables influencing MJU students' spending behavior in Chiang Mai. As opposed to students with higher financial awareness, those with lower financial understanding normally display less positive spending behavior (Odds Ratio = 0.400). In the same manner, FAs have a major effect on spending behavior. Students who have negative FA are more likely than those who favorably have positive attitudes toward spending (Odds Ratio = 0.076). These findings suggest that individuals with good FK and favorable FA are more likely to exhibit positive spending behavior. This aligns with the research conducted by Obagbuwa and Kwenda (2020), which highlighted the impact of FAs on spending habits. It is also consistent with the work of (Lomtaku et al., 2023) indicating that FK influences savings behavior. Furthermore, the results are in line with the study by



Andreou and Philip (2018) which emphasized the clear influence of FK on students' understanding of credit card debt management. Agus Zainul Arifin (2017) found that FK impacts FB. Additionally, the study by Kitdamrongtam and Hantrakul (2016) revealed that personal FK positively affects the relationship between personal financial management attitudes and personal financial management behavior in debt management

Body of Knowledge

The study focuses on understanding the factors that influence the SB, FK, and FA by using Binary Logistic Regression revealing that FK and FA significantly influence SB among MJU students. The appropriateness of the model was tested using the Hosmer-Lemeshow test and found to be suitable for explaining the relationships between FK, FA, and SB among MJU students.

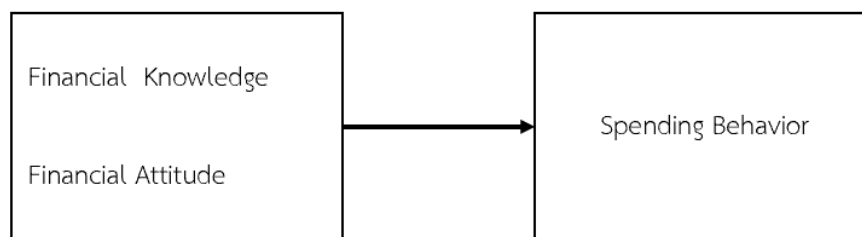


Figure2: The MJU Spending Model

Beneath the MJU context, the relationship that influences financial behavior suggests that addressing financial issues should prioritize financial knowledge and financial attitudes. Therefore, to effectively tackle financial problems, emphasis should be placed on enhancing financial literacy and fostering positive financial attitudes.

Conclusion

The research delves into the impact of HHD on Thailand's economic growth, emphasizing the risks of high HHD-to-GDP ratios. A study by the Bank of Thailand reveals concerning borrowing trends, particularly in credit card and personal debt. The new generation's changing lifestyles and easy access to financial services contribute to increased spending behavior. This study focuses on Maejo University's 16,244 undergraduate students, utilizing quantitative methods. Convenient sampling selects a group of 400 individuals for data collection, meeting Logistic Regression Analysis



requirements. A questionnaire assesses personal information, FK, FA, and SB, exhibiting high reliability. Data analysis involves descriptive statistics and financial literacy evaluation, categorizing results based on criteria. The study checks for abnormal data and employs Chi-Squared Test and Binary Logistic Regression for analyzing factors influencing spending behavior. The results indicate that higher FK and positive attitudes predict better spending behavior.

Suggestions

Applying the Study Findings:

Development of Financial Education Programs: Implement programs focusing on teaching and fostering understanding of financial management. This aims to reduce the likelihood of future debt problems. **Guidance on Financial Management:** Create guidelines for financial management suitable for students and the general public to enhance the development of a positive financial mindset.

Recommendations for Future Research:

Further Investigation of Influencing Factors: Conduct additional research on factors influencing FK and FA. This could lead to strategies for promoting and enhancing these aspects.

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