THE POWER OF FINANCIAL BEHAVIOR IN EMERGENCY FUNDS: EMPIRICAL EVIDENCE FROM A DEVELOPING COUNTRY

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ABSTRACT

Emergency funds are considered a buffer against financial shocks, especially for the informal workforce or individuals living in developing countries with a lower middle income. Hence saving money for emergency circumstances is important. This research investigates the role of financial literacy in emergency funds. Financial literacy is approached in this research in three aspects: financial knowledge, financial behavior, and financial attitude. Logistic and order logistic regressions are applied to analyze the data collected from the Southeast region of Vietnam, a developing country in Asia. The results show that those with better financial behavior are more likely to have emergency funds with savings adequate for covering 3 months' worth of living expenses or more, in comparison with those who have worse financial behavior. Financial knowledge and financial attitude, however, are not found to have a statistically significant impact on saving for emergency funds. In addition, gender is found to not play an important role in emergency funds, but income level is a crucial determinant of the size of emergency funds. These findings provide empirical evidence regarding developing countries with lower middle income to support the literature on personal finance and provide policymakers with suggestions on how to improve individuals' financial behavior and encourage savings for emergency funds.

Keywords: financial literacy; financial behavior; emergency funds; developing country; vietnam

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INTRODUCTION

Savings are only one aspect of the research into personal finance. A large body of literature emphasizes and focuses on long-term savings for objectives such as home ownership, education for children, and retirement. Besides long-term savings, short-term savings are also required to cover unexpected expenses in emergencies or crisis circumstances (Brüggen et al., 2017; Gjertson, 2016). Emergency funds are considered a key factor in the emergencies and financial shocks that individuals and households may have to handle (Liao & Xiao, 2014). According to the National Financial Capability Study (2018), setting up emergency funds could be a bigger challenge for those with lower incomes since they need to deal with more urgent needs in their daily life. Although financial planners and advisers always emphasize that households or individuals should set aside savings for emergency circumstances, whether or not people living in developing countries with lower income have maintained emergency funds for financial demands, including loss of income, disaster, illness, or disease, remains to be seen.

In a developed country context, White (2022) reported that around 61 percent of the people living in the US could have problems in which they are forced to use up their emergency funds. This report also confirms emergency savings could support households and individuals during financial crises and shocks, specifically during the COVID-19 pandemic. Over the Great Recession in 2008, about 33% of participants in the 2009 the National Financial Capability Study (NFCS) suffered from an income shock. By 2012, this percentage was reduced to 29%. In order to deal with periods of economic recession, however, households with lower income have the propensity to make financial decisions that might eventually increase instability worse partially because they do not have adequate financial knowledge and cannot gain access to traditional economic institutions (Sherraden, 2013).

While past investigations of crisis reserve funds have been conducted in most developed countries after the financial crisis in 2008, this research analyzes the data collected from a developing country. In particular, the data offer a developing world insight and perspective and also explain the financial phenomenon that characterizes most people in the Southeast of Vietnam, namely individuals with lower income. Like other developing countries in Southeast Asia, the majority of people in Vietnam work in the informal sector, at around 57.4% (General Statistics Office, 2021). As such, this group of the workforce is considered more exposed to financial vulnerability because of economic conditions or diseases, such as the COVID-19 pandemic. Moreover, there are few studies in Vietnam that provide enough evidence to help economic agents establish assertive financial strategies and policymakers promote savings for short-term and long-term goals, particularly for emergency funds. A very small number of studies on personal finance have been done as the first step to measure the level of financial literacy and explore the relationship between socioeconomic and demographic characteristic factors on financial literacy (Morgan and Trinh, 2020). Even though there have recently been a few studies on financial literacy and its role in financial inclusion, fintech usage, and retirement planning (Askar et al., 2020; Ganesan et al., 2020; Morgan and Trinh, 2020; Nguyen, 2022; Nguyen & Rozsa, 2019; Santoso et al., 2016), there is a lack of research on the role of financial literacy in emergency funds. The present research is conducted to provide evidence to fulfill a solid overview of how savings for emergency funds can be promoted.

Accordingly, this research focuses on financial literacy and the emergency funds of individuals who live in a developing country with lower income. Specifically, financial knowledge, financial behavior, and financial attitude are used to examine their impact on emergency funds. After that, the role of financial literacy in having emergency funds is explored. Finally, this research also expands to examine whether financial knowledge, financial behavior, and financial attitude have any effect on the size of emergency funds. By analyzing the data from a developing country with a lower income in Southeast Asia, this research contributes empirical results to the literature on exploring which aspects of financial literacy play a decisive role in promoting individual savings for emergency funds. The finding of this study emphasizes the role of financial behavior in emergency funds, and it is closely related to the finding of Reyers (2019).

LITERATURE REVIEW

Background theory in the context of emergency funds

Emergency funds have recently been a primary focus since the influence of economic shocks on financial stability has become the key area of research on financial vulnerability (Gjertson, 2016; Lusardi, 2013; Mills & Amick, 2010). An estimated 40% of households in the US are under the influence of financial vulnerability as defined by a shortage of liquid assets equivalent to three months of income, or incapacity to earn $2,000 a month (FINRA, 2012; Gjertson, 2016; Mills & Amick, 2010).

In economic theory, emergency funds are normally approached in the context of savings behavior. According to the permanent income hypothesis (PIH), people maintain consumption smoothing and reduce their spending level when their expected long-term income is not as much as their present income (Friedman, 1957). On the other hand, the possibility of vulnerability with respect to future spending and consumption – factors that would lead to saving for emergency funds – was perceived in the early development of savings theories (Fisher, 1930; Keynes, 1936). Recently, financial fragility is the indicator that determines the situation in which people cannot access or have a lack of financial resources in emergency circumstances. When emergency funds are thought of as essential sources to survive continuous financial hardship caused by unexpected occasions such as diseases, unemployment, or unexpected expenses, individuals are regarded as financially fragile. Those who can overcome these negative economic events, however, are called financially resilient (Hasler, Lusardi, and Oggero, 2018). The main point is that people need to have access to funds in crisis conditions without having to rely of high-cost alternatives, such as payday loans, which might prompt further financial difficulty (Gjertson, 2016; Shah, Mullainathan, and Shafir, 2012).

Approximately one-third of respondents in the 2009 NFCS were affected by an income shock over the Great Recession, i.e., a significant decrease in income in the previous year. By 2012, however, this figure dropped to 29%. This situation could be more difficult for households with lower income because when coping with economic crisis, their financial decisions are more likely to make their financial instability even worse due to a lack of financial knowledge and inability to access traditional economic institutions (Sherraden, 2013). The author emphasizes that utilizing financial knowledge and skills to access and buy secure and inexpensive financial products, like checking and savings accounts, is also necessary for individuals. Specifically, Friedline and West (2016) confirm that for young people, emergency savings have an association with financial inclusion and financial capability that also includes formal financial education; however, there was not a correlation between emergency savings and financial education alone. In a matched savings program, Grinstein-Weiss et al. (2015) also indicated that participants with financial education have higher average monthly savings compared with those without financial education. This finding suggests that the combination of financial education and financial inclusion could produce a better savings outcome than financial inclusion alone.

According to the conceptual model of financial capability (Sherraden, 2013), individuals' financial understanding, skills, and opportunities to use financial products are decisive factors in producing financial outcomes like emergency funds. As an illustration of this, Morduch and Schneider (2017) indicate that people who have volatile incomes may perceive that they can use emergency funds to pay bills and other expenses for months when they have to face unexpected decreases in their income. Further, Grinstein-Weiss et al. (2016, 2018) suggest that knowing how to establish an emergency fund – for example, setting aside tax refunds – is also necessary.

Financial literacy and emergency funds

There are many approaches to defining and measuring financial literacy. First, after reviewing 100 resources, Remund (2010) determined that financial literacy is the ability to understand financial concepts to deal with personal finance, as well as the confidence to plan and make financial decisions. A study by Huston (2010) evaluated 71 papers on this topic and determined that roughly half of these studies defined financial literacy as financial knowledge. Moreover, financial literacy also refers to the combination of financial knowledge and skills in order to achieve financial goals and financial well-being through desirable financial behaviour (Hoelzl & Kapteyn, 2011; Kempson, Collard, & Moore, 2005; Xiao et al., 2014). Specifically, financial literacy is defined as individuals' capacity to combine knowledge, skills, confidence, and points of view so as to eventually inform their financial behaviour (Kempson et al., 2005; Xiao et al., 2014).

The focus of the present study is emergency savings in low-income households. The financial vulnerability of low-income households to financial shocks has drawn a lot of interest from researchers, and a large number of studies have been conducted to examine the factors contributing to emergency savings in low-income households (Adams & West, 2015; Gjertson, 2016; Rothwell et al., 2016). The research findings show that low-income households do not have a propensity to make emergency savings when compared to those with higher incomes (Clark et al., 2020). Nonetheless, a small number of low-income households try to create an emergency fund; likewise, the findings reveal that these households suffer less severe hardship compared with those who do not have an emergency fund (Gjertson, 2016; Hogarth & Anguelov, 2003).

Given the financial vulnerability of low-income households to financial shocks, exploring the factors that play dominant roles in these households' decision-making concerning emergency savings is crucial. Schreiner and Sherraden (2007) prove that the major factor preventing low-income households from saving is resource constraints since their income can only cover basic necessities. Additionally, Collins and Gjertson (2013) suggest that structural and psychological factors concerning the construct of financial capability are also the main obstacles to saving. Regarding internal financial capability, low-income households with lower levels of financial knowledge and financial capability could be a cause of a lower level of emergency saving (Atkinson et al., 2007; Lusardi & Mitchell, 2007). Buckland (2010), however, states that low-income households may not necessarily have a lower level of financial knowledge, but rather their financial knowledge may be different from that of other households depending on their particular financial situations, such as their budgeting and access to benefits. Nevertheless, Anderson, Zhan, and Scott (2004) note the continued existence of financial knowledge about savings among these low-income households. With respect to external financial capability, not having enough access to savings products could stop low-income households from building up emergency savings (Collins & Gjertson, 2013).

The relationship between financial knowledge and emergency savings has recently been examined by Babiarz and Robb (2014), who studied the 2009 NFCS data to look at the association between having an emergency fund with objective and subjective financial knowledge. The authors state that theoretically, accumulating a reserve of wealth is necessary for households to prevent undesirable risks. Nonetheless, this manner of accumulation has the propensity to characterize households that fully realize the likelihood and seriousness of financial emergencies. The authors also prove that the more tested financial knowledge individuals have, the higher the probability of establishing an emergency fund. Similarly, Woodyard et al. (2017) examined 2012 NFCS data and found that the probability of establishing an emergency fund is 16% higher for an additional point of both objective and subjective financial knowledge. However, financial knowledge is not found to have a relationship with emergency savings when a wider range of controls are used to analyze NFCS data (Friedline & West, 2016; West & Friedline, 2016).

METHODOLOGY

Data

Before delivering the questionnaire survey to respondents, a qualitative method in the form of a pilot survey was conducted in two phases from December 2021 to the beginning of January 2022. Experts in the fields of general finance and personal finance, such as university academics and specialists in the banking industry conducted the first round of interviews. This round was meant to check for logical question ordering and the clarity of questions to ensure that response ranges and scales could be deemed appropriate. Then, all suggestions from experts were employed to be carried out in the second round. The questions in the second round were reevaluated for clarity, including grammatical and spelling mistakes, of the questionnaire survey. After reviewing the feedback and suggestions of the second round, the survey questionnaire was revised before collecting data.

To collect data, a survey questionnaire was designed with three main components: (1) financial literacy, approached from three aspects of financial knowledge, financial behavior, and financial attitude; (2) emergency fund information; and (3) the socio-demographic characteristics of respondents. The respondents were selected from five cities in the Southeast Region of Vietnam, including Ho Chi Minh City, Bien Hoa City (Dong Nai Province), Thu Dau Mot City (Binh Duong Province), Vung Tau City (Ba Ria Vung Tau Province), and Dong Xoai City (Binh Phuoc province). The data was collected from the beginning of January 2022 by conveying the paper survey to respondents who agreed to participate in the survey and then gathering their responses after they were completed. Overall, 527 valid questionnaires out of 700 were used for analysis, and invalid questionnaires were removed. These questionnaires were not completed or contained the same answer, "do not know," to the key questions related to emergency funds or financial knowledge questions.

Empirical research model

To measure how financial knowledge, financial behavior, and financial attitudes impact emergency funds, equation (1) is proposed as follows:

$$EF_i = \beta_0 + \beta_1 FK_i + \beta_2 FB_i + \beta_3 FA_i + \beta_4 \sum X_i + \varepsilon_i \quad (1)$$

In equation 1, EFi denotes the emergency fund of individual i. FK, FB and FA are represented by financial knowledge, financial behavior, and financial attitude. X is control variables including demographic characteristics such as gender, age group, education level, labor type, marital status, and income level. β is the coefficient; ε is error term.

Because the emergency fund is measured by a binary variable, it was coded as value 1 if an individual has an emergency fund for emergency situations and 0 otherwise. Hence, the logistic model is applied and presented in equation (2):

$$\text{Log}\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 FK_i + \beta_2 FB_i + \beta_3 FA_i + \beta_4 \sum X_i + \varepsilon_i \quad (2)$$

$Odds = \frac{p}{1-p}$ (p is the probability of no emergency fund, 1-p is the probability of having an emergency fund).

Moreover, this research also measures the emergency fund by the size of emergency funds with an ordinal scale. In particular, the size of emergency funds is divided into: under 3-month living expenses; 3 to 6-month living expenses; and more than 6-month living expenses.

Measurement of variables

According to Kapoor et al. (2012) and Garman and Forgue (2018), an emergency fund that could cover living expenses from three to six months should be created to deal with unexpected financial problems. To collect information on emergency funds and the size of emergency funds for this study, respondents were asked the following questions: (1) "Do you have any emergency fund for emergency situations?"; and (2) "In case of disease, job loss, or other emergencies, how long can your emergency fund cover living expenses?" For the first question, the emergency fund variable is measured by a dummy variable. The second question provides a specific number of months that respondents could cover their living expenses, and the emergency fund variable is measured by a discrete variable.

The main explanatory variables in this research are financial knowledge, financial behavior, and financial attitude. These variables are measured based on Lusardi and Mitchell (2007), and OECD/INFE (2015). Financial knowledge is estimated by 7 questions based on Lusardi and Mitchell (2007) and OECD/INFE (2015). These questions are designed to measure respondents' knowledge and awareness related to basic financial concepts, such as compound interest, inflation, time value of money, and financial diversification in order to estimate respondents' knowledge about financial transactions in their daily life. The answers to these questions are coded 1 for each correct answer and 0 for an incorrect or "I don't know" answer. Accordingly, the score for the financial knowledge indicator ranges from 0 to 7, wherein a higher score characterizes a higher level of financial knowledge. In the second part, financial behavior and financial attitude are measured to capture respondents' behavior and attitudes based on OECD/INFE (2015). Financial behavior is assessed on the basis of their budgeting, saving, borrowing, financial affairs, financial goals, and considered purchases. The score for this indicator ranges from 0 to 9. A higher score represents a higher level of financial behavior. The financial attitude indicator assesses respondents' financial planning in the longer term. Specifically, this indicator estimates aspects such as respondents' time preference and willingness to build up planned savings. As an illustration of this, one question is asked to evaluate respondents' short-term preferences in "living for today" and spending money. This indicator has scores ranging from 1 to 5, wherein a higher score characterizes financial behavior. Moreover, the demographic characteristics of respondents, such as gender, age, education level, marital status, labor force, and income level are considered control variables.

EMPIRICAL RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 and 2 show the descriptive statistics of respondents who completed the survey, with the final full sample of N = 527.

Table 1: Demographic characteristics of respondents

	Frequency	%
Gender		
- Female	270	51.23
- Male	257	48.77
Respondents' age		
- Under 25	104	19.73
- 25-34	228	43.26
- 35-49	155	29.42
- 50-60	40	7.59
Respondent's education		
- Secondary school	83	15.75
- High school	81	15.37
- Diploma/Bachelor	316	59.96
- Postgraduate	47	8.92
Marital status		
- Single	162	30.74
- Married	365	69.26
Labor force		
- Informal sector	228	43.26
- Formal sector	299	56.74
Income level		
- Under 5 million VND ($210)	141	26.76
- 5 – under 9 million VND ($210-$380)	155	29.41
- 9 – 15 million VND ($380-$630)	145	27.51
- Over 15 -30 million VND ($630-$1,270)	52	9.87
- Over 30 million VND (>$1,270)	34	6.45
Observations	527	

Source: author's work.

Table 1 reports respondents' demographic characteristics and Table 1B shows the summary of financial literacy, which is approached using financial knowledge, financial behavior, and financial attitude as aspects. Additionally, table 1B also presents the summary of emergency fund status of respondents Table 1 reports a summary of respondents' information. Among 527 individuals valid for analysis, 51.23% of them are female and 48.77% are male. Regarding age, most respondents are in the 25 to 34 and 35 to 49 age groups, amounting to around 43.3% and 29.4%, respectively. In terms of education level, the majority of respondents, about 60%, have gained a diploma or bachelor's degree. The percentage of respondents who have finished secondary school and high school is 15.8 % and 15.4%, respectively. Only about 9% hold a post-graduate degree. With regard to income, over 56% of individuals earn income under VND 9 million ($380) per month (with this income level they are not required to pay personal income tax). This means they have under average income. Finally, 43.26% of respondents work in informal sectors, and the rest of respondents are formal sector workers.

Table 2 shows the information related to financial literacy, which includes the financial knowledge, financial behavior, and financial attitude of respondents living in the Southeast region of Vietnam. In addition, this table also reports different sizes of respondents' emergency funds. Over 65% of individuals have savings for emergencies, and around 35% do not have an emergency fund; however, just 30.17% of respondents have an emergency fund that covers 3 to 6-month living expenses. 21.44% do not save enough to cover 3-month living expenses.

Table 2: Financial literacy and emergency funds summary

Variables	Obs	Mean (SD)	Min	Max
Financial knowledge	527	3.658 (1.78)	0	7
Financial behavior	527	6.28 (2.19)	0	9
Financial attitude	527	2.361 (1.07)	1	5
	Having an emergency fund			
Emergency fund	No (n =182)	Yes (n= 345)		
	34,54%	65.46%		
	No (n =182)	Under 3 months (n = 113)	3-6 months (n = 159)	More than 6 months (n = 73)
	34,54%	21.44%	30.17%	13.85%

Source: author's work.

Multivariate analysis results

Primarily, considering whether financial knowledge, financial behavior, and financial attitude have any impact on emergency funds is necessary. Table 3 reports the results of the odds ratio attained from a binary logistic regression analysis. The results demonstrate that only financial behavior indicator in column (2) is significantly and positively associated with holding emergency funds, indicating that financial behavior is considered to be a major determinant in financial literacy for establishing emergency savings. Particularly, a one-point increase in financial behavior is related to a 21.9% increase in the odds of having emergency funds. However, individuals' financial knowledge in column (1) and financial attitude in column (3) show no significant statistics in terms of holding emergency funds. This is probably because financial behavior in this study is assessed on the basis of respondents' budgeting, saving, and other financial affairs.

While control variables such as respondents' education and income levels are related to a higher odds ratio of having emergency savings, other respondents' demographic characteristics, such as marital status, number of dependents, and type of labor force to which they are employed do not have a statistically significant impact on having an emergency fund. Gender is also found not to play an important role in emergency funds. This means an increase in respondents' level of education and income results in a greater propensity to have emergency budgets. More specifically, the higher level of education and income individuals have, the higher percentage of individuals set up emergency funds. This could possibly be explained that individuals who receive better education and earn higher incomes may hold a clear view on preparing for unexpected financial emergencies. These findings are closely related to the results of Babiarz & Robb (2014) and Reyers (2019). The results of these studies, however, are only found in the group of people living above the poverty line.

Furthermore, this research also expands to examine the effect of financial knowledge, financial behavior, and financial attitude on the size of emergency funds. Table 4 presents the findings of the ordered logistic regression for the size of emergency funds. Once again, the financial behavior indicator has a positive correlation with the size of emergency funds. In particular, the odds ratio of 1.213 in column 2 of the link between the size of emergency funds and financial behavior denotes that the odds were 21.3%% higher for individuals with better financial behavior than individuals with worse financial behavior.

Table 3: Logistic regression by whether respondents have an emergency fund or not

	Odds ratio		
	(1)	(2)	(3)
Financial knowledge	1.125 (0.08)	………………..	……………..
Financial behavior	……………	1.219 (0.06) ***	……………..
Financial attitude	……………	………………..	0.835 (0.09)
Male	1.164 (0.26)	1.175 (0.27)	1.251 (0.28)
Age (reference: 18 - 24)			
- 25 - 34	1.546 (0.50)	1.635 (0.54)	1.409 (0.46)
- 35 - 49	1.68 (0.61)	1.822 (0.68)	1.594 (0.59)
- 50 - 60	1.842 (0.88)	1.897 (0.91)	1.707 (0.82)
Education (ref.: less than high school)			
- High school			
- Diploma/Bachelor	1.329 (0.51)	1.471 (0.565)	1.608 (0.60)
- Postgraduate	3.396 (1.16) ***	3.302 (1.13) **	4.213 (1.39) ***
Business major	4.717 (2.52) **	4.952 (2.70) **	5.712 (3.05) **
Married status	1.111 (0.29)	1.077 (0.28)	1.193 (0.307)
Formal sector	0.741 (0.19)	0.723 (0.19)	0.702 (0.183)
Income (ref.: under VND 5 million ≈ $210)	1.191 (0.31)	1.121 (0.296)	1.250 (0.32)
- VND 5 – 9 million ($210-$380)	2.394 (0.70) **	2.434 (0.72) **	2.497 (0.731) **
- Over VND 9 – 15 million ($380-$630)	6.065 (2.06) ***	6.114 (2.07) ***	6.781 (2.32) ***
- Over VND 15 -30 million ($630-$1,270)	11.86 (7.03) ***	12.52 (7.43) ***	14.04 (8.34) ***
- Over VND 30 million (>$1,270)	47.19 (50.2) ***	41.49 (44.0) ***	57.82 (61.7) ***
Good fitness model			
- Hosmer-Lemesshow chi2	5.69	5.06	5.71
- Prob > chi2	0.682	0.751	0.679

Note: Dependent variable is 1 if respondents say "Yes" to the question "Have you set aside an emergency fund?" and 0 otherwise. The odds ratio is calculated at sample means n = 527. Significance levels: p<0.001***; p<0.01**; p<0.05*. Standard errors in parentheses. Source: author's work.

Regardless, financial knowledge and financial attitude are not statistically significantly associated with the size of emergency funds. Similarly, Reyers (2019) proposes that there is no correlation between financial knowledge and having emergency funds for those who live above the poverty line. This can be attributed to the suggestion that financial knowledge could be gained from financial education, and this is a situation in which individuals may lack opportunities to get hands-on experience, meaning that financial knowledge could not perform an important role. This result does not support the finding by Kim et al. (2019), which showed a positive linkage between financial knowledge and short-term or long-term savings. Moreover, the findings by Babiarz & Robb (2014) indicated a correlation between financial knowledge and emergency savings in the context of developed countries. Regarding control variables, socioeconomic and demographic factors were taken into account to estimate the size of emergency savings. While education level has no influence on the size of emergency funds, individuals with higher income have a propensity to increase the size of emergency funds in comparison with those with lower income. Individuals' education levels have been to influence perceptions of the need to have an emergency fund. As a result, education levels are highly associated with possessing an emergency fund (results show in Table 3). The size of emergency funds, on the other hand, is unaffected by education level, but income is a decisive and crucial element.

Table 4: Ordered logistic regression by the size of an emergency fund

	Odds ratio		
	(1)	(2)	(3)
Financial knowledge	1.160 (0.07)	……………	………………
Financial behavior	……………	1.213 (0.06) ***	………………
Financial attitude	……………	……………	0.792 (0.08)
Male	1.040 (0.20)	1.032 (0.20)	1.091 (0.21)
Age (reference: 18 - 24)			
- 25-34	1.531 (0.51)	1.574 (0.53)	1.294 (0.517)
- 35-49	1.965 (0.71)	2.076 (0.76)	1.745 (0.64)
- 50-60	2.412 (1.14)	2.556 (1.23)	2.019 (0.96)
Education (ref.: less than high			
school)	1.002 (0.42)	1.262 (0.52)	1.258 (0.52)
- High school	2.150 (0.76)	2.324 (0.83)	2.637 (9.16)
- Diploma/Bachelor	1.595 (0.72)	1.827 (0.83)	**
- Postgraduate	1.053 (0.22)	1.038 (0.21)	2.032 (0.90)
Business major	1.171 (0.24)	1.190 (0.28)	1.108 (0.23)
Married status	0.947 (0.22)	0.914 (0.21)	1.157 (0.27)
Formal sector			1.068 (0.24)
Income (ref.: under VND 5 million ≈			
$210)	3.126 (1.07) **	3.120 (1.07) **	
- VND 5 – 9 million ($210-$380)	6.393 (2.22) ***	6.482 (2.24) ***	3.256 (1.11)
- Over VND 9 – 15 million ($380-	10.59 (4.51) ***	11.47 (4.85) ***	**
$630)			7.253 (2.52)
- Over VND 15 -30 million ($630-	24.10 (11.4) ***	23.91 (11.3) ***	***
$1,270)			12.60 (5.34) ***
- Over VND 30 million (>$1,270)			
			31.39 (14.9) ***
Good fitness model			
- Ordinal HL (p-value)	0.855	0.515	0.791
- PR chi-squared (p-value)	0.859	0.527	0.421
- PR deviance (p-value)	0.864	0.568	0.395
- Lipsitz (p-value)	0.882	0.783	0.351

Note: Dependent variable is an ordinal scale of the question "In case of disease, job loss, or other emergencies, how long can your emergency fund cover living expenses?" The odds ratio is calculated at sample means n = 345. Significance levels: p<0.001***; p<0.01**; p<0.05*. Standard errors in parentheses. Source: author's work.

To test the goodness of fit, the Hosmer-Lemeshow test is applied to the logistic model and the result is presented in Table 3. Additionally, the PR test (Pearson chi-squared and deviance statistics), and the Lipsitz test are also applied to test the goodness of fit between data and the ordered logistic model, as shown in Table 4. All results indicate that there is no evidence of a lack of fit with the P-value of each test >0.05.

CONCLUSION AND RECOMMENDATION

This research proposes an empirical research framework to investigate the role of financial literacy in the emergency savings choices of individuals who live in a lower-income-level developing country, namely the Southeast region of Vietnam. In this study the author used the factors of financial knowledge, financial behavior, and financial attitude to explore their effects on emergency funds. In general, the findings highlight the role of financial behavior in having emergency funds, as well as the size of emergency funds. In particular, people with better financial behavior have a greater propensity to set aside savings for emergencies and increase the size of emergency funds. This finding provides new evidence to the existing empirical results in the literature on low-income developing countries. Financial knowledge and financial attitude, however, have not been found to have a statistically significant impact on saving for emergency funds. Additionally, individuals' education and income also play an important role in emergency funds. Interestingly, gender does not play a role in the size of emergency funds.

Accordingly, this research provides useful information for economic agents to achieve solutions that can improve individual financial behavior. In turn, individuals should perceive the essential role of emergency savings in overcoming short-term shocks and preventing financial distress.

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Appendix: Financial knowledge, financial behavior, and financial attitude

Financial literacy is approached in three aspects	Source
Financial knowledge - Time value of money - Interest plus principal - Interest paid on a loan - Compound interest - Inflation - Risk and return - Diversification	OECD, 2015
Financial behaviors - Responsible for money management - Has a household budget - Active saving - Considered purchase - Timely bill payment - Keeping watch of financial affairs - Long term financial goal setting - Choosing products - Borrowing to make ends meet	OECD, 2015
Financial attitude - I tend to live for today and let tomorrow take care of itself - I find it more satisfying to spend money than to save it for the long term - Money is there to be spent	OECD, 2015

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