

# A gender perspective on the use of supplemental healthcare plans

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## Abstract

Because employer-provided health coverage represents the main source of health insurance for Americans and its costs for employees are rising, accurate knowledge about health coverage would seem to be crucial for making sound decisions on choosing the plans that best meet the specific needs of a family. However, previous research suggests that most employees have little understanding of the scope and monetary value, or even the existence of many components of their health benefit package. This paper re-examines employees' general financial learning efforts and knowledge level, and how they relate to participation in and importance attached to supplemental healthcare plans. We find that, while self-directed financial learning and general financial knowledge significantly predicted plan participation and the importance attached to them, demographic factors, such as gender, age and job classification, dominated the supplemental healthcare decisions.

**Keywords** Supplemental healthcare plans, plan participation, plan importance, self-directed financial learning, general financial knowledge.

## Introduction

In the United States, most consumers rely on their employers for healthcare coverage. In 2003, employers provided 60.4% of Americans with health insurance.<sup>1</sup> It is a specific characteristic of the healthcare system in the United States that employees have to choose among several healthcare plans,<sup>2</sup> commonly divided into basic and supplemental medical expense insurance.<sup>3</sup> These health insurance plans are extremely important in providing financial security to employees and their families.

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In making sound decisions about the specific healthcare needs of a family, accurate knowledge about the scope and the monetary value of healthcare plans would seem to be crucial. The purpose of this paper is to examine how self-directed financial learning and the level of general financial knowledge relates to participation in and the importance attached to an array of supplemental healthcare plans.

Of special interest in the present study are the self-directed financial learning efforts and the general financial knowledge level of a group of employees in lower-level, white-collar positions in a national insurance company. These employees are the lowest-paid and least-educated in the company. As a group, they have traditionally been considered less financially literate, less involved in self-directed financial learning<sup>4</sup> and 'hard-to-reach' for formal financial education.<sup>5,6</sup>

The subject of these employees' learning efforts and knowledge levels is particularly interesting in view of the increasingly diverse and complex array of health plan options and employees' rising share of health insurance costs in employer-sponsored health coverage. Without specific knowledge about the different types of health plans available and the practical implications of choosing one plan over another, consumers are unable to make appropriate choices whether to participate in a plan and, in the case of participation in flex-health plans, how much to contribute to a plan.<sup>7</sup> Inadequate knowledge may result in unfulfilled expectations about protection when medical expenses are incurred, vulnerability to questionable insurance sales appeals and techniques, and purchase of duplicate coverage.<sup>8</sup> At the same time, employers are moving forward with healthcare strategies that rely on employees to be better healthcare consumers by providing financial information and decision-making tools to help employees make better decisions about coverage.<sup>9,10</sup>

In a summary of research on employee general knowledge of benefits, Danehower *et al.*<sup>11</sup> reported that

most employees have little understanding of the scope, monetary value, or even the existence of many components of their benefit package, and more recent studies indicate that employee ignorance of healthcare benefits persists. With regard to health insurance, Garnick *et al.*<sup>12</sup> found that privately insured people understand the basic healthcare plans but over- or underestimate their coverage for supplemental health care. In an earlier study, McCall *et al.*<sup>13</sup> analysed the private insurance market for healthcare insurance plans to supplement Medicare benefits, and found that respondents lack high levels of knowledge about the benefits available to them either through their Medicare or supplemental insurance coverage. In their study, knowledge of benefits was positively related to education, income level and plan participation, and negatively related to non-white ethnic groups and widowed marital status. Low knowledge about supplemental Medicare insurance was also noticed by McCormack *et al.*<sup>14</sup> in a pre- and post-test study that examined the knowledge levels before and after receiving new informational materials. They summarized that ‘beneficiary knowledge is low in the areas most critical to informed choices’ (p. 56).

The present study re-evaluates the question of employees’ financial learning efforts and knowledge levels. The overall objective is to understand how general financial knowledge and financial learning using employer-provided financial educational media relate to participation in and importance attached to supplemental healthcare plans. The present study is based on a randomly selected national sample of insurance employees. The paper is organized as follows: the next section presents the hypotheses. The third section describes procedures, participants’ profile and the measures, and the fourth section details the results of the statistical analyses. The paper concludes with a discussion.

### Hypotheses

We believe that demographic factors, self-directed financial learning and general financial knowledge will predict participation in supplemental healthcare plans. In addition to measuring actual participation in the supplemental healthcare plan, we also examined the importance attached to these plans. The importance employees attached to the plans represents the attitudes

that are considered proximal predictors of behaviour in the Theory of Reasoned Action.<sup>15</sup> We chose to examine importance because previous studies found that the actual benefit use is quite low.<sup>16</sup> Importance may be particularly relevant to the use of supplemental healthcare plans because life situations are dynamic, such that an individual may not need the supplemental plans now or cannot afford them, but may anticipate a need for financial resources for them in the future.

Two different aspects of financial education – knowledge level and learning efforts – potentially affect financial decisions, so we predicted that learning efforts and knowledge level would relate to decisions about plan participation and importance. For learning efforts, we focused on learning on one’s own with media provided at the workplace, such as financial newsletters, financial publications, financial planning software, and the Internet. For knowledge level, we focused on how participants performed when asked financial knowledge questions. We are not aware of any study examining the relationship between financial learning and knowledge and supplemental healthcare plan use or importance attached to them.

Hypothesis 1: Gender, age, ethnicity, marital status, household size and job classification of the respondents relate to various extents to increased participation in and importance attached to supplemental healthcare plans.

Hypothesis 2: Increased self-directed financial learning efforts and higher levels of general financial knowledge relate to greater participation in and importance attached to supplemental healthcare plans.

We believe that the two educational components may differentially predict plan participation and importance attached to a plan among men and women. Research shows that women show a greater lack of knowledge about healthcare coverage than men,<sup>17</sup> and in general, that women are less financially literate than men. The NASD Investor Literacy Research found that women still miss basic financial market knowledge,<sup>18</sup> they have lower levels of math comfort,<sup>19</sup> and prefer traditional print media to software or the Internet to gather financial information.<sup>20</sup> Consequently, we believe that for participation in supplemental healthcare plans general

financial knowledge plays a more important role for men than for women.

On the other hand, in a recent study, Schur *et al.*<sup>21</sup> found that women give the subject of healthcare coverage significantly more thought than men. Graham *et al.*<sup>22</sup> reported in a study on gender differences in investment strategies that the chief advantage associated with ‘female’ styles of financial behaviour is that females seem to be more holistic in their finance-related decisions, and thus tend to consider all the relevant factors, which may lead women to a more thoughtful and informed behaviour. Consequently, we think that self-directed financial learning may have a stronger influence on female plan participation.

Hypothesis 3: The positive relationship between self-directed financial learning and participation in and importance attached to supplemental healthcare plans are stronger for women than for men.

Hypothesis 4: The positive relationship between general financial knowledge and participation in and importance attached to supplemental healthcare plans are stronger for men than for women.

## Method

### Procedure

The present study uses a data sample of employees working for an insurance company with offices nationwide. The survey instrument was mailed to a random sample of 2361 employees in eight geographic regions of the US that were defined through the insurance com-

pany – the west central US, Alabama, south central US, Michigan, northern Texas, north-eastern US, Arizona/Nevada/New Mexico and Oklahoma/Kansas in 1999. A total of 1519 employees returned completed questionnaires producing an overall response rate of 64.3%; 1420 questionnaires were usable for statistical analyses.

### Participants’ profile

The present study uses a subsample of the total sample consisting of lower-level field and management employees ( $n = 1089$ ; 77% of the total sample). These two job classifications were identified through the questionnaire. A profile of the sample of lower-level field and management employees is presented in Table 1. The majority of the participants were women (65%) and the average age of the participants was 39 years. Caucasians made up 82% of the sample. A majority of the participants were married or living with a partner (74%), and were living in households with one or more additional members (87%). Most of the male respondents held field positions (95%). Women were equally employed both in head-quarter management (56%) and as field staff (44%).

### Measures

The measures for the variables used here were specifically developed for this study. Due to the limited amount of literature on self-directed financial learning and healthcare decision making, to our knowledge there is no standardized survey instrument available to assess these measures in the workplace environment.

### Demographics

Participants responded to a number of demographic questions, including their gender, age, ethnicity, marital status, household size and job classification. These factors served as control variables because of their potential relationships with the dependent variables. Gender was coded as a dummy variable (*males* = 0; *females* = 1). Age was reported in actual numbers. The ethnicity measure had five categories. Because of the small number of minorities, the four categories of African Americans, American Indians/Aleuts/Eskimos, Asian/Pacific Islander, and ‘something else’ were summarized and coded with a ‘0’ and labelled ‘Non-Whites’; ‘Whites’

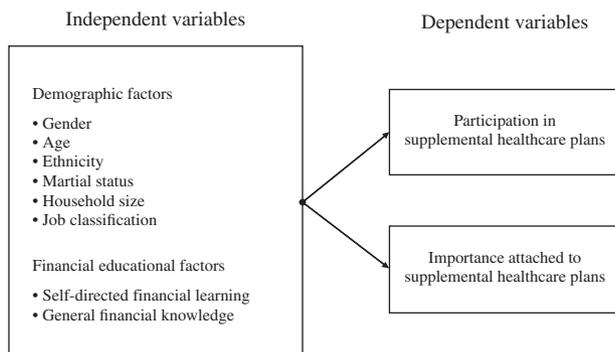


Figure 1 Proposed study design

**Table 1** Description of the control variables by number and percentage<sup>a</sup>

Control variables	Males (34.7%, n = 1089) %	Females (65.3%, n = 1089) %	All %
Age	n = 368	n = 692	n = 1060
29 and under	17.7	17.1	17.3
30–39	40.8	39.9	40.2
40–49	20.4	25.1	23.5
50–59	19.6	15.8	17.1
60 and older	1.6	2.2	2.0
Mean/median/mode (years)	39.4/37/29	39.2/37/36	39.2/37/35
SD	10	9.9	9.9
Ethnicity	n = 373	n = 695	n = 1068
Non-White <sup>b</sup> (= 0)	15.5	18.8	17.7
White (= 1)	84.5	81.2	82.3
Marital status	n = 376	n = 696	n = 1072
Divorced/separated/widowed/single and never married (= 0)	20.2	28.7	25.7
Married/living together as married (= 1)	79.8	71.3	74.3
Household size	n = 377	n = 702	n = 1079
Single (= 1)	13.0	13.4	13.3
2	32.1	33.9	33.3
3	19.6	22.8	21.7
4	23.9	21.9	22.6
5	9.3	6.1	7.2
6 and more	2.1	1.8	2.0
Mean/median/mode	2.9/3/2	2.8/3/2	2.8/3/2
SD	1.3	1.2	1.3
Job classification	n = 378	n = 711	n = 1089
Lower-level field claim workers (= 2)	95.2	44.0	61.8
Lower-level headquarter management (= 4)	4.8	56.0	38.2

<sup>a</sup>Valid percent: only cases with non-missing values are considered.

<sup>b</sup>Includes African Americans, American Indians, Aleuts, Eskimos, Asian or Pacific Islander, and 'something else'.

were coded '1.' Marital status was coded as a dummy variable (*divorced, widowed, separated, never married* = 0; *married or living together as married* = 1). The number of household members was reported in actual numbers. Job classification reflects two categories that represent the largest ones in an insurance company, *lower-level field claim worker* = 0 and *lower-level headquarter management* = 1.

#### Financial education

We developed two different approaches to capture respondents' financial education: we analysed their self-directed financial learning activities and assessed their current level of general financial knowledge. Both edu-

cational measures asked questions with yes/no or true/false answers.

Self-directed financial learning was assessed by the frequencies with which respondents used various employer-provided sources of financial information, such as financial newsletters, financial planning publications, financial planning software and the Internet. Measuring the actual use of self-directed financial learning media is different from other recognized and validated instruments of self-directed financial learning, such as Guglielmino's 58-item Self-Directed Learning Readiness Scale and Oddi's 24-item Continuous Learning Inventory,<sup>23,24</sup> which were designed to assess the extent to which individuals perceive themselves to possess

skills and attitudes frequently associated with self-directedness in learning.<sup>4</sup>

Self-directed financial learning was measured by responses to the question: ‘Which of the following sources of information have you used for financial planning over the past six months? Circle all that apply. (1)

[Company name] newsletter “Understanding Personal Finances” (2) Other financial planning publications (3) Financial Planning Software (4) the Internet.’ The responses were coded *yes* = 1 and *no* = 0. As can be seen in Table 2, the use of these media varied among the respondents. A fifth of the male respondents (20%)

**Table 2** Descriptive statistics of the variables of interest by number and percentage<sup>a</sup>

Variables of interest	Males (%)	Females (%)	Test statistics
Self-directed financial learning	<i>n</i> = 365	<i>n</i> = 687	
0 medium	31.0	40.8	
1 medium	25.2	27.7	
2 media	23.8	19.9	
3 media	11.5	7.3	
4 media	8.5	4.4	
Mean/median/mode	1.4/1/0	1.1/1/0	
SD	1.3	1.1	
<i>F</i> statistic (one-way ANOVA)			20.32***
Cronbach's coefficient alpha			0.57
General financial knowledge	<i>n</i> = 351	<i>n</i> = 651	
0 correct answer	0	0.9	
1–2 correct answers	9.1	23.4	
3–4 correct answers	28.0	42.3	
5–6 correct answers	49.3	28.1	
7–8 correct answers	13.7	5.4	
Mean (SD)/median/mode	0.6(0.2)/0.6/0.6	0.5(0.2)/0.5/0.5	
<i>F</i> statistic (one-way ANOVA)			94.66***
Cronbach's coefficient alpha			0.23
Participation in supplemental plans	<i>n</i> = 348	<i>n</i> = 654	
0 plan	26.1	30.9	
1 plan	31.3	34.4	
2 plans	31.0	23.7	
3 plans	9.8	9.6	
4 plans	1.7	1.4	
Mean (SD)/Median/Mode	1.3(1.0)/1/1	1.2(1.0)/1/1	
<i>F</i> statistic (one-way ANOVA)			3.95*
Cronbach's coefficient alpha			0.44
Importance of supplemental plans	<i>n</i> = 355	<i>n</i> = 652	
'unaware of benefit' (0 scores)	1.1	0.9	
'very unimportant' (1–4 scores)	2	3.9	
'unimportant' (5–8 scores)	5.9	7.4	
'neither nor' (9–12 scores)	24.8	18.4	
'important' (13–16 scores)	46.8	42.2	
'very important' (17–20 scores)	19.4	27.2	
Mean (SD)/median/mode	13.7(3.8)/14/16	13.9(4.2)/14/16	
<i>F</i> statistic (one-way ANOVA)			1.093
Cronbach's coefficient alpha			0.72

<sup>a</sup>Valid percent: only cases with non-missing values are considered.

\**P* < 0.05, \*\*\**P* < 0.001.

used three or all four media for financial planning, compared with only 12% of the women who used three or all four media. However, a fairly large proportion of respondents, 31% of the men and 41% of the women, did not use any of the employer-provided media.

General financial knowledge was measured with the use of eight knowledge items (see Appendix). The scores for general financial knowledge ranged from 0 (no correct answer) to 8 (all answers correct). Respondents were asked, 'Please indicate whether you think each statement is true or false.' The responses were coded *true* = 1 and *false* = 0. More than twice as many men than women answered the eight general financial knowledge questions correctly (14% vs. 5%). The responses were summarized to create the variable, 'general financial knowledge' for descriptive, correlation and regression analysis. Complete results for both educational measures are shown in Table 2.

#### *Supplemental healthcare plans*

The respondents to the survey could choose among eight healthcare plans. Four of those plans, including group health insurance plan, group dental programme, group life insurance plan and long-term disability programme, are commonly considered basic plans.<sup>3</sup> Basic plans provide insurance for primary health and life risks. These plans had participation rates of at least 75% in the present study. Four other health-related plans, including long-term care programme, flex-health insurance premiums, medical reimbursement plan and dependent care assistance plan, had participation rates from 10% (dependent care assistance plan) to 57% (flex-health insurance programme). We summarized those under the label 'supplemental health care plans'.

These so-called supplemental healthcare plans are the focus of the present study. They are designed to supplement the benefits provided by the major health and life insurance policies. Long-term care programmes pay a daily or monthly benefit for medical or custodial care received in a nursing facility, in a hospital or at home. Flex-health insurance premiums are pre-tax income that is set aside for regular, predictable health expenses such as vision care that are not covered by a medical or dental plan. These plans provide a significant tax advantage. A medical reimbursement plan is an arrangement under which an employer reimburses an

employee for uninsured health or accident expenses incurred by the employee or his/her dependents. Dependent care assistance plans allow employees to create a flexible expense account earmarked for child care or other qualifying dependent care needs, such as day care, before- and after-school programmes or help with an elderly parent or ailing spouse.

Participation in these supplemental healthcare plans was measured with the question, 'Do you currently participate in the following [*company name*] benefit plans?' The responses were coded *yes* = 1, *no* = 0, *don't know* = 9. Most respondents participated in one plan. Only 12% of the male respondents and 11% of the females participated in three or all four supplemental healthcare plans.

The importance attached to the supplemental healthcare plans was measured with the question, 'We would like to know how important each of the following benefits is to you, even if you are not currently enrolled in these benefits.' The responses were coded from *unaware of benefit* = 0, *very unimportant* = 1 to *very important* = 5. Overall, about two-thirds of the respondents rated the supplemental healthcare plans 'important' or 'very important.' Complete results for plan participation and plan importance are presented in Table 2.

## Results

The correlation matrix in Table 3 presents the correlations between the nine variables of our study. We see from the correlation matrix that male plan participation was strongly related ( $P < 0.001$ ) to higher age ( $r = 0.189$ ), larger household size ( $r = 0.189$ ), field employment rather than employment at the headquarters ( $r = -0.146$ ), and higher levels of financial knowledge ( $r = 0.188$ ), whereas the importance males attached to these plans was foremost correlated ( $P < 0.001$ ) with two variables: marriage ( $r = 0.143$ ) and larger household sizes ( $r = 0.157$ ).

Plan participation of female respondents was also correlated ( $P < 0.001$ ) with field employment rather than employment at the headquarters ( $r = -0.317$ ), stronger self-directed financial learning efforts ( $r = 0.172$ ), and higher financial knowledge ( $r = 0.207$ ). Similarly, the importance female employees attached to

**Table 3** Correlation matrix for male and female respondents

Variables	1	2	3	4	5	6	7	8	9
Male ( <i>n</i> = 348–378)									
1. Age	–								
2. Ethnicity	0.133*	–							
3. Marital status	0.201**	–0.013	–						
4. Household size	0.031	0.024	0.534**	–					
5. Job classification	–0.037	–0.145**	–0.011	0.034	–				
6. Self-directed learning	–0.158**	–0.028	–0.001	–0.031	–0.155**	–			
7. Financial knowledge	0.092	0.138*	–0.009	–0.011	–0.190**	0.210**	–		
8. Plan participation	0.189**	0.043	0.135*	0.189**	–0.146**	0.051	0.188**	–	
9. Plan importance	0.006	–0.064	0.143**	0.157**	–0.035	0.106	0.088	0.341**	–
Female ( <i>n</i> = 651–711)									
1. Age	–								
2. Ethnicity	0.069	–							
3. Marital status	0.046	0.080*	–						
4. Household size	–0.149**	–0.093*	0.439**	–					
5. Job classification	0.180**	–0.021	–0.033	0.050	–				
6. Self-directed learning	–0.049	0.031	0.088*	0.012	–0.216**	–			
7. Financial knowledge	0.091*	0.096*	0.095*	0.005	–0.309**	0.243**	–		
8. Plan participation	–0.001	0.070	0.078*	0.043	–0.317**	0.172**	0.207**	–	
9. Plan importance	–0.092*	–0.063	0.123**	0.087*	–0.172**	0.190**	0.124**	0.325**	–

\*Correlation is significant at the 0.05 level (2-tailed); \*\*Correlation is significant at the 0.01 level (2-tailed).

Non-demographic measures were rated on a yes = 1/no = 0 scale, where a rating of 1 indicated affirmation of the construct. Cronbach's alpha reliability coefficients are on the diagonal.

these plans correlated ( $P < 0.001$ ) with marriage ( $r = 0.123$ ), field employment ( $r = -0.172$ ), stronger self-directed financial learning efforts ( $r = 0.190$ ), and greater financial knowledge ( $r = 0.124$ ). The results of the correlation matrix, which only represents the direction and magnitude of the linear relationship between two variables, already indicate the important role that financial education plays for the female employees. These results are examined more closely in the following regression analysis.

All hypotheses were tested using hierarchical multiple regression analysis following a statistical procedure described in Cohen and Cohen,<sup>25</sup> Allen,<sup>26</sup> and Butler *et al.*<sup>16</sup> With respect to the use of multiple regressions on an ordinal variable, it is arguable but in general accepted that regression is rather robust when an ordinal dependent variable with a Likert-like scaling (0–4 and 0–20, respectively, as for our variables) is used (see, for instance, Butler *et al.*<sup>16</sup> and Allen<sup>26</sup>). At step 1, demographics were entered as control variables. At step 2, the two financial education predictors were entered,

and at step 3, hypothesized interaction terms were entered. Significant interactions were explored using procedures described by Cohen and Cohen.<sup>25</sup>

Complete regression results for plan participation and importance are presented in Tables 4 and 5. As a group, the control variables accounted for a significant amount of variance in plan participation ( $R^2 = 0.11$ ,  $F = 18.702$ ,  $P < 0.000$ ) and plan importance ( $R^2 = 0.05$ ,  $F = 7.423$ ,  $P < 0.000$ ). Females reported increased participation in the plans ( $\beta = 0.12$ ,  $P < 0.001$ ) and also attached higher importance to the plans ( $\beta = 0.12$ ,  $P < 0.001$ ). Participants employed in field positions also reported increased participation ( $\beta = -0.34$ ,  $P < 0.000$ ) and attached higher importance to the plans ( $\beta = -0.16$ ,  $P < 0.001$ ). Older participants ( $\beta = 0.12$ ,  $P < 0.000$ ) and those living in larger households ( $\beta = 0.11$ ,  $P < 0.001$ ) were more likely to participate in the plans, whereas non-white respondents ( $\beta = -0.06$ ,  $P < 0.05$ ) and those who were married or living as married ( $\beta = 0.11$ ,  $P < 0.001$ ) were more likely to attach higher importance to the plans. Hence, Hypothesis 1 was supported, under-

**Table 4** Ordinal regression results for supplemental healthcare plan participation

Predictor	Standardized regression coefficients		
	Step 1	Step 2	Step 3
Gender (G)	0.12**	0.14***	0.22*
Age	0.12***	0.12***	0.12***
Ethnicity	0.05	0.03	0.03
Marital status	0.02	0.02	0.02
Household size	0.11**	0.11**	0.11**
Job classification	-0.34***	-0.28***	-0.28***
Self-directed learning (SDL)		0.08*	0.03
General financial knowledge (GFK)		0.10**	0.17**
G × SDL			0.08
G × GFK			-0.133
$R^2$	0.11	0.12	0.12
$\Delta R^2$		0.01	<0.01
Sum of squares regression	104.858	104.855	107.530

	Standardized regression coefficients (by gender)			
	Males		Females	
	Step 1	Step 2	Step 1	Step 2
Age	0.17**	0.19**	0.09*	0.07
Ethnicity	0.00	-0.04	0.06	0.05
Marital status	0.01	0.02	0.02	0.02
Household size	0.19**	0.19**	0.07	0.06
Job classification	-0.15**	-0.17**	-0.34***	-0.27***
Self-directed learning		0.03		0.11**
General financial knowledge		0.15**		0.08 <sup>a</sup>
$R^2$	0.09	0.13	0.12	0.13
$\Delta R^2$		0.04		0.01
Sum of squares regression	30.684	38.950	74.186	72.517

<sup>a</sup> $P < 0.10$ , \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ ;  $F$  statistics were significant at the 0.000 level.

scoring the varying influence of the demographic factors.

The addition of the two financial education variables to the model containing the control variables increased the variance explained in plan participation ( $\Delta R^2 = 0.01$ ) and plan importance ( $\Delta R^2 = 0.02$ ) slightly. Higher self-directed financial learning efforts were related to increased plan participation ( $\beta = 0.08$ ,  $P < 0.05$ ) and to importance attached to the plans ( $\beta = 0.13$ ,  $P < 0.000$ ). General financial knowledge was only marginally ( $P < 0.10$ ) related to plan importance ( $\beta = 0.06$ ,  $P = 0.09$ ), but higher levels of general financial knowl-

edge were related to higher participation ( $\beta = 0.10$ ,  $P < 0.01$ ), lending partial support for Hypothesis 2.

The addition of the interactions between gender and self-directed financial learning, and between gender and general financial knowledge did not increase the variance explained in plan participation and plan importance ( $\Delta R^2 < 0.01$ ). For plan participation, the gender variable remained significant ( $\beta = 0.22$ ,  $P < 0.05$ ) and for plan importance, the gender variable remained marginally significant ( $\beta = 0.19$ ,  $P = 0.09$ ), but in both cases, the interaction variables were not significant. This suggests that the two genders have essentially the same regres-

**Table 5** Ordinal regression results for importance attached to supplemental healthcare plans

Predictor	Standardized regression coefficients		
	Step 1	Step 2	Step 3
Gender (G)	0.12**	0.16***	0.19 <sup>a</sup>
Age	-0.03	-0.02	-0.02
Ethnicity	-0.06*	-0.07*	-0.07*
Marital status	0.11**	0.12**	0.12**
Household size	0.05	0.03	0.03
Job classification	-0.16***	-0.12**	-0.12**
Self-directed learning (SDL)		0.13***	0.11*
General financial knowledge (GFK)		0.06 <sup>a</sup>	0.08
G × SDL			0.03
G × GFK			-0.04
$R^2$	0.05	0.07	0.07
$\Delta R^2$		0.02	<0.01
Sum of squares regression	708.429	1018.679	1023.275

	Standardized regression coefficients (by gender)			
	Males		Females	
	Step 1	Step 2	Step 1	Step 2
Age	-0.01	0.00	-0.04	-0.04
Ethnicity	-0.07	-0.10 <sup>a</sup>	-0.06	-0.06
Marital status	0.09	0.11	0.11*	0.13**
Household size	0.10	0.11	0.02	-0.02
Job classification	-0.05	-0.06	-0.17***	-0.12*
Self-directed learning		0.13*		0.14**
General financial knowledge		0.08		0.06
$R^2$	0.03	0.07	0.05	0.07
$\Delta R^2$		0.04		0.02
$F$	2.38*	3.25**	6.53***	6.14***
Sum of squares regression	176.147	331.329	541.862	696.042

<sup>a</sup> $P < 0.10$ ; \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ .  $F$  statistics were significant at the 0.000 level.

sion slope but the intercepts are different. The analysis of the simple slopes of the gender subsets showed that higher levels of general financial knowledge were related to higher plan participation among men ( $\beta = 0.15$ ,  $P = 0.01$ ). Higher self-directed financial learning activity was related to increased plan participation among women ( $\beta = 0.11$ ,  $P = 0.01$ ) and higher plan importance among both women ( $\beta = 0.14$ ,  $P = 0.01$ ) and men ( $\beta = 0.13$ ,  $P = 0.05$ ). Thus, Hypotheses 3 and 4 were fully supported.

## Discussion

We used two aspects of financial education – knowledge level and learning efforts – to advance the literature on participation in supplemental healthcare plans. We found that in our regression models, demographic factors played the most important role. Being female and working in the field offices related to both stronger plan participation and higher plan importance. In addition, getting older and having a larger family related to plan

participation, whereas being married or living as married and belonging to minority ethnic groups related to plan importance (H1). We also found that enhanced self-directed financial learning efforts related stronger to plan importance than to plan participation, whereas higher levels of general financial knowledge related stronger to plan participation and only marginally to plan importance (H2).

Importantly, we also found that gender moderated the relationship between self-directed financial learning and plan participation and plan importance. Specifically, our findings show that enhanced self-directed financial learning efforts related to higher plan participation and plan importance for women than for men (H3). On the other hand, male respondents with higher levels of general financial knowledge were more likely to participate in the supplemental healthcare plans compared with women. General financial knowledge, however, did not relate to plan importance for either of the genders (H4).

The addition of knowledge level and learning efforts to our models containing demographic variables increased the variance explained in plan participation and plan importance by only one and two percentage points for the whole sample and only up to four percentage points for the gender-specific samples. This is surprising and calls into question the effectiveness of the employer-provided media in educating employees about the availability, scope and monetary value of supplemental healthcare plans. Although we believe that the concept of providing employer-based education is a good one, employers may have to assure that employees are accessing the provided media.

Much of the literature on benefit communication seeks to determine the level of knowledge about specific benefit package components.<sup>6,27</sup> However, little was known about how general financial learning efforts and general financial knowledge, in combination with demographic factors, predict participation in and the importance employees attach to a certain array of employee benefits. This void is partially filled by the present study. Comparing the predicting power of demographic and educational variables, we found that demographic variables seem to dominate the decision to participate in supplemental healthcare plans as well as the importance attached to those plans.

### Plan participation

Our findings suggest that female respondents, older respondents, respondents living in larger households and those working as field staff were more likely to participate in the supplemental healthcare plans. These results are not surprising considering the nature of the supplemental healthcare plans, including long-term care programme, flex-health insurance premiums, medical reimbursement plan and dependent care assistance plan. Long-term care and medical reimbursement may be especially financially valuable for older employees, and flex-health insurance and dependent care assistance for those having dependent family members. Since 95% of the male respondents were employed as field staff, it might explain why job classification prevailed as important predictor in our models. Working in an insurance office outside the company headquarters, a significant number of the male employees may be major breadwinners and bear the financial burden of these supplemental health insurances.

On the other hand, it is surprising that the regression results show that women are more likely to participate in the supplemental plans than men. These findings may suggest that women value the supplemental healthcare benefits more, and thus feel obliged to take advantage of the benefit package at the workplace. This effect for female employees was even strengthened after the addition of the two educational variables, and may provide evidence that financially savvy women show an improved understanding of the supplemental healthcare packages' scope and monetary value.

### Plan importance

With regard to the importance attached to the plans, the demographics differed from plan participation in the way that, besides women and field staff, non-white ethnic groups and married employees were more likely to rate the plans higher. The change in the demographic predictors may underscore the notion that family circumstances are dynamic, such that an individual may not need the supplemental health care now but may anticipate a need for the plans in the future. The finding may also indicate that the reduction in disposable income through enrolment in these supplemental

healthcare plans is considered too high, although these respondents value the offer.

### Financial education

A key finding of the present study was that both increased self-directed financial learning efforts and higher levels of general financial knowledge related to plan participation and the importance attached to the plans. General financial knowledge was more strongly related to plan participation than self-directed financial learning. For the importance attached to the plans, self-directed financial learning prevailed as strongly significant predictor. These findings indicated that the learning process plays an important role in understanding the scope and monetary value of the supplemental healthcare benefits. The decision whether to participate or not, however, seemed to be based on the knowledge gathered at the time of decision making.

### Gender differences

An interesting finding of the present study was that gender moderated the relationship between self-directed financial learning and plan participation, as well as plan importance. Those women, who were active, self-directed learners with the media provided at the workplace, were more likely to participate in the supplemental healthcare plans and to attach greater importance to them than the male respondents. This suggests that continuing financial learning plays an important part in female decision making. It also supports the notion of women's tendency to undertake financial decisions more thoughtfully, their tendency to be more detail-oriented, and their desire to gather a broader range of information than men.<sup>21</sup>

For the male respondents, those with higher levels of general financial knowledge were more likely to participate in the plans than those who were active, self-directed learners. This finding may underscore the common notion that men have a higher general financial knowledge, including a better understanding of the benefit package, than women.<sup>27</sup> Importantly we did not find that male general financial knowledge levels are related to the importance attached to the supplemental healthcare plans. Similarly, for women, higher levels of

general financial knowledge did only marginally enhance plan participation and did not relate to plan importance.

Although gender did moderate the relationship between self-directed financial learning, general financial knowledge, and plan participation as well as plan importance, the addition of these two financial-education variables to the models increased the variance explained in plan participation and plan importance by only one and two percentage points in the female models. However, it increased by 50% for plan participation and more than doubled for plan importance in the two male models, although the *R*-squares were relatively small. This suggests that demographic factors, most importantly job classification and the related income range as well as marital status, dominated female plan participation and the importance women attached to those plans. As indicated by the larger increase in the *R*-squares, for the male respondents educational aspects and demographic factors were more balanced in their influence on plan participation and the importance men attached to these plans.

### Implications

The results of our study have several implications for future research. First, our finding that financial education played a lesser role than demographic factors to predict plan participation and the importance attached to the plans deserves more scrutiny. Further research might include more detailed information about what employees know about their benefit packages and how, where, when and from whom they gather knowledge about these packages. It might be useful to analyse the learning process to influence employees' choices. Often, benefit communication begins when a potential employee is recruited, continues during benefit orientation sessions once the employee is hired, and is evident in benefit newsletters or paycheck enclosures.<sup>11</sup> However, there is limited existing research on the best 'teachable moments' and their implications for benefit communication.

Second, further research could investigate other methods of benefit communication. In the present study, we analysed 'one-way' communications with newsletters, publications, software and the Internet.<sup>11</sup> It might be worthwhile to study how 'two-way' educa-

tional efforts that allow employees to interact with an expert and have their questions answered or efforts to provide personalized materials effect plan participation and the importance attached to the plans.<sup>10</sup>

Third, it would also have been interesting to know whether financial learning and knowledge helped individuals to discriminate among different supplemental healthcare plans, as they are not offering equal value to every employee. To answer this question additional information would be needed, for instance, about the employees' family composition (with regard to long-term care programmes, dependent care assistance programmes), or about the spending on pharmaceutical products (with regard to medical reimbursement plans).

Furthermore, we think that our results have clear implications for practising employee benefit communication at the workplace. Our finding that financial educational media played a minor role in explaining the variance in plan participation and the importance attached to the plans when compared with the demographic factors suggests that organizations need to do more to encourage the use of these media. In particular, our results suggest that the media should be tailored to the demographic factors that influence plan participation and the importance attached to these plans. For instance, educational strategies to communicate supplemental healthcare plans to employees may differ for men and women, as well as for younger and older employees, in order to increase the effectiveness of the marketing efforts.

### Limitations

There are limitations to this study. This study was based on a randomly selected national sample of employees of a national insurance company. According to the Bureau of Labor Statistics,<sup>28</sup> office and administrative personnel represents the largest job category of the workforce. However, caution should be exercised when generalizing these results beyond the type of population studied here. Like any other mail survey, there may be restrictions due to recollection of financial behaviour that has taken place several months prior to the time of the survey or an unwillingness of respondents to reveal certain kinds of information. Also, consistent with com-

mon practice, no attempts were made to verify the accuracy of respondents' statements.

Despite these limitations, the results of the present study have practical implications for employee benefit communication at the workplace and provide a sound basis for future studies on this insufficiently researched topic.

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## Appendix

### Items of index variable 'general financial knowledge'

- 1 All credit card companies offer a no interest plan if you pay your bill in 30 days (true).
- 2 Couples who file a joint tax return where one member is at least 55 years old are eligible for one-time exclusion from the capital gains tax on the sale of a personal residence (up to \$500 000) (true).
- 3 A high deductible on homeowner's or renter's insurance increases the premium paid (false).
- 4 There is no sales charge when purchasing 'no load funds' (true).
- 5 When you seek greater returns on an investment, you assume a higher risk (true).
- 6 The rule of thumb is that you should try to have at least 60% of your income in disability coverage (true).
- 7 Common stocks pay the same dividends year after year (false).
- 8 The financial health of the household can be evaluated by looking at the household's net worth statements over time (true).