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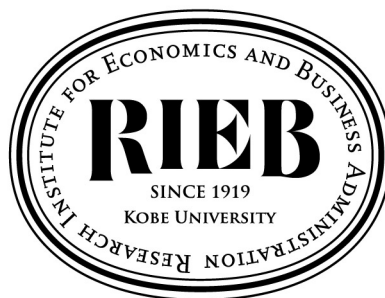
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**Consumer's Financial Literacy and
Financial Troubles: Based on the
2016 Survey on Financial Literacy
and Financial Troubles**

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Consumer's financial literacy and financial troubles* # : Based on the 2016 survey on financial literacy and financial troubles

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Abstract

We conducted "Survey on financial literacy and financial troubles" in September 2016. The survey asked a wide range of questions about financial troubles and financial literacy as well as financial and economic education experiences for 2,700 people. This paper analyzes the characteristics of people who suffer financial troubles from the viewpoint of financial literacy by using the results of this survey. To the best of our knowledge, our paper is pioneering as few papers quantitatively analyze how financial literacy is related to experiences of financial troubles. According to our results, we could not find a clear tendency that people with higher financial literacy are less likely to experience financial troubles. This unexpected result is because some types of financial troubles tend to be experienced by people with higher financial literacy. Conversely, we found financial troubles that people with low financial literacy tend to experience. Also, we found that many people have not experienced financial troubles so far, not because they are financially literate, but simply because they do not use various financial services.

Keywords

Financial education, Financial troubles, Financial literacy

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This paper is based on a translation of Yamori and Ueyama (2018).

1. Introduction

Various surveys have revealed that the financial literacy of Japanese household is insufficient. According to the Central Council for Financial Services Information (2016), the percentage of correct answers to standard financial literacy questions in the survey conducted in Japan was 47%, while the percentage of correct answers to the same questions in the survey conducted in the United States was 57%. Clarifying the effects that the level of financial literacy has on the financial behavior of consumers is an important issue, which will serve as an incentive to promote financial and economic education further. For example, Yamori and Ueyama (2016) used an original questionnaire survey to evaluate the financial literacy of the buyers of used houses and found that the level of financial literacy affected the selection behavior of housing loans. Additionally, using the questionnaire surveys conducted by the Japan Institute of Life Insurance, Yamori (2016) clarified the impact that the level of financial literacy had on insurance selection. Therefore, these studies show that the possibility of making adequate choices about financial products increases with improvement in financial literacy.

On the other hand, no study has proved that poor financial literacy increases the possibility of making wrong financial choices and experiencing various financial troubles.¹ One of the reasons such studies have not been conducted is because when respondents are gathered from random samples based on a limited budget, persons experiencing financial troubles are few, and sufficient analysis cannot be made. Therefore, we conducted in September 2016, “Survey on financial literacy and financial troubles,” which includes many persons who have experienced financial troubles as subjects. In this survey, as will be explained in Section 2, the concept of financial troubles is defined in broad terms. One thousand eight hundred persons who have experienced such troubles were selected as well as 900 persons who have never experienced any troubles as comparative samples.

Based on the survey results, this paper aims to analyze the characteristics of those who encounter financial troubles from the perspective of financial literacy.² The analysis was made by directly linking experiences involving financial troubles and financial literacy. To the best of our knowledge, our study obtains new results that have not been yet presented in prior research.

The composition of this paper is as follows. First, in Section 2, we will

¹ An exception is Shen et al. (2016), which found that the higher person’s financial literacy is, the less financial troubles he/she experiences and that when troubles occur, the person with high financial literacy is able to proactively seek countermeasures.

² Yamori and Ueyama (2017) reported the whole results of the survey.

introduce the outline of the survey. In Section 3, we will explain how the characteristics of respondents, such as age and occupations, affect the possibility to experience financial troubles. In Section 4, we will analyze the relationship between experiences involving financial troubles and the level of their financial literacy. In Section 5, we will analyze the relationship between financial trouble experiences and the propensity to make a life plan. Finally, in Section 6, a summary of this paper is given.

2. Outline of “Survey on financial literacy and financial troubles”

We conducted a “Survey on financial literacy and financial troubles” (hereafter referred to as “Financial troubles survey” or merely this Survey) from September 21 – 26, 2016, using the web survey service provided by Rakuten Research.

In this Survey, we selected responses from males and females living across Japan. In order to examine the characteristics between the age groups, we collected 900 persons of the respective age groups of the 20s-30s, the 40s-50s, the 60s and older, a total of 2,700 persons. Since we intended to analyze in detail the situations of the persons who have experienced some financial troubles, we extracted only persons who have recently experienced various financial troubles. However, since we expected that the necessary sample number would not be gathered had we limited the scope of financial troubles (for example, victim of billing fraud), we also decided to include undesirable financial behavior (e.g., high-cost borrowings.)

Specifically, we inquired “Have you had any of the following finance-related experiences in the past three years? Please select all the applicable answers.” and had the respondents answer from the ten options shown below.

1. I have purchased financial products without a full understanding of the purchase.
2. I have borrowed money for the repayment of a consumer loan I already had (excluding housing refinancing).
3. I have borrowed money from a consumer finance company.
4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.
5. I have fallen into arrears for the payment of utility bills and insurance premiums.
6. I have been a victim of billing fraud.
7. I have been a victim of other fraud related to financial products.
8. I have experienced trouble related to financial products.

9. I have taken on the debt of someone else by acting as a guarantor.
10. I have never experienced any of the above.

We chose persons who selected 1-9 as the main subjects of this survey. For comparison, we chose a fixed number of those who selected “10” and included them as subjects of the survey. Specifically, screening was carried out with the ratio of 600 persons who selected 1-9 and 300 persons who selected 10 for each of the three age groups ³. Please note that in this Survey, “financial trouble” is defined from a considerably wide angle. As shown later on, this definition dramatically affects the interpretation of the results. It is also noteworthy that since the period is limited to the “past three years,” among those who replied that they had no troubles, there may be those who have experienced troubles earlier in their lifetime.

Table 1 shows the responses regarding financial troubles experienced by the 2,700 respondents. Based on the sample collection policy, needless to say, 900 persons selected “10. I have never experienced any of the above,” while the remaining 1,800 persons selected 1-9. The upper row in the table cell indicates the number of samples, while the figure in the lower row within the () indicates the ratio of each sample to the total number of samples in all of the rows.

³ Due to the target of this Survey being ordinary consumers, persons engaged in occupations such as financial institution employees, tax accountants and FP have been excluded.

Table 1 Financial Troubles of Respondents (Breakdown)

	Total
Total	2,700 (Selection ratio)
1. I have purchased financial products without a full understanding of the purchase.	683 (25.3%)
2. I have borrowed money for the repayment of a consumer loan I already had (excluding housing refinancing).	171 (6.3%)
3. I have borrowed money from a consumer finance company.	420 (15.6%)
4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.	276 (10.2%)
5. I have fallen into arrears for the payment of utility bills and insurance premiums	752 (27.9%)
6. I have been a victim of billing fraud.	49 (1.8%)
7. I have been a victim of other fraud related to financial products.	53 (2.0%)
8. I have experienced trouble related to financial products.	118 (4.4%)
9. I have taken on the debt of someone else by acting as a guarantor.	109 (4.0%)
10. I have never experienced any of the above.	900 (33.3%)

Note) The numbers in the cells are: upper row = number of samples, lower row = ratio to the number of samples in all of the rows. The same applies to Tables 2, 3, 7, 9, and 13 below.

3. Characteristics of persons who have had financial troubles

3.1 Age

As previously mentioned, in this paper, those having one of the nine financial troubles (600 persons from each of the three age groups) are categorized as persons having financial troubles. The table shows the statistically significant difference in the selection rate for the respective financial trouble in each of the age groups. Furthermore, chi-square statistics in the table are test statistics to determine whether the bivariate cross relationship is independent or not. Statistics that have *** means that the null hypothesis which is considered to have no correlation is discarded at the 1% level (in other words, there is a significant difference in cross-distribution). ** means there is a significant difference at the 5% level and * at the 10% level (if there is no *, there is no statistically significant difference in the bivariate cross-distribution). Besides, the + (-) in the upper right of the percentage within the cell indicates that the observed value is higher (lower) at the 5% significant level than the theoretical value (theoretical value referred to here is the expected observed value assuming that the bivariate is independent).

Examining Table 2, the selection rate for “5. I have fallen into arrears for the payment of utility bills and insurance premiums” and “6. I have been a victim of billing fraud” is significantly higher in the 20s and 30s age group. The impression that the victims of “6. billing fraud” are mainly the elderly, but the actual results show that many young persons also suffer damages from this type of fraud. Additionally, the selection rate for “3. I have borrowed money from a consumer financing company” and “4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date” was significantly higher in the 40s and 50s age group. The result suggests the harsh economic situation of the middle-aged and the elderly who have had to borrow out of necessity to provide for living expenses. On the other hand, the selection rate of “1. I have purchased financial products without full understanding of the purchase” and “9. I have taken on debt of someone else by acting as a guarantor” was significantly higher in persons 60 years and older. In particular, the large selection for “1” indicates the importance of providing a clear product explanation for the elderly.

As shown above, there are differences in the types of financial troubles encountered during the past three years according to the age group.

Table 2 Financial Troubles (Breakdown to Age Group)

	20s/30s	40s/50s	60s and older
Total	600 (Selection rate)	600 (Selection rate)	600 (Selection rate)
1. I have purchased financial products without a full understanding of the purchase.	183 (30.5%) ⁻	197 (32.8%) ⁻	303 (50.5%) ⁺
Chi-square statistics	60.9***		
2. I have borrowed money for repayment of a consumer loan I already had (excluding housing refinancing).	67 (11.2%)	60 (10.0%)	44 (7.3%) ⁻
Chi-square statistics	5.39*		
3. I have borrowed money from a consumer finance company.	142 (23.7%)	176 (29.3%) ⁺	102 (17.0%) ⁻
Chi-square statistics	25.6***		
4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.	97 (16.2%)	119 (19.8%) ⁺	60 (10.0%) ⁻
Chi-square statistics	22.8***		
5. I have fallen into arrears for the payment of utility bills and insurance premiums.	323 (53.8%) ⁺	256 (42.7%)	173 (28.8%) ⁻
Chi-square statistics	77.4***		
6. I have been a victim of billing fraud.	24 (4.0%) ⁺	15 (2.5%)	10 (1.7%)
Chi-square statistics	6.34**		
7. I have been a victim of other fraud related to financial products.	15 (2.5%)	19 (3.2%)	19 (3.2%)
Chi-square statistics	0.62		
8. I have experienced trouble related to financial products.	43 (7.2%)	30 (5.0%)	45 (7.5%)
Chi-square statistics	3.61		
9. I have taken on the debt of someone else by acting as a guarantor.	16 (2.7%) ⁻	35 (5.8%)	58 (9.7%) ⁺
Chi-square statistics	25.9***		

Note 1) Chi-square statistics : *** ; significant at 1% level ** ; 5% level, * ; 10% level

Note 2) +(-) in the upper right of the percentage within the cell indicates significantly high (low) at the 5% level.

3.2 Occupation

Table 3 shows the comparison of the occupations according to financial trouble experience. Making a comparison according to the experience of financial troubles, we found that there was a statistically significant difference in occupation at the 1% level. Specifically, there was a significant number who had experienced financial troubles among “2. self-employed workers,” “5. regular employees of a small to medium-sized company,” and “6. temporary employees or contract employees.” “2” and “5” can be said to be officers and employees of small to medium-sized companies, emphasizing the need to support such persons to avoid troubles.

On the other hand, those who have not experienced financial troubles were significantly high among “7. pensioners (who were mainly company employees during their working years),” “9. unemployed (not receiving a pension) (not seeking employment).” Since females were the majority in “9” , it can be assumed that they are full-time homemakers. We think that the majority of such persons do not proactively engage in financial activities. As a result, it is assumed that there are fewer opportunities for them to encounter financial troubles. In other words, it does not mean that their knowledge enables them to utilize financial services without getting into trouble.

Table 3 Occupation of Respondents to Experience of Financial Troubles

	Had trouble	Had no trouble
Total	1,800 (100%)	900 (100%)
1. Agricultural/forestry/fishery workers	16 (0.9%)	4 (0.4%)
2. Self-employed workers (including proprietors of small to medium-sized companies)	176 (9.8%) ⁺	67 (7.4%) ⁻
3. Civil servants	90 (5.0%)	47 (5.2%)
4. Regular employees of large companies (including executives)	181 (10.1%)	87 (9.7%)
5. Regular employees of small to medium-sized companies (including executives)	461 (25.6%) ⁺	174 (19.3%) ⁻
6. Temporary employees/contract employees	196 (10.9%) ⁺	72 (8.0%) ⁻
7. Pensioners (mainly company employees in their working days)	223 (12.4%) ⁻	146 (16.2%) ⁺
8. Pensioners (mainly spouses of employees such as full-time homemakers)	61 (3.4%)	38 (4.2%)
9. Unemployed persons (not receiving pension) (not seeking employment)	97 (5.4%) ⁻	73 (8.1%) ⁺
10. Unemployed persons (not receiving pension) (seeking employment)	47 (2.6%)	25 (2.8%)
11. Other	252 (14.0%) ⁻	167 (18.6%) ⁺
Chi-square statistics	43.2***	

3.3 Cohabitation status with children

Table 4 shows the results of examining whether elderly persons living with their children can avoid financial troubles. The rates of those who have experienced troubles are higher among persons living with their children than persons living without children. At the very least, this indicates that financial troubles cannot necessarily be avoided through the support of cohabiting children.

Table 4 Rate of Troubles Experienced by Persons
Cohabiting with Their Children

		Rate of trouble experience	Total
The 60s	Cohabiting	71.2%	267
	Non-cohabiting	60.9%	330
The 70s and older	Cohabiting	74.5%	51
	Non-cohabiting	64.8%	88

3.4 Annual income

In this Survey, we asked the respondents about their annual income. Concretely, we asked them to choose one option from 11 income categories. Using the median of each income category of the respondents (excluding those who responded “Not sure” to their income)⁴, a comparison was made of the average annual income of the respondents according to each financial trouble category.

The results are shown in Table 5. Statistically significant difference was seen for financial troubles 1 and 5. The average annual income for those who responded “1. I have purchased financial products without a full understanding of the purchase” was 4,502,000 yen, while those not having this trouble averaged 3,428,000 yen, a difference of 1,074,000. This indicates that persons who have experienced financial troubles have a high average annual income. This may be attributed to the fact that those with a certain level of income have more opportunities to purchase financial products.

The annual income of those applicable to “10. I have never experienced any of the above” (that is, they have never experienced any financial trouble) was 3,363,000 yen, showing that the annual income of those who have experienced troubles (3,864,000 yen) was higher. However, if the result is limited to those who did not select financial trouble type 1 but trouble types 2-9 (1,069 persons), the average income was 3,476,000 yen, which is on a similar level to those who have not experienced any trouble. The difference in the income level based on the experience of troubles is attributed to the high level of income for the respondents of financial trouble type 1.

Additionally, the average annual income of those applicable to “5. I have fallen into arrears for the payment of utility bills, etc.” was 3,198,000 yen, and the annual income of those not applicable to this item was 3,910,000 yen. In other words, those with arrears-related troubles have a lower annual income.

⁴ Note that we substitute 20 million yen for the option “11. above 20 million yen,” as we cannot calculate median number.

As can be noted from the above, we can perceive that the effects of annual income vary greatly depending on the type of financial trouble.

Table 5 Verified Results on the Difference of Average Income of Respondents:
Financial Troubles (Breakdown)

	1. I have purchased financial products without a full understanding of the purchase.		2. I have borrowed money for the repayment of a consumer loan I already had.		3. I have borrowed money from a consumer finance company.		4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.	
Applicability	Yes	No	Yes	No	Yes	No	Yes	No
No. of samples	649	1862	169	2342	405	2106	267	2244
Annual income(in Million yen)	450.2	342.8	413.6	367.4	394.3	366	347.9	373.2
t-statistics	-6.49***		-1.75*		-1.58		1.44	
	5. I have fallen into arrears for the payment of utility bills and insurance premiums.		6. I have been a victim of billing fraud.		7. I have been a victim of other fraud related to financial products.		8. I have experienced trouble related to financial products.	
Applicability	Yes	No	Yes	No	Yes	No	Yes	No
No. of samples	720	1791	48	2463	51	2460	113	2398
Annual income	319.8	391	315.6	371.6	336.3	371.3	406.6	368.9
t-statistics	5.46***		1.46		0.75		-1.18	
	9. I have taken on the debt of someone else by acting as a guarantor.		10. I have never experienced any of the above.					
Applicability	Yes	No	Yes	No				
No. of samples	104	2407	793	1718				
Annual income	391.4	370	336.3	386.4				
t-statistics	-0.65		3.52***					

Note 1) Applicability: “Yes” refers to those who have selected the particular items. Consequently, those applicable to 1-9 have experienced the financial trouble concerned and those applicable to 10 have not experienced any financial trouble.

Note 2) The asterisks ***, ** and * in t-statistics indicate that the difference between “Yes” and “No” samples are statistically significant at the 1%, 5%, and 10% levels, respectively.

3.5 Financial asset balance

In this Survey, we asked the respondents to specify how much their households have the financial assets by choosing one option from 11 amount ranges. Thus, using the median according to the same procedure as the annual income, a comparison was made of the average financial asset balance for each financial trouble category.

Table 6 shows the results thereof. There is a statistically significant difference at the 1% level for financial troubles 1-6, and the average financial asset balance for those who selected “1. I have purchased financial products without a full understanding of the purchase” was 14,894,000 yen, more than double that of those who did not select the item who averaged 6,587,000 yen. This is similar to those of the aforementioned annual income results, meaning that the abundance of opportunities in purchasing financial products affects the experiences related to financial troubles.

On the other hand, it can be noted that the average financial asset balance is significantly lower for persons who have experienced financial troubles for financial trouble types 2-6 in comparison to those who have never experienced these troubles. Trouble types 2-5 are related to payment capability, and it is natural to think that those with little financial assets are more likely to fall into this category. According to the above table, although persons who have experienced trouble type 2 have a relatively high annual income, they have considerably smaller amount of financial assets in contrast to their high annual income. Moreover, even though we have the impression that the victims of trouble 6 “billing fraud” are elderly persons with sufficient financial assets, as mentioned previously, many young ones are also victimized. Fraud is taken up by the media when it involves a large amount of money, but in reality, the victims are not limited to the wealthy elderly ones.

At the bottom of Table 6, the breakdown of financial assets owned for each person who has experienced financial troubles is shown. In the case of persons who replied “1. I have purchased financial products without full understanding of the purchase,” their “bank deposit-only ratio” and average bank deposit ratio (ratio of bank deposit to the total financial assets) were low, suggesting that such persons own various types of financial products. On the other hand, the characteristic for persons who replied “10. I have never experienced any of the above” is that their “bank deposit-only ratio” and average bank deposit ratio were high and that their financial assets were mainly bank deposits. The results support the hypothesis that financial trouble type 1 is a problem that affects persons who have many opportunities to purchase financial products and that those who have never experienced troubles focus on deposits in managing their

finances, thus hardly owning any risk-accompanying financial assets.

Table 6 Difference of Average Financial Asset Balance among Financial Troubles

	1. I have purchased financial products without a full understanding of the purchase.		2. I have borrowed money for the repayment of a consumer loan I already had.		3. I have borrowed money from a consumer finance company.		4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.	
	Yes	No	Yes	No	Yes	No	Yes	No
Applicability	Yes	No	Yes	No	Yes	No	Yes	No
No. of samples	601	1621	148	2074	368	1854	242	1980
Average financial assets (10,000 yen)	1489.4	658.7	353.9	921.2	434	972.6	244.8	961.4
t-statistics	-11.2***		7.68***		9.00***		13.6***	
Bank deposit-only ratio	8.6%	21.5%	11.1%	17.3%	13.6%	17.5%	17.5%	17.0%
Average bank deposit ratio	46.7%	53.3%	41.7%	51.5%	41.5%	52.5%	40.1%	51.9%

	5. I have fallen into arrears for the payment of utility bills and insurance premiums.		6. I have been a victim of billing fraud.		7. I have been a victim of other fraud related to financial products.	
	Yes	No	Yes	No	Yes	No
Applicability	Yes	No	Yes	No	Yes	No
No. of samples	659	1563	42	2180	50	2172
Average financial assets	481.4	1052.9	381	898.1	865	883.8
t-statistics	10.4***		4.15***		0.09	
Bank deposit-only ratio	19.5%	16.2%	23.1%	16.9%	24.2%	16.8%
Average bank deposit ratio	49.3%	51.5%	43.2%	51.1%	44.0%	51.1%

	8. I have experienced trouble related to financial products.		9. I have taken on the debt of someone else by acting as a guarantor.		10. I have never experienced any of the above.	
	Yes	No	Yes	No	Yes	No
Applicability	Yes	No	Yes	No	Yes	No
No. of samples	105	2117	93	2129	665	1557
Average financial assets	1072.6	874	708.3	891	944	857.5
t-statistics	-1.42		1.23		-1.34	
Bank deposit-only ratio	12.5%	17.3%	17.3%	17.0%	23.4%	14.3%
Average bank deposit ratio	42.8%	51.5%	45.9%	51.2%	59.2%	47.5%

Note1) The averages are calculated using persons without possessing any assets.

Note2) Refer to the note for Table 5.

4. Financial literacy and financial troubles

4.1 Subjective evaluation of financial literacy

In this Survey, the question “What level of knowledge do you have regarding finance in general, securities investment and insurance?” was asked. We obtained responses from one of the five levels, namely “1. substantially less than average,” “2. somewhat less than average,” “3. average,” “4. more than average,” and “5. substantially more than average.” In addition to the above, the option of “Not sure” was also given.

Table 7 is a comparison of the self-evaluation of the respondents regarding their financial knowledge in accordance with the experience of financial troubles. Among those who have experienced financial troubles, those who responded “2. somewhat less than average” were significantly high, while those who responded “4. more than average” were also significantly high, manifesting a bipolar distribution among those who have experienced financial troubles. Meanwhile, among those who have never experienced financial troubles, the ratio of those who responded “6. Not sure” is significantly high.

Table 7 Self-evaluation about Knowledge of Finance by Experience of Financial Troubles

	Had troubles	Had no trouble
Total	1,800 (100%)	900 (100%)
1. Substantially less than average	522 (29.0%)	236 (26.2%)
2. Somewhat less than average	389 (21.6%) ⁺	112 (12.4%) ⁻
3. Average	491 (27.3%)	259 (28.8%)
4. More than average	148 (8.2%) ⁺	50 (5.6%) ⁻
5. Substantially more than average	48 (2.7%)	19 (2.1%)
6. Not sure	202 (11.2%) ⁻	224 (24.9%) ⁺
Chi-square statistics	106.9***	

Next, average self-evaluation score according to each trouble was calculated with “1. substantially less than average” counted as 1 point, “2. somewhat less than average” as 2 points, “3. average” as 3 points, “4. more than average” as 4 points and “substantially more than average” as 5 points. The results thereof are shown in Table 8. First, examining the self-evaluation of persons who selected option 10, the self-evaluation score of those who had financial troubles was 2.26, while the score of those who had never experienced troubles was 2.27,

both groups having the same level of self-evaluation.

We examine the average self-evaluation of persons who had experienced financial troubles according to the trouble type and found that self-evaluation of those who responded “1. I have purchased financial products without full understanding of the purchase” was high at 2.51. As we have seen above, if these results are combined with the results indicating that this trouble type is experienced by those with higher income and larger amount of financial assets, it can be concluded that the background of this trouble type differs from that of others. In order to confirm this point, the average self-evaluation of those who have experienced financial troubles excluding persons who replied “1. I have purchased financial products without full understanding of the purchase” (in other words, those who selected 2-9 and not 1) was inquired. As the reference to the table indicates, the score was 2.09, which was lower than the score for those who have never experienced troubles. This underscores the theory that the background for the occurrence of troubles significantly differs between “1” and others.

On the other hand, self-evaluation of those who selected “4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date” was extremely low. The need to deepen the understanding of the loans has been recommended by the “Financial Literacy Map” of the Committee for the Promotion of Financial Economic Education. It is considered necessary to enhance financial literacy in order to reduce loan product-related troubles.

Table 8 Self-evaluation Standard of Financial Knowledge According to Financial Trouble

		Average	No. of samples
1. I have purchased financial products without a full understanding of the purchase.	No	2.16	2,017
	Yes	2.51	683
2. I have borrowed money to make repayments of a consumer loan I already had (excluding housing refinancing).	No	2.27	2,529
	Yes	2.12	171
3. I have borrowed money from a consumer finance company.	No	2.28	2,280
	Yes	2.15	420
4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.	No	2.30	2,424
	Yes	1.89	276
5. I have fallen into arrears for the payment of utility bills and insurance premiums.	No	2.34	1,948
	Yes	2.05	752
6. I have been a victim of billing fraud.	No	2.26	2,651
	Yes	2.10	49
7. I have been a victim of other fraud related to financial products.	No	2.25	2,647
	Yes	2.47	53
8. I have experienced troubles related to financial products.	No	2.24	2,582
	Yes	2.57	118
9. I have taken on the debt of someone else by acting as a guarantor.	No	2.26	2,591
	Yes	2.15	109
10. No trouble experience.	No	2.26	1,800
	Yes	2.27	900
(Reference) Persons who have experienced troubles other than trouble 1		2.09	1,117

4.2 Objective financial literacy: Results of the basic three questions

In this Survey, we asked the following three questions in order to determine the objective level of financial literacy. These are widely-used questions taken from Lusardi and Mitchell (2014) regarding compound interest, inflation and diversified investment but have been modified to adjust the level of difficulty.

Q14. If you deposit 1 million yen in cash into a 1-year term bank account (annual interest rate 2%) and manage it under the same conditions for 5 years, how much do you expect to receive after 5 years (please regard the tax rate to be zero)?

Q15. Suppose the annual inflation rate is 5% and the bank annual interest rate is 3%. If you leave money in a bank account for 1 year, what do you think would happen to the amount of products and services you can buy with that deposit amount after 1 year?

Q16. Generally speaking, do you think your investment yield would be more stable if you purchase shares of one company as opposed to purchasing stock investment trust (investment in shares of many companies)?

Examining the responses to these three questions, we found that the ratio of correct responses was distributed evenly. There were 27.9% who answered all questions incorrectly, 24.0% who answered 1 question correctly, 27.3% who answered two questions correctly, and 20.7% who answered all questions correctly. Table 9 compares the number of correct responses according to the experience of financial troubles. Statistically significant difference was seen at the 1% level, with a significant number of persons who had experienced financial troubles who answered two questions correctly, while there was a significant number of those who had never experienced financial troubles who answered all questions incorrectly. This leads us to the unexpected conclusion that those who have experienced troubles have a higher level of financial knowledge.

In order to delve deeper into this point, a comparison of the average number of correct responses was made according to each financial trouble in Table 10. As can be seen from option 10, the average number of correct responses by those who have experienced troubles is 1.50, while the figure was 1.23 for those who had never experienced troubles, thereby making the score of those who have experienced troubles higher. As can be seen from the subjective evaluation, it was confirmed that the average number of correct answers for those who selected “1. I have purchased financial products without a full understanding of the purchase,” “7. I have been a victim of other fraud related to financial products” and “8. I have experienced troubles related to financial products” was higher than for persons who did not select these options.

On the other hand, those who did not select “3. I have borrowed money from a consumer finance company,” “5. I have fallen into arrears for the payment of utility bills, etc.” and “4. I have been unable to make repayments for a housing loan, etc.” had a higher average number of correct answers in comparison to those who selected these options.

If we examine the scores of those who have experienced troubles except trouble type 1, the average was 1.30. This score was significantly lower from 1.50 when including those who experienced trouble type 1, making the difference between the non-trouble group and the troubled group no longer significant. In this way, it can be observed that the level of financial literacy among persons who have experienced financial troubles varies according to the type of trouble experienced.

Table 9 Financial Literacy (Number of Correct Answers for Basic Three Questions) to Experience of Financial Troubles

	Had trouble	Had no trouble
Total	1800 (100%)	900 (100%)
1. All questions incorrect	426 (23.7%) ⁻	328 (36.4%) ⁺
2. 1 question correct	444 (24.7%)	205 (22.8%)
3. 2 questions correct	543 (30.2%) ⁺	195 (21.7%) ⁻
4. All questions (3 questions) correct	387 (21.5%)	172 (19.1%)
Chi-square statistics	53.5***	

Table 10 Average Number of Correct Answers by Financial Trouble (Basic Three Questions)

		Average	No. of samples
1. I have purchased financial products without a full understanding of the purchase.	No	1.27	2017
	Yes	1.81	683
2. I have borrowed money to make repayments of a consumer loan I already had (excluding housing refinancing).	No	1.41	2529
	Yes	1.32	171
3. I have borrowed money from a consumer finance company.	No	1.43	2280
	Yes	1.31	420
4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.	No	1.42	2424
	Yes	1.29	276
5. I have fallen into arrears for the payment of utility bills and insurance premiums.	No	1.44	1948
	Yes	1.33	752
6. I have been a victim of billing fraud.	No	1.41	2651
	Yes	1.37	49
7. I have been a victim of other fraud related to financial products.	No	1.40	2647
	Yes	1.83	53
8. I have experienced troubles related to financial products	No	1.39	2582
	Yes	1.80	118
9. I have taken on the debt of someone else by acting as a guarantor.	No	1.41	2591
	Yes	1.43	109
10. No trouble experience.	No	1.50	1800
	Yes	1.23	900
(Reference) Persons who have experienced troubles other than trouble 1		1.30	1117

4.3 Objective financial literacy: Fifteen additional questions

In this Survey, in order to further obtain an objective financial literacy evaluation, 15 questions regarding various fields were asked⁵. Table 11

⁵ Due to space restriction, the concrete questions are not explained. Please refer to

compares the rate of correct answers to the 15 questions according to each financial trouble experience.

As we have seen previously, those who selected “1. I have purchased financial products without a full understanding of the purchase” scored high at an average of 9.96. In addition, those who selected “7. I have been a victim of other fraud related to financial products” and “8. I have experienced trouble related to financial products” scored over 10 points. On the other hand, for financial trouble types 3, 4, 6, 9, those who had experienced troubles scored lower.

Looking at option 10, while the average score of those who had experienced some troubles was 8.84, those who had not experienced any trouble scored 6.98, indicating that those who had experienced troubles have a higher degree of literacy. However, if we focus only on those who had experienced troubles other than “1. I have purchased financial products without a full understanding of the purchase,” the average score decreased to 8.15.

Furthermore, if we scrutinize the results of the 900 who had not experienced any financial trouble, 231 replied, “Not sure” to all of the 15 questions regarding financial knowledge. It is difficult to determine whether such persons are not sure or whether they selected “Not sure” because the questionnaire was too troublesome. However, there is an excellent possibility that there are many who fall into the latter category.⁶ Thus, the average score of the respondents excluding those who responded “Not sure” for all of the questions is shown in Table 12. Looking at this table, as per the previous results, the scores for those who selected trouble type 1 was high, while the score for those who selected options other than financial trouble type 1 was almost equal to that for those who have never experienced troubles.

Yamori and Ueyama(2018) Table 150.

⁶ For example, 2,092 answered correctly and 78 answered incorrectly to the question, “Anyone can own a credit card if they apply for it,” meaning most respondents were able to answer this question correctly. Nevertheless, 530 responded “Not sure.”

Table 11 Correct Answers to the 15 Financial Questions by Financial Trouble

		Average	No. of samples
1. I have purchased financial products without a full understanding of the purchase.	No	7.63	2,017
	Yes	9.96	683
2. I have borrowed money to make repayments of a consumer loan I already had (excluding housing refinancing).	No	8.20	2,529
	Yes	8.43	171
3. I have borrowed money from a consumer finance company.	No	8.25	2,280
	Yes	8.03	420
4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.	No	8.28	2,424
	Yes	7.68	276
5. I have fallen into arrears for the payment of utility bills and insurance premiums.	No	8.18	1,948
	Yes	8.33	752
6. I have been a victim of billing fraud.	No	8.23	2,651
	Yes	7.57	49
7. I have been a victim of other fraud related to financial products.	No	8.17	2,647
	Yes	10.81	53
8. I have experienced troubles related to financial products	No	8.13	2,582
	Yes	10.17	118
9. I have taken on the debt of someone else by acting as a guarantor.	No	8.23	2,591
	Yes	8.01	109
10. No trouble experience.	No	8.84	1,800
	Yes	6.98	900
(Reference) Persons who have experienced troubles other than trouble 1		8.15	1,117

Table 12 Correct Answers to the 15 Financial Questions (excluding respondents who replied “Not sure” to all questions)

	Average score	Number of persons
Persons who have experienced “financial trouble 1”	10.80	630
Persons who have experienced financial troubles other than “trouble 1”	9.40	968
Persons who have never experienced any financial trouble	9.39	669

5. Life planning status

An essential element in financial literacy is habitual life planning. In this Survey, there is a question which asks, “Do you have an awareness of life planning (creating a life plan that reflects future revenue and expenditures as well as possible life events)?”

Table 13 compares awareness toward life planning according to financial trouble experiences. There is a statistically significant difference at the 1% level, and a significantly higher number of those who had financial trouble replied, “I think about it somewhat.” However, a significant number of those who have never experienced financial trouble replied, “Not sure.” Therefore,

excluding the “Not sure” responses, there is no significant difference according to the experience of financial troubles.

Table 14 compares the views toward life planning according to financial troubles by scoring them. In this table, respondents who replied, “Not sure” were excluded and regarding the remaining four options, “1. I give it considerable thought” is given 4 points, “2. I think about it somewhat” is given 3 points, “3. I hardly think about it” is given 2 points and “4. I don’t give it any thought” is given 1 point, and the average is calculated based on the scores.

Persons who replied, “1. I have purchased financial products without a full understanding of the purchase, “7. I have been a victim of other fraud related to financial products”, “8. I have experienced trouble related to financial products” had a stronger tendency toward life planning. On the other hand, those who replied “4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date” or “5. I have fallen into arrears for the payment of utility bills, etc.” had a weaker tendency toward life planning. As can be seen from the results mentioned above, those who have experienced arrears-related troubles such as trouble types 4 and 5 have low financial literacy and poor life planning habits. Therefore, financial and economic education in terms of the matter is a promising means to reduce the occurrence of such problems.

Table 13 Awareness of Life Planning by Experience of Financial Trouble

	Had trouble	Had no trouble
Total	1,800 (100%)	900 (100%)
1. I give it considerable thought.	175 (9.7%)	74 (8.2%)
2. I think about it somewhat.	843 (46.8%) ⁺	326 (36.2%) ⁻
3. I hardly think about it.	502 (27.9%)	256 (28.4%)
4. I don’t give it any thought.	163 (9.1%)	90 (10.0%)
5. Not sure.	117 (6.5%) ⁻	154 (17.1%) ⁺
Chi-square statistics	85.0***	

Table 14 Awareness Toward Life Planning According to Financial Trouble

	Average	No. of samples
1. I have purchased financial products without a full understanding of the purchase.	2.75	683
2. I have borrowed money for the repayment of a consumer loan I already had (excluding housing refinancing).	2.53	171
3. I have borrowed money from a consumer finance company.	2.51	420
4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.	2.44	276
5. I have fallen into arrears for the payment of utility bills and insurance premiums.	2.50	752
6. I have been a victim of billing fraud.	2.68	49
7. I have been a victim of other fraud related to financial products.	2.92	53
8. I have experienced trouble related to financial products.	2.86	118
9. I have taken on the debt of someone else by acting as a guarantor.	2.62	109

Note) Average is calculated from “1. I give it considerable thought” 4 points, “2. I think about it somewhat” 3 points, “3. I hardly think about it” 2 points and “4. I don’t give it any thought” 1 point.

6. Conclusion

We conducted a “Survey on financial literacy and financial troubles” in September 2016. In this Survey, 900 persons for each group chosen as subjects in their 20s-30s, 40s-50s and 60s and older were divided into 600 persons who had financial troubles and 300 who had no financial trouble. Using the survey results, we analyze the characteristics of those who are likely to encounter financial troubles, focusing on their financial literacy level. We investigate links between the experience of financial troubles and financial literacy.

According to the results, there are differences in the types of financial troubles experienced according to the age group and occupation. From the perspective of annual income, the item “1. I have purchased financial products without a full understanding of the purchase” has been experienced to a greater degree by those with a high annual income, whereas the item “5. I have fallen into arrears for the payment of utility bills, etc.” has been selected to a greater degree by those with a low annual income. From the aspect of financial assets owned, it became apparent that trouble related to payment capabilities such as “2. I have borrowed money for the repayment of a consumer loan, etc.” was experienced more often by those with small amount of financial assets.

As to the relationship between the level of financial literacy and financial troubles, which is the focus of this paper, it cannot be said that those with a higher level of financial literacy tend not to experience financial troubles. For example, we assumed that if one can read a manual without misunderstanding its contents, one can avert financial troubles. However, we could not verify such a

tendency. Nevertheless, detailed analyses suggest the following interesting implications.

Firstly, it became evident that certain types of financial troubles are likely to be encountered by those who have a low level of financial literacy. For example, both self-evaluation and objective evaluation regarding financial knowledge were low for those who selected “4. I have been unable to make repayments for a housing loan or a credit card loan by the repayment date.” At the very least, in order to avoid the occurrence of this type of trouble, the promotion of better financial and economic education would prove useful.

Secondly, according to the results of this paper, for the majority of persons who have never experienced financial troubles, it appears that they were able to avoid troubles, not because they were able to manage their way safely through complicated transactions, but because they seldom engaged in financial transactions (with the exception of bank deposits). This can be interpreted in a positive light in that persons with low financial literacy do not use financial services that are beyond their understanding. However, it can also mean that such ones have never received any solicitations, and there remains the concern that if they do receive solicitations for advanced financial services, they may not be able to make sound judgment. In addition, we should not ignore that such persons are bearing the opportunity cost of not being able to take advantage of various opportunities. The target of financial and economic education should be not only to suppress the occurrence of financial troubles but also to promote the fair use of various financial opportunities. This Survey made evident that such issues still remain.

Finally, the following 3 points merit attention for future research. The first point is how to handle “Not sure” responses. Perhaps because of the abundance of questions related to financial literacy, there were many “Not sure” responses. In particular, many such answers were from those who had not experienced any financial troubles. If we include “Not sure” in the analysis, the results of the financial literacy of those who have never experienced financial troubles would be considerably low, whereas if “Not sure” is excluded, the difference would become minimal. We interpreted the results by considering calculations excluding the extreme respondents who replied, “Not sure” to all the questions as most reasonable. However, there is a need to verify its validity in the future.

Secondly, cases of “I have purchased financial products without a full understanding of the purchase” were categorized as financial trouble, but the attributes of the respondents who selected this option were considerably different from those of the persons who selected other types of troubles. The results thereof need further detailed analysis. For example, there is a possibility that those with a low level of financial literacy cannot comprehend whether they

understand the financial product concerned, while only those with high financial literacy have an understanding of the situation. There is also the possibility of a reverse causal relationship stemming from past financial trouble necessitating a person to study finance, which has, in effect, led to the present high level of financial literacy. The handling of such reverse causal relationship in understanding financial troubles requires careful future consideration.

Thirdly, there is a need to analyze the occurrence of financial troubles from the perspective of financial products and dealers. In this Survey, we inquired of the “combination of dealers of financial products or services and products” to those who have experienced “buying or using financial products without full explanation or full understanding.” This enables the analysis of what sort of financial literacy accounts for the widespread occurrence of certain problems related to the purchase or use of certain financial products. This will be our future analysis task.

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