Development and Validation of a Women's Financial Self-Efficacy Scale

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Lack of standardized measurement is one of the main factors that inhibits rigorous evaluations of financial literacy programs. However, although several scholars have developed financial self-efficacy measurements, none have been tailored for women. This article aims to develop and validate a Women's Financial Self-Efficacy Scale (WFSES). Results showed that the WFSES had an excellent reliability coefficient alpha (.93). The scale had good content-related validity, which covered all key domains in financial management for women. The criterion-related validity showed that the WFSES was positively correlated with the New General Self-Efficacy Scale (NGSES). Factor analysis showed four factors to be consistent with the common categories in financial management curricula.

Keywords: financial self-efficacy, measurement development, measurement validation, standardized measurement, Women's Financial Self-Efficacy Scale

Financial literacy education has been receiving increased attention as a sustainable way to lift people out of poverty and also as a means to empower people, especially women and certain vulnerable groups. In the United States, many financial literacy-training curricula have been developed and tailored for different groups, including youth, college students, women, the elderly, domestic violence (DV) victims, and others. Despite this increase in the number of financial management programs, there are few rigorous studies that provide empirical evidence regarding the most effective strategies for the enhancement of financial capability (CFPB, 2015). One of the main reasons for this dearth of empirical studies is the lack of standardized measurement.

In the past 15 years, several scholars have developed measurements for financial self-efficacy. However, there has been no measurement tailored for women, who are more vulnerable to financial hardships or barriers and are often overrepresented in financial counseling services. Women tend to have less knowledge about financial literacy, are more intimidated by financial decision-making, and are less confident in investing money than men (Anthes & Most, 2000; Graham, Stendardi, Myers, & Graham, 2002). Given these differences between men and women, some financial education programs have been designed specifically for women. Evaluation of these programs is limited due to the lack of standardized measurements. This article aims to develop a self-administered scale that measures financial self-efficacy for women over the age of 18, and can also be used online.

In the literature, the terms "financial literacy," "financial capability," and "financial self-efficacy" have a range of definitions. In this article, these three terms are defined as follows. Financial literacy refers to financial knowledge, which includes an individual's understanding of basic financial management strategies and economic principles (Lusardi & Mitchell, 2014). Financial capability includes both internal capacities (knowledge, skills, and attitudes) and external conditions (access to financial institutions and financial products) that give people opportunities to become financially self-sufficient (Sherraden, 2013; Xiao & O'Neil, 2016). This article relies on Bandura's definition of

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self-efficacy, which refers to "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Therefore, financial self-efficacy could be understood as an individual's self-perceived ability in managing their finances.

Literature Review

This literature review first discusses self-efficacy theory and how it relates to human behavior in general and to personal financial management in particular. Literature that highlights the gender differences in terms of financial self-efficacy and financial management will also be discussed. Finally, there is a review and critique of existing financial self-efficacy measurements and an explanation regarding the gap in the literature of this area.

Self-Efficacy and Human Behavior

The construct of self-efficacy in this article is based on Bandura's social cognitive theory, which perceives self-efficacy in terms of "expectancies" and "perception of control" (Gecas, 1989, p. 292). The main notion in self-efficacy theory is that people's lives are guided by their perceived beliefs in their capabilities. People with high self-efficacy tend to view challenges as something to overcome and master. Conversely, people with low self-efficacy tend to believe they could not overcome these challenges and, therefore, often avoid challenges and choose easier tasks (Bandura, 1997).

In personal financial management, studies have found that an individual's confidence in managing their finance is a key factor for driving change in their financial behavior. For example, Babiarz and Robb (2014) analyzed a data set collected by the National Financial Capability Study and found financial self-efficacy to be positively correlated with the probability of having savings. In another recent national survey conducted in Canada, Rothwell, Khan, and Cherney (2016) found that financial self-efficacy is the mediator between financial knowledge and postsecondary-education saving. Lim, Heckman, Letkiewicz, and Montalto (2014) examined the relationship between financial stress, self-efficacy, and financial help-seeking behavior on a sample of college students. The study found that people with high financial self-efficacy were more likely to seek financial help than people with low financial self-efficacy. Financial self-efficacy also acted as a moderator between financial stress and financial help seeking although at a low level.

Women are often found to have lower confidence than men in terms of financial management (Bach, 2000; Estes & Hosseini, 1998; Schumell, 1996). Joo and Pauwels (2002) examined factors that affect retirement confidence for men and women, and found that age, dependent care, and openness in income reporting are three main differences between men and women. Age was a significant factor for men but not for women. Younger male workers tend to have greater retirement confidence than older male workers. Dependent care and openness in income reporting seemed to be significant for women but not for men. The more dependents women had, the lower their level of retirement confidence. Female workers who reported their income also had lower retirement confidence than those who did not. This appears to be correlated with the level of wealth, as Smith (1995) found that people who had more wealth tended not to disclose their income.

In terms of financial risk-taking, women were also found to be more risk averse than men (Montford & Goldsmith, 2015; Palsson, 1996; Riley & Chow, 1992). This could contribute to the disparity in wealth levels between men and women. Income level was found to be significant in determining women's involvement in household financial decision-making. Bernasek and Bajtelsmit (2002) surveyed university faculty at five Colorado universities and found that as women's income share increased, so did their level of involvement in household financial decision-making.

There are several factors that affect women's motivation to adopt positive financial behaviors. Rowley, Lown, and Piercy (2012) conducted focus groups with 17 women aged 25–54 in the United States, and found life transition events such as divorce, marriage, having children, moving, and changes in employment to be determining factors in facilitating change in women's financial behavior. Social and professional support, as well as financial knowledge attained in financial management training sessions, helps women overcome difficulties and setbacks. Furthermore, positive attitudes such as optimism and confidence help women maintain the changes they make.

Perhaps as a result of women's lower financial management capability compared to men, financial literacy programs are often tailored to the unique needs of women. For instance, the Women's Institute for Financial Education (WIFE) has developed training materials specifically for women, teaching them about saving and investing, budgeting, and preparing for retirement. Besides basic financial management topics, WIFE prepares women for life after divorce or widowhood (WIFE, n.d.). Several financial management training curricula specifically targeted for women and battered women have also been developed such as: *Personal Economic Planning* (PEP; VonDeLinde & Correia, 2005), *Redevelopment Opportunities for Women's Economic Action Program* (REAP; Sanders, Weaver, & Schnabel, 2007), and *Moving Ahead Through Financial Management* (Postmus, Plummer, & Murshid, 2010). Having standardized measurements specific for women would enhance the rigorousness of the evaluations of these programs.

Existing Measurements of Financial Self-Efficacy

In terms of standardized measurements of financial self-efficacy, there have been four scales developed in the past 15 years. Dietz, Carrozza, and Ritchey (2003) developed a Financial Self-Efficacy Scale (FSES) to examine whether financial self-efficacy explains gender differences in retirement saving strategies. The scale included three items adapted from the Pearlin Mastery Scale (Pearlin & Schooler, 1978): "I have little control over financial things that happen to me," "I often feel helpless in dealing with the money problems of life," and "There is little I can do to change many of the important money issues in my life." The reliability coefficient alpha reported was low, at .69. There is also no evidence of validity for this scale. Although the authors mentioned running a Confirmatory Factor Analysis (CFA) in which all three items loaded more than .7, there is no report about the dimensionality of the scale or its construct validity. The content validity of this scale is also undermined by the fact that the items do not cover all commonly accepted aspects of financial self-efficacy.

Weaver, Sanders, Campbell, and Schnabel (2009) developed a FSES as a subscale in the Domestic Violence-Related Financial Issues Scale (DV-FI) measure. The DV-FI scale included 24 items with five factors: financial self-efficacy, financial security and future safety, perceived financial role in partner violence, economic abuse, and financial distress and relationship decisions. The scale was tested on a sample of DV victims at a shelter (N = 113). Financial self-efficacy in this study was a five-item subscale in the DV-FI measurement, covering an individual's confidence in selected financial management tasks such as credit card debt, credit rating, employment, and education opportunities. The items were worded in terms reflective of confidence such as: "I am confident that I can meet my goals for becoming financially secure," "I am confident that I can meet my goals for eliminating credit card debt," "I am confident that I can meet my goals for improving my credit rating," "I am confident that I can meet my goals for obtaining adequate employment," and "I am confident that I can meet my goals of accessing educational opportunities" (Weaver et al., 2009, p. 577). The coefficient alpha was .86 for the subscale of financial self-efficacy. Construct validity was tested by exploring the correlation between five factors of the DV-FI scale with the Family Resource Scale (Dunst & Leet, 1987), Conflict Tactics Scale (Strauss, Hamby, Boney-McCoy, & Sugarman, 1996), and Psychological Maltreatment of Women Inventory (Tolman, 1999). The Financial Self-Efficacy subscale was found to be positively correlated with the Family Resource Scale; however, correlations with other scales were not significant (Weaver et al., 2009). The test–retest reliability was examined by the stability coefficient of the test scores two weeks apart for the comparison group (n = 35). The Financial Self-Efficacy subscale showed a moderate stability over 2 weeks (r = .62).

Nevertheless, the Financial Self-Efficacy subscale (Weaver et al., 2009) has a number of limitations. This subscale includes only five items, which do not cover all major domains of basic financial management. Additionally, results of this study only apply to women living in shelters. Further study is needed to examine its validity and reliability with DV victims who do not seek shelter help.

Lown (2011) developed and tested a six-item FSES for researchers, educators, counselors, and advisors. The FSES was developed based on Schwarzer and Jerusalem's (1995) General Self-Efficacy Scale (GSES; Schwarzer & Jerusalem, 1995). The author used four items from the original GSES scale and added six more items about tasks related to financial management, which were measured on a four-point Likert scale, ranging from 1 (not true at all) to 4 (exactly true). The scale was distributed online to university

employees. Results showed a modest coefficient alpha of .76 in the scale. Criterion-related validity was checked through its correlation with the Retirement Personality Type (RPT) scale. Although the correlation was positive and significant, the question was about the suitability of using the RPT as a criterion. The RPT scale was used to identify different types of people in terms of retirement savings attitude. The validity evidence of the scale is limited.

More recently, Rothwell et al. (2016) developed a five-item scale to measure financial self-efficacy in Canada. The items covered an individual's self-rating of their own level of financial knowledge, as well as their ability to keep track of money, make ends meet, choose financial products, and stay informed about financial issues. The rating scale was a four-point scale from not *very good* (4) to *very good* (1). The scale was tested in a sample of 1,408 adults from low-income families in Canada. Results showed that the Cronbach's alpha was .75 and exploratory factor analysis showed one-factor model after removing one item with low factor loading. This scale marks another development in the financial self-efficacy literature. However, the items in the scale still do not cover all domains of basic financial management, given that it was tested in Canada, which has a different financial context and welfare structure from the United States, and that its evidence for validity is limited.

Among these four scales, three were intended for a general population, and one was specific for battered women. All of them have limitations in terms of validity and reliability. Given the fact that many financial literacy programs are gender specific, a financial self-efficacy measurement tailored for a broader group of women would be beneficial. This article describes the development and validation of a FSES for evaluators, researchers, social workers, and financial counselors to use with women.

Methods

Research Design

This mixed methods study was designed to develop and validate a Women's Financial Self-Efficacy Scale (WFSES). The preliminary phase of the study involved the use of qualitative and quantitative methods to develop and refine the scale (described in detail below under the "Instrument Development" section). The current study was designed to validate and further refine the WFSES through an anonymous, web-based, self-administered survey of adult women.

Instrument Development

The WFSES items in this study were developed based on specific tasks in basic financial management and Bandura's (2006) suggestions in developing self-efficacy scales. They were subjected to a rigorous process of item development, including literature review, consultation with experts, think-aloud interviews, focus group discussions, and pilot testing. The domains for financial management in the scale for this project were developed based on curricula of financial literacy programs for women as discussed in a previous section. Five main categories of financial management were identified: (a) cash flow and debt management, (b) repair and building credit, (c) financial goals development, (d) saving and investing, and (e) taxation and financial protection (Table 1).

These domains were also used to develop the construct map. The financial self-efficacy construct map included a working definition of financial self-efficacy along with a map illustrating what a high level of financial self-efficacy meant and what a low level of financial self-efficacy meant. Items to measure financial self-efficacy were developed based on this construct map (see Figure 1). Following Bandura's (2006) guide for constructing self-efficacy scales, items were worded in ways that expressed the capability of respondents to say: "I can . . . ." The rating scale showed levels of confidence from one to five, with one being "not confident at all" and five being "highly confident."

Figure 1. Financial self-efficacy construct map.

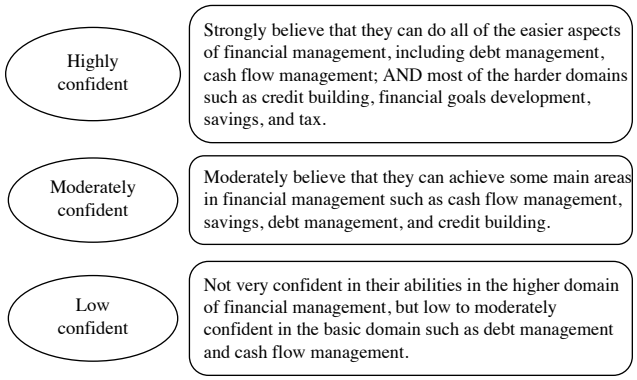


TABLE 1. Definition of Each Category of Financial Management

Categories	Definition
1. Cash flow and debt management	Includes basic skills in managing income, spending, and paying of bills.
2. Repair and building credit	Includes skills in credit cards management and knowledge about how to solve a financial problem and financial fraud, if it occurred.
3. Financial goals development	Includes skills in setting financial goals and developing plans to achieve financial goals.
4. Saving and investing	Includes skills in putting money aside for saving and investing the savings.
5. Taxation and financial protection	Includes skills in managing tax filing, protecting oneself from identity theft and solving it, if it occurred.

Consultation With Experts

The items were refined 20 times throughout the process of the instrument development. A three-person expert panel was formed, and included one expert in each program evaluation, financial literacy training, and measurement development. The panel was consulted regularly, especially during the item development stage. Overall, the panel determined that the measurement had good content-related validity. The items measured what they were intended to measure, were appropriate to the definition of financial self-efficacy, and covered the main domains of financial management, especially domains that are important for women.

Think-Aloud Interviews

The think-aloud interviews were conducted with five women to check the response-related validity. Two participants were identified as immigrants and three were nonimmigrants. Three were White and two were Asian. A think-aloud interview is a technique of investigation in which interviewees are asked to speak out loud their thoughts while responding to the questions. During this process, the interviewees were observed carefully to see if there were any questions that were difficult to understand, might make participants feel uncomfortable, the participants misunderstood, might offend respondents, and so on (Wilson, 2005). The think-aloud interviews did not spot any questions that might offend or make the interviewees feel uncomfortable. Only one question in the demographic information about immigration status was a little confusing, as participants had different ideas about what "immigrant" meant. As a result, the question was reworded to "Were you born in the United States?" The think-aloud interviews also helped the researcher recognize that people often weigh their abilities based on past experience. Therefore, a note was put into the scale: "You do NOT need to be actually doing the actions now to rate yourself high. Instead, this is about the extent of your confidence in *thinking that you can* do the actions." This was done in order to remind people to think about their "perceived ability" rather than concrete "experience."

Pilot Test

After the scale was refined following the feedback from the think-aloud interviews, the pilot-test was conducted with an undergraduate class and a graduate class. The undergraduate class provided 35 responses and the graduate class provided 15 responses. Forty-seven of the respondents were female and three were male. Basic item analysis was conducted with data from the two groups, separately and together. The difference in results of the two analyses was not significant. The quality of each item was evaluated based on item-total Pearson score, item difficulty, standard error, and infit and outfit index. Items with a low items-total score, which had an infit index of less than -2 and an outfit index of more than 2, were revised or discarded. Eight items in total were discarded from the total of 30 items. Results of the pilot test revealed a coefficient alpha of .95. The nonparametric curves showed that the five-level rating scale worked well in general.

In addition to the pilot test, a focus group discussion was conducted with the graduate students to get their feedback after they took the scale. They were asked to comment on if there is any question that might be offensive or irrelevant, questions that might have double meanings, the attractiveness of the letter of invitation, and so on. The focus group was helpful in identifying some redundant questions and complicated, high-level reading words,

such as "expenses" and "credit abuse." A brief explanation of the two terms was added, as well as of the terms earned income tax credit (EITC) and identity theft, for those who were not familiar with these terms. Apart from the above questions, the participants said that the questions were easy to understand, straightforward, and easy to complete quickly.

Sample

This study used a purposive sampling with the inclusion and exclusion criteria as follows: (a) being female, (b) 18 years old or over, and (c) having lived in the United States for at least 3 years. The reason for a 3-year cut off is to choose people who have had enough time in the United States to understand and utilize most of the basic personal financial services in the U.S. Participants were recruited via e-mail listservs and networks nationwide. A call for participation was sent to listservs of undergraduate and graduate students at one university in Minnesota and one in California. In addition, the invitation was distributed via community agencies, DV agencies, and nonprofit organizations to reach the nonacademic populations and people with low income.

There were 299 responses in total. The majority of the participants in this sample were White (69%), followed by Asian (14%). Almost all of the participants in the "other" category (10%) were Hispanic, of Latino origin, or Mexican American. African Americans accounted for 2%. There were no Native Americans, Alaska Natives, Native Hawaiian, or Pacific Islanders. As mentioned above, immigrants were defined as people who were not born in the United States. Immigrants accounted for 15% of the participants.

More than half of the participants were single and one-third were married. The majority of the participants (82%) were young women under 40 years old (16% were 18–24; 39% were 25–30; 20% were 31–35; 7% were 36–40). Among the middle-aged and elderly population, 5% of the sample were between 41 and 45 years old, 6% were between 46 and 50 years old, and 7% were over 50 years old. Most participants (92.6%) either had a college degree or graduate degree. Only 6.7% had not received a college degree, and less than 1% had only a high school diploma or did not finish high school. Regarding training on financial management, one-third of participants had some financial literacy training and two-thirds never had any financial literacy training.

Data Collection

All data were collected online via Google Forms. Participants received a link to the online FSES with the informed consent form on the first page. Participants who completed the survey received another e-mail asking if they would be willing to take a short survey about general self-efficacy to examine the criterion-related validity and construct-related validity of the WFSES.

Data Analysis

SPSS version 22 and jMetrik was used to analyze the data. Several tests were conducted to examine the reliability and validity of the scale (details were described in the results section). Construct-related validity and criterion-related validity were tested based on the correlation with the new General Self-Efficacy Scale (NGSES; Chen, Gully, & Eden, 2001). Exploratory and confirmatory factor analyses were conducted to explore the underlying structure of the WFSES and to identify specific items with lower factor loadings that might be omitted to create a final scale with both strong psychometric properties and utility.

Results

Reliability

The item analysis results showed that the distribution was fairly normal, since the skewness (−0.243) was between −1 and +1. The scores ranged from 47 to 110 and the mean and median were similar (83.0 and 83.44). The item difficulty ranged from the easiest at .886 to the most difficult at .61. All item difficulty was above .5. This means that the items were not too difficult for the participants because item difficulty ranged from 0 to 1 where "0" means no one feels confident that they could be able to do the task and "1" means everyone feels confident that they could be able to do the task. Item 18 had the lowest item total-correlation, at .338, so it was removed from the scale. The cutoff point for this scale was .35. The reliability analysis showed a result for coefficient alpha of .93, which is a high level of reliability. The standard error measurement (SEM) was 3.95, which means the estimate of variability expected for the observed scores was 3.95.

The test characteristic curve (Figure 2) was a positive line showing that the measurement had a good discriminating ability in which people with higher levels of the trait being measured (self-efficacy) would consistently endorse

Figure 2. Test characteristic curve.

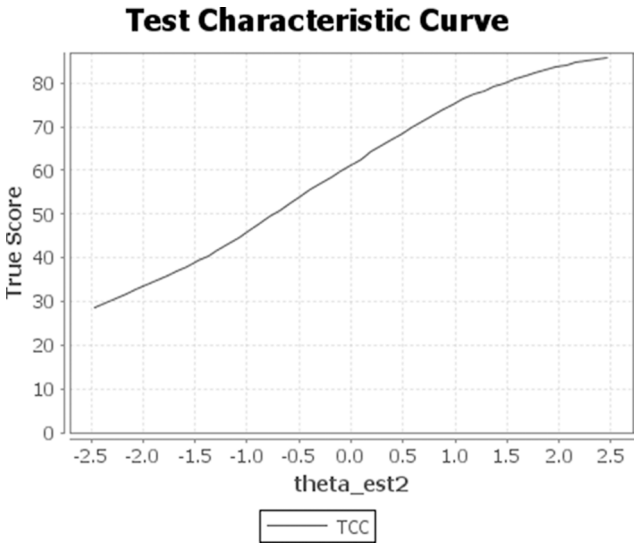
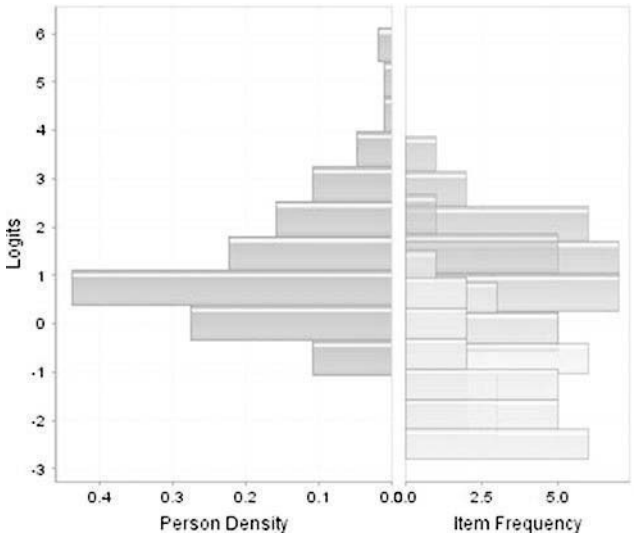


Figure 3. Person-item map.



the higher-scoring responses, and people with lower levels of self-efficacy would consistently endorse the lower-scoring responses. Theta is the ability of the individual to agree or disagree with the items or the likelihood of the person to endorse the items based on their ability. There is a gradient of probability on either side of 0 on the theta scale (falling as ability decreases and increasing as ability increases).

The person-item map showed that the person density and the item frequency had a large overlapping part, with most people in the range of medium difficulty items (see Figure 3). This means the items were appropriate to the level of participants. Some items were below the level of participants. This result was consistent with the item difficulty index formerly referenced. These results were expected, given the high level of education of participants in this sample.

Validity

Criterion-related validity was tested based on the correlation with the NGSES (Chen et al., 2001). A correlation between the responses of the WFSES and the NGSES yielded a result of .43. This was a very good validity coefficient, given that most validity coefficients are often small and usually do not exceed .5 (Murphy & Davidshofer, 2005).

Factor Analyses

Factor analysis was deemed appropriate in this study, with the Kaiser–Meyer–Olkin measure of sampling adequacy at .925 and Bartlett's test of sphericity showing a significant result ($x^2 = 3731.886, p = .000$). The exploratory factor analysis yielded four factors, based on results from the rotated factor pattern matrix and rotated factor structure matrix. Factor analysis results are available upon request.

Confirmatory factor analyses and reliability analyses were also conducted for each factor to determine the factor loadings of each item within their factors and the coefficient alpha of each factor. Table 2 presented the results of CFA for each factor. All items had factor loadings greater than .5. Reliability analysis of each factor showed that all factors had a moderate to high coefficient alpha (.80–.90). Table 3 provides the descriptive statistics, between-factor correlations, and coefficient alpha for the four generated subscales of the WFSES. The correlation between the subscales ranged from .414 (subscales Cash Flow Management and Credit Basis and Savings) to .743 (subscales Knowledge about Financial Resources and Savings). The reliability estimates presented in parentheses on the diagonal ranged from .81 to .87 with a total scale coefficient alpha equal to .93.

TABLE 2. Confirmatory Factor Analysis for Four Extracted Factors

Items	Factor loading
Factor 1: Saving and investing	
9. I can stick to my financial plan.	.767
11. I can put aside some money for future unexpected expenses.	.817
12. I can put money into a savings account regularly for future goals.	.820
13. I can save for retirement.	.682
14. I can figure out how much money I can save per month.	.762
15. I can invest my savings appropriately to achieve my financial goals.	.654
16. I can be prepared to handle unexpected financial problems.	.780
Factor 2: Knowledge about financial resources	
5. I can find resources to help me solve a difficult financial problem.	.611
6. I can recognize and avoid a financial fraud.	.657
17. I can arrange for health insurance coverage I need.	.584
19. I can find resources to help me with completing my tax forms if I need them.	.651
20. I can get my EITC if I am eligible.	.586
21. I can protect myself from identity theft.	.651
22. I can find resources to help me solve an identity theft problem if it happens to me.	.660
Factor 3: Financial goals achievement	
7. I can set financial goals for my future wellbeing.	.855
8. I can develop a plan to achieve my financial goals.	.971
10. I can achieve my financial goals if I try hard enough.	.615
Factor 4: Cash flow management and credit basis	
1. I can keep track of my spending to see where I need to make changes.	.777
2. I can pay my bills on time.	.642
3. I can develop a plan to pay off my debt as early as possible.	.762
4. I can reduce my use of credit by making good spending decisions	.846

Note. EITC = earned income tax credit.

TABLE 3. Factor Correlations and Factor Coefficient Alpha for the WFSES (*N* = 299)

Factor	*M*	*SD*	1	2	3	4
1. Savings (*n* = 7)	24.87	5.90	(.87)			
2. Knowledge about financial resources (*n* = 7)	26.74	5.05	.743	(.81)		
3. Financial goals achievement (*n* = 3)	11.96	2.3	.548	.563	(.85)	
4. Cash flow management and credit basis (*n = 4*)	16.46	3.20	.414	.474	.552	(.84)
Total scale (*n* = 21)	80.16	14.28				(.93)

Shorter Scale

Since there are 22 items in the original scale, for practical reasons, a shorter scale would also be beneficial. Therefore, the researcher reviewed and shortened the scale by further reducing some items that had lower item total-correlation and seemed repetitive in content. All items that had item total-correlation under .60 were reviewed. Eight items with item total-correlation under .60 were identified. Among those, seven items (3, 6, 17, 18, 19, 20, 21) were removed because of redundancy with other items. The shortened scale included 16 items and item analysis yielded a coefficient alpha of .93, the same as the 22-item scale (Table 4).

TABLE 4. Long and Short Women's Financial Self-Efficacy Scale

Instruction for taking the scale:

Please **circle the appropriate number** in each statement **to rate how confident you are in taking** the financial actions listed below.

Note: You do NOT need to be actually doing the actions now to rate yourself high. Instead, this is about the extent of your confidence in **thinking that you can** do the actions.

Use the scale below to rate each item.

1	2	3	4	5
Not confident at all		Moderately confident		Highly confident

Long Scale	**Short Scale**
1. I can keep track of my spending to see where I need to make changes.	1. I can keep track of my spending to see where I need to make changes.
2. I can pay my bills on time.	2. I can pay my bills on time.
3. I can develop a plan to pay off my debt as early as possible.	3. I can reduce my use of credit by making good spending decisions
4. I can reduce my use of credit by making good spending decisions	4. I can find resources to help me solve a difficult financial problem.
5. I can find resources to help me solve a difficult financial problem.	5. I can recognize and avoid a financial fraud.
6. I can recognize and avoid a financial fraud.	6. I can set financial goals for my future well-being.
7. I can set financial goals for my future well-being.	7. I can develop a plan to achieve my financial goals.
8. I can develop a plan to achieve my financial goals.	8. I can stick to my financial plan.
9. I can stick to my financial plan.	9. I can achieve my financial goals if I try hard enough.
10. I can achieve my financial goals if I try hard enough.	10. I can put aside some money for future unexpected expenses.
11. I can put aside some money for future unexpected expenses.	11. I can put money into a savings account regularly for future goals.
12. I can put money into a savings account regularly for future goals.	12. I can save for retirement.
13. I can save for retirement.	13. I can figure out how much money I can save per month.
14. I can figure out how much money I can save per month.	14. I can invest my savings appropriately to achieve my financial goals.
15. I can invest my savings appropriately to achieve my financial goals.	15. I can be prepared to handle unexpected financial problems.
16. I can be prepared to handle unexpected financial problems.	16. I can arrange for health insurance coverage I need.
17. I can arrange for health insurance coverage I need.	
18. I can complete my income tax forms by myself.	
19. I can find resources to help me with completing my tax forms if I need it.	
20. I can get my EITC if I am eligible.	
21. I can protect myself from identity theft.	
22. I can find resources to help me solve an identity theft problem if it happens to me.	

Note. EITC = earned income tax credit.

Discussion

Strengths of This Study

Compared to other previous FSESs, this WFSES offers a solid scale which covers four key domains of financial literacy. The items of this scale follow Bandura's (2006) recommended wording for developing a self-efficacy scale—the "I can" formula, which is a "judgment of capability" (p. 308) as opposed to the item wording in Lown (2011), where sentences introduced by verbs such as "I worry," "I lack," or "it is challenging" represent statements of thoughts or reality. The consistency in wording all items based on the "I can" formula also allows researchers to have a more precise measurement of self-efficacy levels.

As suggested by Johnson and Sherraden (2007), financial education should aim for financial capability, which includes both internal capacities and external conditions that enable people to become financially self-sufficient. The items in this WFSES take into account both the perceived confidence in accessing some of the financial resources (the external conditions) and the perceived confidence in the individual's ability to manage personal/ household finance (the internal capacities).

Limitations of the Study

This study relied on online recruitment, which limited its reach only to people who had access to computers connected to the Internet and some computer skills. Such individuals tend to be more educated and able to do more complicated tasks. In fact, more than 90% of the participants in the study had either a college or a graduate degree. All of these factors could have contributed to the high reported level of financial self-efficacy.

The interpretation of the collected data was limited, as responses recorded in the study were affected by self-report, based on the perceived confidence of the participants. According to Lusardi (2011), there is a noticeable disconnection between perceptions and financial behaviors. Lusardi (2011) found that, among the people who gave themselves a high score in their daily financial management tasks, 25% of them still had some behaviors considered harmful to financial well-being such as withdrawing cash from credit cards, making late payments, or overdrawing their checking accounts. Therefore, a high level of financial self-efficacy might not mean proficient financial management behaviors. However, financial self-efficacy is an important aspect that influences financial behaviors. Individuals with higher levels of financial self-efficacy are more likely to put their knowledge into action (CFPB, 2015). For instance, if someone has knowledge about stock investments and he/she has higher levels of financial self-efficacy, he/she is more likely to invest in the stock market.

Implications for Future Research

Future research could help enhance the WFSES by testing it on a bigger sample or on subjects with less than a college education. In addition, further analyses could be conducted to examine the scale's validity more thoroughly. For example, Differential item functioning (DIF) analysis could be done if a bigger sample was obtained. DIF analysis would allow researchers to assess the difference in financial self-efficacy score by race, gender, or age. This scale should be tested on other samples to examine its validity and reliability in other populations. For example, the study could be replicated on men or youth such as intermediate and high school students. Future studies could also replicate this study with people in other countries.

Researchers could use the WFSES in experimental or quasi-experimental studies. Since the WFSES has been tested and validated, it could serve as a standard measurement in experimental research. According to the CFPB report (2015), there is still a huge need for rigorous evaluation of financial capability strategies. Although there is growing evidence of effective approaches in improving financial capability, empirical evidence is still limited.

Implications for Practice

The WFSES could help trainers and social workers measure the self-efficacy of women before they receive services, to assess their confidence in managing finance. This information would help trainers deliver the information that the participants need and provide training that is suitable to the participants' levels of financial management. The WFSES could also

help program managers choose and design effective financial management programs. As suggested by Bandura (2006), self-efficacy assessment helps "identify patterns of strengths and limitations in perceived capability," which "not only increases predictiveness, but provides guidelines for tailoring programs to individual needs" (p. 319).

The WFSES could also provide meaningful data for program managers to use in their communication or negotiations with funders. They could use the WFSES to measure participants' financial self-efficacy before and after training to assess whether the training has helped change participants' attitude toward financial management. Given the fact that funders prefer to fund programs with impact, evidence-based programs that use the scale for assessment could be very marketable.

Overall, this scale showed validity and reliability in measuring the financial self-efficacy of women. If it is adopted, financial management programs that target women will not have to borrow or adapt from other FSESs which were not designed and validated specifically for women. This study provides a standardized scale to measure women's financial self-efficacy, thus turning the gender bias of this study into an advantage. Having a better way of measuring women's financial self-efficacy will help in designing better and more effective financial management programs for women.

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