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Financial education and consumers' willingness to change behavior

Abstract

This paper uses proprietary data comprising of 4,155 participants who attended financial education seminars conducted by a major U.S. consumer credit counseling agency in 2007. In this study, knowledge gained from attending the seminars is estimated using a multivariate regression model. Results indicate that those most likely to gain knowledge from attending the financial education seminars were respondents between 18 and 24 years of age, lower income groups and respondents who did not complete college. The findings of this study also reveal that the minority groups, women, and the less educated were more willing to seek further financial counseling and act on behavior changes after attending the seminar.

Keywords: household finance, financial planning, investment behavior.
JEL Classification: D14, D03.

Introduction

Debt obligations and monthly payments strain the budgets of millions of households every year. Although, there can be a number of reasons why consumers get into financial trouble, the most common reasons include job loss or a reduction in income; health problems or disability; and events such as divorce or separation. Sometimes, irresponsible financial management can also get consumers into serious financial trouble. To deal with their financial crisis, a number of households seek help from financial counseling agencies as a last resort. The government is encouraging financial counseling agencies to offer more education programs to help prevent consumers from falling into financial trouble. The U.S. Department of Housing and Urban Development (HUD) encourages pre-purchase counseling for many of their housing programs. Additionally, consumers who file for bankruptcy are required to complete a financial education course from an approved provider.

Credit and consumer counseling agencies play a pivotal role in assisting consumers during financial crises; however, there is limited empirical research available that has evaluated the effectiveness of the courses offered by these agencies.

This paper utilizes data provided by a major credit counseling agency to examine the determinants of consumers who report increasing their knowledge from attending financial education seminars conducted by the agency and report their willingness to plan on wealth building and better financial management, after attending the seminar.

1. Literature review

1.1. Effectiveness of consumer counseling programs. Staten, Elliehausen and Lundquist (2002) found that individuals who attended consumer credit counseling improved their credit scores, reduced their outstanding credit balance and improved their loan repayment ability. Elliehausen, Lundquist and Staten (2007) found that over the long run, financial education had a positive effect on the participants' financial behavior. Consumers who attended the financial counseling sessions improved their creditworthiness and reduced their nonpayment delinquency over a period of time. Bailey, Sorhaindo and Garman (2003) had similar findings. Clients, after attending the financial education sessions of a large non-profit credit counseling organization, attributed greater importance to budgeting and managing their debts, and reported being in control of their financial situation. Additionally, participants wanted more information on investments, retirement planning and other financial education topics.

1.2. Effectiveness of financial education programs. Bernheim and Garrett (2003) found that employer based financial education helped stimulate participants' savings and planning for retirement. Results of a study conducted by the U.S. Department of Agriculture Cooperative extension Service revealed that consumers who attended the financial education programs conducted by Extension, increased their savings by an average of $1,600 and reduced their debt by an average of $1,200 over a period of one year (Hirad & Zorn, 2001). Another study showed that employees who attended retirement education training sessions at their workplace increased their participation in 401(k) plans (Kim, Kratzer & Leech, 2001). A study conducted in 2003 by a consumer credit counseling national trade association found that 25% of the participants successfully completed credit counseling programs. Other research by the same association showed that while 21% of the participants completed programs in 1999, 47% dropped out of the program and 4% ultimately filed for bankruptcy (National Foundation, 2003). According to the Freddie Mac study (1998),

We thank the Consumer Credit Counseling Services of Atlanta for providing us with the proprietary dataset.

borrowers who attended classroom based pre-purchase homebuyer education programs had a 26% lower ninety day delinquency rate, when compared with those who did not attend such sessions. The impact of education can also be seen in the classroom. When financial education was included in the curriculum of high school students, nearly half of the students increased their financial knowledge and almost a third of the students improved their financial behavior while approximately 40% increased their confidence in handling finances (Danes, Huddleston-Casas & Boyce, 1999). Even a little financial education appears to produce positive impacts on financial behaviors. Clancy, Weiss and Schriener (2001) found that low-income households attending short financial education sessions increased their participation in Individual Development Accounts (IDA).

1.3. Determinants of financial help seeking behavior. Grable and Joo (1999) found that individuals who demonstrated poor money management behavior and experienced financial stress were more likely to seek financial help. The researchers also found that younger households who did not own homes were more likely to seek financial help. In a follow up study (Grable & Joo, 2001), the researchers found that respondents who had a high level of risk tolerance were older, owned homes, and had greater financial satisfaction were more likely to seek professional or non-professional help to address their financial planning needs. Another study applying the trans-theoretical model of change showed that clients moved through different stages of change while participating in credit counseling programs. The researchers of this study suggest that financial education providers need to be more aware of these stages and need to tailor educational programs to address client needs based on their stage of learning during the program (Xiao, Sorhaindo & Garman, 2006).

In this study, we explore the determining characteristics of consumers who perceive benefitting from attending financial education seminars offered by a well known credit counseling agency. Based on the theory and finding of previous studies, we hypothesize that:

Hypothesis 1: Individuals seeking help in managing their finances will gain the most knowledge from attending the financial education seminar, after controlling for other socio-demographic and environmental factors.

Hypothesis 2: Individuals seeking help in managing their finances will be able to set their financial goals and learn to plan for future, upon attending the seminar, when controlling for other socio-demographic and environmental factors.

2. Methodology

Jacobs (1988) suggests a five step approach to program evaluation. The five steps or tiers are the pre-implementation phase, which comprises of justification and need for a financial education program; accountability phase, which includes determining the viability of the program; program clarification phase, which includes further clarification and fine tuning of the program; progress towards objectives phase, which includes a reality check on the effectiveness of the program; and program impact evaluation, which focuses on the outcomes. Fox, Bartholomae and Lee (2005) suggest the application of this evaluation approach in measuring the effectiveness of financial education programs. For the purpose of this study we focus on the progress towards objectives phase and determine the program impact of the financial seminar session on participant behavior.

3. Data

Data were collected from surveys created and administered by the Consumer Credit Counseling Services in a major metropolitan Area located in the Southern United States. Participants received the survey at the end of the financial education seminar. The total dataset is comprised of 4,155 respondents who attended a financial education seminar in 2007. The data includes demographic and socio-economic characteristics of the respondents; information regarding their financial situation prior to attending the seminar; the respondents' plan of action for controlling their finances in the future; and their self reported increase in financial knowledge from attending the seminar.

4. Variables

4.1. Dependent variables. The dependent variable of interest in the first part of this study is the self reported value of knowledge gained from attending the seminar on a scale of 1 through 10, with 10 being the highest. The dependent variables in the second part of this study are the respondents' willingness to set financial goals, seek more counseling and build asset equity through homeownership, as a result of attending the seminar. Responses were recorded on a likert type scale of one through six and reverse coded to construct the variables.

4.2. Independent variables. The independent variables in this study included age, race, number of children, gender, educational attainment, income, and level of confidence in ability to handle finances. Age was broken into five groups: 18-24, 25-34, 35-

44, 45-54 and 55 plus. For the purpose of this research, the 55 and up age group was kept as the reference variable. Age was included because earlier studies have shown a positive association between age and financial help seeking attitude (Grable & Joo, 1999). Race consisted of Blacks, Hispanics, Asians and other races; Whites served as the reference group. Respondents were asked to rate on a Likert scale of one (strongly agree) to five (strongly disagree) the level of confidence in their ability to handle their finances prior to attending the seminar as well as their confidence level after attending the seminar. For the purposes of this study, the scale was reverse coded.

4.3. Empirical analysis. OLS regressions were used in the study to estimate the determinants of gaining knowledge from attending the seminar. The first part of the study used two multivariate regression models to estimate knowledge gained. Model 1 controlled for the socio-economic and demographic characteristics of the respondents. In addition to the variables included in Model 1, Model 2 also examined knowledge gained from the seminar, and controlled for the effect of the respondents' perception of the quality of presentation and included material quality, knowledge of the presenter and location of seminar. In the second part of the study, OLS regression estimates were run to determine the factors affecting respondents' reported willingness to set financial goals, purchase a home, and seek more financial counseling while controlling for socioeconomic and demographic characteristics. The responses for willingness to act to purchase a home or seek financial counseling are recorded on a scale of one through six.

$$\begin{aligned}&\textit{Knowledge gained} = \alpha + \beta 1\ \textit{age} + \beta 2\ \textit{race} + \\ &+ \beta 3\ \textit{gender} + \beta 4\ \textit{marital status} + \\ &+ \beta 5\ \textit{educational attainment} + \beta 6\ \textit{income} + \\ &+ \beta 7\ \textit{seminar experience}. \qquad (1)\end{aligned}$$

$$\begin{aligned}&\textit{Set financial goals} = \alpha + \beta 1\ \textit{age} + \beta 2\ \textit{race} + \\ &+ \beta 3\ \textit{gender} + \beta 4\ \textit{marital status} + \\ &+ \beta 5\ \textit{educational attainment} + \beta 6\ \textit{income}. \qquad (2)\end{aligned}$$

5. Results

5.1. Descriptive statistics. Table 1 shows the descriptive statistics of respondents who reported scores on the first and fourth quartiles of the knowledge gained scale. The results show that there as a significantly higher percentage of respondents between the ages 25 and 44 who reported knowledge scores in the fourth quartile of the scale as compared to the first quartile. Also a significantly higher percentage of women and respondents with an educational attainment of some college or lower, reported higher scores in the fourth quartile as compared to the first quartile of knowledge gained. Respondents who were married or had incomes in the \$21,000-\$30,000 range and respondents with income higher than \$60,000 reported a higher percentage of knowledge scores in the fourth quartile than in the first one.

Table 1. Descriptive statistics

Variables	Coding	All	Rating Q1	Rating Q4
Age				
Less than 25	1 = yes; 0 = no	11.13%	12.76%	9.91%
25-34	1 = yes; 0 = no	30.66%	29.73%	30.93%**
35-44	1 = yes; 0 = no	28.11%	26.20%	31.74%***
45-54	1 = yes; 0 = no	18.98%	21.63%*	17.29%
Above 54	1 = yes; 0 = no	11.12%	9.68%	10.13%
Gender				
Women	1 = yes; 0 = no	64.44%	62.58%	68.8%***
Men	1 = yes; 0 = no	35.56%	37.42%***	31.20%
Race				
White	1 = yes; 0 = no	31.71%	34.88%***	22.79%
Black	1 = yes; 0 = no	52.76%	50.59%	62.48%***
Hispanic	1 = yes; 0 = no	10.50%	9.11%	9.47%
Asian	1 = yes; 0 = no	1.22%	1.34%	1.47%
Others	1 = yes; 0 = no	3.81%	4.08%	3.79%
Marital status				
Single	1 = yes; 0 = no	45.64%	47.45%*	46.68%
Married	1 = yes; 0 = no	35.80%	34.05%	35.81%***
Divorced	1 = yes; 0 = no	11.25%	11.40%	10.81%
Widowed	1 = yes; 0 = no	4.89%	4.58%	4.84%
Partnered	1 = yes; 0 = no	2.42%	2.52%	1.86%

Table 1 (cont.). Descriptive statistics

Variables	Coding	All	Rating Q1	Rating Q4
Education				
High school or lower	1 = yes; 0 = no	35.57%	36.94%	38.46%***
Some college	1 = yes; 0 = no	36.95%	36.64%	37.4%**
College or higher	1 = yes; 0 = no	27.48%	26.42%	24.14%
Income				
Less than $20,000	1 = yes; 0 = no	21.76%	25.93%	22.94%
$21,000-$30,000	1 = yes; 0 = no	24.04%	23.34%	26.2%***
$31,000-$40,000	1 = yes; 0 = no	19.64%	19.92%	17.41%
$41,000-$50,000	1 = yes; 0 = no	12.97%	14.21%	12.51%
$51,000-$60,000	1 = yes; 0 = no	8.21%	5.29%	6.62%
Above $60,000	1 = yes; 0 = no	13.38%	11.31%	14.32%***
*p < .05; **p < .01; ***< p < .001				

5.2. Determinants of reported gain in financial knowledge. Table 2 shows the determinants for gaining financial knowledge from attending the financial education seminar. The results indicate that when compared to the reference group of 55 or older, younger respondents between the ages of 18 and 24 were more likely to gain knowledge from attending the seminar. This relationship was significant for both the Models 1 and 2. In the Model 1, Black respondents, when compared to the reference group of White respondents, reported a significantly higher knowledge score from attending the seminar. In the Model 2, both Black and Asian respondents reported significantly higher scores of knowledge gained when compared with the reference group of White respondents, upon attending the seminar. Men as compared to women reported lower knowledge scores in the Model 2; this relationship, however, was not significant in the Model 1. Respondents with educational attainment of some college or lower reported higher knowledge scores in both the Models 1 and 2, when compared with respondents that completed college or higher. Compared to respondents who earn more than $60,000, respondents in all other income groups (earning $60,000 or lower) reported greater scores for knowledge gained in both the Models 1 and 2. Having a greater number of children and being confident in their ability to reach their financial goals prior to attending the seminar were positively and significantly associated with knowledge gained in the seminar. This relationship was true for both Model 1 as well as Model 2. The results in Model 2 also show that the respondents' perception of seminar experience comprising of the material as well as presenter quality and location of the seminar were significant positive predictors of gaining knowledge from attending the seminar.

Table 2. OLS estimate of gaining knowledge from attending seminar

	Model 1			Model 2		
Variables (N = 3458)	Coef.	St. Error	Sig	Coef.	St. Error	Sig.
Age (Ref: 55 or more)						
Age 18-24	0.861	0.294	***	0.513	0.255	**
Age 25-34	0.386	0.241		0.107	0.209	
Age 35-44	0.136	0.237		0.043	0.206	
Age 45-54	-0.145	0.246		-0.031	0.214	
Race (Ref: White)						
Black	0.964	0.147	***	0.639	0.129	***
Hispanic	0.334	0.244		0.110	0.213	
Asian	0.516	0.576		1.075	0.506	**
Other	0.226	0.366		0.318	0.320	
Gender (Ref: female)						
Male	-0.004	0.135		-0.222	0.117	*
Marital status (Ref: married)						
Single	-0.188	0.154		0.103	0.134	
Divorced	-0.013	0.218		0.083	0.187	
Other marital	-0.340	0.347		-0.255	0.301	
Children	0.193	0.058	***	0.143	0.050	***
Confidence level	0.582	0.055	***	0.272	0.050	***

Table 2 (cont.). OLS estimate of gaining knowledge from attending seminar

	Model 1			Model 2		
Variables (N = 3458)	Coef.	St. Error	Sig	Coef.	St. Error	Sig.
Educational attainment (*College degree or up*)						
HS or less	1.114	0.177	***	1.140	0.153	***
Some college	0.832	0.162	***	0.732	0.141	***
Income (*Ref*: > $60,000)						
Incomelt20	1.183	0.248	***	1.097	0.216	***
Income2030	1.589	0.239	***	1.499	0.209	***
Income3040	1.347	0.235	***	1.235	0.205	***
income4050	1.568	0.252	***	1.403	0.219	***
Income5060	0.917	0.280	***	0.785	0.243	***
Seminar experience						
Material quality				0.495	0.031	***
Presentation quality				0.152	0.041	***
Location				0.303	0.057	***
Intercept	22.073	0.295	***	4.389	0.587	***
N	3458			3458		
R-squared	0.124			0.335		
*p < .05; **p < .01; ***< p < .001						

5.3. Determinants of willingness to plan. Table 3 shows the determinants of the willingness to plan and act after attending the seminar. Three separate multivariate OLS regressions were run for this purpose. The regression in the first model was for the respondents' willingness to set financial goals. The results show that age groups of 34 or younger were more likely to set financial goals upon attending the seminar than respondents who were 55 or older. Being Black or Hispanic was positively associated with setting financial goals after attending the seminar. Additionally, those who were single or were confident in managing their finances prior to attending the seminar were more likely to set financial goals after attending the seminar. When compared with the reference group of respondents who completed college or higher, those who had completed some college or less were more likely to set financial goals after attending the seminar. All income groups earning $60,000 or less were positively associated with setting financial goals as a result of attending the seminar, when compared with the reference group of respondents with incomes greater than $60,000. Men were less willing than women to set financial goals after attending the seminar.

Table 3. OLS estimate of willingness to act

	Set financial goals			Buy home			Seek more counseling		
Variables	Coef.	St. error	Sig	Coef.	St. error	Sig	Coef.	St. error	Sig
Age (*Ref*: *55 or more*)									
Age 18-24	0.177	0.059	***	0.449	0.077	***	0.117	0.074	
Age 25-34	0.088	0.048	*	0.298	0.063	***	0.052	0.061	
Age 35-44	0.028	0.048		0.204	0.062	***	0.094	0.060	
Age 45-54	-0.043	0.049		0.033	0.064		0.063	0.062	
Race (*Ref*: *white*)									
Black	0.190	0.029	***	0.286	0.038	***	0.315	0.037	***
Hispanic	0.113	0.049	**	0.290	0.064	***	0.254	0.062	***
Asian	-0.027	0.115		0.262	0.095	***	0.517	0.209	**
Other	0.072	0.073		0.040	0.150		0.231	0.093	**
Gender (*Ref*: *female*)									
Male	-0.048	0.027	*	0.008	0.035		-0.084	0.045	*
Marital status (*Ref*: *married*)									
Single	0.055	0.031	*	0.075	0.040	*	0.169	0.039	***
Divorced	0.056	0.043		0.071	0.056		0.135	0.055	**
Other marital	0.113	0.070		0.002	0.091		0.068	0.088	
Children	0.013	0.012		0.061	0.015	***	0.077	0.015	***
Confidence level	0.039	0.011	***	0.169	0.015	***	0.065	0.064	

Table 3 (cont.). OLS estimate of willingness to Act

	Set financial goals			Buy home			Seek more counseling		
Variables	Coef.	St. error	Sig	Coef.	St. error	Sig	Coef.	St. error	Sig
Educational Attainment (college degree or up)									
HS or less	0.223	0.035	***	0.202	0.046	***	0.172	0.045	***
Some college	0.158	0.033	***	0.099	0.042	**	0.136	0.041	***
Income (Ref: > $60,000)									
Incomelt20	0.257	0.050	***	0.234	0.065	***	0.365	0.063	***
Income2030	0.262	0.048	***	0.412	0.062	***	0.373	0.061	***
Income3040	0.310	0.047	***	0.383	0.061	***	0.247	0.060	***
income4050	0.296	0.051	***	0.386	0.066	***	0.308	0.064	***
Income5060	0.246	0.056	***	0.187	0.073	**	0.206	0.071	***
Intercept	3.679	0.072	***	2.334	0.094	***	2.784	0.091	***
Test significance: *p < .05; **p < .01; ***< p < .001									

In the second regression model, regarding the decision to buy a home after attending the seminar, the estimates show that when compared with the reference age group of 55 or older, respondents in the age groups of 44 or younger were more likely to plan on buying a home after attending the seminar. Also, Black, Hispanic and Asian minorities when compared with the reference group of Whites, singles when compared with the reference group of married, those who had greater number of children and those who were confident about managing their finances prior to attending the seminar, were more willing to plan to buy a home, after attending the seminar. Respondents with educational attainment of some college or less and income groups earning $60,000 or lower were also more willing to plan on buying a home after attending the seminar.

The third regression provides estimates of the determinants for seeking more financial counseling after attending the financial education seminar. The results show that all racial groups when compared to the reference group of Whites, respondents who were single or divorced when compared with the reference group of married, and those who had a greater number of children, were more likely to seek further financial counseling after attending the seminar. Men were less likely than women to seek further financial counseling. Respondents with educational attainment of some college or less when compared with the reference group of college completion or higher and lower income groups earning $60,000 or less were more willing to seek further financial counseling after attending the financial education seminar.

6. Discussion

The purpose of this study was to determine the impact of financial education on participant behavior. In particular, an examination of the characteristics of respondents who reported an increase in their knowledge as a result of attending the financial education seminar, their willingness to plan for wealth building (such as purchasing a home) and improvement of financial management skills (such as setting goals and seeking further counseling).

6.1. Knowledge gained. Prior research indicates that financial illiteracy is predominant among those with less education, minorities (Black and Hispanic) and women (Center for Research, 2008). This study reinforces those findings. Results indicate that respondents reporting a significant increase in financial knowledge as a result of the seminar were aged 18 to 24, Black, Asian, and had an education level of some college or less. It makes sense that young adults who may be fairly new in their financial knowledge would gain a lot from the educational seminar. Older participants may have learned more from their own prior experience than from the actual seminar. Regarding race, a large percent of participants reported being Black which may have driven the result. However, only a small percentage of respondents reported being Asian. It is possible that these respondents were fairly new to the American financial system and were seeking further education and, therefore, gained a great deal from the seminar. Those with less than a college degree may not have had the opportunity to obtain as much formal education regarding finances as those with a degree, thus influencing their knowledge gaining experience in the seminar to be greater than those with a more formal education. One may also consider the possibility that those with a degree, and the status that follows, had upwardly biased answers indicating that their knowledge increase was large as a result of the seminar, but in reality it may be large due to their prior education. Prior research indicates that men are more financially literate than women (Center for Research, 2008). This paper supports those findings; males reported lower knowledge scores than females after attending the seminar. It is possible that the female respondents had less prior financial knowledge going into the seminar than the male respondents. The results also indicate that low income respondents (those with income between $21,000 and 30,000) reported significantly higher gains in knowledge as a result of the seminar. This could be due to their receiving limited educational experiences because of their income level, thus by simply attending the seminar they were exposed to education and gained from it. Those reporting the highest income level ($60,000 and over) also had significant gains in knowledge as a result of the seminar. These individuals, who are likely to have more education than lower income persons were, perhaps, corrected in some of their beliefs regarding personal finances after attending the seminar, thus significantly increasing their knowledge.

Married respondents also reported having significantly high gains in knowledge after attending the seminar. Past research has shown that married households tend to accumulate greater wealth than non-married households (Waite, 1995). Married households are likely to have higher incomes as a result of dual earners and benefit from economies of scale. Additionally, married households are more long-term orientated than other households and are driven by bequest motives for their posterity (Waite, 1995). Factors such as these may have motivated the married households to increase their financial knowledge through attending the seminar.

6.2. Willingness to act-financial goals. Younger participants in this study reported a significant willingness to set financial goals as a result of attending the seminar. Persons in the age group of 18 to 24 years old may be more motivated for setting new goals while older participants may be more set in their financial practices. Perhaps older participants have the willingness to set goals as a result of some other motivating factor such as an event occurring in their household rather than because of attending the seminar. Respondents who indicated they were confident in managing their finances were also significantly more willing to set financial goals. The confidence level of this group may be driving their willingness to set goals. Such confidence may extend beyond their ability to manage their finances and motivate them to set new goals.

6.3. Willingness to act-buy a home. Homeownership is a goal for many individuals, thus it is not surprising that the majority of age groups as well as the majority of race groups were willing to act on buying a home as a result of the seminar. Nationally, homeowners under age 35 are the fastest growing age group of homeowners (Joint Center, 2008); this includes two of the three significant age groups in this study. Those aged 45 to 54 were not significantly more willing to act on purchasing a home. This could be because they are more likely to already own a home. Those with more children were also more likely to be willing to purchase a home. This intuitively makes sense because of the needs of a growing family for additional space along with the security homeownership brings. However, such needs may be the driving force behind their willingness to purchase rather than the seminar itself. Respondents who reported being confident in their ability to reach their financial goals were also more willing to purchase, clearly this is an expected fit in as much as good financial management compliments homeownership.

6.4. Willingness to act-seek more counseling. All races (save the reference group of White) report a significant willingness to seek more counseling. This is a positive sign for the future of financial education and counseling. Individuals belonging to the minority groups, therefore, appear to be interested in furthering their knowledge of financial matters and consider such education important enough in their lives to at least have a willingness to seek more counseling. Single and divorced respondents also report a significant willingness to seek more counseling. Persons who are not part of a two-earner household may be struggling with their finances or the financial consequences of a divorce and thus have an increased motivation to seek out further advice. Additionally, those with more children have an increased motivation to seek further financial advice because the financial needs of their children are increasing as they get older, for example, school, transportation, and entertainment expenses.

It is important to note that both educational attainment (some college or less) and lower income levels (< $61,000) indicate a positive and significant willingness to act on all three dependent variables which were set financial goals, buy a home, and seek more counseling. Those with some college or high school education may be more willing to act (set goals, purchase a home, and seek more counseling) as a direct result of their limited education. These respondents may have enjoyed and learned from the educational seminar such that they were willing to act on setting goals, buying a home, and seeking more counseling. Also, this may have been one of few formal financial education experiences. They may be hearing information for the first time and thus encouraged to act due to their new increase in knowledge. However, it should be considered that this group of respondents was motivated enough to attend the seminar, therefore, that motivation may be driving their willingness to act more so than the actual seminar. One should also note that many of the respondents were relatively young (30.66% between age of 25-34), they may have yet to complete a college education thus also contributing to the significance of the educational attainment variable. The lower income groups were also willing to act on the three behavior changes. Those with lower incomes may represent the younger and less educated who see a bright future and want to set goals, buy a home, and seek further assistance.

6.5. Limitations. Financial literacy research can be limited for many reasons. Six limitations of this study will be discussed. First, participants self selected into the seminar. The participants chose to attend, they either attended because of an experience they had, information they wanted confirmed, or even simply because they were highly motivated. They were motivated to attend the seminar and that motivation may have driven the results of their knowledge gained and willingness to act. Motivated individuals are more likely to set goals and seek further information. Another limitation is that there was no pre-test administered. Thus, the results bear no indication as to what the participants knew before attending the financial education seminar. It is possible that respondents had some prior knowledge regarding financial matters, whether due to prior experience or education, that drove the results. A third limitation is that no control group was available. This study used a sample of convenience (the clientele of a large credit counseling agency) and did not have access to a control group. Fourth, the sample was a regional sample and results should not be generalized to individuals in other regions. Fifth, there was no variables to measure respondents' prior knowledge, home ownership and individual wealth or net worth of their assets and liabilities that could be included in the empirical tests. Having such information would help clarify the actual impact of the financial education seminar. Lastly, we did not have control over the survey questions that were asked or how they were composed. This led to some limitations in the data collected. We have, however, conducted post-estimation tests to check for multicollinearity and our results suggest that there are no issues with regards to multicollinearity in our empirical models.

Conclusions and implications

This study focuses on the fifth stage of Jacobs (1988) five step approach to program evaluation which is the progress toward objectives phase, by assessing the impact of the financial education session. Prior research has indicated the success and usefulness of financial education (Bailey, Sorhaindo, & Garman, 2003; Bernheim & Garrett, 2003; Danes, Huddleston-Casas & Boyce, 1999; Kim, Kratzer & Leech, 2001; Staten, Elliehausen & Lundquist, 2002). Our study finds that participation in a financial education seminar had an impact on the knowledge gained and willingness of participants to set goals, buy a home, and seek further counseling. This study extends the existing literature by demonstrating the willingness of lower income and less educated individuals to act after taking the financial education seminar. This is an important finding because the financial education seminars conducted by the credit counseling services are specifically designed to help this demographic segment. Another interesting finding of our study is the positive association between seminar quality and knowledge gained from attending the seminar.

Suggestions for further research pertaining to this study include adding a pre-test to the seminar and a follow up survey. A pre-test would assess prior financial knowledge and may assist program leaders in making improvements to the course. A follow up survey would allow for actual behavior change to be observed instead of just the willingness to act. The results of this study can be used by financial educators, Cooperative Extension, and other industry professionals as they seek to improve their own programs and aid clientele in moving forward in their own financial pursuits.

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