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Research Evidence on the CYFI Model of Children and Youth as Economic Citizens

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Executive Summary

The vision of Child and Youth Finance International (CYFI) is that all children and youth realize their full potential as economic citizens (2012). For CYFI, economic citizenship is essential for social and economic well-being of children, families, communities, and countries. The CYFI Research Working Group proposed a model of economic citizenship, and a subcommittee compiled existing research findings on the relationships in the model. They issued a White Paper titled *Children and Youth as Economic Citizens: Review of Research on Financial Capability, Financial Inclusion, and Financial Education* at the first convening of CYFI's Child and Youth Summit in Amsterdam in April 2012, and this is a summary and update of portions of that report.

Model of economic citizenship

The White Paper proposes that financial education, social education, and financial inclusion are the building blocks of empowerment and financial capability that underpin economic citizenship for children and youth.

Review of the evidence

Financial education is the provision of instruction and/or materials designed to increase financial knowledge and skills of children and youth. While classroom-based financial education is a common strategy in higher income countries, a wide variety of instructional methods and materials are being used around the world. Results from studies reviewed here are mixed and inconclusive but seem to suggest that financial education generally is associated with short-term knowledge gains and self-reported behavior changes. Rigorous evidence on long-term outcomes is lacking.

In the context of CYFI's model of economic citizenship, *social education* involves understanding rights of and responsibilities to self, family, and others. We find that social education has not been included in studies of financial inclusion or financial education, and future research should include (a) defining, conceptualizing, and articulating the meaning of social education within the child and

¹ This research review was abstracted by Margaret Sherraden and David Ansong with editorial assistance by Tiffany Trautwein. It is based on the CYFI White Paper titled *Children and Youth as Economic Citizens: Review of Research on Financial Capability, Financial Inclusion, and Financial Education* by CYFI Research Working Group members, including Deborah Adams and William Elliott III, University of Kansas; David Ansong, Washington University; Mat Despard and Rainier Masa, University of North Carolina Chapel Hill; Tahira Hira, Iowa State University; Tom Lucey, Illinois State University; Rajiv Prabhakar, London School of Economics; Margaret Sherraden, University of Missouri St. Louis; Fred Ssewamala, Columbia University; and Trina Williams Shanks, University of Michigan. Additional Contributors include Marit Blaak, Uganda Adult Education Network; Tina Malti, University of Toronto; Olga Saweri, Child and Youth Finance International; Alegnta Felleke Shikibom, University of Kansas; Cuthbert Tukundane, Uganda Martyrs University; Abram van Eijk, Child and Youth Finance International; and Jacques Zeelen and Frank Elsdijk, University of Groningen, Netherlands.

youth finance movement; (b) detailing the rights and responsibilities component of economic citizenship, and (c) concentrating research efforts on learning if and how social education furthers economic citizenship for children and youth.

Financial inclusion involves access to basic financial services and provision of quality, affordable, and convenient services. Truly inclusive financial services promote a sense of dignity for all clients without regard to age, social standing, or economic status and provide a secure place to keep money and accumulate assets. We suggest that outcomes are associated with financial inclusion of children and youth include (a) economic and financial well-being, (b) financial knowledge and skills, (c) psychological health, (d) reproductive and sexual health, (e) academic achievement, and (f) education attainment and expectations.

Financial capability has individual and structural components. It combines a person's ability to act with the opportunity to act. To be financially capable, people must have financial knowledge and skills as well as access to appropriate financial services to enhance social and economic well-being.

Conclusion

The global effort to establish economic citizenship among children and youth can best be undertaken with a solid theoretical model supported by empirical evidence. The CYFI Research Working Group finds that evidence to support the individual components of the model of economic citizenship for children and youth—financial education, social education, financial inclusion, empowerment, and financial capability—is insufficient. Key recommendations for future research include developing a better understanding of the (a) long-term outcomes of financial education, (b) discrete and summative contributions of financial education and financial services for children and youth, especially those in financially vulnerable groups, (c) effectiveness of various combinations of financial education, products, and services, (d) defining, conceptualizing, and articulating the meaning of social education within the child and youth finance movement and how it furthers economic citizenship, and (e) benefits of financial inclusion, especially experimental research that assesses impacts for children and youth in developing countries.

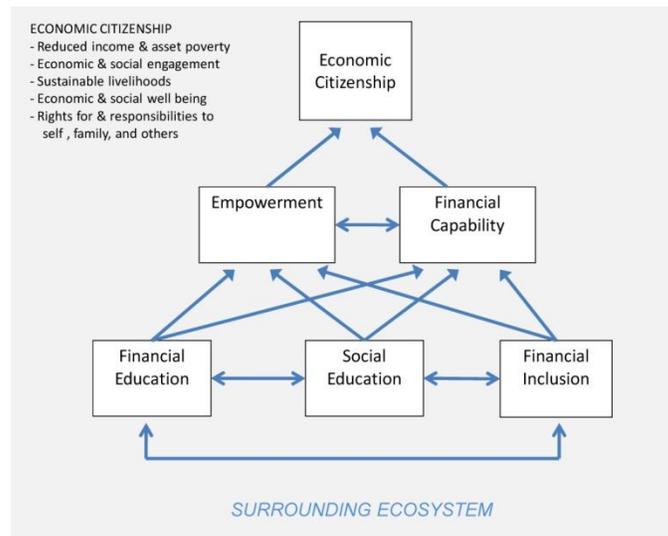
To achieve this level of understanding, we recommend that the CYFI Research Working Group continue to develop a network of scholars in all regions of the world who will undertake empirical research across national and cultural contexts. These scholars can generate rigorous quantitative and qualitative studies, using experimental design and advanced analytical methods that can reveal relative impacts and interactions of financial education and financial inclusion.

Introduction²

The vision of Child and Youth Finance International (CYFI) is that all children and youth realize their full potential as economic citizens (2012). For CYFI, economic citizenship is essential for social and economic well-being of children, families, communities, and countries.

In March 2011, the CYFI Research Working Group proposed a model of economic citizenship for children and youth around the world, and a subcommittee of that group agreed to compile existing research findings on the relationships in the model. They issued a White Paper, *Children and Youth as Economic Citizens: Review of Research on Financial Capability, Financial Inclusion, and Financial Education* at the first convening of CYFI's Child and Youth Summit in Amsterdam in April 2012. This is a summary and update of a portion of that report.

Figure 1. Model of Children and Youth as Economic Citizens (From Child and Youth Finance International. (2011, March). *ChildFinance Academic Working Group Meeting Outcomes and Key Conclusions*. New York, NY: Institute of International Education.)



Model of Economic Citizenship

In the model, the working group proposed that financial education, social education, and financial inclusion are the building blocks of empowerment and financial capability that underpin economic citizenship for children and youth (Figure 1). *Financial education* includes instruction and/or materials designed to increase financial knowledge and skills. *Social education* is the provision of knowledge and skills that change individuals' understanding and awareness of their rights and the rights of others. It also involves fostering of life skills. *Financial inclusion* is access to appropriate, quality, and affordable financial services. *Empowerment* is the sense of confidence and efficacy experienced by children and youth through controlling their own lives, claiming their rights, and having empathy toward others. *Financial capability* has individual and structural components. It combines a person's ability to act with

² Deborah Adams, Tom Lucey, Margaret Sherraden, Mat Despard, Tahira Hira, and the CYFI Research Working Group are the authors of this section in the original report.

the opportunity to act. To be financially capable, people must have financial knowledge and skills as well as access to appropriate financial services to enhance social and economic well-being.

While empowerment is portrayed as a separate construct in the CYFI model of economic citizenship, financial capability actually incorporates empowerment at the individual level and access and opportunity at the structural level. Essentially, financial capability occurs when children are personally empowered and simultaneously experience financial inclusion, or real access to appropriate financial products and services along with the opportunity to practice using those services. Thus, our review here is of studies addressing the broader construct of financial capability which we believe includes empowerment.

In this review, each concept in the model is examined using available evidence from studies in developed and developing countries. The evidence is restricted to studies available in English. The limitations of this methodology are discussed in the final section.

The Evidence on Financial Education³

Overall, research on the effects of financial education for children and youth is encouraging, but it is not conclusive. Walstad, Rebeck, and MacDonald (2010) find that high school students in the US who received video instruction and lessons in the Financing Your Future (FYF) program experienced statistically significant and consistent gains in knowledge of money management, financial decision making, earning and income, saving and investing, credit scores, and use of financial services. These improvements are similar for females and males, across types of job experience, kind of financial education course, and teachers' characteristics. Although these findings are encouraging, they point only to short-term benefits.

Syedean and Yi (2011) find that college students' financial literacy improved after taking managerial finance courses. Similarly, Bernheim, Garrett, and Maki (2001), find that middle-age adults who received state-mandated financial education in high school report having higher savings amounts than those in states where financial education is not mandated. However, Cole and Shastry (2009), who replicated this study with U.S. Census data and a much larger sample, find that state mandates are not associated with saving and investing.

According to Junior Achievement Worldwide (n.d.), multiple evaluations of its financial literacy programs in developed and developing countries reveal significant improvement in participants' understanding of how to avoid debt, open a bank account, write a check, and plan a budget. They also report that program participants are more likely than their peers who are not in the program to say they understand what it means to save and invest.

Studies with mixed evidence on the benefits of financial education (e.g., Amin et al., 2010; Bell, Gorin, & Hogarth, 2009; Gray & Chanini, 2010; Tennyson & Nguyen, 2001) or weak evidence (e.g., Cole & Shastry, 2009; Peng, Bartholomae, Fox, & Cravener, 2007; Mandell & Klein, 2009) generally use more rigorous research methods than studies that find consistent benefits. For example, Gray and Chanini (2010)—the only study reviewed here that uses an experimental design—find weak evidence for the impact of financial education on adolescent girls in rural India.

³ Mat Despard is the author of this section in the original report.

Some studies point to differences in outcomes based on motivation. For example, in an analysis of Jump\$tart financial literacy survey data, Mandell and Klein (2007) find no differences in survey scores between U.S. high school seniors who took a personal finance-related course and those who did not. However, students with future-oriented goals such as going to college had higher financial literacy scores than those without such goals.

Evidence from the 22 studies reviewed in the full White Paper suggests that financial education likely has short-term benefits for children and youth, but it is difficult to draw conclusions because of the research methods used to assess outcomes and the variety of interventions measured. Also, several other limitations of these studies include the following:

- Only 6 of 22 studies were conducted outside of the US.
- Only 7 of 22 studies used a quasi-experimental research design with a comparison group to assess outcomes.
- Only one study used an experimental design with randomized assignment.
- Many studies used non-representative samples of mostly White children and youth and/or did not report subgroup differences in outcomes by race/ethnicity and family income.
- Few studies used follow-up measures to determine whether financial knowledge gains were sustained.
- All but one study used self-reported measures of financial behavior instead of objective measures.
- Most studies assessed the effects of financial education for adolescents; little evidence is available concerning effects for children and pre-adolescents.

In sum, studies show mixed and inconclusive results on the impact of financial education, which mirrors other reviews of financial education outcomes for children and youth (Fox, Bartholomae, & Lee, 2005; McCormick, 2009) and adults (Bell & Lerman, 2005; Caskey, 2006; Collins & O'Rourke, 2010; Fox, Bartholomae, & Lee, 2005; Gale & Levine, 2010; Hathaway & Khatiwada, 2008). Overall, most individual studies that report benefits of financial education use non-experimental research designs—which lack control or comparison groups—or measure short-term gains in financial knowledge and self-reported financial behaviors (e.g. Danes, Huddleston-Casas, & Boyce, 1999; Danes, 2004; García Bohórquez, 2012; Varcoe, Martin, Devitto, & Go, 2005; Walstad, Rebeck, & MacDonald, 2010). Rigorous evidence on long-term outcomes is lacking.

The Evidence on Social Education⁴

CYFI's model of economic citizenship for children and youth includes understanding the rights of and responsibilities to self, family, and others, a concept that is integrated into some but not all social education approaches (Lucey, 2007; Lucey & Giannangelo, 2006). In reviewing the literature, we find that the term *social education*—which scholars generally use to refer to citizenship education of one type or another—has a different meaning in the child and youth finance movement. Further, we find little evidence that social education has been included in studies of financial education or financial inclusion, which means that it is beyond the scope of this paper and requires future scholarly attention.

⁴ This section is based on Tom Lucey's review of the research.

Future research will need to address the question, “What is social education, and what does it have to do with economic citizenship for children and youth?” Related recommendations for forthcoming work in this area include (a) defining, conceptualizing, and articulating what is meant by social education within the child and youth finance movement; (b) detailing the rights and responsibilities component of economic citizenship, and (c) concentrating research efforts on learning if and how social education furthers economic citizenship for children and youth.

The Evidence on Financial Inclusion⁵

As financial institutions, nonprofits, and governments create children and youth financial products and programs in many countries in Asia, Africa, and Latin America, researchers must examine the potential impact on youth development. To conclude that financial inclusion programs have had a positive impact, a study must have evidence that children and youth savers, for example, have different outcomes from those who are not savers. The CYFI Research Working Group reviewed research that explicitly addresses financial access of children and youth, and outcomes appear to fall into six broad categories:

- Economic and financial well-being
- Financial knowledge and skills
- Psychological health
- Reproductive and sexual health
- Academic achievement
- Education attainment and expectations

The studies reviewed suggest that initial evidence shows positive economic, social, and health outcomes for youth. However, it is important to note that most studies focus on savings programs. Moreover, most services were implemented as a “bundle,” making it difficult to identify specific elements that directly influenced the reported outcomes. Also, like studies of financial education, some studies of financial inclusion are non-representative and cross-sectional. This limits our ability to generalize findings to other populations or determine what causes reported outcomes.

Outcomes associated with financial inclusion of children and youth

Economic and financial well-being

In Kenya, scholars find a positive association between participation in a child and youth savings and microcredit program and higher income, savings, and household assets (Erulkar & Chong, 2005). Tap and Reposition Youth (TRY) participants and non-participants—all girls—had comparable income and household asset levels at baseline, but incomes increased significantly (by about 20%), and household assets were considerably higher for participants than for non-participants at the project’s end (Erulkar & Chong, 2005). TRY participants are significantly more likely to have at least seven or more household assets compared to non-participants and are more likely to have savings and significantly higher savings than non-participants. By endline, TRY girls have mean savings of

⁵ Rainier Masa, David Ansong, and William Elliott are the authors of this section in the original report.

USD 95, while non-participants have mean savings of USD 67 (Erulkar & Chong, 2005). TRY participants also are more likely to keep their savings in safer places than non-participants.

Safe and Smart Savings Products for Vulnerable Adolescent Girls in Kenya and Uganda finds that girls in the program are significantly more likely than girls in a comparison group to have a long-term financial goal, correctly answer financial knowledge questions, have used banking services, and be saving on a weekly basis (Austrian, 2011).

In Uganda, scholars find a positive association between higher savings levels and participation in the SUUBI project, which provides children orphaned by AIDS with workshops that focus on asset building and career planning, mentors to reinforce learning, and Child Development Accounts (CDAs). On average, youth in the experimental group save USD 6.33 per month (USD 76 per year) (Ssewamala & Ismayilova, 2009). After individual savings are matched 2:1, on average the participants accumulate USD 228 per year. Aside from a higher savings levels, SUUBI participants experience a positive shift in attitudes toward saving money, while non-participants experience a negative shift in attitudes toward saving (Ssewamala & Ismayilova, 2009).

In the AssetsAfrica project in Uganda, Chowa and Ansong (2010) estimate effects of a savings intervention at the household level and find that youth aged 15 to 35 years who receive the intervention accumulate significantly more financial assets, total wealth, and net worth than those who do not receive the intervention.

In Mongolia, Women's World Banking finds that even low-income girls aged 14 to 18 years save nearly USD 6 per month (Banthia & Shell, 2009).

A study in India finds that girls aged 13 to 25 years interviewed about their savings accounts (jointly held with parents or husbands) in Self-Employed Women's Association (SEWA) are able to save. However, they know little about their accounts or how to use them, and they lack decision-making power over their savings (Kalyanwala & Sebstad, 2006).

A study in Great Britain suggests that saving at age 16 is linked to saving at age 34. Also, socialization experiences, social status, and income help shape future saving behavior (Ashby, Schoon, & Webley, 2011).

In the United States, children begin saving for multiple purposes between ages 12 and 15 (Friedline, Elliott, & Nam, 2011). Young people who have a savings account during adolescence and whose parents own assets are significantly more likely to have a savings account and save in young adulthood (Friedline, Elliott, & Nam, 2011; Friedline, 2012).

In sum, these studies suggest a positive relationship between ownership of savings accounts and higher levels of savings, income, and assets among children and youth.

Financial knowledge and skills

Scanlon and Adams (2009) use data from in-depth interviews with 30 participants (ages 14 to 19) in the U.S.-based Saving for Education, Entrepreneurship, and Downpayment (SEED) initiative and

find that participants report both increased financial knowledge and fiscal prudence. The SEED initiative provided financial literacy workshops, incentives for online training, and a youth savings account.

Sherraden, Johnson, Guo, and Elliott (2010) use data from I Can Save (ICS), a financial education and matched savings account program for children ages 5 to 9 in kindergarten or first grade. ICS children ($n = 35$) scored significantly higher on a financial literacy test taken in fourth grade than children in the comparison group ($n = 18$) and non-study students (those who entered the school during the three years after the start of the program; $n = 55$).

Neither study determines the relative effect of the matched savings account or financial education and support.

Psychological effects

Some studies suggest that vulnerable children and youth, such as orphans and poor young women, benefit emotionally from having savings. A study in Gujarat, India, finds that young women able to exercise control over their financial resources through their own savings accounts are more likely than those without control to have specific savings goals, be encouraged to make their own decisions, or be consulted by family members about the use of their savings (Kalyanwala & Sebstad, 2006).

In Uganda, AIDS-orphaned adolescents who were offered a matched savings account as part of the SUUBI Project report higher self-esteem than orphans who were not offered a savings account (Ssewamala, Han, & Neilands, 2009).

In Allahabad, India, an evaluation of a program for girls aged 14 to 19 who were offered youth savings accounts, vocational training, and reproductive health services finds that the girls are more likely to be members of a group. They also score higher on indexes of social skills, and spend time on leisure activities than girls not involved in the program. However, there was no effect on gender-role attitudes, mobility, self-esteem, and time visiting friends (Mensch, Grant, Sebastian, Hewett, & Huntington, 2004).

Several studies examine the relationship between savings and future well-being of children and youth. Again, Scanlon and Adams (2009) use data from SEED to examine this relationship and find that students in the matched savings program are likely to report being more fiscally prudent, having a more positive view of self, being more future oriented, having a stronger sense of security, and being more financially knowledgeable. Ssewamala and Ismayilova (2009) find that orphaned adolescents with matched savings accounts report a higher level of certainty that they will accomplish their future educational plans than orphaned adolescents without matched savings accounts.

Reproductive and sexual health

In Uganda, AIDS-orphaned adolescents participating in the SUUBI project who were offered a matched savings account are more than twice as likely to rate their health as good or excellent than

their counterparts without savings accounts. Moreover, healthy youth are likely to have higher self-esteem than youth with poor or fair health functioning (Ssewamala, Han, & Neilands, 2009).

A literature review conducted by US Agency for International Development suggests adolescent girls' vulnerability to HIV infection may be reduced when they have access to microfinance (especially savings) programs that address poverty alleviation, empowerment, and health (US AID, 2008).

Adolescent girls in the TRY program in Kenya demonstrated more empowered gender attitudes after participating in the program. They believe that wives should be able to refuse their husbands sex, marriage is not the only option for an unschooled girl, and having a husband is not necessary to be happy (Erulkar & Chong, 2005). TRY participants were more than 1.7 times more likely than non-TRY participants to be able to refuse their partner sex and nearly 3 times more likely to be able to insist on condom use (Erulkar & Chong, 2005). Although the reproductive health knowledge of TRY participants generally increased, the authors observe no statistically significant changes in reproductive health knowledge.

Similarly, Austrian (2011) finds that girls in a savings program in Kenya were more likely than girls in a comparison group to report they have somewhere to meet regularly with female friends and less likely to agree that "girls are not as good as boys in school" or that "some girls deserve to be raped because of how they behave." They also were more likely to know that HIV can be transmitted through sexual intercourse and about at least one contraception method (Austrian, 2011). A study of a program in Allahabad, India, that offered youth savings accounts, vocational training, and reproductive health services, finds that girls aged 14 to 19 who are exposed to the intervention are significantly more likely to have knowledge of safe spaces for unmarried adolescent girls to congregate (Mensch, Grant, Sebastian, Hewett, & Huntington, 2004).

In Uganda, adolescent participants in the SUUBI project improved their HIV prevention attitudes scores, whereas the non-participants' scores decreased. This implies that adolescents who took part in the intervention have a more positive opinion about using HIV prevention methods (Ssewamala, Alicea, Bannon, & Ismayilova, 2008). Approval rates of risky sexual behaviors remain the same or are lower for girls and boys with savings accounts, whereas approval rates of risky sexual behaviors are higher among their peers who did not have savings accounts (Ssewamala et al., 2010). Among adolescents in the experimental group, the approval score for girls is unchanged and the rate for boys is significantly lower (Ssewamala et al., 2010). Furthermore, adolescents with savings accounts report a significant reduction in sexual risk-taking intentions contrasted with adolescents without savings accounts (Ssewamala, Han, Neilands, Ismayilova, & Sperber, 2010).

In South Africa, young women aged 14 to 35 in the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) program report higher levels of communicating in their households about HIV, having accessed voluntary counseling and testing, and being less likely to have had unprotected sex at last sexual intercourse contrasted with non-participants (Pronyk et al., 2008).

Academic achievement

Almost all available evidence in English on academic achievement comes from developed countries, mostly in the US. The first study examines the effect of savings on math scores for youth ages 12 to 18 in the US (Elliott, 2009). Findings indicate that youth with school savings have significantly higher math scores than their peers without designated savings, and the author suggests this partly can be explained by the effects of youth savings on college expectations.

Another study (Elliott, Jung, & Friedline, 2010) builds on these findings and examines the impact of family wealth. Having savings is positively associated with math scores and family net worth, and having savings is positively related to math scores for all youth. However, the positive effect is larger for youth in high-wealth families than middle-wealth families, which is larger than the effect for youth in low-wealth families. Overall, findings seem to indicate that increased math scores cannot be explained by family wealth alone.

In contrast, another study by Elliott, Jung, and Friedline (2011) finds that the effect of having school savings on youth's math scores does *not* vary by family wealth levels. These findings suggest that school savings may be a better policy tool than general savings if increasing equity is a goal since low-wealth youth benefit as much as high-wealth youth do in terms of math scores.

Elliott, Kim, Jung, and Zhan (2010) examine the effects of savings on Black and White youth's math and reading scores. School savings are significantly related to White youth's math scores but not their reading scores. Conversely, school savings are not directly related to Black youth's math scores but are to their reading scores. This study implies that the impact of school savings may vary by race.

There is little evidence of savings' impact on other key education indicators such as level of educational attainment and school attendance or in developing countries. One exception is an experimental study conducted in Uganda that suggests a positive relationship between savings and higher grades, test scores, and improved attitudes about education (Ssewamala & Ismayilova, 2009). This study of 277 AIDS-orphaned youth ages 11 to 17 from 15 comparable schools finds that—aside from having greater savings—orphans with savings accounts report better Primary Leaving Examination (PLE) scores than their peers without savings accounts. Based on PLE results, SUUBI participants were more likely to have better school grades than their peers (Curley, Ssewamala, & Han, 2010; Ssewamala & Ismayilova, 2009).

Education attainment and expectations

There is evidence that savings may improve educational attainment and expectations. One U.S. study examines whether youth ages 17 to 23 who have already left high school are currently enrolled in or have graduated from a two- or four-year college or university (Elliott & Beverly, 2011a). Youth who are currently enrolled or have graduated from university are defined as being “on course,” whereas youth who are not currently enrolled and have not graduated from university are defined as being “off course.” On average, 57% of youth in the study are on course. However, 75% of youth with their own savings are on course compared to 45% of youth without savings. When race, family income, parent's education, and youth's academic achievement are controlled for, savings remains an important predictor of whether or not youth are on course. Findings indicate that 17- to 23-year-old

youth who have savings are approximately twice as likely as their peers without savings to be on course. This implies that large-scale youth savings policies and programs might help keep youth on course. Evidence also indicates that having savings results in a college-bound identity, which may impact students' decision to remain on course. Savings might reduce fears that financial barriers will prevent youth from staying on course (Elliott & Beverly, 2011a).

Another study conducted in the US indicates that only 35% of low- to moderate-income youth (below USD 50,000) are on course contrasted with 72% of high-income youth (USD 50,000 or above) (Elliott, Constance-Huggins, & Song, 2011). Forty-six percent of low- to moderate-income youth with school savings are on course, but only 24% of low- to moderate-income youth without savings are. When parents' expectations and school involvement, family income, and youth's academic achievement are controlled for, youth's savings remains an important indicator of being on course. However, savings is not an important factor for high-income youth, who might be confident in their parents' ability to pay for college. An important implication is that low- to moderate-income youth will benefit most from savings policies and programs.

Another U.S. study (Elliott & Nam, 2011)⁶ finds that 37% of Black students are on course contrasted with 62% of White students. Controlling for similar factors as the previous two studies mentioned, findings here suggest that Black and White youth with savings are about twice as likely to be on course as their counterparts without savings. This might be particularly important for Black youth, who experience higher amounts of debt upon graduating from college on average (Baum & Steele, 2010). Further, high levels of debt particularly influence college dropout rates among Black students (Somers & Cofer, 2000), but having savings would likely result in accruing less debt.

Elliott and Beverly (2011b) use the term "wilt" to describe youth who expected in high school to attend a four-year university but did not. Findings indicate that more than half of youth (55%) without savings accounts experience wilt, while only 20% of youth with savings accounts do. Controlling for a variety of factors, including youth's academic achievement, the authors find that youth with savings accounts are about six times more likely to attend college than those without accounts. When youth savings are added to the model, academic achievement is no longer statistically significant. An important implication is that desire and ability alone may not result in college attendance.

Another study examines whether having savings leads to more positive expectations or whether more positive expectations lead to youth having savings (Elliott, Choi, Destin, & Kim, 2011), an important distinction when measuring savings' potential to have indirect effects. While this study could not establish that one causes the other, it provides evidence of an association between the two. However, the best interpretation of the results might be that having savings leads to more positive college expectations *and* higher college expectations lead to having savings.

Elliott, Chowa, and Loke (2011) compare outcomes for four groups of students who prior to high school graduation (a) had no school savings and were uncertain if they would graduate from a four-

⁶ However, an important limitation of the data sets used in these studies is that low-income families are disproportionately represented among Black households; therefore, there are very few high-income Black households in the samples. As a result, findings using samples of Blacks only are probably more indicative of low-income than all Blacks.

year college; (b) had school savings but were uncertain if they would graduate from a four-year university; (c) had no school savings but were certain that they would graduate from a four-year university; and (d) had school savings and were certain they would graduate from a four-year university. Findings suggest that having savings results in higher rates of college enrollment and graduation when youth expect to graduate from a university. This suggests that building positive university-bound identities might be more effective than promoting only savings and asset accumulation.

There is less evidence from developing countries regarding the role of savings in educational expectations and attainment. One study shows that orphans in Uganda with savings accounts are more likely to have future educational plans than their peers who do not (Curley, Ssewamala, & Han, 2010). Results from the SUUBI project reveal that orphans with matched savings accounts experience greater expectations and confidence in their educational plans than orphans without savings accounts (Curley, Ssewamala, & Han, 2010).

Overall, findings suggest that programs promoting savings are likely to have positive effects on youth's progress toward post-secondary education. The evidence seems to indicate that positive effects are greater for low-and moderate-income youth than for high-income youth, but there appears to be a point at which having savings makes no statistical difference. This may be because students whose families reach a certain income threshold no longer doubt their families' ability to pay for college. Findings also suggest that having a stake in college (i.e., owning one's own savings) has a positive effect on Black youth's college progress.

The effect of having savings appears to be stronger when youth expect to graduate from a four-year college, but evidence shows that attitude may not be sufficient to explain differences in college attendance. There also is evidence that having savings leads to positive college expectations, and having positive college expectations leads to having savings.

The Evidence on Financial Capability⁷

The CYFI working model suggests that offering financial education and financial inclusion together may yield more positive results than pursuing one strategy at a time.

It is important to mention that almost no research studies are clear-cut tests of this idea for adults or children and youth especially in developing countries. (There are more studies with adults, which are summarized in the White Paper.) Programs might "lead" with (or emphasize) financial education and offer a real or simulated financial product to make the education "come alive" in order to increase motivation, attention, focus, and absorption of information (Dewey, 1938; O'Neill, 2006; Choi, Reid, Staten, & Todd, 2010). Conversely, the program might "lead" with a financial product and simultaneously offer financial education aimed at improving understanding and management of the financial product. Empirical findings from these studies are suggestive, but they are not tests of the idea of financial capability because they are not designed to sort out differences.

Some studies cast doubt on the financial capability concept. Analysis of the national Jump\$tart survey in the United States finds that high school students do not score higher on relevant parts of

⁷ Margaret Sherraden is the author of this section in the original report.

the financial literacy test even when they own stocks or credit cards in their own name (Mandell, 2004). Similarly, a qualitative study of youth participating in a U.S.-based matched savings account and financial education program finds that participants attribute increased financial knowledge to financial education workshops, but not to holding assets, although they also express aversion to financial education sessions (Scanlon & Adams, 2009).

In contrast, another study suggests that young children like the combination of financial education and a financial product. A quasi-experimental study of a four-year school-based financial education and savings program called “I Can Save,” finds that young children are enthusiastic about an afterschool financial education “club” because of the food and games, but also because they like saving and depositing their savings in the bank (Sherraden, Johnson, Elliott, Porterfield, & Rainford, 2007). The same study finds that the combination may lead to a higher level of financial knowledge. Financial literacy test scores in grade 4 are significantly higher in treatment group students compared to comparison group and non-study students (who did not receive a savings account), regardless of parent education and income (Sherraden, Johnson, Guo, & Elliott, 2010). Although the study suggests that the combination of a savings account and financial education has a positive impact, it does not establish independent contributions of the savings account compared to education; in addition, the sample size is small ($N = 108$) and the study took place in only one school in the United States.

Another finding emerging from empirical studies suggests that an imagined product may make financial education more effective (McCormick, 2009; Russell, Brooks, Nair, & Fredline, 2006). This method may be especially effective when experiential learning curricula are perceived by children and youth as interesting and relevant (Johnson & Sherraden, 2007). For example, financial education for high school students using a stock market game has better outcomes than purely didactic approaches (Mandell, 2008).

In sum, these studies provide scant empirical evidence of the iterative relationship between financial education and financial inclusion. More rigorous research should test the independent and combined impacts. Research should “unbundle” the features of the program to allow conclusions about what features are having what effects on children. Research should sort out variations in the types of financial education and financial product. It is likely that type and quality of educational content matter (Carpena, Cole, Shapiro, & Zia, 2011; Leckie Shek-Wai Hui, Tattrie, Robson, & Voyer, 2010). It is also likely that the type of financial product, such as savings, transaction, or credit, also matters. Finally, the type of linkage made between financial education curricula and the financial product also may affect outcomes.

Studies in Progress

Several studies underway may shed light on the relationship between a savings account and outcomes for children and youth. SEED for Oklahoma Kids (SEED OK) is a large-scale experiment that aims to assess the feasibility of CDAs and their impact on savings, asset accumulation, parents’ expectations and behaviors, and children’s developmental outcomes. After baseline interviews with the mothers, half of the newborns (approximately 1,360) received \$1,000 in a state-owned college savings account, while the other half (the control group) did not. Early findings suggest CDAs have a positive effect on savings and asset accumulation (Nam, Kim, Clancy,

Zager, & Sherraden, 2013), and future studies will examine socio-emotional and economic effects (Huang, Sherraden, Kim, & Clancy, 2013).

In *Teaching Savings Practices to Ugandan Youth* (2009-2011),⁸ FINCA Uganda and the Poverty Action Lab are examining the impact of savings account and financial literacy training across four groups outside of school: savings account with financial literacy training, savings account without financial training, financial training with no savings account, and no savings account or financial literacy training. In the *MicroSavings in Ugandan Primary Schools*,⁹ researchers are examining savings and education outcomes in a school-based commitment savings and financial education experiment. Initial findings suggest that as a result of a savings plus financial education program, more children save (but not more or more regularly), become more risk averse, and designate savings for school (Berry, Karlan, & Pradhan, 2012).

YouthSave researchers are examining results of two experiments that offer a savings account to youth ages 12–18 in four countries, Colombia, Ghana, Kenya, and Nepal.¹⁰ The study in Colombia is testing the effectiveness of text message reminders and financial education with youth who have a savings account, and the study in Ghana is testing the effectiveness of savings accounts and financial education for youth.¹¹

Study Limitations

This review is limited to studies written in English, due to limitations of time and resources, and therefore, coverage of research from non-English-speaking countries is limited. In the future, we urge more funding for research on economic citizenship of children and youth in all countries and regions of the world. Resources should be routinely available for translation of key studies across languages.

Conclusion

Innovations in financial education are outpacing research. There is considerable excitement, energy, and creativity in this field but insufficient evidence that financial education helps children and youth make sound financial decisions. We know little about what works and for whom. Are financial education efforts with lower frequency and less intensity of student-staff interaction as effective as efforts with higher frequency and more intensity of student-staff interaction? Do rural and lower income youth benefit as much as urban and higher income youth from financial education?

While offering financial education to children and youth seems to be a reasonable practice, the evidence concerning its effectiveness is very limited. Most studies indicate only short-term gains in knowledge and self-reported changes in financial behaviors. Limitations of the relatively few studies include the lack of randomized assignment and multivariate analyses, selection bias, and use of mostly U.S.-based samples. Additional experimental studies with greater rigor and adequate sample

⁸ <http://www.povertyactionlab.org/evaluation/teaching-savings-practices-ugandan-youth>

⁹ <http://www.povertyactionlab.org/evaluation/microsavings-ugandan-primary-schools>

¹⁰ <http://www.youthsave.org/>

¹¹ <http://csd.wustl.edu/AssetBuilding/YouthSave/Pages/default.aspx>

sizes that test the effects of well-specified financial education programs across more diverse samples of children and youth are needed.

Initial findings suggest that children and youth benefit from financial inclusion, especially having access to a savings account. Several studies show a positive relationship between owning a savings account or participating in a group-based microcredit program and economic well-being, overall health, reproductive and sexual health, mental health, academic achievement, educational attainment, and expectations for the future. Despite these findings of association, more research—especially experimental research that assesses impacts of financial inclusion of children and youth in developing countries—is needed. Future applied research should focus on understanding the distinct *and* cumulative effects of financial education and financial services.

The working group posits that there may be added benefits to an approach that integrates financial education and financial services; however, there is a dearth of evidence of their combined effectiveness, especially among children and youth in developing countries. Research should explore if effectiveness differs by type of financial education (such as text message information, classes, counseling), amount of financial education, and across variations in financial products and services (such as, savings, transaction accounts, credit), and in different combinations. Offering financial education and a savings account with automatic deposit features, for example, may have stronger effects on savings than offering financial education or a savings incentive. Future applied research should focus on understanding the discrete and summative contributions of financial education and financial services to children and youth, especially financially vulnerable groups. Finally, future studies should distinguish possible differences in these effects for children and youth of different ages.

References

- Amin, S., Rahman, L., Ainul, S., Rob, U., Zaman, B., & Akter, R. (2010). *Enhancing adolescent financial capabilities through financial education in Bangladesh* (Population Council White Paper). Retrieved from http://www.popcouncil.org/pdfs/2010PGY_WhitePaperBanglaFinancialEd.pdf
- Ashby, J. S., Schoon, I., & Webley, P. (2001). Save now, save later? Linkages between saving behavior in adolescence and adulthood. *European Psychologist*, 16(3), 227–237.
- Austrian, K. (2011). *Expanding safe spaces, financial education, and savings for adolescent girls in Kenya* (Brief No. 29). Retrieved from http://www.popcouncil.org/pdfs/TABriefs/29_KenyaGirlsSavings.pdf
- Banthia, A., & Shell, B. (2009, November/December). The youth frontier in microfinance: Savings & financial education for girls in Mongolia. *Microfinance Insights*, 46–47. Retrieved from http://www.swwb.org/sites/default/files/docs/savings_and_financial_education_for_girls_in_mongolia.pdf
- Baum, S., & Steele, P. (2010). *Who borrows most? Bachelor's degree recipients with high levels of student debt*. Retrieved from <http://advocacy.collegeboard.org/sites/default/files/Trends-Who-Borrows-Most-Brief.pdf>
- Bell, C., Gorin, D., & Hogarth, J. M. (2009). *Does financial education affect soldiers' financial behavior?* (Networks Financial Institution at Indiana State University Working Paper 2009-WP-08). Retrieved from http://indstate.edu/business/nfi/leadership/papers/2009-WP-08_Bell_Gorin_Hogarth.pdf
- Bell, E., & Lerman, R. I. (2005, September). Can financial literacy enhance asset building? *Opportunity and Ownership Project*, 6. Retrieved from http://www.urban.org/UploadedPDF/311224_financial_literacy.pdf
- Bernheim, B. D., Garrett, D. M., & Maki, D. M. (2001). Education and saving: The long-term effects of high school financial curriculum mandates. *Journal of Public Economics*, 80(3), 435–465.
- Berry, J., Karlan, D., & Pradhan, M. (2012, April). *Evaluating the efficacy of school based financial education programs in Ghana*. Paper presented at the Child and Youth Finance International Summit, Amsterdam.
- Carpena, F., Cole, S., Shapiro, J., & Zia, B. (2011). *Unpacking the causal chain of financial literacy* (Policy Research Working Paper 5798). Washington, DC: World Bank Development Research Group, Finance and Private Sector Development Team. Retrieved from <http://www.povertyactionlab.org/publication/unpacking-causal-chain-financial-literacy>
- Caskey, J. P. (2006). *Can personal financial management education promote asset accumulation by the poor?* (Policy Brief #2006-PB-06). Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=923565
- Child and Youth Finance International (CYFI). (2011, March 14–15). *Child and Youth Finance Academic Working Group: Meeting Outcomes and Key Conclusions*. Presentation at International Institute of Education, New York.
- Child and Youth Finance International (CYFI). (2012). *Children, youth & finance 2011*. Amsterdam, The Netherlands: Author. Retrieved from http://childfinanceinternational.org/index.php?option=com_mtree&task=att_download&link_id=1468&cf_id=200
- Choi, L., Reid, C., Staten, M., & Todd, R. (2010). *Improving evaluation and metrics in youth financial education conference proceedings*. San Francisco, CA: San Francisco Federal Reserve,

- October 28–29. <http://www.frbsf.org/publications/community/wpapers/2011/improving-evaluation-and-metrics-in-youth-financial-education.pdf>
- Chowa, G., & Ansong, D. (2010). Youth and savings in AssetsAfrica. *Children and Youth Services Review*, 32: 1591–1596.
- Cole, S., & Shastry, G. K. (2009). *Smart money: The effect of education, cognitive ability, and financial literacy on financial market participation* (Harvard Business School Working Paper 09-071). Retrieved from <http://www.hbs.edu/research/pdf/09-071.pdf>
- Collins, J. M., & O'Rourke, C. M. (2010). Financial education and counseling: Still holding promise. *The Journal of Consumer Affairs*, 44(3), 483–498.
- Curley, J., Ssewamala, F. M., & Han, C. K. (2010). Assets and child educational outcomes: Child Development Accounts (CDAs) for orphaned children in Uganda. *Children and Youth Services Review*, 32, 1585–1590.
- Danes, S. M. (2004). *Evaluation of the NEFE high school financial planning program*. Retrieved from <http://hsfpp.nefe.org/loadFile.cfm?contentid=273>
- Danes, S. M., Huddleston-Casas, C., & Boyce, L. (1999). Financial planning curriculum for teens: Impact evaluation. *Financial Counseling and Planning*, 10(1), 25–37.
- Dewey, J. (1938). *Experience & Education*. New York, NY: Kappa Delta Pi.
- Elliott, W. (2009). Children's college aspirations and expectations: The potential role of college development accounts (CDAs). *Children and Youth Services Review*, 31(2), 274–283.
- Elliott, W., & Beverly, S. (2011a). Staying on course: The effects of assets and savings on the college progress of young adults. *American Journal of Education*, 117(3), 343–374.
- Elliott, W., & Beverly, S. (2011b). The role of savings and wealth in reducing “wilt” between expectations and college attendance. *Journal of Children and Poverty*, 17(2), 165–185.
- Elliott, W., Choi, E. H., Destin, M., & Kim, K. (2011). The age old question, which comes first? A simultaneous test of young adult's savings and expectations. *Children & Youth Services Review*, 33(7), 1101–1111.
- Elliott, W., Chowa, G., & Loke, V. (2011). Toward a children's savings and college-bound identity intervention for raising college attendance rates: A multilevel propensity score analysis. *Sociology Mind*, 1(4). Previously published as Center for Social Development Working Paper 11-29, available at: <http://csd.wustl.edu/Publications/Documents/WP11-29.pdf>
- Elliott, W., Constance-Huggins, M., & Song, H. (2011). Reducing the college progress gap between low- to moderate-income (LMI) and high-income (HI) young adults: Assets as an understudied form of economic capital (CSD Working Paper 11-14). Retrieved from <http://csd.wustl.edu/Publications/Documents/WP11-15.pdf>
- Elliott, W., Jung, H., & Friedline, T. (2010). Math achievement and children's savings: Implications for Child Development Accounts. *Journal of Family and Economic Issues*, 31(2), 171–184.
- Elliott, W., Jung, H., & Friedline, T. (2011). Raising math scores among children in low-wealth households: Potential benefit of children's school savings. *Journal of Income Distribution*, 20(2), 72–91.
- Elliott, W., Kim, K. H., Jung, H., & Zhan, M. (2010). Asset holding and educational attainment among African American youth. *Children and Youth Services Review*, 32(11), 1497–1507. Previously posted as Center for Social Development Working Paper 09-46, available at: <http://csd.wustl.edu/Publications/Documents/WP09-46.pdf>
- Elliott, W., & Nam, I. (2011). *Direct effects of assets and savings on the college progress of black young adults* (CSD Working Paper 11-14). Retrieved October 19, 2011, from <http://csd.wustl.edu/Publications/Documents/WP11-14.pdf>

- Erulkar, A., & Chong, E. (2005). Evaluation of a savings and microcredit program for vulnerable young women in Nairobi. Nairobi: Population Council.
- Fox, J. J., Bartholomae, S., & Lee, J. (2005). Building the case for financial education. *Journal of Consumer Affairs*, 39, 195–214.
- Friedline, T. (2012). Predicting children's savings: The role of parents' saving for transferring financial advantage and opportunities for financial inclusion. *Children and Youth Services Review*, 34(1), 144–154.
- Friedline, T. L., Elliott, W., & Nam, I. (2011). Predicting savings from adolescence to young adulthood: A propensity score approach. *Journal of the Society for Social Work and Research*, 2(1), 1–22.
- Gale, W. G. & Levine, R. (2010). *Financial literacy: What works? How could it be more effective?* (Financial Security Project at Boston College Working Paper, FSP 2011-1). Retrieved from http://crr.bc.edu/images/stories/Working_Papers/FSP_2011-1.pdf
- García Bohórquez, N. (2012). El impacto de la educación económica y financiera en los jóvenes: El caso de finanzas para el cambio. Banco de la República, Colombia. Borradores de Economía, 687. Retrieved from http://www.banrep.org/publicaciones/pub_borra.htm
- Gray, B., & Chanini, S. (2010). *Advancing women's and adolescent girls' access to resources and influence in rural India* (Freedom from Hunger Research Report No. 11). Retrieved from <http://www.fhtechnical.org/resources/research-reports/advancing-women-s-and-adolescent-girls-access-resources-and-influence-rur>
- Hathaway, I., & Khatiwada, S. (2008). *Do financial education programs work?* (Working Paper 0803). Retrieved from <http://www.clevelandfed.org/research/workpaper/2008/wp0803.pdf>
- Huang, J., Sherraden, M., Kim, Y., & Clancy, M. (2013, February). *An Experimental Test of Child Development Accounts on Early Social-Emotional Development*. Paper presented at Restoring Household Financial Stability after the Great Recession: Why Household Balance Sheets Matter, St. Louis, MO.
- Johnson, E., & Sherraden, M. S. (2007). From financial literacy to financial capability among youth. *Journal of Sociology and Social Welfare*, 34(3), 119–145.
- Junior Achievement WorldWide (n.d.). Executive Summary: Financial Literacy Impact of JA Program Participation. Retrieved from http://www.jaworldwide.org/files/white_papers/ExecSum-Financial-Literacy-Impact-of-JA-programs.pdf
- Kalyanwala, S., & Sebstad, J. (2006). Spending, saving, and borrowing: Perceptions and experiences of girls in Gujarat. New Delhi: Population Council.
- Leckie, N., Shek-Wai Hui, T., Tattrie, D., Robson, J., & Voyer, J. P. (2010). *Learning to save, saving to learn: LearnSave Individual Development Accounts project*. Ottawa, Canada: Social Research and Demonstration Corporation. Retrieved from http://www.srdc.org/uploads/learnSave_final_EN.pdf
- Lucey, T. (2007). The art of relating moral education to financial education: An equity imperative. *Social Studies Research and Practice*, 2(3), 486–500.
- Lucey, T. A., & Giannangelo, D. M. (2006). Short-changed: The importance of facilitating equitable financial education in urban society. *Education and Urban Society*, 38(3), 268–287. doi:10.1177/0013124506286942
- Mandell, L. (2004). *Financial literacy: Are we improving? Results of the 2004 national Jump\$tart survey*. Washington, DC: Jump\$tart Coalition.

- Mandell, L. (2008). Financial literacy in high school. In Lusardi, A. (Ed.), *Overcoming the saving slump: How to increase the effectiveness of financial education and saving programs* (pp. 257–279). Chicago, IL: University of Chicago Press.
- Mandell, L. & Klein, L. S. (2007). Motivation and financial literacy. *Financial Services Review*, 16, 105–116.
- Mandell, L., & Klein, L. S. (2009). The impact of financial literacy education on subsequent financial behavior. *Journal of Financial Counseling and Planning*, 20(1), 15–24.
- McCormick, M. H. (2009). The effectiveness of youth financial education: A review of the literature. *Journal of Financial Counseling and Planning*, 20(1), 70–83.
- Mensch, B., Grant, M., Sebastian, M., Hewett, P., & Huntington, D. (2004). The effects of a livelihood intervention in an urban slum in India: Do vocational counseling and training alter the attitudes and behavior of adolescent girls? (Population Council Working Paper No. 194). New York, NY: Population Council.
- Nam, Y., Kim, Y., Clancy, M., Zager, R., & Sherraden, M. (2012). Do Child Development Accounts promote account holding, saving, and asset accumulation for children's future? Evidence from a statewide randomized experiment. *Journal of Policy Analysis and Management*. Advance online publication. doi:10.1002/pam.21652
- O'Neill, J. (2006). Citizenship, well-being and sustainability: Epicurus or Aristotle? *Analyse & Kritik*, 28, 158–172.
- Peng, T. M., Bartholomae, S., Fox, J., & Cravener, G. (2007). The impact of personal finance education delivered in high school and college courses. *Journal of Family and Economic Issues*, 28(2), 265–284.
- Pronyk, P. M., Kim, J. C., Abramsky, T., Phetla, G., Hargreaves, J. R., Morison, L. A., & Porter, J.D.H. (2008). A combined microfinance and training intervention can reduce HIV risk behavior in young female participants. *AIDS*, 22, 1659–1665.
- Russell, R., Brooks, R., Nair, A., & Fredline, L. (2006). The initial impacts of a matched savings program: The Saver Plus program. *Economic Papers*, 25, 32–40.
- Scanlon, E., & Adams, D. (2009). Do assets affect well-being? Perceptions of youth in a matched savings program. *Journal of Social Service Research*, 35(1), 33–46.
- Syedian, M. & Yi, T. D. (2011). Improving financial literacy of college students: A cross-sectional analysis. *College Student Journal*, 45(1), 177–189.
- Sherraden, M. S., Johnson, E., Elliott, W., Porterfield, S., & Rainford, W. (2007). The I Can Save Program: School-Based Children's Saving Accounts for College. *Children and Youth Services Review*, 29(3), 294–312.
- Sherraden, M. S., Johnson, L., Guo, B., & Elliott III, W. (2010). Financial capability in children: Effects of participation in a school-based financial education and savings program. *Journal of Family and Economic Issues*, 32, 385–399. doi:10.1007/s10834-010-9220-5
- Somers, P., & Cofer, J. (2000). Mortgaging the future: Student debt load in the U.S. Testimony before the Senate Governmental Affairs Committee. Washington, DC: U.S. Senate.
- Ssewamala, F., Alicea, S., Bannon, W. M., & Ismayilova, L. (2008). A novel economic intervention to reduce HIV risks among school-going AIDS orphans in rural Uganda. *Adolescent Health*, 42, 102–104.
- Ssewamala, F., Han, C. K., & Neilands, T. B. (2009). Asset ownership and health and mental health functioning among AIDS-orphaned adolescents: Findings from a randomized clinical trial in rural Uganda. *Social Science and Medicine*, 69, 191–198.

- Ssewamala, F., Han, C. K., Neilands, T. B., Ismayilova, L., & Sperber, E. (2010). Effect of economic assets on sexual risk-taking intentions among orphaned adolescents in Uganda. *American Journal of Public Health, 100*(3), 482–488.
- Ssewamala, F. M., & Ismayilova, L. (2009). Integrating children savings account in the care and support of orphaned adolescents in rural Uganda. *Social Service Review, 83*, 453–472.
- Ssewamala, F., Ismayilova, L., McKay, M., Sperber, E., Bannon, W. M., & Alicea, S. (2010). Gender and the effects of an economic empowerment program on attitudes toward sexual risk-taking among AIDS-orphaned adolescent youth in Uganda. *Journal of Adolescent Health, 46*, 372–378.
- Tennyson, S., & Nguyen, C. (2001). State curriculum mandates and student knowledge of personal finance. *Journal of Consumer Affairs, 35*(2), 241–262.
- Varcoe, K. P., Martin, A., Devitto, Z., & Go, C. (2005). Using a financial education curriculum for teens. *Financial Counseling and Planning, 16*(1), 63–71.
- Walstad, W. B., Rebeck, K., & MacDonald, R. A. (2010). The effects of financial education on the financial knowledge of high school students. *Journal of Consumer Affairs, 44*(2), 336–357.

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