

An analysis of the importance of personal finance topics and the level of knowledge possessed by working adults

Ronald P. Volpe^a, Haiyang Chen^{b,*}, Sheen Liu^a

^a*Department of Accounting and Finance, Youngstown State University, Youngstown, OH 44555, USA*

^b*E*TRADE Financial Learning Center, William Paterson University, 1600 Valley Road, Wayne, NJ 07474*

Abstract

This study attempts to identify the important questions in personal financial literacy and the deficiencies in employees' knowledge in those areas. Surveying benefit administrators at 212 U.S. companies, we found that the participants rate retirement planning and personal finance basics as two important topics where there are deficiencies in employees' knowledge. We also observed deficiencies in other areas such as investments and estate planning. In contrast, employees are relatively well informed about company benefits. The results suggest that educational programs should focus on improving employees' knowledge in areas where deficiencies exist. © 2006 Academy of Financial Services. All rights reserved.

Jel classification: D14

Keywords: Importance of personal finance topics; Financial literacy among working adults

1. Introduction

Prior studies on financial literacy have focused on how knowledgeable Americans are about personal finance. Their findings have shown that Americans possess inadequate knowledge about personal finance issues (see Chen & Volpe, 1998 for a review). However, the results of these studies are weakened because of several limitations. First, many of the past studies used surveys with only a limited number of 5 to 10 questions. Readers must question the reliability of the results. Second, there is little research and agreement among

* Corresponding author. Tel.: +1-973-720-3765; fax: +1-973-720-6315.

E-mail address: chenh@wpunj.edu (H. Chen).

researchers on what important questions should be included in a financial literacy survey. Last, many previous studies have been conducted by financial service companies. These surveys focus on areas related to their business and fail to cover other areas in personal finance. These limitations have made the validity and reliability of past survey instruments questionable. If a person fails a five-question survey on mutual funds, the individual is not necessarily illiterate about mutual funds, let alone about the entire field of personal finance. There exists an urgent need to make improvements on these issues.

This study attempts to improve the validity and reliability of future surveys by identifying important questions that should be utilized in testing literacy in personal finance. The first purpose of this study is to identify important topics in personal finance. Benefit administrators are an excellent source of information to answer these questions in the workplace. The second purpose is to identify the current level of knowledge possessed by employees. Such information helps identify knowledge deficiencies in the workplace and, in turn, helps develop effective educational programs to correct those deficiencies.

Research conducted in the past 40 years indicates that high school and college graduates have inadequate knowledge about personal finance because this group does not have a sound personal finance education (Chen & Volpe, 1998; Vitt, Anderson, Kent, Lyter, Siegenthaler & Ward, 2000). Providing people with remedial training to improve their knowledge in personal finance is an urgent issue in the workplace, as well as in other areas of society. Some organizations recognize that financial literacy is important for one's quality of life and are willing to help educate workers. Other organizations worry that financial illiteracy would negatively impact workers' productivity (Garman, Leech & Grable, 1996), and they provide training on personal finance to improve employees' knowledge (Joo & Garman, 1998a, 1998b; Joo & Grable, 2000). Unlike high schools or colleges, these organizations' primary businesses are not to train people about personal finance but to produce and sell products or services. They can allocate only limited resources to personal finance education. These organizations need to know (1) the most important topics in personal finance and (2) the level of knowledge their employees have. To maximize the effectiveness of personal finance education programs, they should focus only on the important personal finance topics where knowledge levels are relatively low. This study attempts to answer these questions.

The rest of the paper is organized as follows. Section 2 provides a literature review of the recent studies on financial literacy. Section 3 presents the survey methodology. Section 4 reports results. Section 5 concludes the study.

2. Literature review

There are extensive studies on financial literacy among Americans. Table 1 presents a summary of 12 recent financial literacy studies covering a broad spectrum of topics. The survey results consist of large numbers of participants from college students with little or no investing experience, mutual fund investors, on-line investors, and retirement plan investors with more experience. The findings suggest that Americans lack sufficient knowledge of personal finance basics. The average scores for the surveys were from a low of 37% from the Vanguard Mutual Fund Investing Survey (Farrell, 2000) to an average high score of 60% for

Table 1
A summary of recent studies on personal financial literacy in the U.S.

Author (Date)	Sample	Topic(s) surveyed	Number of questions	Average score/results
Volpe, Kotel and Chen (2002)	530 on-line investors	Investment basics	10	Less than 50%
Securities Investor Protection Corp./ National Association of Investors Corporation (Gordon, 2001)	933 adult investors	Investment issues	5	85% of participants earned 60%
American Century Investments (Reuters, 2001)	750 adult investors primary or joint decision-makers	Bond market and bond mutual fund basics	10	73% of participants scored < 50%
John Hancock Financial Services (2001)	800 retirement plan investors, age 25–65	Evaluate the opinions & attitudes of employees currently contributing to a 401(k) or equivalent retirement plan	—	21% consider themselves relatively knowledgeable
American Education Savings Council, Employee Benefit Research Institute and Mathew Greenwald & Associates (2001)	1,000 parents with children Age 6–17	Attitudes towards financial matters, financial behaviors and habits	—	51% said they understand financial matters very well and 46% fairly well.
Vanguard/Money 2000 (Farrell, 2000)	1,501 mutual fund investors	Mutual fund/investing	20	37%
Chen and Volpe (1998)	924 college students	Financial planning basics, savings & borrowing, insurance and investment	36	53%
Federal Reserve Bank of Minneapolis (1998)	404 adults	Basic economic concepts	13	45%
Vanguard/Money 1997 (Farrell, 2000)	1,555 mutual fund investors	Investment risks and strategies	20	51%
Princeton Survey Research Associates/Investor Protection Trust (1996)	1,001 Investors	Investments, no-load mutual funds, bonds, diversification, investor insurance, financial plans, broker or financial planner background	8	82% failed
Vanguard/Money 1995 (Farrell, 2000)	1,467 mutual fund investors	Mutual fund/investing	20	49%
Volpe, Chen and Pavlicko (1996)	454 college students	Investment basics	10	44%

the Securities Investor Protection Corp/National Association of Investors Corporation Investment Issues Survey (Gordon, 2001).

The literature review presented in Table 1 is not intended to be exhaustive. Rather, the review covers more recent studies. Readers can read a more complete review of the prior research in Chen and Volpe (1998) and Vitt et al. (2000). Vitt et al. (2000), National Endowment for Financial Education (2001), and Braunstein and Welch (2002) provide reviews of the general state of financial literacy in the United States and education programs in personal finance. Most of these studies suffer from several weaknesses. They use a limited number of questions in the surveys or use short telephone interviews. Personal finance is a field that covers a broad spectrum of areas. A 5- or 10-question survey can hardly touch the surface of this vast field. Even if these 5 or 10 questions are really important in certain areas of personal finance, it is very difficult to label someone financially illiterate just because one fails a short test. The reality is that there is little research on what questions are important and should be included in financial literacy surveys. In sum, the designs of the previous surveys can be improved to enhance the validity and reliability of the financial literacy research.

3. Methodology

To identify which personal finance questions are important for working adults, we sought input from professionals in charge of 401(k) education, employee benefits, and other related personal finance programs in United States based companies. These administrators work with employees on personal finance issues and help them solve problems on a regular basis. Through education, continuous training, and work experience in personal finance areas, these professionals become knowledgeable about personal finance in the corporate world. This paper seeks to identify the importance of and level of knowledge possessed by employees about personal finance topics in United States-based companies. The selected professionals are more knowledgeable about these topics than any other groups of employees in these companies.

Our survey is different from those conducted by the Certified Financial Planner Board of Standards (CFP Board). The purpose of our study is to identify important personal finance topics for ordinary working adults. The survey participants are different from those of the CFP Board. Additionally, we are interested in the ranking of importance among these topics to develop training programs that focus on topics that are more important, yet less known, among employees. The ranking of the importance cannot be determined from the topics generated by the CFP Board.

To assist the survey participants' assessment in ranking the importance of personal finance issues and in evaluating employees' knowledge on the issues, we designed a survey covering areas of (1) company benefit plans, (2) personal finance basics, (3) insurance, (4) investments, (5) taxes, (6) retirement planning, and (7) estate planning. We ensured that key topics in personal finance were covered by the survey. When designing the questionnaire, we considered the necessity of having a sufficient number of questions. At the same time, the survey participants may not have a large amount of time to complete a lengthy survey. To strike a balance, we included a total of 68 questions in our final survey. Thirty-four are about the importance of various personal finance issues and the remaining cover employees' knowledge on these issues.

We asked two professionals who are knowledgeable about personal finance to review the questionnaire, conduct a small-scale pilot test, and use the feedback to improve the instrument. A copy of the survey instrument can be found in the appendix.

A unique feature of the survey is not only are the participants asked to rank the importance of the topics, but also to assess people's knowledge about them. We put the 34 pairs of questions side by side in two columns in the survey. One side lists questions asking the participants' opinions on the importance of various personal finance issues. The other side is about the participants' assessment of employees' knowledge on these same issues. At the top of each column, we requested that the participants respond by choosing one answer from "A" to "E." For the questions regarding the importance of each issue, an "A" suggests that the participants feel that it is very important and an "E" not important at all. For the question about the participants' assessment of people's knowledge, an "A" means that they are very knowledgeable about the issues and an "E" not knowledgeable at all.

We converted responses from each participant into a numerical dataset for analysis. For example, we converted a response of "A" into 0, "B" to 1, "C" to 2, "D" to 3, and "E" to 4. We used the numerical scores to calculate the average scores for both assessment on the importance and people's knowledge for each question, each section, and the entire survey. We then analyzed the results using descriptive statistics and *t* tests comparing means of these scores. We also developed a two-dimensional grid to graphically show the discrepancies between the importance of and people's knowledge about the surveyed personal finance topics.

4. Results

We randomly selected 1,500 United States-based companies of various sizes from the King of Pension Funds database by Judy Diamond Associates, Inc. The database provides detailed data about participants' name, company names, addresses, number of employees, assets of retirement plan, and others. The large companies have more than 12,000 employees and the small ones more than 200. We mailed the questionnaires to these companies and collected 212 useable responses, representing a response rate of more than 14%. This response rate is relatively low. Therefore, caution should be exercised when one wants to generalize the results. We have noticed that low response rate is typical in research when seeking input from managers in the corporate world. For example, Trahan and Gitman (2003) used a sample with a 9% response rate.

4.1. Importance of various personal finance issues

Table 2 shows descriptive statistics of the importance of various topics. The sections of (1) company benefit plan information, (2) personal finance basics, (3) insurance, (4) investments, (5) taxes, (6) retirement planning, and (7) estate planning are in the order of their appearance in the survey. Within each section, we list individual questions by their importance in descending order. For example, in the section of company benefits, participants rank Question 3, insurance plan benefits offered by the company, most important (a score of 0.29). We present Question 3 first in the section. We report the section mean at the end of each section, and the overall mean at the end of Table 2.

Table 2

Descriptive statistics of the participants' responses to the importance of various topics

Survey topics	Average score given by the participants on the importance of each topic (0 as the most important and 4 the least important)
3. The insurance plan benefits offered by the company	0.29
11. The investment matching policy for 401(k) plan	0.30
1. The different provisions of the company's pension plan	0.47
13. 401(k) plan's distribution options	0.51
9. Withdrawal provisions of the company's 401(k) plan	0.81
7. The transfer provisions of the company's 401(k) plan	0.83
5. The existence of loan provisions for the company's 401(k) plan	1.07
Average of benefit topics	0.61
17. Having defined financial goals (saving for a special purchase, and so forth)	0.38
19. Having an action plan to meet the financial goals	0.48
21. Impact of inflation on investment returns	0.60
15. Time value of money	0.67
Average of personal financial basics	0.53
25. Adequate health care coverage	0.23
23. Adequate life insurance coverage	0.61
27. Adequate property and liability insurance coverage	0.92
Average of insurance topics	0.59
41. Benefits of a long-term investment strategy	0.40
45. Benefits of a well-diversified asset allocation investment strategy	0.49
33. Being able to read and understand mutual fund statements	0.50
29. Understanding the different types of mutual funds	0.68
43. Historic long-term performance of stock, bond, cash, and REIT	0.80
31. Understanding the performance measures of mutual funds	0.84
39. Benefits of dollar-cost-averaging	1.02
37. Understanding mutual fund fees and expense ratios	1.24
35. Being able to read and understand mutual fund prospectus	1.42
Average of investment topics	0.82
47. Benefits of pre-tax investing through a 401(k) plan	0.28
49. Benefits of tax-deferred capital growth from a 401(k) plan	0.44
51. The differences between income tax exemption & deductions	0.86
53. The differences between tax on long-term & short-term capital gains	1.23
Average of tax topics	0.70
55. Projected future financial needs for retirement	0.31
57. Funds available based on expected investment returns from savings	0.40
59. Having an emergency plan in case of retirement savings shortfall	0.53
Average of retirement planning	0.41
63. Purpose of a will in estate planning	0.70
67. Avoiding estate taxes and probate	0.90
65. Purpose of a trust in estate planning	1.10
61. Estate planning techniques	1.12
Average of estate planning topics	0.95
Overall average	0.66

The results suggest that, on average, the participants believe that the questions included in the survey are important. The overall average of 0.66 for the entire survey indicates that most participants chose either 0 (very important) or 1 (important) when ranking the importance of these issues. This high ranking of importance not only suggests that the questions in the survey are important but also is indicative about the validity of the survey. The most important question is Question 25, adequate health care coverage, with a score of 0.23, suggesting that the participants strongly feel that it is very important. The least important question is Question 35, being able to read and understand a mutual fund prospectus (a score of 1.42).

The results from each section reveal that the participants consider the topics of retirement planning (an average section score of 0.41), personal finance basics (0.53), and company benefits (0.61) important. The smaller scores show that they are considered more important than the overall average for the entire survey (0.66). Within the section of company benefits, participants rate Question 3, insurance plan benefits offered by the company, very important (a score of 0.28). Question 11, company matching for 401(k), is also important (0.30). Within the section of retirement planning, Question 55, projected future financial needs for retirement, is important (0.31). Question 57, funds available based on expected investment return, is also important (0.40). Within personal financial basics, Question 17, having defined financial goals, turns out to be important (0.38). Other important questions in other sections include Question 25, adequate health care coverage, (0.23); Question 47, benefits of pretax investing through a 401(k) plan, (0.28); and Question 41, benefits of long term investment, (0.40). It is not surprising that these issues are highly important. These issues are related to people's immediate benefits and long-term financial planning and management.

After examining the scores for individual questions and sections, we compare the relative importance between sections and test if the differences are statistically significant. Table 3 shows results of the differences in importance among various personal finance areas and *t* test results. We list the average section score in parenthesis after description of each section in the top row and the first column. Each cell in Table 3 represents the difference between scores in two sections. We calculate the difference score by subtracting the section score in the top row from the section score in the first column. For example, the difference in importance between company benefit plan and personal finance basics is 0.08 ($0.61 - 0.53 = 0.08$).

As described earlier, a section score of 0 suggests that the participants feel that the section is very important, and 4 not important at all. A smaller section score suggests that the section is considered more important. The positive difference score of 0.08 suggests that the participants, on average, believe that the personal finance basics (0.53) are more important than company benefit plan-related issues (0.61). Each difference is followed by a *t* statistic and the level of significance. The *t* tests are used to test if the difference between average section scores is statistically significant. In this case, the difference between the sections of company benefit and personal finance basics is significant at the 0.05 level. To avoid redundancy, we only report the difference scores, *t* statistics, and the level of significance in cells above the diagonal line. The difference scores should be the same in the corresponding cells below the diagonal line except that their signs would be opposite. Take the difference between personal finance basics and company benefit topics for example, the difference score is -0.08 ($0.53 - 0.61 = -0.08$). The number suggests the same result that personal finance basics are more important than company benefit-related issues.

Table 3
Difference of importance between various topic groups

	Average of benefit topics (0.61)	Average of financial basics (0.53)	Average of insurance topics (0.59)	Average of investment topics (0.83)	Average of tax topics (0.70)	Average of retirement planning (0.41)	Average of estate planning topics (0.95)
Average of benefit topics (0.61)	0.00	0.08	0.02	-0.21	-0.09	0.20	-0.34
<i>t</i> statistic		1.99	0.62	-5.64	-2.42	5.30	-6.38
Sig. (2-tailed)		0.05	0.53	0.00	0.02	0.00	0.00
Average of financial basics (0.53)		0.00	-0.05	-0.29	-0.17	0.12	-0.42
<i>t</i> statistic		-1.45	0.15	-8.17	-4.08	3.39	-7.68
Sig. (2-tailed)		0.15	0.88	0.00	0.00	0.00	0.00
Average of insurance topics (0.59)		0.00	0.00	-0.24	-0.12	0.18	-0.36
<i>t</i> statistic				-5.93	-2.83	4.79	-7.31
Sig. (2-tailed)				0.00	0.01	0.00	0.00
Average of investment topics (0.83)				0.00	0.12	0.41	-0.12
<i>t</i> statistic					3.53	10.99	-2.30
Sig. (2-tailed)					0.00	0.00	0.02
Average of tax topics (0.70)					0.00	0.29	-0.25
<i>t</i> statistic						7.18	-4.77
Sig. (2-tailed)						0.00	0.00
Average of retirement planning (0.41)						0.00	-0.54
<i>t</i> statistic							-10.36
Sig. (2-tailed)							0.00
Average of estate planning topics (0.95)							0.00

Note: The cells report the difference of participants' assessment of importance of various topics in personal finance. For example, the difference between company benefits and personal finance basics is $0.61 - 0.53 = 0.08$. Paired-Sample *t* tests are used to test if the differences in the importance between various topics are significantly different from 0 using two-tailed tests.

Table 3 shows that the participants believe that, on average, retirement planning is more important than other sections. The differences between retirement planning and others are statistically significant. Second, the financial basics section is more important than others except for retirement. The results are statistically significant. Third, estate planning is considered less important than other areas. The results are again statistically significant. Fourth, consistent with findings reported in Table 2, the investment section is less important than other areas except for estate planning. Last, the importance of company benefits, insurance, and tax is between the most and the least important sections. In sum, retirement planning and financial planning basics are two areas that are more important, and estate planning and investment sections are relatively less important.

4.2. *People's knowledge about personal finance*

Table 4 reports descriptive statistics of the participants' assessment of people's knowledge in seven personal finance topical areas. Within each section, we list the individual questions by participants' assessment of people's knowledge, with the most knowledgeable issues presented first. For example, in the section of company benefits, Question 12, the investment matching policy of 401(k) plan, is considered as the most knowledgeable area (a score of 1.14) and we, therefore, list it first in the section. We report the section mean at the end of each section and the overall mean at the end of Table 4.

The overall average of 2.22 indicates that the participants, on average, do not believe that people are knowledgeable about personal finance issues. Working adults are most knowledgeable about Question 12, company-matching policy for the 401(k) plan (a score of 1.14). This is not surprising because it is a simple and important issue for employees. The least knowledgeable area is Question 38, understanding mutual fund fees and expense ratios (a score of 3.00). It is closely followed by Question 36, being able to read and understand mutual fund prospectus (a score of 2.98). The findings suggest that working adults need to improve their literacy in these areas. It is beneficial to know the company matching policy, but one should also know about mutual fund specifics. This is helpful to select the right fund(s) to invest their retirement money and the company's matching funds.

The results in Table 4 show that people are not knowledgeable about estate planning (a section score of 2.75) and investment (2.44). We note that the participants also rate people's level of knowledge low in retirement (a section score of 2.37), and personal finance basics (2.34). These two sections are what the participants believe to be most important. Compared to the above sections, people's knowledge is rated higher for insurance (a section score of 1.76), and company benefits (1.82). Their scores are smaller than the overall knowledge score of 2.22.

Table 5 presents results of the differences in people's knowledge about various personal finance areas. The average section score is listed in parenthesis after description of each section in the top row and the first column. Each cell in Table 5 represents the difference between scores in two sections. We calculate the difference score by subtracting the section score in the top row from the section score in the first column. For example, the difference between knowledge about the company benefit plan and personal finance basics is -0.52 ($1.82 - 2.34 = -0.52$). People are relatively more knowledgeable about a section if the score is smaller. Thus, a negative difference between the company benefit plan and personal

Table 4

Descriptive statistics of the participants' evaluation of people's knowledge about various topics

Survey topics	The participants assessment on people's knowledge about each topics (0 as very knowledgeable and 4 the least knowledgeable)
12. The investment matching policy for 401(k) plan	1.14
4. The insurance plan benefits offered by the company	1.47
6. The existence of loan provisions for the company's 401(k) plan	1.58
10. Withdrawal provisions of the company's 401(k) plan	2.04
8. The transfer provisions of the company's 401(k) plan	2.16
2. The different provisions of the company's pension plan	2.16
14. 401(k) plan's distribution options	2.23
Average of benefit topics	1.82
18. Having defined financial goals (saving for a special purchase, and so forth)	2.12
20. Having an action plan to meet the financial goals	2.40
16. Time value of money	2.42
22. Impact of inflation on investment returns	2.42
Average of personal financial basics	2.34
26. Adequate health care coverage	1.25
24. Adequate life insurance coverage	1.81
28. Adequate property and liability insurance coverage	2.21
Average of insurance topics	1.76
34. Being able to read and understand mutual fund statements	1.83
42. Benefits of a long-term investment strategy	2.00
46. Benefits of a well-diversified asset allocation investment strategy	2.15
44. Historic long-term performance of stock, bond, cash, and REIT	2.29
30. Understanding the different types of mutual funds	2.41
32. Understanding the performance measures of mutual funds	2.59
40. Benefits of dollar-cost-averaging	2.69
36. Being able to read and understand mutual fund prospectus	2.98
38. Understanding mutual fund fees and expense ratios	3.00
Average of investment topics	2.44
48. Benefits of pre-tax investing through a 401(k) plan	1.50
50. Benefits of tax-deferred capital growth from a 401(k) plan	1.91
52. The differences between income tax exemption & deductions	2.20
54. The differences between tax on long-term & short-term capital gains	2.70
Average of tax topics	2.08
56. Projected future financial needs for retirement	2.18
58. Funds available based expected investment returns from savings	2.32
60. Having an emergency plan in case of retirement savings shortfall	2.60
Average of retirement planning	2.37
64. Purpose of a will in estate planning	2.45
68. Avoiding estate taxes and probate	2.82
66. Purpose of a trust in estate planning	2.85
62. Estate planning techniques	2.88
Average of estate planning topics	2.75
Overall average	2.22

Table 5
Difference in people's knowledge between various topics

	Average of benefit topics (1.82)	Average of financial basics (2.34)	Average of insurance topics (1.76)	Average of investment topics (2.43)	Average of tax topics (2.07)	Average of retirement planning (2.37)	Average of estate planning topics (2.74)
Average of benefit topics (1.82)	0.00	-0.52	0.07	-0.61	-0.25	-0.54	-0.92
<i>t</i> statistic		-9.15	1.16	-12.28	-4.89	-8.92	-15.78
Sig. (2-tailed)		0.00	0.25	0.00	0.00	0.00	0.00
Average of financial basics (2.34)		0.00	0.58	-0.09	0.27	-0.02	-0.40
<i>t</i> statistic		10.37	10.37	-2.19	4.96	-0.49	-7.66
Sig. (2-tailed)		0.00	0.00	0.03	0.00	0.62	0.00
Average of insurance topics (1.76)		0.00	0.00	-0.67	-0.32	-0.61	-0.99
<i>t</i> statistic				-11.53	-5.12	-9.12	-14.41
Sig. (2-tailed)				0.00	0.00	0.00	0.00
Average of investment topics (2.43)			0.00	0.00	0.36	0.07	-0.31
<i>t</i> statistic					8.63	1.41	-6.81
Sig. (2-tailed)					0.00	0.16	0.00
Average of tax topics (2.07)					0.00	-0.29	-0.67
<i>t</i> statistic						-5.10	-12.77
Sig. (2-tailed)						0.00	0.00
Average of retirement planning (2.37)						0.00	-0.38
<i>t</i> statistic							-7.21
Sig. (2-tailed)							0.00
Average of estate planning topics (2.74)							0.00

Note: The cells report the differences of participants' assessment of people's knowledge on various topics in personal finance. For example, the difference between company benefits and personal finance basics is $1.82 - 2.34 = -0.52$. Paired-Sample *t* tests are used to test if the differences are significantly different from 0 using two-tailed tests.

Table 6

Tests of difference between importance of personal finance topics and people's knowledge

Survey topics	Importance of issues	People's knowledge	Difference between importance of the topics and people's knowledge	<i>t</i> statistic	Sig. (two-tailed)
	(1)	(2)	(3) = (1) – (2)	(4)	(5)
Average of benefit topics	0.61	1.82	–1.21	–20.20	0.00
Average of personal financial basics	0.53	2.34	–1.81	–27.08	0.00
Average of insurance topics	0.59	1.76	–1.17	–17.33	0.00
Average of investment topics	0.82	2.44	–1.62	–24.69	0.00
Average of tax topics	0.70	2.08	–1.38	–19.45	0.00
Average of retirement planning	0.41	2.37	–1.95	–26.51	0.00
Average of estate planning topics	0.95	2.75	–1.79	–23.29	0.00
Overall average	0.66	2.22	–.56	–28.18	0.00

finance basics suggests that the participants, on average, believe that people know more about the company benefit plan than personal finance basics. Each difference is followed by a *t* statistic and its level of significance. The *t* tests are used to test if the difference between the scores is significantly different from 0. In this instance, the difference between the sections of company benefit and personal finance basics is highly significant. As in Table 3, to avoid redundancy, we only report the difference scores, *t* statistics, and the level of significance in cells above the diagonal line. The scores should be the same in the corresponding cells below the diagonal line except that the signs would be opposite.

The estate-planning column shows that the differences between estate planning and other sections are consistently negative, suggesting that people are less knowledgeable about estate planning than in any other areas. The differences are always statistically significant. The next group of weak areas includes the investment, retirement, and personal finance basics sections. The differences between these sections and company benefit, insurance and tax are statistically significant. The differences among themselves are not significant suggesting that people are equally not knowledgeable about these sections.

4.3. Discrepancies between the importance in and knowledge about personal finance

This survey questionnaire allows the participants to express their opinions about the importance of personal finance topics (odd numbered questions), and at the same time to assess people's knowledge on the same topics (even numbered questions). Thus, we can identify what topics are important for people to know, how knowledgeable they are, and where the knowledge gaps are. We can use the information to develop future educational programs focusing on more important topics where people have a relatively low level of knowledge.

To find out the difference between what the participants believe to be important and what people know about the topic, we construct differences between the two in various areas of personal finance, which are reported in Table 6. For example, the difference between the importance of company benefits and employees' knowledge about them is -1.21 ($0.61 - 1.82 = -1.21$). The *t* test result indicates that the difference is statistically significant.

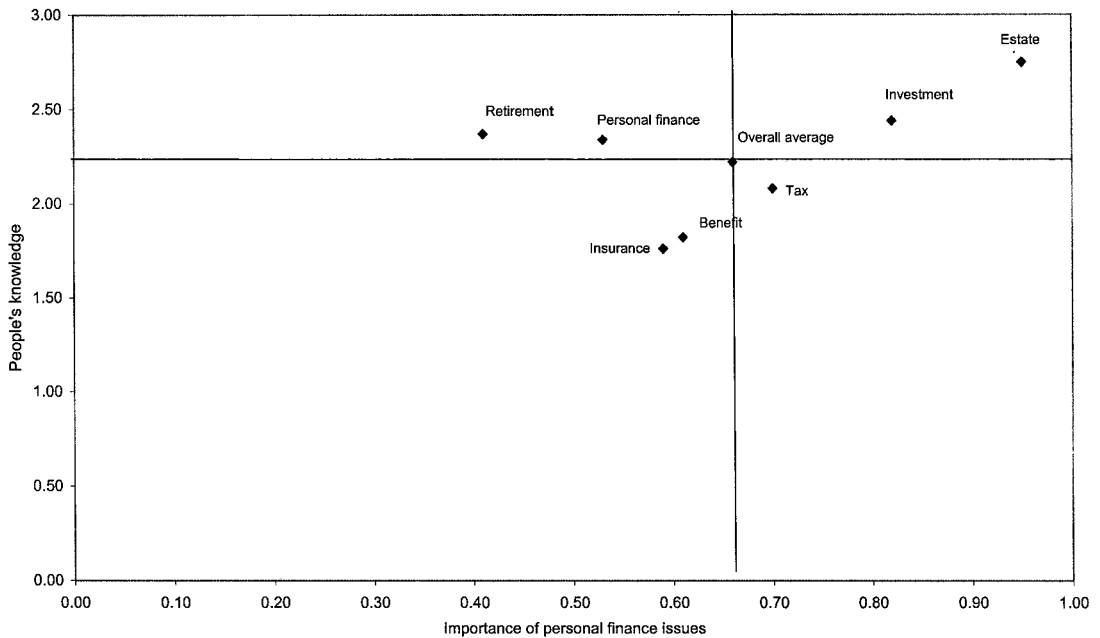


Fig. 1. Discrepancies between importance of personal finance issues and people's knowledge about them.

The finding shows that the participants believe that company benefit plans are important and they are not sure if people are knowledgeable about them. Table 6 indicates that this situation applies to all of the averages of various personal finance areas and the entire survey. We find the largest difference (-1.95) in the retirement planning area where the issue is very important, yet people do not know much about it. Similarly, we find a fairly large difference in the area of personal finance basics (-1.81).

Fig. 1 presents a two-dimensional grid, showing graphically what important topics are in personal finance and what the level of people's knowledge is. The X-axis shows the importance of various topics. As used in the survey, a smaller number suggests that the topic is relatively important. The Y-axis represents people's knowledge about a topic. The smaller the number, the more knowledgeable they are. Fig. 1 clearly shows that personal finance topics are important, yet people's knowledge about them can be improved.

To show both the importance and the level of knowledge, we use the overall average to divide the grid into four quadrants. The upper left quadrant includes topics that are relatively more important, yet less known. Retirement and personal finance basics are in this quadrant. The retirement related topics are important (a section score of 0.41), yet people's knowledge is relatively low (2.37). The same would apply to personal finance basics. Its importance score is 0.53, knowledge score 2.34. The upper right quadrant includes topics that are relatively less important and less known. Estate planning and investment are included. The lower left quadrant represents topics that are relatively more important and better known. It includes insurance and company benefits. The lower right quadrant includes tax planning, which is considered as a relatively less important and better-known topic.

The results presented in Table 6 and Fig. 1 suggest that we focus our training on retirement

and personal finance basics. These personal finance topics are relatively more important and employee knowledge is relatively low.

5. Summary and conclusions

Little research has been done to identify what personal finance issues are important and what is the level of people's knowledge about them. This study attempts to make an original contribution in these areas by surveying 212 benefit administrators in United States bases companies. The main finding is that the surveyed personal finance topics are important and working adults are not knowledgeable about them. First, the results show that retirement planning is very important. Additionally, many long-term financial planning issues such as setting goals and issues related to company benefit provisions are important. Results of *t* tests suggest that these topics or groups of topics are more important than others are. The least important topics include items in estate planning, followed by investment. Second, we find that, overall, people are not knowledgeable about personal finance. The overall average of 2.22 suggests that the participants are not sure if people are knowledgeable about personal finance. The least knowledgeable areas include investment and estate planning topics. People are relatively more knowledgeable about company benefits. Again, these results are statistically significant. Last, we test what are the largest gaps between the importance and current level of knowledge possessed by working adults. Not surprisingly, the largest difference is in the retirement planning area, where the issue is considered very important, yet people have relatively less knowledge about it (importance score is 0.41; knowledge score 2.37). The same is true for personal finance basics (importance score, 0.53; knowledge score, 2.34). We also find fairly large differences in other areas of personal finance such as investment and estate planning.

This study makes two contributions to the literature. First, this study attempts to identify what are important questions in personal finance that people must know. Second, by identifying the importance and weaknesses in people's personal finance knowledge, we can more effectively develop educational programs to correct the deficiencies. The findings suggest that future educational programs should focus on important personal finance areas where people have inadequate knowledge. These areas include retirement planning and basics of personal finance.

As with any previous research, this study also has its limitations. We will discuss the limitations with conjunction of future research. First, we could include many other questions in the survey. However, other restrictions prevented us from including too many questions in the survey. Future research can direct more efforts in identifying other important items in financial literacy tests. A fruitful future study would be to cross validate the data and results of prior studies so that we can develop a solid financial literacy scale. We note that there is a stream of literature focusing on personal financial wellness in the workplace (see Joo & Bagwell, 2003; Joo & Grable, 2004). Further studies through interdisciplinary research would benefit our understanding of public financial literacy. Second, we survey benefit administrators who may have their own preferences regarding the importance of various personal finance topics. Future studies may expand this study to seek input from other experts in personal finance fields. Finally, this study helps to point out the effective areas to provide personal finance training. A major future task for personal finance professionals would be to design, deliver, and assess the effectiveness of these training programs.

Appendix

Note: To save space, we only include survey questions. For each question, participants can select 'A', 'B', 'C', 'D', or 'E'. In the left column, a selection of 'A' means "Very important", 'B' "Somewhat important", 'C' "Not sure", 'D' "Not very important", and 'E' "not important at all". In the right column, a selection of 'A' means "Very knowledgeable", 'B' "Somewhat knowledgeable", 'C' "Not sure", 'D' "Not very knowledgeable", and 'E' "Not knowledgeable at all".

Survey of Employers on the Importance of Employee Personal Finance Issues

Please read the directions carefully and respond in pencil to the questions in numerical order (1,2,3,4 etc.) on the questionnaire response scan sheet. The questionnaire items are arranged in a two column format of related questions. Note that each odd-numbered question in the **LEFT** column has a related even-numbered question in the **RIGHT** column.

For the odd-numbered questions in the **LEFT** column, please indicate your opinion on the **importance** of your employees having knowledge about the topics. The selection of the letter A indicates that you think the topic is very important. The selection of the letter E indicates that you think the topic is not important at all. For the questions in the **RIGHT** column, please indicate your opinion on the actual level of your employees' **knowledge** of the topics. The selection of the letter A indicates that you think your employees are very knowledgeable. The selection of the letter E indicates that you think your employees are not knowledgeable at all.

Please use a pencil to make marks on the questionnaire response scan sheet that completely fill the circle (A B C D E).

Return the scan sheet (without folding it) in the enclosed postage - paid envelope.

If you elect to complete the online version of the survey go to: <http://www.wcba.yzu.edu/surveys/benefits.html> and follow the instructions.

Your Opinion on the Importance of Employee Knowledge of Company Benefit Plan Information	Your Opinion on the Actual Level of Employee Knowledge of Company Benefit Plan Information
1. The different provisions of the company's pension plan	2. The different provisions of the company's pension plan
3. The insurance plan benefits offered by the company	4. The insurance plan benefits offered by the company
5. The existence of loan provisions for the company's 401(k) plan	6. The existence of loan provisions for the company's 401(k) plan
7. The transfer provisions of the company's 401(k) plan	8. The transfer provisions of the company's 401(k) plan
9. Withdrawal provisions of the company's 401(k) plan	10. Withdrawal provisions of the company's 401(k) plan
11. The investment/matching policy for the company's 401(k) plan	12. The investment/matching policy for the company's 401(k) plan
13. The options available to an employee if they were to receive a plan distribution resulting from a job change or 401(k) plan termination	14. The options available to an employee if they were to receive a plan distribution resulting from a job change or plan termination

Your Opinion on the Importance of Employee Knowledge of Personal Finance Basics	Your Opinion on the Actual Level of Employee Knowledge of Personal Finance Basics
15. Time value of money 17. Having defined financial goals, such as saving for a special purchase, college education, retirement, etc. 19. Having an action plan to meet the financial goals 21. Impact of inflation on investment returns	16. Time value of money 18. Having defined financial goals, such as saving for a special purchase, college education, retirement, etc. 20. Having an action plan to meet the financial goals 22. Impact of inflation on investment returns
Your Opinion on the Importance of Employee Knowledge of Insurance	Your Opinion on the Actual Level of Employee Knowledge of Insurance
23. Adequate life insurance coverage 25. Adequate health care coverage 27. Adequate property and liability insurance coverage	24. Adequate life insurance coverage 26. Adequate health care coverage 28. Adequate property and liability insurance coverage
Your Opinion on the Importance of Employee Knowledge of Investments	Your Opinion on the Actual Level of Employee Knowledge of Investments
29. Understanding the different types of mutual funds and their objectives 31. Understanding the performance measures of mutual fund investments 33. Being able to read and understand the 401(k) participant quarterly/annual statement 35. Being able to read and understand a mutual fund prospectus 37. Understanding mutual fund fees and expense ratios 39. Benefits of dollar-cost-averaging 41. Benefits of a long-term investment strategy 43. Historic long-term performance of common stock, bond, money market, and real estate investments funds 45. Benefits of a well-diversified asset allocation investment strategy	30. Understanding the different types of mutual funds and their objectives 32. Understanding the performance measures of mutual fund investments 34. Being able to read and understand the 401(k) participant quarterly/annual statement 36. Being able to read and understand a mutual fund prospectus 38. Understanding mutual fund fees and expense ratios 40. Benefits of dollar-cost-averaging 42. Benefits of a long-term investment strategy 44. Historic long-term performance of common stock, bond, money market, and real estate investments funds 46. Benefits of a well-diversified asset allocation investment strategy

Your Opinion on the Importance of Employee Knowledge of Taxes	Your Opinion on the Actual Level of Employee Knowledge of Taxes
47. Benefits of pre-tax investing through a 401(k) plan	48. Benefits of pre-tax investing through a 401(k) plan
49. Benefits of tax-deferred capital growth from the pre-tax investment in a 401(k) plan	50. Benefits of tax-deferred capital growth from the pre-tax investment in a 401(k) plan
51. The differences between income tax exemptions and deductions	52. The differences between income tax exemptions and deductions
53. The differences between tax rates on long-term and short-term capital gains	54. The differences between tax rates on long-term and short-term capital gains
Your Opinion on the Importance of Employee Knowledge of Retirement Planning	Your Opinion on the Actual Level of Employee Knowledge of Retirement Planning
55. Projected future financial needs for retirement	56. Projected future financial needs for retirement
57. Projected future retirement funds available based on expected investment returns from savings	58. Projected future retirement funds available based on expected investment returns from savings
59. Having an emergency plan in case of a retirement savings shortfall	60. Having an emergency plan in case of a retirement savings shortfall
Your Opinion on the Importance of Employee Knowledge of Estate Planning	Your Opinion on the Actual Level of Employee Knowledge of Estate Planning
61. Estate planning techniques	62. Estate planning techniques
63. Purpose of a will in estate planning	64. Purpose of a will in estate planning
65. Purpose of a trust in estate planning	66. Purpose of a trust in estate planning
67. Avoiding estate taxes and probate	68. Avoiding estate taxes and probate

Acknowledgments

The authors are grateful to Conrad Ciccotello (Editor) for his suggestions. The authors also appreciate comments from a reviewer, and discussant and participants at the 2003 Academy of Financial Services Meeting, where an early version of the paper was presented. The authors are responsible for all remaining errors. Financial supports were provided by grants from the University Research Council at Youngstown State University.

References

- American Education Savings Council (ASEC), Employee Benefit Research Institute (EBRI), & Mathew Greenwald & Associates (MGA). (2001). *2001 Parents, Youth, and Money Survey*. Washington, DC: Author.
- Braunstein, S., & Welch, C. (2002). Financial literacy: an overview of practice, research, and policy. *Federal Reserve Bulletin*, 87, 445–457.
- Chen, H., & Volpe, R. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*, 7, 107–128.
- Farrell, P. B. (2000). Are investors really getting dumber? Available at: <http://aol.marketwatch.com/source/blq/aol/archive/20000905/news/current/superstar.asp>. Accessed November 2, 2004.
- Federal Reserve Bank of Minneapolis. (1998). Economic literacy survey demographics. The Region. Available at: <http://www.minneapolisfed.org/pubs/region/98-12/survey.cfm?js=0>. Accessed March 27, 2006.
- Garman, E. T., Leech, I. E., & Grable, J. E. (1996). The negative impact of employee poor personal financial behaviors on employers. *Financial Counseling and Planning*, 7, 157–168.
- Gordon, M. (2001). 4 out of 5 investors don't know basics, survey says. Available at: <http://www.sipc.org/pdf/survey%20results.pdf>. Accessed March 28, 2006.
- John Hancock. (2001). *Insight into participant investment knowledge & behavior*. Boston, MA: John Hancock.
- Joo, S., & Bagwell, D. C. (2003). Tools for the financial professional: personal financial wellness. *Journal of Personal Finance*, 2, 39–53.
- Joo, S., & Garman, E. T. (1998a). Workers want more than retirement education at their workplace: a report of research findings. In: E. T. Garman, P. L. Camp, D. C. Bagwell, & J. Kim, *Personal finances and worker productivity* (vol. 2, pp. 156–161). Blacksburg, VA: Virginia Polytechnic Institute and State University.
- Joo, S., & Garman, E. T. (1998b). Financial wellness may be the missing factor in understanding and reducing worker absenteeism. In: E. T. Garman, P. L. Camp, D. C. Bagwell, & J. Kim, *Personal finances and worker productivity* (vol. 2, pp. 172–182). Blacksburg, VA: Virginia Polytechnic Institute and State University.
- Joo, S., & Grable, J. E. (2000). Improving employee productivity: the role of financial counseling and education. *Journal of Employment Counseling*, 37, 2–15.
- Joo, S., & Grable, J. E. (2004). An exploratory framework of the determinants of financial satisfaction. *Journal of Family and Economic Issues*, 25, 25–50.
- National Endowment for Financial Education (NEFE). (2001). *Financial literacy in America: individual choices, national consequences*. Denver, CO: National Endowment for Financial Education.
- Princeton Survey Research Associates (PSRA) & Investor Protection Trust (IPT). (1996). *Investor knowledge survey*. Arlington, VA: Princeton Survey Research Associates/Investor Protection Trust.
- Reuters. (2001). Americans flunk bond market IQ test. Available at: <http://socialize.morningstar.com/NewSocialize/asp/FullConv.asp?forumId=F00000009&lastConvSeq=925>. Accessed March 28, 2006.
- Trahan, E. T., & L. J. Gitman. (2003). The corporate market for personal financial planning services benefits. *Financial Services Review*, 12, 1–18.
- Vanguard. (2000). *Test your mutual fund knowledge*. Survey. Vanguard what's your investing IQ? Money.com. Available at: <http://flagship3.vanguard.com/VGApp.hnw/InvestmentKnowledge>. Accessed March 28, 2006.
- Vitt, L. A., Anderson, C., Kent, J., Lyter, D. M., Siegenthaler, J. K., & Ward, J. (2000). *Personal finance and the rush to competence: financial literacy education in the U.S.* Middleburg, VA: Fannie Mae Foundation.
- Volpe, R. P., Chen, H., & Pavlicko, J. J. (1996). Personal investment literacy among college students: a survey. *Financial Practice and Education*, 6, 86–94.
- Volpe, R. P., Kotel, J. E., & Chen, H. (2002). A survey of investment literacy among online investors. *Financial Counseling and Planning*, 13, 1–13.