



Applied-Research Paper

## Identifying and Explaining the Topics in the Financial Literacy Training Using Fuzzy Delphi Approach

Fatemeh Kazempour Dizaji<sup>a</sup>, Mohammadhamed Khanmohammadi<sup>a,\*</sup>, Mahmood Moeinuddin<sup>b</sup>

<sup>a</sup>Department of Accounting, Damavand Branch, Islamic Azad University, Damavand, Iran

<sup>b</sup>Department of Accounting, Yazd Branch, Islamic Azad University, Yazd, Iran

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### ABSTRACT

The purpose of this qualitative research is to identify and explain the topics in financial literacy training in Iran using an exploratory approach. For this purpose, 20 semi-structured interviews with experts were conducted in the first stage to identify the topics of financial literacy training, and 36 primary categories were identified in the open coding stage using qualitative content analysis. The identified sub-categories were linked in the axial coding stage and categorized into nine axial categories. In the next step, namely selective coding, the identified central categories were systematically categorized into three general chapters. In the second stage, the fuzzy Delphi technique in two phases was used to achieve group consensus between experts and screening the findings of the first stage. At this stage, the most consensus between the experts was reached in 32 topics. Based on the results, all areas of personal finance are covered under three general topics, including income and savings management, risk management, and cost management. The topics extracted in this study can be utilized to design, codify, and implemented financial literacy training programs in Iran.

## 1 Introduction

With the emergence of a new economic and financial change in the present age, there is a need for individuals to acquire special knowledge and capabilities in order to face the arisen complexities. Due to the diversity and complexity of financial markets and rapid developments in today's context, having financial management skills and methods to collect, analyze and use financial information and, in sum, financial literacy is essential. Financial knowledge refers to understand the knowledge set, including the study of financial phenomena, nature, laws, and relationships governing it [5]. Everyone in the community

should be able to generate income, consume optimally, save money, and invest in the future. A combination of investment options, savings, housing, life insurance, stocks, and setting up a personal business is essential for everyone in society. As one of the important issues in everyone's life, the management of personal financial affairs is definitely not possible without planning and initial knowledge of financial concepts [2]. Because of their relationship to personal financial issues, financial literacy often requires correct knowledge of decisions about specific personal financial matters such as real estate, insurance, investment, savings (especially for university), tax planning, and retirement. According to some experts, financial literacy includes a combination of financial concepts such as interest composition, financial planning, mechanisms of credit card use, useful savings methods, consumer rights, time value of money, and so on [10].

The concept of financial literacy was first introduced in 1997 in the United States during the opening ceremony of the Coalition for Individual Financial Literacy. In a study of high school students' financial literacy, the financial literacy coalition defined financial literacy as a person's ability to use his or her knowledge and skills to effectively manage his or her financial resources for financial security during the lifetime. The meaning of financial literacy varies among academic circles, from knowledge on financial products (for example, stocks on bond bonds, differences between fixed-rate and floating-rate mortgage bonds, etc.), knowledge about financial concepts (inflation, composite interest, diversity, credit scores, etc.), and having the mathematical or numerical skills needed to make effective financial decisions and being involved in certain activities such as financial planning [9]. Although increasing attention has been paid to assessing the financial literacy of individual investors in recent studies [17], there have been some worrying reports of low levels of financial literacy. Much attention has been paid to the teaching of financial literacy around the world after the global financial crisis between 2007 and 2009 [8]. Pointing to the need to teach financial literacy in learning, researchers believe that this teaching should be formally taught at all levels of education, including higher education [12].

Experimental results from other countries show that financial literacy training is necessary because people who do not have enough knowledge and awareness about financial issues and how to manage their resources and financial cost, are not able to plan and manage the family budget or make financial decisions, and they not have the needed skills to overcome financial crises. Since the negative consequences of not having financial literacy affect not only the life of the individual but also the government and society, it is necessary for our country along with other developed countries to include financial concepts in school books to improve the literacy level of future generations and begin financial literacy training courses for different strata of society. Accordingly, the present study seeks to provide appropriate topics for financial literacy training among young people, with the help of the experts' opinion in the field of finance and using fuzzy Delphi method. The rest of the research is organized in such a way that the research background is presented in the second part and then, the fuzzy Delphi method is explained, and finally, the research method and results analysis will be presented.

## **2 Theoretical Foundations and Research Background**

In the third edition presented by the JumpStart Coalition, personal financial literacy standards are compiled based on six pillars of financial responsibility and decision making, income and employment, money planning and management, credit and debt, risk management and insurance, saving and investment. Reviewing 71 studies in the field of financial literacy, Huston [11] found that researchers consider four areas referring to financial literacy or financial knowledge; these areas include basic concepts (purchasing

power of money, time value of money, individual financial accounting, etc.) borrowing concepts (mortgage, consumer loan, credit card, etc.), investment concepts (savings, stocks, bonds, mutual funds, etc.), and protection concepts (insurance and other risk management techniques). Examining financial literacy and the need for education, Lusardi [14] found that lack of financial literacy is a very important issue even in developed countries and should be given serious attention. She measured people's financial literacy by designing three questions on risk perception, interest, and inflation. The results show that the lack of financial literacy in the most developed financial markets has worrying effects, and its training is essential. In fact, financial literacy is like a global passport that allows people to make the most of financial markets and make the right financial decisions. Financial literacy training programs for children have examined in a study by Ramagir et al. [18]. Evidence suggests that school-based financial literacy training programs can improve the financial knowledge and attitudes of children and adolescents.

Studies evaluating the tendency to good behavior and self-reported studies also show positive effects. However, there are few studies that assess the impact of financial education on the actual financial behavior of children and adolescents. A study conducted by Xiao and Porto [19] in 2017 on financial literacy and financial satisfaction show that financial education could affect financial satisfaction, mental well-being, financial behavior, and financial variability. The findings also show that effective financial literacy, good financial behavior, and financial performance index play a strong mediating role between financial education and financial satisfaction. In a study entitled "Financial literacy: Do people know the ABCs of finance?", Lusardi [15] examines the causes of the failure of retirement plans, the lack of adequate participation in stock markets, and poor borrowing behavior. Lusardi has concluded that many people do not have enough financial literacy to make such decisions, and therefore make mistakes in these decisions, and this harm to individuals can be generalized to the national level.

The only way, according to Lusardi, to prevent these mistakes is to add financial education programs to the curriculum. A study conducted by Yaqubnejad et al. [7], provides a model for measuring the financial literacy of Iranian students using fuzzy Delphi method. In this research, the concept of financial literacy and theoretical foundations and research background has been discussed first of all [20-22]. Then, the fuzzy Delphi technique was used to obtain the consensus of 12 financial experts in the country (as a Delphi panel), and a questionnaire consisting of 25 questions for measuring the financial literacy of Iranian students was developed and presented as a model for measuring financial literacy in the country's universities. According to the results of this study, the selected questions from the experts, consensus include various concepts such as time value of money, tax, investment in stocks and bonds, inflation, e-banking, various methods of borrowing, insurance, and retirement, etc.

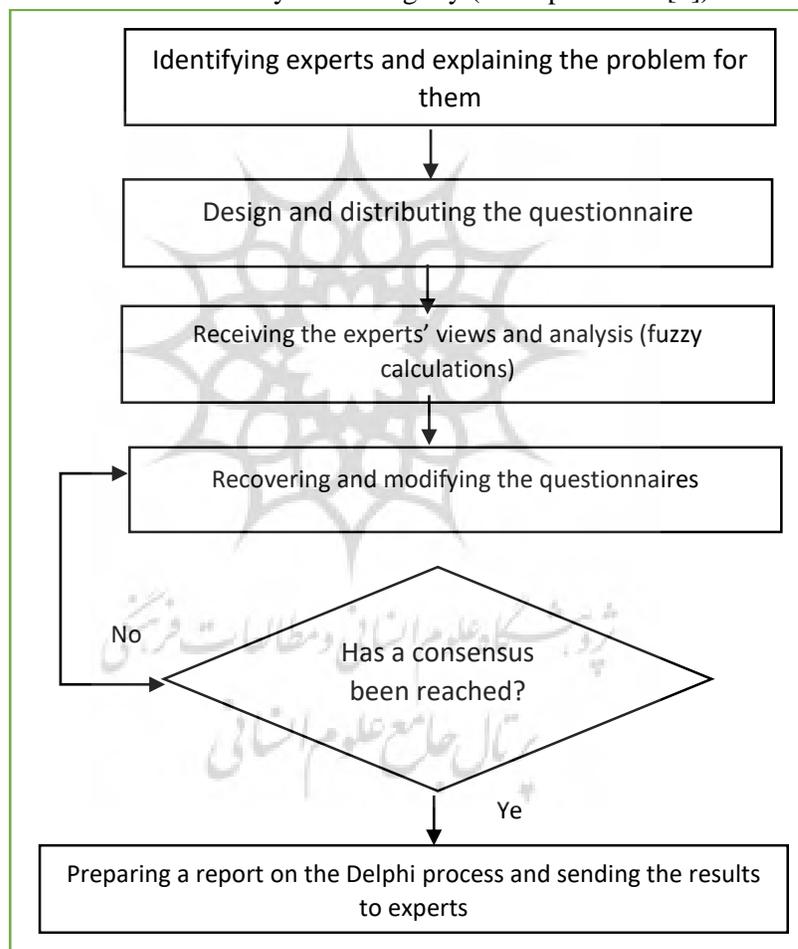
### 3 Research Methodology

The present study is applied research in terms of purpose and qualitative research with an exploratory approach in terms of paradigm that has been done aimed at identifying the topics of financial literacy education for young people in Iran. Due to the novelty of the subject and the wide range of its dimensions, the topics of the training should be identified on the basis of collective wisdom. Therefore, the fuzzy Delphi method was used along with content analysis so that using fuzzy numbers instead of definite numbers; the near-realistic results can be achieved in addition to effective communication with financial experts and quick consensus among their opinions. Accordingly, the research method is designed in two stages. In the first stage, 20 semi-structured interviews with financial experts were conducted to identify and extract

financial literacy training topics by studying the research literature and using the purposeful sampling method, and considering the theoretical saturation index. After the interviews, financial literacy training topics were identified using content analysis during open, axial, and selective coding steps. In the second stage, according to the identification of financial literacy training topics for young people through interviews with experts and the possibility of bias in their opinions, fuzzy Delphi technique was used to achieve group consensus among experts and to ensure precision, accuracy, usability, the integrity of the identified topics and the elimination of possible biases.

### 3.1 Fuzzy Delphi Method

The fuzzy Delphi method, developed in the 1980s by Kaufman and Gupta (Feyzi and Dehqan [3]), is used to make decisions and consensus on issues whose goals and parameters are not clearly defined in order to achieve very valuable results. An important feature of this method is providing a flexible framework that resolves many obstacles related to inaccuracy and ambiguity (Mirsepasi et al. [6]).



**Fig. 1:** Fuzzy Delphi Method Algorithm

The decisions made by experts are mostly based on their individual competence and are highly subjective. Therefore, it is better to display the data with fuzzy numbers instead of definite numbers. The fuzzy Delphi

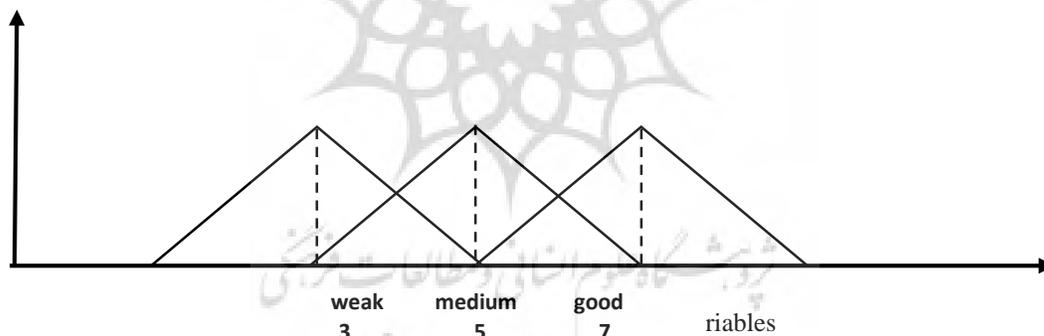
method integrates the fuzzy concept and the Delphi method and requires a small survey sample to obtain objective and reasonable results. An important feature of this method is the presentation of a flexible framework that removes many obstacles related to inaccuracy and ambiguity (Azar and Faraji [1]). The fuzzy Delphi method algorithm is shown in the figure 1.

Experts usually provide their views in the form of minimum value, maximum possible value, and maximum value (triangular fuzzy numbers). Then the average opinion of the experts is provided, the difference between each expert's opinions from the average is calculated, and then this information is sent for obtaining new expert opinions. In the next step, each expert will present a new opinion or correct his previous opinion based on the information obtained from the previous step. This process will continue until the average number of fuzzy numbers is stable enough [1].

### 3.2 Definition of Linguistic Variables

As experts in the Delphi process had to choose the appropriate topics for training financial literacy, the use of definite value variables made it difficult for them to comment. So, it seems that the use of qualitative variables in the form of good, medium, and weak alternatives will solve this problem to some extent. The people's views are not the same for qualitative variables such as high or low. Experts have different mentalities in terms of having different characteristics, and if the alternatives are answered based on different mentalities, the analysis of variables is worthless. However, experts will answer questions with the same mentality by defining the quality of qualitative variables. Therefore, qualitative variables are defined in the form of fuzzy triangular numbers (Fig. 1).

Possible values, defined by fuzzy triangular numbers, are (5, 7, 9) for the good alternatives, (3,5,7) for the medium alternatives, and (1,3,5) for the weak alternative, which is shown in Fig. 1.



### 3.3 Fuzzy Delphi Method Implementation Stages

At each stage of the Delphi test, the fuzzy average for the triangular numbers  $\tilde{A}_1, \tilde{A}_2, \dots, \tilde{A}_n$  is calculated as follow.

$$\tilde{A}_m = \frac{\tilde{A}_1 + \tilde{A}_2 + \dots + \tilde{A}_n}{n} \quad (1)$$

The triangular fuzzy number belongs to the person in the  $\tilde{A}_i$  formula, and the fuzzy average of each question is  $\tilde{A}_m$ . After calculating the fuzzy average for the questions of the questionnaire, the difference of each expert from the population average is calculated using the following formula in each step [1].

$$(A_1^m - A_1^i, B_i^m - B_1^i, C_1^m - C_1^i) \quad (2)$$

$A_1^m, B_1^m, C_1^m$  are the lower, middle, and upper thresholds of the average fuzzy numbers related to the questions, respectively.  $A_1^i, B_1^i, C_1^i$  are the lower, middle, and upper thresholds of the average fuzzy numbers for the person  $i$ , respectively.

Then, the population average in the previous stage and the difference of each expert's opinion from the population average are given to him/her in the next stage, and again each person will answer the questions according to the relevant difference. At this stage, the person can modify his opinion or repeat the opinion of the previous stage. Now again, the fuzzy average for the new stage of calculation and the difference between the averages of the two stages for each question is calculated. In case that the difference between the two stages calculated using formula number 3 is less than .15, a sufficient consensus has been reached on that question. This step continues until sufficient consensus is reached.

$$s(\tilde{N}_i - \tilde{N}_j) = \frac{(a_1 + 2a_2 + a_3) - (b_1 + 2b_2 + b_3)}{4(B_2 - B_1)} \tag{3}$$

In formula No. 3,  $B_2$  is the largest, and  $B_1$  is the smallest boundary between the two average phases. Also,  $a_1, a_2, a_3$  are the lower, middle and upper thresholds for the mean of each question in the previous step and  $b_1, b_2, b_3$  are the lower, middle, and upper thresholds correspond to the mean of each question in the new stage.

### 3.4 Statistical Population

Financial literacy training topics were extracted using content analysis method using the interviews, conducted with 20 experts and professors with a Ph.D. in accounting and finance and faculty member in the field of accounting, financial management, and financial engineering and more than ten years of teaching and professional experience in this field in order to collect data in this study. Then, in the second stage, considering that the number of suitable members in the Delphi method is recommended between 10 and 20 people [4], 12 experts were judgmentally selected based on knowledge and experience characteristics, using the purposeful sampling method in order to reach a consensus among experts. The selected experts have a Ph.D. degree in one of the fields of finance and accounting and have valuable experience in the profession and education. After determining the members of the Delphi panel, both questionnaires were distributed and collected among the experts.

**Table 1:** The Frequency Distribution for the Experts' Educational and Professional Job Experience

variable	group	% of relative frequency	Cumulative percentage
The interviewee's job experience	3-10	8	8
	10-17	25	33
	17-25	50	83
	25-28	17	100

## 4 Research Results

Field data analysis was conducted in three stages of open, axial, and selective coding. In the open coding stage, 36 primary categories were identified. In the axial coding stage, communication was identified between the identified sub-categories, and the categories were categorized in the form of 9 axial categories.

In the selective coding stage, the identified central categories were systematically classified into three general topics.

**Table 2:** Results from Qualitative Content Analysis

Selective coding	Axial coding	Categories extracted in open coding
Income and savings management	Income and employment	Knowing the financial and economic terms (income, assets, debt, capital, etc.
		Familiarity with banks and credit institutions and banking services
		Understanding personal income sources and how to earn money
		The difference between net income and gross income
		Familiarity with labor and trade laws
	Budgeting	The importance of a budget for liquidity management
		Understand the importance of budgeting for personal and financial goals
		Short-term and long-term planning for different stages of the life cycle (employment, marriage, disability, home purchase, etc.)
	Cost control and savings	Understand the cost and strategy to reduce it
		Significance of savings and understanding how savings help improve the financial situation.
	Tax	Understanding tax liabilities
		Familiarity with tax laws (income tax, salary, and value-added)
		The effect of the tax rate on the capital return rate
	Investing and protecting assets	Understand the principles of investing and its types
		Understanding how investment creates wealth
		How to access resources
		Using a consultant to invest
		The concept of risk
		Financial responsibility and risk tolerance
		The concept of safety and theft
Extensive and efficient economic communication		
Risk management	Insurance	Understanding the importance of insurance and the risks associated with not being insured
		Familiarity with different types of insurance (property insurance and liabilities, disability, life, etc.)
	Retirement	Planning for retirement
		Familiarity with retirement plans
Cost management	Time value of money and interest rates	Understand the time value of money in inflationary conditions
		How to calculate interest - compound interest
	Loan and credit	The concept of loan and credit
		Types of loans (good loans, housing, marriage, etc.) and choosing the right loan according to the characteristics and conditions of the individual
		Scheduling payment of installments and debt

**Table 2:** Results from Qualitative Content Analysis

Selective coding	Axial coding	Categories extracted in open coding
		Debt measurement
		Responsibility of individuals in guaranteeing loans and obligations of others
		Familiarity with credit cards
		How to get credit and its consequences
	Expenditure tools and techniques	Understanding spending and saving techniques
		Deciding on cost and problem-solving strategies

### 4.1 The First Stage of Fuzzy Delphi

After identifying the topics of financial literacy training, the fuzzy Delphi technique was used in two stages to achieve consensus among experts. For this purpose, a questionnaire was prepared based on the results of content analysis using a fuzzy triangular mean, and the amount of fuzzy decoding was obtained in each of the steps. The fuzzy result of the first step is described in Table 3.

**Table 3:** Fuzzification Results of the Delphi First Phase

L	M	H	Topics
4.833	6.833	8.833	Knowing the financial and economic terms (income, assets, debt, capital, etc.
3.667	5.667	7.667	Familiarity with banks and credit institutions and banking services
4.167	6.167	8.167	Understanding personal income sources and how to earn money
4.500	6.500	8.500	The difference between net income and gross income
4.500	6.500	8.500	Familiarity with labor and trade laws
3.833	5.833	7.833	The importance of a budget for liquidity management
4.000	6.000	8.000	Understand the importance of budgeting for personal and financial goals
4.000	6.000	8.000	Short-term and long-term planning for different stages of the life cycle (employment, marriage, disability, home purchase, etc.)
4.333	6.333	8.333	Understand the cost and strategy to reduce it
4.333	6.333	8.333	Significance of savings and understanding how savings help improve the financial situation.
3.833	5.833	7.833	Understanding tax liabilities
4.167	6.167	8.167	Familiarity with tax laws (income tax, salary, and value-added)
3.833	5.833	7.833	The effect of the tax rate on the capital return rate
4.167	6.167	8.167	Understand the principles of investing and its types
4.167	6.167	8.167	Understanding how investment creates wealth
2.167	4.167	6.167	How to access resources
4.167	6.167	8.167	Using a consultant to invest
3.833	5.833	7.833	The concept of risk
4.000	6.000	8.000	Financial responsibility and risk tolerance
1.833	3.833	5.833	The concept of safety and theft

**Table 3:** Fuzzification Results of the Delphi First Phase

L	M	H	Topics
1.833	3.833	5.833	Extensive and efficient economic communication
3.833	5.833	7.833	Understanding the importance of insurance and the risks associated with not being insured
4.167	6.167	8.167	Familiarity with different types of insurance (property insurance and liabilities, disability, life, etc.)
4.000	6.000	8.000	Planning for retirement
4.167	6.167	8.167	Familiarity with retirement plans
4.667	6.667	8.667	Understand the time value of money in inflationary conditions
3.833	5.833	7.833	How to calculate interest - compound interest
4.333	6.333	8.333	The concept of loan and credit
4.500	6.500	8.500	Types of loans (good loans, housing, marriage, etc.) and choosing the right loan according to the characteristics and conditions of the individual
4.500	6.500	8.500	Scheduling payment of installments and debt
4.500	6.500	8.500	Debt measurement
4.167	6.167	8.167	Responsibility of individuals in guaranteeing loans and obligations of others
3.833	5.833	7.833	
2.333	4.333	6.333	How to get credit and its consequences
3.833	5.833	7.833	Understanding spending and saving techniques
3.833	5.833	7.833	Deciding on cost and problem-solving strategies

In order to better investigate, after the first step, the average experts' opinion (the numbers presented in the table above) and the difference of opinion of each expert are calculated from the average, and then this information is sent to the experts again to get new comments. According to the results of the previous step, the expert will present a new opinion or, if appropriate, correct his previous opinion. The results of the second phase, fuzzy Delphi are provided in three low (L), medium (M), and high (H) thresholds in Table 4.

**Table 4:** Fuzzification Results of the Delphi Second Phase

L	M	H	Topics
5.000	7.000	9.000	Knowing the financial and economic terms (income, assets, debt, capital, etc.)
4.167	6.167	8.167	Familiarity with banks and credit institutions and banking services
4.167	6.167	8.167	Understanding personal income sources and how to earn money
4.500	6.500	8.500	The difference between net income and gross income
4.500	6.500	8.500	Familiarity with labor and trade laws
4.167	6.167	8.167	The importance of a budget for liquidity management
4.000	6.000	8.000	Understand the importance of budgeting for personal and financial goals
4.333	6.167	8.167	Short-term and long-term planning for different stages of the life cycle (employment, marriage, disability, home purchase, etc.)
4.667	6.500	8.500	Understand the cost and strategy to reduce it
4.333	6.333	8.333	Significance of savings and understanding how savings help improve the financial situation.
3.833	5.833	7.833	Understanding tax liabilities

**Table 4:** Fuzzification Results of the Delphi Second Phase

<b>L</b>	<b>M</b>	<b>H</b>	<b>Topics</b>
4.333	6.333	8.333	Familiarity with tax laws (income tax, salary, and value-added)
4.167	6.167	8.167	The effect of the tax rate on the capital return rate
4.500	6.333	8.333	Understand the principles of investing and its types
4.167	6.167	8.167	Understanding how investment creates wealth
2.333	4.333	6.333	How to access resources
4.167	6.167	8.167	Using a consultant to invest
4.000	6.000	8.000	The concept of risk
4.000	6.000	8.000	Financial responsibility and risk tolerance
1.833	3.833	5.833	The concept of safety and theft
1.833	3.833	5.833	Extensive and efficient economic communication
4.167	6.167	8.167	Understanding the importance of insurance and the risks associated with not being insured
4.167	6.167	8.167	Familiarity with different types of insurance (property insurance and liabilities, disability, life, etc.)
4.000	6.000	8.000	Planning for retirement
4.167	6.167	8.167	Familiarity with retirement plans
4.667	6.667	8.667	Understand the time value of money in inflationary conditions
4.000	6.000	8.000	How to calculate interest - compound interest
4.500	6.500	8.500	The concept of loan and credit
4.500	6.500	8.500	Types of loans (good loans, housing, marriage, etc.) and choosing the right loan according to the characteristics and conditions of the individual
4.500	6.500	8.500	Scheduling payment of installments and debt
4.500	6.500	8.500	Debt measurement
4.167	6.167	8.167	Responsibility of individuals in guaranteeing loans and obligations of others
4.167	6.167	8.167	Familiarity with credit cards
2.333	4.333	6.333	How to get credit and its consequences
4.000	6.000	8.000	Understanding spending and saving techniques
4.000	6.000	8.000	Deciding on cost and problem-solving strategies

In the last step, we obtain the defuzzified values for both steps, and we also calculate the difference between the defuzzified values which results are given in Table 5.

**Table 5:** The Average Difference of The Experts' Opinion in the First and Second Phase

<b>Average difference</b>	<b>Topics</b>	<b>average difference</b>	<b>Topics</b>
0	Financial responsibility and risk tolerance	0.04	Knowing the financial and economic terms (income, assets, debt, capital, etc.

**Table 5:** The Average Difference of The Experts' Opinion in the First and Second Phase

<b>Average difference</b>	<b>Topics</b>	<b>average difference</b>	<b>Topics</b>
0	The concept of safety and theft	0.11	Familiarity with banks and credit institutions and banking services
0	Extensive and efficient economic communication	0	Understanding personal income sources and how to earn money
0.08	Understanding the importance of insurance and the risks associated with not being insured	0	The difference between net income and gross income
0	Familiarity with different types of insurance (property insurance and liabilities, disability, life, etc.)	0	Familiarity with labor and trade laws
0	Planning for retirement	0.08	The importance of a budget for liquidity management
0	Familiarity with retirement plans	0	Understand the importance of budgeting for personal and financial goals
0	Understand the time value of money in inflationary conditions	0.05	Short-term and long-term planning for different stages of the life cycle (employment, marriage, disability, home purchase, etc.)
0.04	How to calculate interest - compound interest	0.05	Understand the cost and strategy to reduce it
0.04	The concept of loan and credit	0	Significance of savings and understanding how savings help improve the financial situation.
0	Types of loans (good loans, housing, marriage, etc.) and choosing the right loan according to the characteristics and conditions of the individual	0	Understanding tax liabilities
0	Scheduling payment of installments and debt	0.04	Familiarity with tax laws (income tax, salary, and value-added)
0	Debt measurement	0.05	The effect of the tax rate on the capital return rate
0	Responsibility of individuals in guaranteeing loans and obligations of others	0.05	Understand the principles of investing and its types
0.11	Familiarity with credit cards	0	Understanding how investment creates wealth
0	How to get credit and its consequences	0.04	How to access resources
0.04	Understanding spending and saving techniques	0	Using a consultant to invest
0.04	Deciding on cost and problem-solving strategies	0.04	The concept of risk

According to the explanations provided in the fuzzy Delphi method algorithm, when the average difference between the experts' opinions on all the questions in the questionnaire is reduced to zero during two consecutive steps and becomes less than .15, the Delphi implementation stops. The study also found that the difference in fuzzy values was less than 0.15, so it can be concluded that sufficient consensus has been reached among experts. Therefore, the implementation of the Delphi method is stopped, and the results are explained. Questions with the "good" score and the average score approximately in the range of 5, 7, 9 triangular numbers are selected in the second step, and the average of items less than these values is removed. Examination of the table above shows that the concepts of theft and safety, broad and efficient economic communication, and how to access resources, how to obtain credit, and its consequences have less average. So, they are eliminated from the priorities of financial literacy education, and 32 topics are remained with good scores, indicating that consensus has been reached between the experts. In addition, the selected topics cover all areas of personal finance and are classified into three general areas of income and savings management, Cost management, and risk management.

## 5 Discussion and Conclusion

Without the ability to understand financial issues and know the alphabet of economics and finance, and in short, to have financial literacy, success in life in today's modern world is impossible. Financial literacy is a broad concept of information and behavior for individuals to enjoy a secure future financial position [16]. Financial literacy training is a process in which consumers and suppliers expand their knowledge of financial products and their concepts through information, education, or counseling, and by developing skills and confidence, they become aware of risks and opportunities to make better decisions. The present study was conducted to identify and explain the topics of financial literacy training for young people using a fuzzy Delphi approach. The results obtained from the content analysis show the 36 identified primary categories. In the axial coding stage, communication was identified between the identified sub-categories, and the categories were categorized in the form of 9 axial categories. In the selective coding stage, the identified central categories were systematized and categorized into three general topics of income and savings Management, risk management, and management. In the second stage of the research, in order to reach the consensus among the experts on the validity of the selected topics, the fuzzy Delphi method was used in two stages. Thirty-two topics resulted from the consensus and collective wisdom of top professors in accounting, finance and ownership have the "good" score at the second stage and their average score was approximately in the range of triangular numbers 5, 7, 9. These topics can be used to promote the financial literacy of young people. It should be noted that the selected topics cover all areas of personal taxation and can be classified into three general areas of income and savings management, Cost management, risk management. According to the results of the above research, the design of selected courses for teaching financial literacy to young people can be extracted as follows:

### 1) Income and savings management

People who have good financial literacy can make good planning for themselves and their families. They can also manage their cost optimally and invest their savings in profitable activities. Generally, the financial activities of each person should be careful, and personal planning should be planned in order to achieve the set needs and goals. This requires training in the basics of income and employment, budgeting, cost and savings control, taxation and investment, and protection of assets, which are listed in the table below according to the consensus of financial experts.

**Table 6:** Income and Saving Management

The main goal: planning and organizing the issues related to personal finance and adopting proper decisions in the field of personal finance				
Course title: income and employment	Course title: budgeting	Course title: cost control and saving	Course title: Tax	Course title: investment and asset protection
<p>Knowing the financial and economic terms (income, assets, debt, capital, etc.)</p> <p>Familiarity with banks and credit institutions and banking services</p> <p>Understanding personal income sources and how to earn money</p> <p>The difference between net income and gross income</p> <p>Familiarity with labor and trade laws</p>	<p>The importance of a budget for liquidity management</p> <p>Understand the importance of budgeting for personal and financial goals</p> <p>Short-term and long-term planning for different stages of the life cycle (employment, marriage, disability, home purchase, etc.)</p>	<p>Understand the cost and strategy to reduce it</p> <p>Significance of savings and understanding how savings help improve the financial situation.</p>	<p>Understanding tax liabilities</p> <p>Familiarity with tax laws (income tax, salary, and value-added)</p> <p>The effect of the tax rate on the capital return rate</p>	<p>Understand the principles of investing and its types</p> <p>Understanding how investment creates wealth</p> <p>How to access resources</p> <p>Using a consultant to invest</p> <p>The concept of risk</p> <p>Financial responsibility and risk tolerance</p> <p>The concept of safety and theft</p> <p>Extensive and efficient economic communication</p>
Consequences				
<p>Awareness of income sources, interests, opportunities and job needs</p> <p>Awareness of the benefits of financial decision making and selection</p> <p>Creating an opportunity for students to think and be responsible</p>				
Teaching methods: teacher lecture with the students' participation, holding workshops for students to understand the concepts, strengthening and teaching how to budget, decision and responsibility, use of books, and experiences of successful people.				

## 2) Cost management

Financial literacy is required in order to have a proper financial strategy in personal life. Responding appropriately to events that affect daily financial decisions, making smart financial decisions, measuring their economic viability, considering different aspects of decisions, and, in sum, the ability to manage financial matters are among the effects of having financial literacy. Lack of financial literacy can lead to

getting loans with high-interest rates and large bankruptcies. Therefore, teaching the concepts of the time value of money and interest rates, loans, and the validity of spending tools and techniques can be effective in empowering the individual in life. The table below shows the topics of this section according to the consensus of financial experts.

**Table 7:** Cost Management

The main goal: maintaining credibility and the ability to make the right decisions about using loans and debt management		
Course title: Time value of money and interest rates	Course title: loan and credit	Course title: spending tools and techniques
<p>Understand the time value of money in inflationary conditions</p> <p>How to calculate interest - compound interest</p>	<p>The concept of loan and credit</p> <p>Types of loans (good loans, housing, marriage, etc.) and choosing the right loan according to the characteristics and conditions of the individual</p> <p>Scheduling payment of installments and debt</p> <p>Debt measurement</p> <p>Familiarity with credit cards</p> <p>How to get credit and its consequences?</p> <p>Responsibility of individuals in guaranteeing loans and obligations of others</p>	<p>Understanding spending and saving techniques</p> <p>Deciding on cost and problem-solving strategies</p>
<p>Consequences</p> <p>Understand the importance of growth and increase financial well-being</p> <p>Decision making and planning in uncertain circumstances</p>		
Teaching Method: teacher Lecture and students' participation by realizing content and using brochures, animations, and short video		

3) Risk management

The individuals' financial, savings, and investment needs vary at different stages of life, including childhood, adolescence, marriage, and retirement. In order to be financially secure in the future in the age of financialization, everyone has to look for retirement funding to decide how much and where to save. Most people are not aware of the risks they may face in the future. Then, it is necessary for everyone to select the most suitable insurance policy according to their circumstances. The topics of this section are fully listed according to the consensus of financial experts in the Table 8.

The topics extracted in this research by the experts' consensus and collective wisdom and fully listed in the above tables can be used to design, develop, and implement financial literacy training programs in Iran.

Finally, the following suggestions can be presented for future research based on the results obtained from this study:

1. Planners, as the main trustees of curriculum development, can utilize the results of this research to learn more about the general outlines of financial literacy education and to try to determine the goals, content, method, and proper evaluation.
2. Researchers are recommended to focus on the executive processes of financial literacy training in different age groups.
3. Research should be done on developing local personal tax standards for different educational levels and even different social strata.

**Table 8:** Risk management

The main goal: understanding the types of common risks and risk management methods	
Course title: Insurance	Course title: Retirement
Understanding the importance of insurance and the risks associated with not being insured	Planning for retirement
Familiarity with different types of insurance (property insurance and liabilities, disability, life, etc.)	Familiarity with retirement plans
consequences	
Understand analytics and foresight	
Teaching Method: teacher lecture and student Participation through the realization of content and use of brochures and short educational video	

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