

Children & Youth as Economic Citizens: Review of Research on Financial Capability, Financial Inclusion, and Financial Education



Child and Youth Finance International Research
Working Group

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Deborah Adams organized conference calls for the team leaders throughout the year, and led efforts to compile

various sections of the paper as we neared the finish line. She also wove a number of contributions from committee members together in leading the Executive Summary, introduction, and implications sections of the paper.

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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. For CYFI, economic citizenship is essential to the social and economic well-being of children, families, communities, and countries. In March 2011, CYFI asked members of its Research Working Group to write a paper addressing what is known from the research about key components of the organization's model of economic citizenship among children and youth.

We focus on three key components of economic citizenship in this review of research: financial capability, financial inclusion, and financial education. The review is composed of five main sections.

Section 1 Introduction Our introductory section discusses our processes and outcomes in gathering and reviewing the literatures included in this paper. In this section, we discuss the parameters we established for this review, components of the model of economic citizenship we focus on in the literature review, limitations and implications for future research. We also reference a companion report that we produced to detail financial inclusion products, programs, and policies as well as financial education programs and intervention methods.

Section 2 Theory and Research on Financial Capability Financial capability conveys both an individual and a structural idea, incorporating a person's financial knowledge, skills and abilities as well as his or her access to appropriate financial services and opportunity to use these services to enhance social and economic well-being.

Section 3 Theory and Research on Financial Inclusion Financial inclusion means access to basic financial services for children and youth, for the purposes of this paper, and conveys the provision of quality services that are affordable and convenient. Truly inclusive financial services are delivered in a way that promotes a sense of dignity without regard to age or social and economic status in the larger community, while providing children and youth a secure place to keep money and accumulate assets.

Section 4 Theory and Research on Financial Education Financial education means the provision of educational instruction and/or materials designed to increase the 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 increasingly used around the world and include radio, television, and print media, age-appropriate experiential budgeting exercises, theatre and dance productions, websites and other online resources, and text messaging.

Section 5 Summary, Implications, and Recommendations Our concluding section summarizes main findings from the literature review, covers implications for a model of economic citizenship, and makes a number of recommendations for future research efforts.

The global effort to establish economic citizenship among children and youth can best be undertaken with a solid theoretical model supported by empirical evidence. Propositions regarding the ways in which financial access and education may together lead to financial capability and then ultimately to enhanced social and economic well-being must be systematically tested if efforts to enhance the economic citizenship of children and youth are to be evidence based. In other words, the model we use to depict how children and youth become economic citizens is only as helpful as the empirical evidence on which it rests.

Key recommendations for future research include: (a) developing a network of researchers in all regions of the world who will undertake empirical research across national and cultural contexts; (b) assessing the current scope of financial education and financial inclusion of children and youth around the world; and (c) generating rigorous quantitative and qualitative studies, using experimental design and advanced analytical methods, that can sort out the relative impacts and interactions of financial education and inclusion.



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1. Introduction

Deborah Adams, Tom Lucey, Margaret Sherraden, Mat Despard, Tahira Hira , and the CYFI Research Working Group

The vision of Child and Youth Finance International (CYFI) is that all children and youth realize their full potential as economic citizens. For CYFI, economic citizenship is essential to the social and economic well-being of children, families, communities, and countries. According to this vision, economic citizens are socially and financially engaged and understand their rights and responsibilities to self, family, and others in the larger community. Economic citizenship entails sustainable livelihoods as well as reduced income and asset poverty.

In March 2011, CYFI asked members of its Research Working Group to write a paper addressing what is known from the research about key components of the organization's model of economic citizenship among children and youth. After securing funding for the project (Child and Youth Finance International, 2011a), we began locating and reviewing research on the components of financial education, social education, and financial inclusion, which together were posited to form the foundation of the CYFI model of economic citizenship.

Our starting point, then, was the model shown in Figure 1 which was developed and refined by the Research Working Group of CYFI (then known as ChildFinance International) suggesting that financial education, social education, and financial inclusion

interact with one another, influence empowerment and capability, and, ultimately, lead to economic citizenship for children and youth.

As members of the CYFI Research Working Group, we believe the global effort to establish economic citizenship among children and youth can best be undertaken with a solid theoretical model supported by empirical evidence. Propositions regarding the ways in which financial access and education may lead to increased well-being for children and youth must be systematically tested if efforts to provide financial rights, services, and education to children and youth are to be evidence based. In other words, the model we use to depict how children and youth become economic citizens is only as helpful as the empirical evidence on which it rests.

Thus, two overarching questions guided our earliest efforts in producing this paper:

- What can we learn from the empirical literature about financial education, social education, financial inclusion, empowerment, and capability for children and youth?
- Does our review of the research have implications for our model of economic citizenship for children and youth?

We began by discussing each of the constructs in the CYFI model of economic citizenship, and more clearly defining and describing them for the purposes of this paper. Then, we did a broad search for empirical literature addressing various constructs in the model. In reviewing these literatures, the following findings helped us establish parameters for our review of the research.

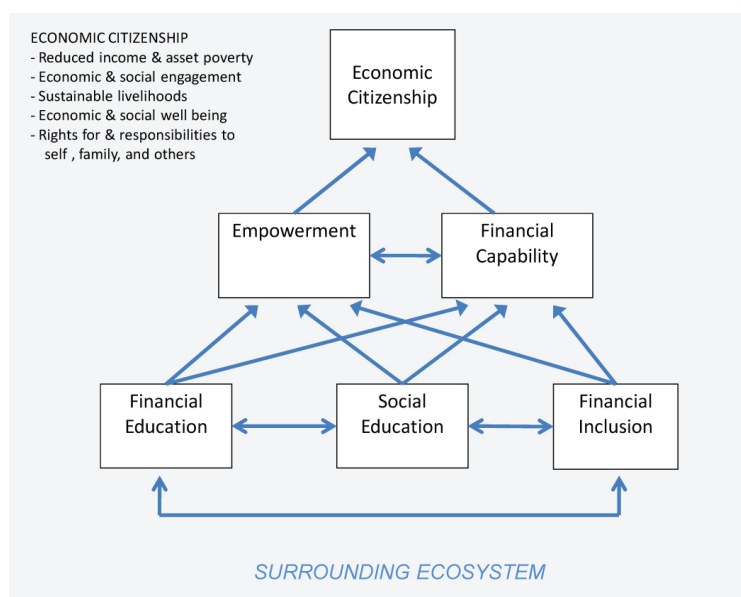


Figure 1. Model of Children and Youth as Economic Citizens (ChildFinance, 2011b)



1.1 Research on Social Education and Economic Citizenship

Turning first to our observations on the construct of social education in the CYFI model of economic citizenship, we learned that scholars have generally thought of social education for children and youth as educational efforts to develop and strengthen citizenship. This is somewhat at odds with the way in which social education has been discussed within the movement to secure and expand financial rights for children and youth.

For example, CYFI (Child & Youth Finance International, 2011) has described social education as the provision of knowledge and skills that change children's understanding and/or awareness of their individual rights and those of others. Further, at the March 2011 meeting of CYFI's Research Working Group, social education was said to involve the fostering of life skills, and to parallel UNICEF's definition of life skills which is "large group of psycho-social and interpersonal skills which can help people make informed decisions, communicate effectively, and develop coping and self-management skills that may help them lead a healthy and productive life. Life skills may be directed toward personal actions and actions toward others, as well as actions to change the surrounding environment to make it conducive to health" (UNICEF, 2012).

Early in our review of the empirical literature, we noted that there is very little evidence that social education – whether focused on citizenship or life skills – has been included in studies of either financial education or financial services for children and youth. This finding will be important in guiding future research on economic citizenship for children and youth. According to CYFI, economic citizenship is comprised of a number of components that include thoroughly understanding and actively acknowledging rights of and responsibilities to self, family, and others. If this dimension of rights and responsibilities is determined to be central to economic citizenship, future research will be required to study the ways in which children successfully develop a thorough understanding and active acknowledgement of their rights and responsibilities, as well as those of their families and members of their larger communities.

Future research in this area may be informed by a related finding from our work. We learned that a focus on rights of and responsibilities to self, family, and others is integrated into some, but certainly not all, social education (Lucey, 2007; Lucey & Giannangelo, 2006). This, in addition to the apparent lack of focus on social education in studies of financial inclusion and financial education, points to the need for future efforts to: (1) more clearly define, conceptualize, and articulate the rights and responsibilities dimension of economic citizenship, and (2) research if and how

social education supports the rights and responsibilities dimension of economic citizenship. Broadly, in the future, we will need to address the related questions "What is social education, and what does it have to do with economic citizenship for children and youth?"

Finally, because financial inclusion and financial education initiatives are growing exponentially and frequently offer a "bundle" of services, it is quite likely that at least some components of social education are included in efforts to increase the financial capability of children and youth (see, for example, the discussion of economic citizenship later in this section of the paper). Clearly articulating what we mean when we talk about social education in the Child and Youth Finance movement will be an important first step in being able to systematically plan and review future research on its role in economic citizenship for children and youth.

1.2 Research on Empowerment and Economic Citizenship

Another observation we made as we began to review studies was that empowerment is part and parcel of financial capability. While empowerment is pictured as a separate construct in the CYFI model of economic citizenship, financial capability actually incorporates empowerment at the individual level as well as access and opportunity at the structural level. Essentially, financial capability occurs when individual 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.

1.3 Implications for Rapid Growth in Products, Programs, and Policies for Research

A final observation we made as we worked on this paper is that the research to date is fairly limited, especially when compared with the many examples of products, programs, and policies that are attempting to increase financial inclusivity and education for children and youth around the world. For this reason, we have produced a companion report to this research review. This companion report describes financial and educational programs for children and youth, and includes tables listing financial products, programs, and policies as well as financial education programs and intervention methods. The companion report is available at Child and Youth Finance International web site.



1.4 Components of Economic Citizenship for Children and Youth

The ultimate goal for leaders in the movement to assure financial and economic rights for children and youth is that all children and youth realize their full potential as economic citizens. For example, CYFI holds that economic citizenship is essential to the social and economic well-being of children, families, communities, and countries.

The efforts to gain full economic citizenship for children and youth in practice are monumental, while the work of scholars to develop, test, and adopt commonly held definitions and measures of economic citizenship is merely daunting. This work of more clearly defining economic citizenship and developing valid measurement tools and methods is yet to be started. Following the CYFI model of economic citizenship, this paper provides a review of the research on three constructs that we believe to be central to the development of economic citizenship for children and youth: financial capability, financial inclusion and financial education.

Aside from the constructs covered in this review of the research, the CYFI model includes a list of other components of economic citizenship for children and youth. These include social and financial engagement, an understanding of their rights and responsibilities to self, family, and others, reduced income and asset poverty, and sustainable livelihoods.

Of the suggested components of economic citizenship not addressed in this paper, we believe that the most pressing additional research should address sustainable livelihoods training and education for children and youth. As soon as possible, a group of scholars with expertise in this area should be gathered and commissioned to review the empirical literature to date on sustainable livelihoods training and education. As we note later in this paper, an increasingly common strategy is to offer financial education in conjunction with livelihoods education and other youth development services.

1.5 Limitations of this Research Review

One limitation of this review of the empirical literature is that the studies we include are limited to English-language research on financial capability, financial inclusion, and financial education.

Further, while we included key studies worldwide, our coverage of studies from English-speaking countries is better. In future research on economic citizenship of children and youth, we believe that research in various parts of the world needs to be funded and that resources should be routinely available for translation of key studies.

1.6 Definitions

Turning back to the task at hand, the findings discussed above helped us determine a focus on the constructs in the CYFI model of economic citizenship that would be our focus for this paper, and establish parameters for our review of the research.

In keeping with those parameters, this paper reviews the research on:

- financial capability
- financial inclusion
- financial education

For the purposes of this paper, and in keeping with current use of terminology in the field, our definitions of key terms are as follows:

Financial capability conveys both an individual and a structural idea, combining a person's ability to act with their opportunity to act (Johnson & Sherraden, 2007; Sherraden, forthcoming). The financial capability approach suggests that children and youth should learn about financial management and the financial world at the same time as they are provided beneficial tools to participate. Following Sen (1987) capability has to do with "real" opportunity, suggesting that it takes both individual ability and the assurance of access and opportunity in order to truly enhance well-being (p. 36). In this paper, we take financial capability as our proximal outcome of interest and suggest that it may be dependent on both financial inclusion and financial education.

Financial inclusion, in the context of this paper, means access for children and youth to "quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients" (Gardeva & Rhyne, 2011, p. 6). We use the term financial inclusion to mean basic financial services for children and youth including, at a minimum, a safe place to keep money and accumulate savings (Hirschland, 2009; Nagarajan, 2005).

Financial education means the provision of educational instruction and/or materials designed to increase the financial knowledge and skills of children and youth. As detailed in the financial education section of this paper, both the practice and research communities have used competing theoretical frameworks in designing, offering, and researching financial education. While classroom-based financial education is a common strategy in higher-income countries, a wide variety of instructional methods and materials are being increasingly used around the world and include radio, television, and print media, age-appropriate experiential budgeting exercises, theatre and dance productions, websites and other online resources, and text messaging.

The order of our review follows a common academic convention



of beginning with a discussion of the construct that represents the key outcome of interest, and then proceeding with discussions of constructs that may be acting together to shape that outcome. In this case, we begin by reviewing research on financial capability, and subsequently cover the research on financial inclusion and financial education. We conclude the paper with recommendations for future research on financial capability among children and youth.

In sum, we began with a charge to review the empirical literature on constructs central to the CYFI model of economic citizenship for children and youth. Our early findings helped us focus our attention in this paper on studies addressing financial capability, financial inclusion, and financial education. These observations, along with the results from our research review, have implications for the CYFI model of economic citizenship and for future research in this area, both of which will be discussed in the conclusion to the paper. First, though, we begin with a review of theory and research on financial capability, followed by reviews of conceptual and empirical work on financial inclusion and financial education.

2. Theory and Research on Financial Capability

2.1 Conceptual Development of Financial Capability

Margaret Sherraden & Mat Despard

The idea of financial capability is a core concept in the model for economic citizenship for Child and Youth Financial International (CYFI). In this section, we outline our understanding of financial capability and other key theoretical perspectives that inform research on children and youth financial capability.

Scholars and practitioners in the United Kingdom pioneered the use of the term “financial capability.” They suggest that the concept of financial capability not only should include financial knowledge, but also people’s confidence and motivation to manage personal finances (Dixon, 2006). The UK government, for example, has adopted the following definition:

Financial capability is a broad concept, encompassing people’s knowledge and skills to understand their own financial circumstances, along with the motivation to take action. Financially capable consumers plan ahead, find and use information, know when to seek advice and can understand and act on this advice, leading to greater participation in the financial services market. (HM Treasury, 2007, p. 19)

This understanding of financial capability has gradually become accepted. Today, the standard definition of financial capability

includes financial knowledge and skills, attitudes, habits, motivation, confidence, self-efficacy, and behavior (Lusardi, 2010). Although motivation, confidence, and behavior suggest contextual variables (i.e., they are qualities that are not considered entirely innate), context is not integrated into these conceptualizations of financial capability.

In this document, we use a slightly different definition. We view financial capability as both an individual and a structural idea, combining a person’s ability to act with their opportunity to act. In this way, people are able to “understand, assess, and act in their best financial interest” (Johnson & Sherraden, 2007, p. 124; Sherraden, forthcoming). The key distinction between financial literacy and financial capability, according to this definition, is that to be financially capable, people must be more than financially literate, confident and motivated; they must also have genuine access to quality financial products and services that allow them to act in their best financial interest. Together, ability and opportunity contribute to a person’s financial functioning in ways that lead to financial capability and improved financial well-being and life chances (Sherraden, forthcoming).

2.1.1 Theoretical Background on Capability

The concept of capability is derived from the seminal work of philosophers Amartya Sen and Martha Nussbaum (Johnson & Sherraden, 2007; Sherraden, forthcoming). According to Sen, “Capabilities . . . are notions of freedom in the positive sense: what real opportunities you have regarding the life you may lead” (Sen, 1987, p. 36). To Nussbaum, who applies capability theory to human development and welfare, the idea of capability takes into account people’s internal capabilities (e.g., ability, knowledge, skills), but also the external conditions and array of opportunities available (e.g., access to products, services, and institutions), which together make up their combined capabilities (2000, p. 85). For Nussbaum, it is the policies, laws, regulations, and practices that provide opportunities for all individuals to develop the full range of capabilities that lead to human well-being.

People possess certain internal capabilities, but external conditions also must be in place in order for people to be capable. Internal capabilities may exist when external conditions do not, according to Nussbaum: “a society might do quite well at producing internal capabilities but might cut off the avenues through which people actually have the opportunity to function in accordance with those capabilities” (2011, p. 21). Similarly, internal capabilities may be lacking. Both are needed in order for people to function. They are interactive; in other words, internal capabilities are “developed, in most cases, in interaction with the social, economic, familial, and political environment” (Nussbaum, 2011, p. 21).



People make financial decisions based on their ability, knowledge, and skills, but also based on what is possible in their circumstances. For example, when financially vulnerable people say that mainstream financial products and services are not meant for them (Kempson & Finney, 2009; Sherraden & McBride, 2010), it suggests a chasm between the financial worlds of rich and poor. In this respect, individual motivation or self confidence in dealing with household finances may not be so much an expression of individual ability and skill in making financial decisions, as an expression of the individual's economic and social position and influence in relation to mainstream financial institutions. Real options and opportunities in people's environment shape their assumptions and understanding about what is possible. It is this link between individual and structure that influences people's attitudes, motivation, confidence, self-efficacy, and behavior. In this way, the environment, or "external conditions" in Nussbaum's words (2000), is internalized in people's perceptions, expectations, and behavior (Reynolds & Pemberton, 2001).

A final point about financial capability is the importance of voice and participation in shaping policies and programs. According to Sen, in societies that enhance capabilities, people are engaged. They are able to pursue the lives they choose through individual and collective action. For example, using extensive empirical evidence that famines do not occur in democracies, Sen (1981) demonstrates that ordinary people must have the ability to be heard and influence policy decisions.

When children and youth are financially capable, we might expect that they would have greater voice and play a role in shaping their financial well-being. This implies that policy is responsive to their circumstances.

2.1.2 Individual and Structural Theories Inform the Concept of Financial Capability

Several theories inform the concept of financial capability. Following a continuum from individual level to structural perspectives, these include the theory of planned behavior, the developmental perspective, social learning theory, possible selves theory, behavioral economics, and institutional theory. Individual level perspectives focus on how a person's thinking, behavior, and/or interactions with family members, neighbors, and friends affect the decisions she or he makes about money. Structural level perspectives focus on how social structures like schools, banks, and the actions of governments shape these same decisions. By describing various individual and structural level perspectives, we can understand the different ways in which a person's financial decisions can be affected by things that are within that person (like their thoughts) and things that are outside of that person (like a bank that offers a new product). We can also imagine how these

decisions can be shaped by a combination of these things, like how a bank offering a new product makes a person think differently about saving money.

2.1.3 Theory of Planned Behavior

Azjen's (1991) theory of planned behavior posits that intentions to behave in certain ways are influenced by attitudes about the behavior, subjective norms, and perceived behavior control. Applied to financial behavior, the theory of planned behavior suggests that children and youth may be ready and inclined to save money, for example, if they think a) saving money is a good idea and will benefit them or their families; b) their parents, teachers, and other influential persons approve of saving; and c) they are capable of saving money and face no constraints in doing so. According to the theory of planned behavior, financial education, for example, may help children and youth form favorable attitudes about making wise spending choices and saving money while efforts to increase their access to savings products may help reduce perceived constraints to saving.

2.1.4 Developmental Perspective

The ability and opportunity to manage material resources effectively – including money – is an important objective related to successful transitions to adult roles and responsibilities. Developmental and life span theories and perspectives (e.g. Baltes, 1987; Zastrow & Kirst-Ashman, 2012) posit that growth and change is a lifelong process that has biological, social-emotional, and cognitive dimensions. People have the potential to change and grow, though this happens in historical and cultural contexts and is affected by normative (e.g. puberty) and non-normative (e.g. natural disasters, conflict) events and processes. The ability of children and youth to develop financial knowledge and skills is affected by their cognitive and social abilities at different developmental stages (Berti & Bombi, 1988; Strauss, 1952). Children can understand various financial concepts at a very young age, perhaps as early as four years or younger (Holden et al., 2009), and grasp basic economic concepts during primary grades (Sonuga-Barke & Webley, 1993; Sosin, Dick, & Reiser, 1997). These concepts form the foundation of more complex understanding as children mature (Leiser, 1983; Ward, 1974).

However, to some extent, developmental milestones are culturally bound. Cross-cultural research suggests that children who participate in economic life and receive more education are knowledgeable at an earlier age about economic concepts (Furnham & Argyle, 1998; Holden et al., 2009; Roland-Levy, 1990). These variations may have roots in distinct cultural traditions. Some cultures, for example, emphasize the importance of adolescent and young adult economic self-sufficiency, while others emphasize



strong ties to family, extended family, and community (Sim Lai, 2011).

2.1.5 Social Learning Theory

Social Learning Theory may help explain how youth attain financial knowledge through various social interactions. Observations of others through imposed, selected, and created social environments provide an important learning context that inform human agency (Bandura, 2005). Vicarious experiences affect individual's self-efficacy appraisals as perceptions of capabilities are influenced by observing the actions and attainments of others. These appraisals are particularly receptive to vicarious experiences when the individual is uncertain of her or his abilities and has had little relevant experience (Bandura, 1997). SLT may help explain the social processes through which youth change when financial education occurs in the context of classroom-based or other group social interactions.

The economic and financial socialization of children is influenced by a range of influences including family, peers, teachers, media, and culture (Beutler & Dickson, 2008; Bodnar, 2005; Furnham & Argyle, 1998; McNeal, 1987; Roland-Levy, 1990). Families have the earliest and most important influence in shaping values, attitudes, standards, norms, knowledge, and behaviors that contribute to their "financial viability and well-being" (Schuchardt et al., 2009, p. 86; see also Kourilsky, 1977; Moschis, 1985; Rettig & Mortenson, 1986). Some research suggests that children whose parents provide opportunities to learn about money have more understanding of money than children whose parents do not (Marshall & Magruder, 1960). Research studies suggest that allowances, parental modeling, and learning self-control affect children's future financial behaviors, according to Webley and Nyhus (2012), although they caution that swiftly changing economic and socialization practices, as well as wide variations across cultures, require more research.

2.1.6 Possible Selves Theory

Possible selves theory (Markus & Nurius, 1986) sees individuals' self-concepts as informed by ideas of what she or he might become in the future, offering a link between cognition and motivation. Applied to financial education, motivation to become more financially knowledgeable and to save money may be affected by how youth think about themselves in some future state, such as going to college or operating a small business. This envisioned future state may then motivate youth to save money rather than use money for having fun or for other short-term, consumptive purposes (Pettigrew, Taylor, Simpson, Lancaster, & Madden, 2007).

Destin and Oyserman (2009) have found an association between

the perceived availability of financial assets and an "open-path" mind-set among students that affected planned academic effort. Elliott III, Sherraden, Johnson and Guo (2010) have found that children who participated in a school-based savings program were more likely to associate saving with going to college than a comparison group.

2.1.7 Behavioral Economics

A behavioral economic perspective rebukes the formal propositions of rational choice theory and instead posits that individuals do not always act in ways that maximize their economic self-interests. Individuals fail to take advantage of opportunities and resources through inertia, procrastination, and psychological biases and need help in the form of "nudges" that make it easier to do things like save for retirement and maximize investment returns (Thaler & Sunstein, 2008). Behavioral economics theory assumes that a large proportion of people lack the necessary will power and self-control and thus promotes externally imposed controls. The key principles of behavioral economics, especially in reference to financial regulation, include simplicity, constraining choices, "automaticity," mental accounting, and the creation of social norms.

Youth may need various nudges to help them form a habit of saving, for example. Financial education and inclusion (i.e. access to and use of financial services) are necessary but insufficient preconditions for saving behavior among youth. Youth also need help to overcome psychological hurdles to saving, such as hyperbolic discounting, or the tendency to accept smaller rewards given sooner over larger ones given later. This help may come in the form of reminders to make savings deposits, being aware of their peers' saving, setting specific savings goals to form a mental commitment, services that make it very easy to make savings deposits, and receiving incentives (Pathak, Holmes, & Zimmerman, 2011).

2.1.8 Institutional Theory

Institutions are the principal conduits for external social, economic and political conditions that shape and constrain human behavior. Institutional theory suggests that use of financial products and services by children and youth is not only the result of their behavior, but is shaped by the financial services landscape.

Institutional theory provides a way to understand and think about how to expand access to children and youth. In their work on saving and asset building, Sherraden and colleagues identify a bundle of institutional constructs that shape saving action (Beverly et al., 2008; Sherraden, 1991; Sherraden & Barr, 2005). These include (1) access or the ability and right to use financial products and services; (2) information about financial products and services;



(3) incentives and financial returns on products and services; (4) facilitation or the ease with which people use financial products and services; (5) expectations and goals about the use of financial products and services; (6) restrictions that restrain unwise use of financial products and services; and (7) security of financial products and services (Beverly et al., 2008).

2.1.9 Conclusion

The financial capability approach suggests that children and youth should learn about financial management and the financial world at the same time as they are provided access to beneficial tools to participate. At the individual level, a developmental perspective suggests that children and youth should be taught about and brought into financial services in developmentally appropriate ways, building on cognitive and psychological stages of development. Possible selves theory suggests that children who are brought into and learn about the financial system at a young age may be better able to envision their economic participation and engage in the financial world while young. Children may be more motivated to save, for example, when they recognize that saving can help them achieve goals and when they receive support and encouragement from adults, according to the theory of planned behavior.

From a behavioral economics perspective, children and youth may be more engaged in learning about and participating in financial services when education and services are designed in ways that recognize how they are really apt to behave (although children and youth have received relatively little attention by behavioral economists).

Institutional theory suggests that structures must be in place to make access to financial education and services a real option for children and youth. Expanding financial access will require appropriately designed products and services, but it will also require changing the ways that societies think about and include children and youth as financial actors. It is estimated that 56% of all adults worldwide are “unbanked,” ranging from 17% unbanked in high-income countries to 64% unbanked in developing countries (Ardic, Heimann, & Mylenko, 2010). While estimates of unbanked among children and youth are lacking, the proportion is surely much higher. Access to financial services among children and youth will require major changes in banking products, practices, and outreach, as well as public policy and regulatory overhaul.

In sum, improving financial functioning and well-being will require attention to individual learning and behavior, but also to the institutional context and voices of children and youth.

2.2 Research on Financial Capability

Margaret Sherraden

2.2.1 Introduction

This section presents empirical evidence on financial capability; that is, the contributions of financial services and financial education to the financial well-being of children and youth. Overall, the evidence is suggestive and requires more focused and rigorous research.

2.2.2 Evidence on financial capability

Empirical research suggests that offering financial products/ services and financial education together has positive results. Existing research provides insights into financial capability of children and youth around the world and helps to inform the proposed model.

Note that some financial capability programs “lead” with a financial product or service, while others “lead” with financial education. Typically, programs that “lead” with a financial product include financial education in order to improve understanding and product management. For example, Individual and Child Development Accounts, college savings plans, homebuyer programs, tax preparation, public assistance and benefits, jobs, emergency aid, and savings clubs, typically focus on product outreach, but may also offer financial education.

Programs that “lead” with financial education and also offer a real or simulated financial product or service typically aim to make the education “come alive.” This form of experiential education may increase motivation, attention, focus, and absorption of information (O’Neill, 2006).

In the sections below, we examine evidence from studies where financial services and financial education are combined. Each section begins with a heading that describes the overall finding, and begins with studies of adults, followed by studies that address children and youth.

2.2.3 People may be more motivated to engage in financial education if there also is an offer of a financial product or service

Offers of financial education alone tend to draw small and select (often more informed and motivated) groups of participants. One way to encourage broader participation among target groups is to link financial education with an attractive financial product or service. There is some evidence from the field that this strategy



may work. For example, a survey of financial education programs in San Francisco reported increased participation in financial education programs that also offered incentives with tangible benefits (Choi, 2009). Another study suggests that an offer of genuine access is important. In this study, unbanked participants in a financial education program were encouraged to open a bank account. When offered a bank account by a bank representative who attended the financial education workshop, the take-up rate (and use of other complementary bank products) was significantly higher than among unbanked participants who attended a workshop without a bank representative present to enroll them (Bertrand, Mullainathan, & Shafir, 2006).

Nonetheless, even when there is an offer of a financial service, people may be reluctant to engage in financial education. An evaluation of the U.S. government's First Accounts program, for example, which aimed to bring low-income households into the financial mainstream, finds that few participants took up free education services among those who signed up for accounts (U. S. Department of Treasury, 2009). Similarly, a large-scale matched savings program in the UK, Saving Gateway, found a low take-up rate for financial training and advice (8% to 18% in different phases), and in qualitative interviews, participants expressed a lack of enthusiasm for financial education (Kempson & Finney, 2009, p. 46). In another program, an offer of a bank account was not an enticement to participate in financial education: Bank On San Francisco decoupled financial education requirements from account opening after discovering that "getting a bank account is not an incentive to go to a [financial education] class" (Phillips & Stuhldreher, 2011, p. 13).

It may be important to integrate financial education into financial services in ways in which it occurs automatically (Thaler & Sunstein, 2008). Technology innovations offer potential for this integration through the use of cell phone and online messaging. This approach may be especially appealing to children and youth. A study assessing the effects of offering online banking along with financial and computer literacy training to low-income participants finds that participants were drawn by the technology; however, the intervention did not have the effects hoped for because of implementation challenges (Servon & Kaestner, 2008). There is very little evidence on the integration of financial education and financial services from studies with children, especially in developing countries. A study of a financial education and savings program with very young children finds that they are enthusiastic about an afterschool financial education "club" because of the snacks and games, but also because they enjoyed saving and depositing their savings in the bank (Sherraden, Johnson, Elliott, et al., 2007).

These studies suggest that an attractive financial product or

service with built-in financial education may be effective, but more research is needed, especially with children and youth in developing country contexts.

2.2.4 Combining financial education and financial services may lead to greater financial knowledge

There is some evidence that when both financial services and financial education are combined, they lead to improved financial knowledge and skills. For example, a comparison of financial education-only and financial education-plus-IDA (matched savings) finds that low-income participants in the latter tested significantly higher on financial knowledge on average, although the two groups differed in important ways (Anderson, Zhan, & Scott, 2004).

In Peru, a randomized control trial study of the effect of adding regular financial education to microcredit for one to two years for low-income women business owners in Peru finds improvements in business knowledge, but little evidence of changes in business revenue, profits, or employment (Karlan & Valdivia, 2010).

Turning to children and youth, a quasi-experimental study of a financial empowerment program in Mongolia implemented by XacBank, finds that adolescent girls offered both financial education and savings showed improvements in knowledge, skills and attitudes, and some behavior changes (Tower with McGuinness, 2011). Another quasi-experimental study of a four-year school-based financial education and savings program called "I Can Save," finds that 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 contrast, analysis of the national Jump\$tart survey in the United States finds that students do not score higher on relevant parts of 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 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).



2.2.5 Combining financial education and financial services may lead to improved financial knowledge and financial functioning

In a large study of adults participating in matched savings account programs (Individual Development Accounts) in 14 sites in the United States, financial education (up to 10 hours) makes an independent contribution to saving performance (savings and deposits) in IDAs (Schreiner & Sherraden, 2007).

In another U.S.-based study, the Small Dollar Loan program piloted by the Federal Deposit Insurance Corporation (FDIC), default rates appear to be lower in products accompanied by savings and financial education; however, limited sample size and program variation temper these results (Miller, Burhouse, Reynolds, & Sampson, 2010).

In contrast, a randomized study of IDAs in Canada called Learn\$ave finds little effect of financial education on savings in a matched savings program (Leckie, Hui, Tattrie, Robson, & Voyer, 2010). The treatment group that received 15 hours of financial management training and case management services did not save more than the group with a saving match only, although qualitative findings suggest the educational content may have been inadequate (Leckie et al., 2010).

Turning to evidence in developing economies, a randomized control trial in Indonesia finds that two-hour financial literacy education focused on savings accounts has no effect on the probability of opening a bank account among unbanked participants, except for a modest increase among those with the lowest levels of education and financial literacy at program start (Cole, Sampson, & Zia, 2011). However, among participants also offered a small incentive to open a savings account, rates were higher and participants made more use of the account than among those who received only financial education; moreover, an increase in the incentive from \$3 to \$14 increased the proportion of households that opened a bank savings account from 3.5% to 12.7%. A survey two years after the intervention found that the new accounts were still open and in use (Cole et al., 2011).

Pre-post surveys and qualitative studies conducted in Bolivia and Sri Lanka with adults in three financial services programs finds that adding financial education to financial services increases knowledge and results in behavior change (Gray, Sebsted, Cohen, & Stack, 2009). They find that budgeting behaviors are easier for clients to put into practice; however, savings and debt management are less amenable to change because of circumstances beyond the control of individual households, including uncertain incomes and expenses (Gray et al., 2009)

Turning to evidence on youth, one study 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).

2.2.6 Sometimes the distinction between financial education and financial services is blurred

Financial education can be approached in many different ways. Most of the time, it is interpreted as content that is conveyed in a classroom, workshop, online, or other venue; however, financial education can be interpreted more broadly to include information that is integrated into a financial product or service. For example, financial education could be sent in a text message by the bank where the financial product is held, or incorporated into disclosure information given to customers when they sign up for a product or service. The aim of this type of education is usually very specific and aimed at a particular aspect of an individual's financial knowledge, skills, or behavior.

A US-based field experiment (Bertrand & Morse, 2010) finds that information disclosed to payday loan borrowers aimed at lowering their use of high-cost debt helps people understand more about the costs associated with payday borrowing, and reduces take-up of payday loans by about 10% (over a period of 4 months following exposure to the new information).

In other field experiments in Peru, Bolivia, and Philippines, text message reminders to treatment groups increase savings. In one study, some savers received reminders about their financial goal, others received reminders that there were incentives for saving, and some received both types of reminders. In the sites where participants received reminders to save (by text message or letter), savings increased by 6% and participants were 3% more likely to reach their savings goal, while in one site where participants received both types of reminders savings increased considerably more (Karlan, McConnell, Mullainathan, & Zinman, 2011).

2.2.7 Summary of evidence on financial capability

These studies suggest that financial education and financial accounts have an iterative relationship that results in positive economic effects. Effects across several studies include higher financial literacy levels and improved financial management skills, as well as higher rates of account opening, higher savings deposits, higher use of accounts, and future saving and investing (see also, Baker & Dylla, 2007). However, not all studies test for or find both outcomes. Some studies find no relationship. The type and quality



of educational content may matter (Carpena et al., 2011; Leckie et al., 2010). Similarly, the type and quality of financial service may affect outcomes. Finally, the extent and type of connection made between the financial education curricula and the financial service may affect outcomes.

Overall, however, financial capability in children and youth requires more rigorous research. We note several limitations of existing studies. First, most studies examine a “bundle” of features that includes financial inclusion, financial education, and other support measures—without isolating independent effects of each. Second, most studies are not experimental and cannot establish causal relations and independent effects. Third, most of the research examining the interactions between financial education and financial services focus on savings and not on other financial products and services (e.g., transaction accounts, loans, insurance). Finally, most studies that examine the roles of both financial education and financial services focus on adults. Research is just beginning to examine the relationship in children and youth.

2.2.8 Studies in progress and future research

More rigorous research is required to understand the independent and joint contributions of financial education and financial services, and identify ways to integrate them for optimal results. This research is especially needed among children and youth and in developing country contexts.

Several studies are underway that may shed light on the relationship between a savings account and financial education for youth. One project, Teaching Savings Practices to Ugandan Youth (2009-2011),¹ is examining the impact of savings accounts 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,² researchers are examining savings and education outcomes in a school-based commitment savings and financial education experiment. Initial findings suggest that more children save (but do not save more or more regularly), become more risk averse, and shift savings to school as a result of a savings plus financial education program (Berry, Karlan, & Pradhan, 2012).

In another project, 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.³ The study in Colombia is testing the effectiveness of reminders and financial education text messages with youth who have a savings account, and the other in Ghana is testing the effectiveness of savings accounts and financial education for in-school and out-of-school youth.⁴

2.2.9 Summary of contributions to a model of economic citizenship for children and youth

These studies provide some guidance for a model for economic citizenship for children and youth. Taken as a whole, although these studies do not disaggregate the relative importance of financial education and financial services, they do suggest that both are important. If both are important – perhaps for different reasons – this underscores the potential benefit of integrating the two more closely, as has been attempted in innovations, such as experiments for matched savings and other incentive-based savings schemes, commitment accounts, and text message reminders and financial education.

However, there is a dearth of evidence concerning the interaction of financial education and financial services for children and youth, especially in developing countries. Future applied research should focus on understanding the discrete and summative contributions of financial education and financial services in this population, including diverse groups of financially vulnerable children and youth (e.g., age, gender, and cultural backgrounds).

Research should also explore if effectiveness differs by type of financial education (e.g., text message information, classes, counseling) and across variations in financial products and services (e.g., 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 and a matched savings account.

3. Theory and Research on Financial Inclusion

3.1 Financial Inclusion among Children and Youth

Margaret Sherraden

3.1.1 Introduction

While financial inclusion of adults is the norm in developed

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

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

3 <http://www.youthsave.org/>

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



countries, financial exclusion is the norm in low and middle-income countries (Honohan, 2008). Recent estimates indicate that 2.5 billion adults in developing countries lack access to basic bank accounts (Chaia et al., 2009; Kendall et al., 2010). Between half and three-quarters of adults in the developing world are “unbanked” (Ardic, Heimann, & Mylenko, 2011; Kendall et al., 2010). In some areas of the world, the numbers of unbanked are much higher. In Sub-Saharan Africa, for example, 80% of adults (356 million) are unbanked (Chaia et al., 2009).

While bringing the unbanked into the formal financial services sector is a growing priority in many countries, there is less attention on financial inclusion among children and youth. By the time the 1.2 billion youth ages 15 to 25 in the world—including the 90% who live in developing countries—reach adulthood,⁵ it is safe to say that many will not have interacted with mainstream financial services, although we lack precise data. Studies in developed country contexts find that young people under 25 are the least likely age group to have access to basic financial services including transaction and savings accounts, credit and insurance, and are particularly less likely to have overdraft protection and insurance (Goodwin, Adelman, Middleton, & Ashworth, 1999; Russell, Maitre, & Donnelly, 2011).

This section reviews definitions, theoretical perspectives on financial inclusion of children and youth, and identifies key challenges.

3.1.2 Financial inclusion: What is it and why would children and youth benefit?

Financial inclusion, according to the Center for Financial Inclusion, is “a state in which all people who can use them have access to a suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients” (Gardeva & Rhyne, 2011, p. 6). This includes, at a minimum, savings, credit, insurance and payments. Financial inclusion aims to facilitate economic transactions, manage day-to-day resources, improve quality of life, protect against vulnerability, make productivity-enhancing investments, leverage assets, and build economic citizenship (Acción International, 2009).

For children and youth, basic financial services include, at a minimum, a safe place to keep their money and accumulate savings (Hirschland, 2009; Nagarajan, 2005). Moreover, some groups of children may need access to credit, fixed deposits, insurance, remittances, and transfers at various points in their development (Lubwama & Rekogama, 2011). For example, children of international migrants may benefit from remittance accounts,

especially if their parents or other relatives are abroad. Financial inclusion also includes financial protections to ensure the right to participation and to keep money safe (Agarwal, 2007).

Child and Youth Finance International (CYFI) has established minimum institutional and product requirements in its “Child-Friendly Product Prototype.” These requirements are as follows:

Minimum Institutional Requirements:

- The financial institution is licensed under appropriate national laws and regulations. The institution is in good standing with its national regulatory authority.
- The institution is covered by a deposit guarantee scheme, if applicable, in the country.
- The institution has a code of conduct with respect to children including staff training and development programs on how to interact with children.

Minimum Product Requirements:

- Non-discriminatory access to products.
- Maximum control by the child within the national legal and regulatory framework.
- Net positive financial return received by the child.
- No penalty in case of withdrawals.
- No or minimal requirements with respect to initial opening deposits.
- No credit facilities (including overdrafts) related to product.
- Child-friendly (simple and transparent) communication surrounding the product.
- Financial education component to the product.

These lists of requirements may serve as a good practice tool given the current environment of varied and fast-growing financial inclusion initiatives for children and youth worldwide (see companion report at the Child and Youth Finance International web site). The focus of these lists on access, security, facilitation, inclusion, and education appear to be applicable to financial services for people in all age groups, especially those who are socially and/or economically vulnerable.

There is growing demand (although some may be latent) among young people for a range of financial services (Hirschland, 2009). Children and youth, like adults, seek financial services that are secure, flexible, convenient, financially affordable, and both available and secure (Collins et al., 2009; Sherraden, forthcoming). Specific products and services that benefit children and youth may differ by stage of development, type of economic activity, financial knowledge, cultural preference, and other factors (Nagarajan, 2005). Regarding stage of development, for example, young children may benefit from a place to save to help their parents and for future school expenses, while older youth may prefer a place

⁵ <http://social.un.org/youthyear/>



to save for technology, entertainment, and clothing (Nagarajan, 2005). Out-of-school youth may require a place to save for small business and return to school, while young mothers may need a place to save for their children's basic needs (Sebstad, 2011).

Measures:

There are multiple ways to calculate financial inclusion. While studies often use only one dimension, it is preferable to measure multiple dimensions. Sarma (2008) incorporates several in a composite measure that includes (a) banking penetration (e.g., number of bank accounts as a proportion of the total population), (b) availability of banking services (e.g., ratios of financial institution outlets, ATMs, or bank employees per population), and (c) usage of the banking system, a dimension that attempts to assess not only the unbanked, but the "under-banked" (e.g., ratio of deposits and country GDP) (p. 8-9). Sarma suggests that while affordability and timeliness are also pertinent, data are more difficult to obtain (2008). By these various measures, little is known about levels of financial inclusion among children and youth.

3.1.3 Financial inclusion challenges

Scholars have also identified challenges to financial inclusion of children and youth, especially the most vulnerable (Hirschland, 2009; Hopkins, Porter, Perdomo & Munoz, 2012; Kempson, Atkinson, & Pilley, 2004). There are three areas of financial challenge, including challenges faced by youth, those faced by financial services, and those posed by the policy and country contexts.

Challenges facing youth. Many barriers facing youth are similar to those that face other underserved populations (Beck et al., 2009; Islam & Mamun, 2011). These include lack of identity and other key documents, residency requirements, poverty, cost of bank products and services (e.g., minimum balance and fees), inadequate and inappropriate products and services, lack of trust in financial institutions, isolation factors (e.g., social, geographic, economic, political), lack of education and financial knowledge and skills (Agarwal, 2007; Hirschland, 2009; Stein et al., 2010).

However, some barriers are especially pertinent for children and youth or have additional dimensions that affect youth more than adults. These include lack of parental financial inclusion, physical mobility, ability to act on their own behalf (e.g., babies), age (in many countries, the minimum legal age for signing contracts is 18 years), and regular income streams (Kalyanwala & Sebstad, 2006). There is a perceived credit risk of lending to young people and exclusion of youth from group credit arrangements by adults who believe that young people are not ready (Donahue, James-Wilson, & Stark, 2006).

Challenges facing financial institutions. According to CGAP, there are potential advantages for financial institutions to serve currently unbanked children and youth, including tapping a large and growing new market, cross-selling and revenue generated from the other financial services the customer uses now or in the future, customer loyalty, and an invigorated brand (McKee, 2010). Nonetheless, serving the unbanked is often costly and it takes longer for financial products to achieve financial sustainability, despite the growing use of less expensive technologies such as mobile phones and correspondent banking (Hirschland, 2009). As Lubwama and Rekogama explain:

"Due to the highly diverse, segmented nature of youth as a client group, many organizations provide multiple products aimed at young people at different life stages, which can drive up development, implementation, and evaluation costs" (2011, p. 8).

Therefore, financial inclusion initiatives require an institutionalization process that includes thoughtful planning, engagement, time, and evaluation (Lubwama & Rekogama, 2011).

The cost of providing financial services to children and youth, especially the most vulnerable, is comparatively high (FAO, 2002; Hirschland, 2009). Generally, young people are small depositors and borrowers, and banks have little potential for cross-selling in the near future, and assessment of young people's credit worthiness is costly. Further, if young customers live in rural and isolated areas, the cost of operation is higher because of lack of human resources and infrastructure. These costs often are passed on to customers through transaction fees and charges, which may further impede youth demand (Hirschland, 2009).

Hirschland (2009) points out that reaching vulnerable youth will likely require (a) bundling of services, and (b) some form of financial incentive to retain youth and encourage savings (p. 3). Moreover, staff must know how to work with youth (Nagarajan, 2005). However, Hirschland also points out that financial institutions may find ways to overcome high costs by developing low-cost delivery channels, keeping youth as long term clients or serving their family members, or they may account for high costs as fulfilling corporate social responsibility obligations (2009). Mobile phone technology may be the way forward to low cost delivery, especially for youth (Acción International, 2009).

Policy and country context challenges. The country context also may pose challenges. For example, political conflict and violence make it difficult to reach youth, and may require additional support including counseling, mentors, and longer engagement periods (Nagarajan, 2005). Many young people perceive formal savings mechanisms as unattractive because of complicated and restrictive rules and onerous documentation requirements (Ansong & Chowa,



2010; Deshpande, 2006; Okoye & Okpala, 2001). Age restrictions prevent younger youth from opening accounts in their own name without their parents' consent and involvement. Regulated financial institutions are obligated to strictly comply with the know-your-customer rules that require financial institutions to conduct client identity checks and verification (Orozco, 2006). Even though these requirements and procedures are meant to guard against abuse and fraud (Beck, et al. 2009), they often are obstacles to youth financial inclusion. As Dovi (2008) explains:

"Many banks . . . insist on considerable documentation to open an account. Banks in Cameroon, Sierra Leone, Uganda, and Zambia require at least four documents, including an identity card or passport, recommendation letter, wage slip and proof of address. In a continent where many people work in the informal sector and more than 60 per cent live in rural areas, gathering such documentation can be a challenge" (p. 13).

Given differential access to financial services and the high costs and lack of knowledge about how and what to provide, public policies are required to increase children and youth financial inclusion. Policies should sponsor policy experiments and research, and support financial institution innovations.

3.2 Research on Outcomes Associated with the Financial Inclusion of Children and Youth

Rainier Masa, David Ansong, and William Elliott

As financial institutions, nonprofits, and governments have initiated children and youth financial products and programs in many countries in Asia, Africa and Latin America, a key question is the potential impact on youth development. To assess impacts of financial inclusion, a study must have evidence that children and youth savers have different outcomes from those who are not savers. Only a few programs have been studied scientifically and rigorously, and these studies rarely focus on youth in developing countries.

Below, we review existing research on outcomes associated with financial inclusion of children and youth. Given that our focus in this section is financial inclusion, we review research here that has explicitly addressed access for children and youth to "quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients" (Gardeva & Rhyne, 2011, p. 6). For the purposes of this paper, financial inclusion means basic financial services for children and youth including, at a minimum, a safe place to keep money and accumulate savings (Hirschland, 2009; Nagarajan, 2005).

As reviewed below, outcomes associated with financial inclusion of

children and youth appear to fall into five broad areas:

- Economic and financial well-being
- Financial knowledge and skills
- Health and mental health
- Reproductive and sexual health and
- Academic and educational achievement.

Taken together, the studies reviewed here suggest initial evidence of positive economic, social, and health outcomes for youth. However, it is important to note that many savings programs included in this review were implemented as a "bundle" of services, making it difficult to identify specific elements that directly influenced the reported outcomes. Moreover, many of these studies are cross-sectional and non-representative, making causal inference and generalizability limited.

3.2.1 Economic and Financial Well-Being

This section addresses the available evidence on the potential impact of child and youth savings programs on income, savings, and assets (see Table 1). To our knowledge, there are no studies on the impact of children and youth savings on household net worth.

- 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). Although Tap and Reposition Youth (TRY) participants and non-participants – all girls – had comparable income levels at baseline, incomes increased significantly (by about 20%) for TRY participants at endline, compared to non-participants (Erulkar & Chong, 2005). Similarly, while household asset levels were similar across participants and non-participants at baseline, assets were considerably higher among TRY participants at endline compared to non-participants (Erulkar & Chong, 2005). TRY participants were significantly more likely to have at least seven or more household assets compared to non-participants. TRY participants were also more likely to have savings, and significantly higher savings, than non-participants. By endline, TRY girls had mean savings of USD 95, while non-participants had mean savings of USD 67 (Erulkar & Chong, 2005). TRY participants also were more likely to keep their savings in a safer place, compared to non-participants, who were more likely to keep their savings at home where it was at greater risk of being stolen or confiscated by parents, guardians, or husbands.
- In Kenya, a savings, financial and health education, and mentoring program, "Safe and Smart Savings Products for Vulnerable Adolescent Girls in Kenya and Uganda," finds that girls in the program were significantly more likely to have a long-term financial goal, correctly answer financial knowledge



questions, have been to a bank and used banking services, and be saving on a weekly basis than girls in a comparison group (Austrian, 2011).

- In Uganda, scholars find a positive association between participation in the SUUBI project and higher savings level. SUUBI is a word that means “hope” in the Luganda language that is widely spoken in Uganda. The SUUBI project provided children orphaned as a result of AIDS with workshops that focus on asset building and career planning; mentors to reinforce learning; and a Child Development Account. On average, youths in the experimental group save USD 6.33 per month, or USD 76 per year (Ssewamala & Ismayilova, 2009). After individual savings are matched 2:1, the participants accumulate, on average, USD 228 per year. Aside from a higher savings level, SUUBI participants experienced a positive shift in attitudes toward saving money, while non-participants experienced a negative shift in attitudes toward saving (Ssewamala & Ismayilova, 2009).
- In Mongolia, Women’s World Banking finds that even low-income girls (14-18) saved nearly USD 6 per month (Banthia & Shell, 2009).
- In contrast, another study in India finds that girls (13-25) interviewed about their savings accounts in Self-Employed Women’s Association (SEWA) (jointly held with parents or husbands) are able to save. However, they know little about their accounts, how they are used, and they lack decision making power over their savings (Kalyanwala & Sebstad, 2006).
- Finally, studies suggest savings in adolescence and young adulthood is linked to saving in adulthood in developed countries. A study in Great Britain suggests that saving at age 16 is linked to saving at age 34, and that socialization experiences, social status, and income help to shape future saving behavior (Ashby, Schoon, & Webley, 2011). In the United States, having a savings account during adolescence and parents who own assets are significant predictors of savings account ownership and saving in young adulthood (Friedline, Elliott, & Nam, 2011).

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.

3.2.2 Financial Knowledge and Skills

There are a few studies of the effects of child and youth financial inclusion on their level of financial knowledge and skills (see Table

1).

Scanlon and Adams (2009) use data drawn from in-depth interviews with 30 participants (ages 14 – 19) in the U.S.-based Saving for Education, Entrepreneurship, and Downpayment (SEED) initiative and find participants are more financially knowledgeable. The SEED initiative provided participants with financial literacy workshops and incentives for online training in addition to a youth savings account.

Sherraden, Johnson, Guo, and Elliott (2010) use data from the “I Can Save” (ICS) program, a financial education and matched savings account program for children ages 5 to 9. The children entered the program when they were in kindergarten or first grade. Children who participated in ICS (n=35) scored significantly higher on a financial literacy test taken in fourth grade than comparison group (n=18) and non-study students (children who entered the school in the three years after the start of the program; n=55). The study does not disaggregate the relative impact of the matched savings account compared to the financial education and support.

3.2.3 Health and Mental Health

This section reviews the available evidence on the impact of children and youth financial services on emotional and mental health, and reproductive and sexual health indicators. Regarding mental health, two studies suggest a positive relationship between youth savings and higher levels of self-esteem and participation in a social group. Another study suggests that having control over one’s savings is associated with greater decision-making and formation of specific savings goals. Notably, the studies demonstrate that vulnerable children and youth, such as orphans and poor young women, benefit emotionally from having savings.

- In Uganda, AIDS-orphaned adolescents offered a matched savings account as part of the SUUBI Project reported higher self-esteem than orphans who were not offered a savings account (Ssewamala, Han, & Neilands, 2009). Further, self-esteem was positively associated with self-rated health functioning status (Ssewamala et al., 2009), which was also associated with participation in the SUUBI program. The orphans with a matched savings account had more than twice the odds of rating their health as good or excellent than their counterparts without a savings account. Moreover, healthy youth were likely to have higher self-esteem than youth with poor or fair health functioning.
- Another program in Allahabad, India, that offered youth savings accounts, vocational training, and reproductive health services, found that girls aged 14 to 19 who were exposed to the intervention were significantly more likely to have knowledge of safe spaces (defined as places in the community where it is safe for unmarried adolescents girls to congregate),



to be members of a group, to score higher on indexes of social skills and self-esteem, to be informed about reproductive health, and to spend time on leisure activities (Mensch, Grant, Sebastian, Hewett, & Huntington, 2004). However, no effect was found on gender-role attitudes, mobility, self-esteem, and time use (number of hours visiting friends, performing domestic chores, or engaging in labor-market work).

- Evidence from Gujarat, India found that having control over one's savings is also associated with positive social behavior. Young women who were able to exercise control over their financial resources through their own savings accounts were more likely than those who did not have 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).

3.2.4 Reproductive and Sexual Health

This section reviews evidence on the impact of children and youth financial inclusion on reproductive and sexual health knowledge and behavior (Table 1). A literature review conducted by US AID suggests several factors that may reduce adolescent girls' vulnerability to HIV infection when they have access to microfinance (especially savings), that address poverty alleviation and empowerment and health coverage (US AID, 2008). Two prominent studies, one from Kenya and one from Uganda, suggest that there is a positive association between youth savings and improved reproductive and sexual health knowledge and behavior. An evaluation of a microcredit program for young women in South Africa indicates a negative association between financial inclusion and risky HIV-related behaviors. These findings have important implications for public health policy and programming for youth, particularly in Sub-Saharan Africa.

- In addition to positive economic benefits, adolescent girls in the TRY program demonstrated development of more empowered gender attitudes than non-TRY participants. At baseline, TRY girls' attitudes changed on three issues. They believed that wives should be able to refuse their husbands sex; that marriage is not the only option for an unschooled girl; and that having a husband is not necessary to be happy (Erulkar & Chong, 2005). Additionally, there was indication that some TRY girls had greater ability to refuse sex and insist on condom use, compared to their peers who had not participated in the program. For instance, TRY participants were over 1.7 times more likely to be able to refuse their partner sex and nearly three times more likely to be able to insist on condom use, compared to nonparticipants (Erulkar & Chong, 2005). Although the reproductive health knowledge of TRY participants generally increased, no statistically

significant changes in reproductive health knowledge were observed.

- Similarly, Austrian (2011) finds in Kenya that girls in a savings program were more likely to report they have somewhere to meet regularly with female friends, and be 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" than comparison group girls. They also were more likely to know that HIV can be transmitted through sexual intercourse and they know about at least one contraception method (Austrian, 2011).
- In Uganda, adolescent participants in the SEED/SUUBI project had improved their HIV prevention attitudes scores, whereas the non-participants experienced a decrease in their scores. The results imply that adolescents who took part in the intervention had a more positive opinion about using HIV prevention methods (Ssewamala, Alicea, Bannon, & Ismayilova, 2008). Findings from the SUUBI Project also revealed that participants who had a savings account experienced a beneficial impact on attitudes toward risky sexual behaviors. Approval rates of risky sexual behaviors remained the same or decreased for girls and boys who had a savings account, whereas approval rates of risky sexual behaviors increased among their peers who did not have a savings account (Ssewamala, Ismayilova, McKay, Sperber, Bannon, & Alicea, 2010). Among adolescents in the experimental group, the impact on approval of risky sexual behaviors was greater for boys than for girls, with the approval score for girls remaining unchanged and the rate for boys decreasing significantly (Ssewamala et al., 2010). Furthermore, when SUUBI researchers looked at the impact of the program on sexual risk-taking intentions, results show that adolescents who had a savings account reported a significant reduction in sexual risk-taking intentions compared with adolescents who did not have a savings account (Ssewamala, Han, Neilands, Ismayilova, & Sperber, 2010).
- In South Africa, young women aged 14-35 who participated in the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) program reported higher levels of HIV-related communication, were more likely to have accessed voluntary counseling and testing, and less likely to have had unprotected sex at last sexual intercourse, compared with non-participants (Pronyk, Kim, & Abramsky, et al., 2008). IMAGE was a group-based microcredit program combined with gender and HIV training curriculum. Qualitative evidence also suggests a greater acceptance of intra-household communication about HIV and sexuality (Pronyk, et al. 2008).



3.2.5 Academic and educational achievement

This section reviews available evidence on the potential impact of children and youth savings on education. Almost all of the available evidence concerns impact of savings accounts and savings on educational achievement in developed country contexts.

Table 1 discusses studies that examine the relationship between children and youth savings and academic achievement, especially performance on math test scores.

- The first study examines the effects that youth savings has on math scores of youth 12 to 18 (Elliott, 2009). Findings indicate that youth with savings designated for school have significantly higher math scores than their peers without designated savings. This study helps establish that there may be an association between having youth savings designated for school and math scores. Moreover, findings suggest that part of this relationship can be explained by the effects of youth savings on their college expectations. That is, part of how youth savings influences their math scores is through the relationship between school savings and college expectations.
- Another study also examines the effects that having a savings account has on youth's math scores (Elliott, Jung, & Friedline, 2010). This study builds on findings from the study described above by examining interactions between family wealth and youth savings designated for school to ascertain whether the effects of youth savings are explained by family wealth. Findings from this study reveal a rather complicated relationship between youth savings and family net worth. First, having youth savings is positively associated with math scores and family net worth. Moreover, the presence of savings is positively related to math scores for youth who live in low-wealth, middle-wealth, and high-wealth families. However, the effects of youth school savings on math scores are larger for youth living in middle-wealth families than those in low-wealth families, and the effects are larger for youth living in high-wealth families than they are for youth living in middle-wealth families. At least some of the effects that family net worth has on youth's math scores, therefore, may be explained independently by youth savings. Overall, findings seem to indicate that youth savings makes an important independent contribution to math scores that cannot be explained solely by family wealth.
- Examining of the relationship between youth savings designated for school and math scores is the topic of another study (Elliott, Jung, & Friedline, 2010). This study also finds that having savings designated for school is associated with youth's math scores. In contrast to Elliott, Jung, and Friedline

(2010), another study (Elliott, Jung, & Friedline, 2011) finds that the effect of having savings designated for school on youth's math scores does not vary according to level of family wealth. Given this, having savings designated for school may be a better policy solution than just having savings if increasing equity is a goal. This is because, in terms of math scores, low-wealth youth benefit from having savings designated for school as much as high-wealth youth do.

- Finally, another study examines the effects of savings on black and white youth's math and reading scores separately (Elliott, Kim, Jung, & Zhan, 2010). Youth's savings designated for school is significantly related to white youth's math scores but is not significantly related to their reading scores. Conversely, savings is not directly related to black youth's math scores but is directly related to their reading scores. In regards to youth preparation for college, an implication of this study is that youth savings designated for school may vary by race.

There is much less evidence on the impact of children and youth savings on other key education indicators (e.g. level of educational attainment and school attendance) and in developing country contexts. One exception is an experimental study conducted in Uganda that suggests a positive relationship between children and youth savings and higher grades, test scores, and improved attitudes about education (Ssewamala & Ismayilova, 2009).

- A study of the SUUBI project conducted by Ssewamala and Ismayilova (2009) in rural Uganda with 277 AIDS-orphaned youths (ages 11–17) from 15 comparable schools finds that, aside from having greater savings, orphans with a savings account reported better Primary Leaving Examination (PLE) scores than their peers who were not offered a savings account. Based on the PLE aggregates, SUUBI participants were more likely to have better school grades than their peers who had not participated in the program (Curley, Ssewamala, & Han, 2010; Ssewamala & Ismayilova, 2009).

Overall findings from studies on savings suggest that children and youth savings may be an important part of a strategy to help children and youth develop their academic abilities. However, more research is required, especially for children and youth in developing countries.

3.2.6 Educational attainment and expectations

Table 1 also includes findings from several studies that examine the relationship between and youth savings and its role in educational attainment. and shaping educational expectations.

- One U.S. study examines whether youth (ages 17-23) who have



already left high school are currently enrolled in or have already graduated from a two-year or four-year college or university (Elliott & Beverly, 2011a). Youth who are currently enrolled or who 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 of their own. Moreover, when factors such as race, family income, parent’s education, and youth’s academic achievement are controlled for, youth’s savings remains an important predictor of whether or not youth are on course or not. In fact, findings indicate that 17-23 year-old youth who have savings are approximately twice as likely to be on course as their peers without savings of their own. This finding implies that policies that promote large-scale youth savings programs might be important to keeping youth on course. Evidence from this study also indicates that youth’s savings is connected with having a more positive university-bound identity, which, in turn, shapes youth’s decisions about whether or not to remain on course. It may be that policies that promote youth’s savings may reduce fears that financial barriers will prevent them from staying on course.

- Examining differences between lower- and higher-income youth, another study conducted in the United States, examines effects of youth’s savings on youth’s university progress. Analyzing differences between low- to moderate-income (below USD 50,000) youth and high-income (USD 50,000 or above) youth, this study indicates that only 35% of low- to moderate-income (LMI) youth are on course compared to 72% of high-income (HI) youth (Elliott, Constance-Huggins, & Song, 2011). Regarding youth’s savings, 46% of LMI youth with school savings of their own are on course; conversely, only 24% of LMI youth without savings are on course. Further, when factors such as parents’ expectations and school involvement, family income, and youth’s academic achievement are controlled for, youth’s savings remains an important factor for explaining whether or not LMI youth are on course. Youth’s savings, however, is not an important factor for HI youth, suggesting that HI youth are confident in their parents’ ability to pay for university. Whereas it might be that LMI youth have everyday experiences with their families not being able to pay bills, buy a washer and dryer, or afford groceries, HI youth have everyday experiences where they see their parents paying their bills, providing them with the basic needs in life, and much more. An important implication of this finding is that it might be a better use of public funds to design youth’s savings policies that target LMI youth and not HI youth because they may benefit most from such policies.

- Another U.S. study examines whether there are differences in youth’s savings effects by race (Elliott & Nam, 2011).⁶ In particular, it examines whether or not black and white youth are on course. Among black students, only 37% are on course compared to 62% of white students.
- Controlling for similar factors as the previous two studies, findings suggest that both black and white youth who have savings are about twice as likely to be on course as their counterparts without savings of their own. This finding might be particularly important for black youth since, on average, they experience higher amounts of debt upon graduating from college. Twenty-seven percent of black youth who graduated from a four-year university in 2007-08 finished with \$30,500 or more of debt in comparison to 15% of white young adults (Baum & Steele, 2010). Further, there is evidence that large levels of debt are particularly harmful to college dropout rates among black students (Somers & Cofer, 2000). However, if they have savings, it would likely mean that they would carry less debt.
- U.S. students without savings accounts of their own are far more likely to experience “wilt” in another study (Elliott & Beverly, 2011b). In this study, “wilt” is used to describe youth who have not attended a four-year university by 2005 despite holding expectations in high school in 2002 that they would attend and graduate from a four-year university. Findings indicate that a staggering 55% of youth with no savings account of their own experience wilt, while 80% of youth who expect to graduate from a four-year college prior to leaving high school and have an account do not experience wilt. Moreover, youth who expect to graduate from a four-year college and have an account are about six times more likely to attend college than those who expect to graduate from a four-year college but do not have an account, controlling for a variety of factors including youth’s academic achievement. Moreover, when youth’s savings is added to the model, youth’s academic achievement is no longer statistically significant. An important implication of these findings is that desire and ability alone may not be enough for youth to attend college; having savings may also matter. In an earlier report to Congress, ACSFA (2001) draws a similar conclusion when they state, “Make no mistake, the pattern of educational decision making typical of low-income students today, which diminishes the likelihood of ever completing a bachelor’s degree, is not the result of free choice. Nor can it be blamed on academic

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 blacks than all blacks.



preparation” (p. 18).

- Another study examines whether youth’s savings lead to more positive expectations or whether more positive expectations lead to youth having savings (Elliott, Choi, Destin, & Kim, 2011). This is an important question related to the potential of CSAs and CDAs to have indirect effects. While this study could not establish a causal link between youth’s savings and their expectations for university, it does provide evidence that it is at least plausible that having youth’s savings leads to more positive college expectations among youth. However, the best interpretation of the results might be that two-way causation likely exists (i.e., youth’s savings leads to more positive college expectations and more college expectations leads to youth owning savings of their own).
- This study builds on Elliott and colleagues (2011) by asking whether a combined approach that promotes youth’s savings as well as positive university expectations is more effective than if either strategy is pursued on its own (Elliott, Chowa, & Loke, 2011). To test this, the study creates four groups: (1) had no school savings and were uncertain they would graduate from a four-year college prior to leaving high school; (2) had school savings and were uncertain they would graduate from a four-year university prior to leaving high school; (3) were certain they would graduate from a four-year university and had no school savings prior to leaving high school; and (4) had school savings and were certain they would graduate from a four-year university prior to leaving high school. Findings support the hypothesis that having savings is more effective when youth also expect to graduate from university. This suggests that youth’s savings programs that attempt to build positive university-bound identities might be more effective than those that only promote savings and asset accumulation.

There is less evidence in developing country contexts regarding the role of savings on educational attainment and educational expectations.

- Orphans in Uganda with a savings account were more likely to have future educational plans than their peers who had not participated (Curley, Ssewamala, & Han, 2010). Further results from the SUUBI Project reveal that orphans with a matched savings account experienced greater expectations and confidence in their educational plans than orphans without a savings account (Curley et al., 2010).

Overall, findings summarized here suggest that programs promoting youth’s savings are likely to have a positive effect on

youth’s progress toward post-secondary education.⁷ The evidence to date suggests that we might see these positive effects for low- and moderate-income children and youth more than for high-income children and youth. There appears to be a point at which household income is high enough that having savings makes no statistical difference for whether youth have graduated from college or are currently progressing toward graduation. This may be because, beyond a certain income threshold, it no longer makes sense for youth to doubt that their families will be able 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 effects of savings appear to be stronger when only youth who expect to graduate from a four-year college are considered. However, the fact that youth’s savings still has an independent effect on college attendance among youth who expect to graduate from a four-year college suggests that attitude may not be sufficient to explain differences in college attendance. There is also research support for the temporal ordering proposed by asset researchers; that is, children and youth savings lead to positive expectations. However, the best interpretation is that two-way causation likely exists—children and youth savings lead to more positive expectations, and more positive expectations lead to owning savings. Given these findings, it might be that children and youth savings accounts would be even more effective if they were combined with programs that attempt to build children and youth educational expectations.

3.2.7 Expectations for the Future

Several studies examine the relationship between children and youth savings and aspects of their future well-being.

- Scanlon and Adams (2009) use data drawn from in-depth interviews with 30 participants (ages 14 to 19) in the Saving for Education, Entrepreneurship, and Downpayment initiative (SEED) to examine this relationship. They find that students

⁷ Regarding student loans, there is little evidence for the effectiveness of loans on college enrollment or persistence. For example, Leslie and Brinkman (1988) note that persistence is enhanced by larger amounts of aid and that grant and scholarship aid tends to have a more positive impact on persistence than do loans. Research suggests that grants are more effective than loans at promoting persistence (Alon, 2007; Perna, 1998). Perna (1998) also reports that student financial aid in the form of grants has a positive effect on persistence, whereas loans, unless they are minimized or combined with other larger forms of aid, are less predictive of persistence. Along similar lines, Bresciani and Carson (2002) find evidence that students with large loans and little grant aid persist at lower rates than those with smaller loan burdens, no need, or unmet need. Unmet need is “the portion of college expense not covered by the expected family contribution and student aid, including work-study and loans” (ACCSFA, 2002, p. 5).



in the matched savings program are likely to report being more fiscally prudent, to have a more positive view of self, to be more future oriented, to have a stronger sense of security, and to be more financially knowledgeable. They find little evidence to suggest that being in a matched savings program improves youth's family interactions or community involvement.

- Ssewamala and Ismayilova (2009) find that orphaned adolescents with a matched savings account, compared with orphans without a matched savings account, reported a higher level of certainty that they will accomplish their future educational plans such as pursuing a college or university degree.

3.2.8 Summary and Conclusions

Initial findings from the field suggest that children and youth benefit from financial inclusion, especially 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 (income, savings), health (including reproductive and sexual health), mental health, academic achievement and 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 country contexts, is needed.

4. Theory and Research on Financial Education

4.1 Financial Education for Children and Youth

Mat Despard & Tahira Hira

4.1.1 Introduction

The OECD, in their Recommendation on Principles and Good Practices for Financial Education, argues that, in the modern globalized world, financial literacy is associated with quality of life and that, in the absence of financial education, individuals and households are more prone to indebtedness and bankruptcy (OECD, 2005). The World Savings Bank Institute (WSBI) is a strong advocate for children's financial education as a way to develop long-term bankable citizens, prevent social and economic exclusion, and allow children and youth to make more informed financial decisions. WSBI (2011) believes in child financial education, "not only to support their habit building, but also because children are key actors of change for their families." The

Child and Youth Finance movement places a high priority on improving financial literacy among young people as this is seen as an integral component of developing the next generation of responsible economic citizens.

As financial literacy is increasingly seen as an essential skill for one's social and economic well-being, tailoring financial education to children and youth grows in importance, and emerges as an important component in the transition from childhood to adulthood and the development of the next generation of economic citizens.

However, financial literacy still remains poorly defined and imperfectly measured (Holzmann, 2010). As an interdisciplinary field, professionals and scholars have grappled with competing theoretical frameworks for research and scholarship on financial education. Additionally, comprehensive and effective strategies for educating children and youth to be effective managers of money and successful navigators of a complex financial marketplace have not yet emerged (McCormick, 2009).

In this part of the paper, we discuss financial education delivery strategies and end with a summary of major trends in financial education for children and youth. Then we turn our attention to a review of studies that focus on outcomes associated with financial education for young people, identify the gaps in the research, and make recommendations for future research.

Turning first to delivery strategies, financial education can be delivered to youth in a variety of settings, using different delivery channels, targeting youth with certain characteristics and/or circumstances, and focusing on different outcomes. These efforts also vary based on different social, cultural, and economic contexts.

Classroom-based financial education is a common strategy in higher-income countries like the US (Council for Economic Education, 2009). For example, NEFE notes that over eight million U.S. high school students have received instruction using the High School Financial Planning Program® (HFSPP) since 1984 (National Endowment for Financial Education, 2007). Because public education in higher income countries is universal – available to all children and youth - school-based delivery is a very efficient means of offering financial education (McCormick, 2009). Universal strategies are also being pursued in lower- and middle-income countries including Estonia, Brazil, Ghana, and Indonesia, and the Aflatoun curriculum is being adapted and used in schools in several middle- and lower-income countries (Aflatoun, 2010).

Financial education is also offered outside of classrooms in the U.S. For example, the Charles Schwab Foundation and Boys and Girls Clubs of America began offering the Money Matters financial literacy program in clubs starting in 2003. In middle- and lower-income countries, financial education is offered through youth



serving organizations (YSOs), which also address the health, livelihoods, and empowerment needs of youth and reach out-of-school youth. For example, the Binti Pamoja center integrates financial education with other programs and services that focus on reproductive and women's rights for 11-18 year old girls in Kibera, a large slum area in Nairobi Kenya.⁸

Youth financial education generally incorporates the following principles:

- use of age-appropriate content;
- hands-on, experiential learning exercises;
- practical skills building;
- relevant topics for youth;
- goal setting;
- encouraging saving; and
- opportunities for youth to apply what they have learned

(Friedman, 2005).

McCormick (2009) suggests that financial education programs be relevant to the needs and circumstances of children and youth, address motivational factors, begin in early grades, ensure that instructors are trained and well prepared to deliver content, and incorporate use of savings tools to make education relevant.

Financial education should also be relevant to the social, economic, and cultural context of youth. In U.S. urban settings, Lucey and Giannangelo (2006) recommend student-centered instruction using interactive communication and discovery that includes strong character and values components and the participation of parents, family, and the community. Lucey (2007) further contends that youth financial education is not relevant to youth from all socioeconomic groups. He argues for a moral framework of financial education that puts instruction within a context of economic justice.

These principles are enacted in an increasingly wide variety of ways beyond classroom instruction, such as radio and television programs, hands-on budgeting exercises using picture cards, theatre and dance productions, and comic strips (MasterCard Foundation, Microfinance Opportunities, & Genesis Analytics, 2011). Other youth educational mechanisms include financial education websites and online games, contests, and text messaging. The Jump Start Coalition for Personal Financial Literacy hosts an online clearinghouse of hundreds of multi-media educational materials, including DVDs, online games, and mobile phone applications (The JumpStart Coalition for Personal Financial Literacy, 2011).

⁸ See http://siteresources.worldbank.org/INTGENDER/Resources/336003-1280176218337/3_KarenAustrian_AGFE_Savings.pdf

Many of these efforts to reach youth can be characterized as "Edutainment" – fun ways for children and youth to learn about money. For example, "It's a Habit!" is a group of "edutainment" products and services including workbooks, music, articles, newsletters, live appearances, and contests built around a central character – Sammy Rabbit – who teaches kids about saving.⁹

Financial education efforts vary based on intensity and duration. For example, the distribution of comic books or radio broadcasts represent low intensity social marketing efforts with no direct practitioner-to-youth contact, and hence, require fewer financial resources. Conversely, delivery of a 20-hour classroom-based financial education curriculum with experiential learning exercises like trips to banks represent higher intensity efforts with direct practitioner-to-youth contact requiring greater financial resources.

The advantages of lower intensity efforts include the potential for greater scale to reach larger numbers of children and youth and the standardization of content delivery, such as a common print or broadcast medium. Disadvantages include inability to reach certain groups, such as out-of-school and rural youth, shallower learning, and lack of opportunity to learn through social interactions.

The advantages of higher intensity efforts include the ability to deepen learning through repetition, trial and error, expert guidance, social interactions, and exposure to more information. Disadvantages include higher costs, inconsistent quality of instruction and guidance, and reaching only youth with pre-existing motivation who are willing to devote considerable time and effort to specialized learning.

Thinking about financial education in terms of intensity, duration, and required resources, allows funders, researchers, and policy makers to consider and assess the cost-benefit ratios of various strategies. For instance, if an outcome objective is to increase the frequency and amount of youth savings deposits, can an acceptable level of this outcome be achieved through a less intensive and less expensive strategy?

To summarize, three overall trends characterize current global youth financial education efforts:

1. Financial education linked with financial services. The U.S. Savings for Education, Entrepreneurship and Downpayment (SEED) demonstration combined financial education with access to child development accounts (Scanlon & Adams, 2009). Financial institutions are increasingly engaged in financial education as a form of marketing youth-oriented products and encouraging

⁹ <http://www.itsahabit.com/>



youth to save money. For example, the “I Can Save” project in the US combines classroom-based financial education with trips to the bank to make savings deposits and savings clubs for elementary school students (Sherraden, Johnson, Guo, & Elliott, 2010).

XacBank’s financial education programs for children and youth in Mongolia include bank tours and are linked to youth savings accounts. Hatton National Bank in Sri Lanka has been offering financial education to in-school and out-of-school youth since the 1990s in addition to offering youth savings accounts and in-school banking. (Dias & Siisel, 2011). Plan Kenya and Child Savings Kenya are helping children ages 8 to 12 open accounts with Postbank in western Kenya while implementing the Aflatoun financial education curriculum. Linking financial education with financial services is seen as advantageous because it allows youth to put what they have learned into immediate action and build financial assets, reflecting Sherraden’s (forthcoming) definition of financial capability.

2. A wide variety of interactive delivery mechanisms. As noted above, practitioners are employing a wide range of methods to build youth’s financial knowledge and skills. In general, there appears to be consensus that youth are more likely to learn if they receive content delivered using multiple forms of media and have opportunities to practice what they have learned. Employing a diverse array of delivery mechanisms allows us to assess the relative costs and benefits of different strategies.

3. Integration with youth development strategies. An increasingly common strategy is to offer financial education in conjunction with livelihoods, microenterprise, life skills, gender empowerment, HIV/STD prevention, and other youth development services. Catholic Relief Services in partnership with Caritas Rwanda integrates Savings and Internal Lending Community (SILC) groups with livelihoods training for Orphaned and Vulnerable Children (OVC). Project activities include basic financial education and have reached 6,200 OVC participants.¹⁰ The YouthInvest project operated by Mennonite Economic Development Associates (MEDA) integrates financial inclusion, financial education, and livelihoods training for youth in Egypt and Morocco.¹¹ Other examples include the Boys and Girls Clubs in the US, the Binti Pamoja Center in Nairobi, Kenya, BRAC and the Underprivileged Children’s Education Program in Bangladesh, and the Straight Talk Foundation in Uganda.

¹⁰ http://www.crsprogramquality.org/storage/pubs/microfinance/MF%20Rwanda%20Case%20Study_for_web.pdf and <http://www.mastercardfdn.org/pdfs/YouthSavingsMay2010Web.pdf>

¹¹ <http://www.meda.org/web/images/stories/YouthInvest.pdf>

4.2 Research on Outcomes Associated with Financial Education for Children and Youth

Mat Despard

A total of 21 studies were reviewed for this section of the paper. Only studies that tested the effects of financial education only among children, youth, and college age young adults were included in the review. Generally speaking, the studies provide limited and mixed evidence of the positive benefits of financial education only for children and youth.

Studies reporting evidence of the benefits of financial education (e.g. Danes, Huddleston-Casas, & Boyce, 1999; Danes, 2004; García Bohórquez, 2012; Varcoe, Martin, Devitto, & Go, 2005; Walstad, Rebeck, & MacDonald, 2010) mostly used non-experimental (i.e. no control or comparison group) research designs and/or measured short-term gains in financial knowledge and attitudes and self-reported financial behaviors. For example, Walstad, Rebeck, and MacDonald (2010) found that U.S. high school students who received Financing Your Future (FYF) video instruction and lesson materials experienced statistically significant and consistent increases in financial knowledge across several domains or topics including money management, financial decision making, earning and income, saving and investing, credit scores, and use of financial services. These differences were found while controlling for student demographic differences such as gender and employment history, type of course, and teacher characteristics. While the findings of this study are generally encouraging, they point only to short-term benefits. From studies like this, we do not know whether benefits “stick” with youth into young adulthood. Bernheim, Garrett, and Maki (2001), found that middle-age adults who received state-mandated financial education when they were in high school had self-reported higher savings than those who received their education in states that did not mandate financial education, suggesting the “stickiness” of financial education. However, Cole and Shastry (2009) replicated this study using 2000 U.S. Census data and a much larger sample and found that state mandates were not associated with saving and investing market participation.

Studies that produced mixed (e.g. Amin et al., 2010; Bell, Gorin, & Hogarth, 2009; Gray & Chanini, 2010; Tennyson & Nguyen, 2001) or weak (e.g. Cole & Shastry, 2009; Peng, Bartholomae, Fox, & Cravener, 2007; Mandell & Klein, 2009) evidence concerning the benefits of financial education generally used more rigorous research methods than studies that found consistent benefits. For example, Gray and Chanini (2010) was the only study reviewed that used an experimental (randomized control trial) design,



finding weak evidence for the impact of financial education among adolescent girls in rural India.

Some studies point to differences in outcomes based on motivation. For example, analyzing Jump\$start financial literacy survey data, Mandell and Klein (2007) found no differences in survey scores between U.S. high school seniors who took and did not take a personal finance-related course. However, students with future-oriented goals like attending college had higher financial literacy scores than those without such goals. Similarly, Fox and Bartholomae (1999) found that family financial management majors at a Midwestern university in the U.S. performed better in an undergraduate financial management course than non-majors.

Evidence from the 21 studies reviewed for this paper suggests that financial education may carry short-term benefits for children and youth, yet the methods used to assess outcomes and the types of interventions (taking a full semester course vs. receiving financial literacy training) vary a great deal in these studies. In addition, the following limitations of these studies should be noted:

- Only 5 out of 20 studies were conducted outside of the US;
- Only 7 out of 20 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;
- Most studies assessed the effects of financial education for adolescents; little evidence is available concerning effects for children and pre-adolescents.

The results of these studies of financial education outcomes for children and youth are mixed and inconclusive, mirroring other reviews for both adults (Bell & Lerman, 2005; Caskey, 2006; Collins & O'Rourke, 2010; Fox, Bartholomae, & Lee, 2005; Gale & Levine, 2010; Hathaway & Khatiwada, 2008) and children and youth (Fox, Bartholomae, & Lee, 2005; McCormick, 2009). These reviews indicate that financial education is generally associated with short-term knowledge gains and self-reported behavior changes, yet evidence concerning long-term behavior changes and financial outcomes is lacking.

Innovation in the field – marked by experimentation with many different ways of improving children and youth's financial knowledge and skills – is quickly outpacing research. There is

considerable excitement, energy, and creativity in this field, yet there is an insufficient body of evidence to suggest that financial education helps youth make smooth transitions into adulthood by making sound financial decisions. In particular, we know little about what works and for whom. Are “low touch” financial education efforts as good as “high touch” ones in promoting saving among children and youth? Do youth from rural areas or lower-income households benefit from financial education?

While the rationale for offering financial education to children and youth is sound, 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 conducted on the effectiveness of financial education for children and youth include the lack of randomized assignment and multivariate analyses, selection bias, and use of mostly U.S.-based samples. Additional research with greater rigor that tests the effects of well specified financial education programs across more diverse samples of children and youth is needed.

5. Summary, Implications, and Recommendations

Mat Despard, Deborah Adams, and the White Paper Committee

This paper has provided a review of research on three key constructs in CYFI's model of economic citizenship for children and youth: (1) financial capability (2) financial inclusion and (3) financial education. While related, these terms are increasingly used in specific and distinct ways in both programs and research. We began the paper by providing definitions of these three terms. Now, as we summarize what we have learned, our findings suggest that enhancing the financial capabilities of children and youth will likely require financial inclusion along with financial education

In other words, we believe that the literature to date suggests that educational materials and programs designed to increase financial knowledge and skills along with access to appropriate financial products and services may be required if we want children and youth to be financially capable. In coming to this conclusion, we also had the opportunity to draw implications for CYFI's model of economic citizenship.

5.1 Implications for Conceptual Model of Economic Citizenship

First, as described in the introduction, CYFI's model of economic citizenship for children and youth includes an understanding of one's rights of and responsibilities to self, family, and others. A focus on rights of and responsibilities to self, family, and others



is integrated into some, but not all, social education approaches (Lucey, 2007; Lucey & Giannangelo, 2006). It soon became clear to us that the term social education, which scholars generally use to refer to citizenship education of one type or another, has been used in a different way within the Child and Youth Finance movement. Further, we found that social education has not been included in studies of financial inclusion or financial education.

Social education, then, was beyond the scope of this paper and requires additional scholarly attention in the future. While completing our review of the literature, we did make the following recommendations for future efforts to assess the role of social education in economic citizenship for children and youth. In essence, 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 future work in this area include clearly defining, conceptualizing, and articulating what is meant by social education within the Child and Youth Finance movement, detailing the rights and responsibilities component of economic citizenship, and concentrating research efforts on learning if and how social education furthers economic citizenship for children and youth.

We think it is possible that including a rights and responsibilities focus in financial education may be advantageous in the work to facilitate full economic citizenship for children and youth. For this reason, we suggest that consideration be given to placing social education in an overlapping position with financial education in an economic citizenship model that may guide future research efforts as pictured in Figure 2.

We also suggest that future research begin with the understanding that empowerment is one part of the broader construct of financial capability, as discussed in the introduction and financial capability sections of this paper. We have visually placed empowerment with financial capability in Figure 2.

The studies we have reviewed in this paper, then, provide some guidance for a model for economic citizenship for children and youth. Taken as a whole, although these studies do not disaggregate the relative importance of financial education and financial services, they do suggest that both are important. If both are important – perhaps for different reasons – this underscores the potential benefit of integrating the two more closely, as has been attempted in innovations, such as experiments for matched savings and other incentive-based savings schemes, commitment accounts, and text message reminders and financial education.

However, there is a dearth of evidence concerning the interaction of financial education and financial services for children and youth,

especially in developing countries. Future applied research should focus on understanding the discrete and summative contributions of financial education and financial services in this population, including diverse groups of financially vulnerable children and youth (e.g., age, gender, and cultural backgrounds). Using research on financial inclusion research to illustrate this point, resources are urgently needed to narrow the gap between scholarship done in the US and other industrialized countries on assets for children and youth (see, for example, Adams et al., 2010, and Shanks et al., 2010) and scholarship on similar topics in the developing world.

Research should also explore if effectiveness differs by type of financial education (e.g., text message information, classes, counseling) and across variations in financial products and services (e.g., 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 and a matched savings account.

5.2 Future Research on Livelihoods

An additional implication regarding the need for future research on livelihoods emerged as we reviewed research on financial capability, financial inclusion, and financial education for this paper. As discussed in the introduction, CYFI’s model lists several elements of economic citizenship including sustainable livelihoods. According to the CYFI Core Content Framework (CYFI, 2012), “social/livelihood education” should help children develop cognitive, personal and interpersonal skills, prepare them for the job market, and engage their entrepreneurial spirits.

This rather broad goal again appears to parallel the UNICEF definition of “livelihood skills,” which is “capabilities, resources and opportunities to pursue individual and household economic goals. Livelihood skills relate to income generation and may include technical/vocational skills (carpentry, sewing, computer programming), job seeking skills such as interviewing, business management skills, entrepreneurial skills, and skills to manage money” (UNICEF, 2011).

Similarly, recent CYFI discussions regarding “sustainable livelihoods” have included a variety of terms such as entrepreneurship strategies; income generating activities; business plan development; management and business skills; technical/vocational skills; and opportunities for apprenticeships and on-the-job training.

Sustainable livelihoods as a necessary component of economic citizenship is clearly deserving of a full-fledged effort to gather and review the empirical literature on educational initiatives to



help children and youth earn enough money to not only survive, but also thrive. While it was beyond the scope of our work on this paper, we believe that a similar effort by academics with expertise in this area should be undertaken as soon as possible to review and synthesize what is known from the research to date on sustainable livelihoods. We also suggest that an important first step would be to clearly define and detail the meaning of the term sustainable livelihoods for the purposes of both economic citizenship programs and research in the future.

5.3 Summary of Research Challenges and Recommendations

Future research on constructs in the economic citizenship model needs to avoid common challenges of the past such as the lack of well-designed and rigorous evaluations that have plagued financial education studies to date (Fox, Bartholomae, & Lee, 2005). Wide variation in research methods, target outcomes, and analytical methods, lack of a common set of reliable measures that can be validated across settings, and lack of longitudinal designs to assess outcomes over time are key research gaps (Schuchardt, Hanna, Hira, Lyons, Palmer, & Xiao, 2009).

Research to determine the effectiveness of financial education and financial inclusion for children and youth share a similar set of challenges. For example, following a conference on improving evaluation efforts in youth financial education, Choi, Reid, Staten, and Todd (2010) summarized the following key research challenges in this field:

Lack of:

- the use of theory to test interventions;
- a core set of target outcomes and measures; and
- longitudinal observations to assess outcomes over time.

Inability to:

- generalize findings to broader populations of children and youth; and
- understand how teacher effectiveness, content, and depth of exposure affect outcomes.

A need to:

- understand whether financial education benefits lower-income and/or minority children and youth;
- evaluate delivery mechanisms other than classroom-based financial education; and
- understand how financial products may mediate the relationship between financial knowledge and behavior.

McCormick (2009) echoes some of these same concerns and adds that the lack of studies that use control groups hinder efforts to

make claims concerning the effectiveness of financial education for children and youth. The same could be said about studies on financial inclusion.

To increase the rigor of financial education and financial inclusion research, a number of methodological challenges need to be addressed, including problems with intervention specification, measurement, research design, and analysis. Each of these methodological themes and accompanying brief recommendations are discussed below.

5.4 Intervention Specification

Several impact studies of financial education for children and youth fail to fully explain educational content and delivery mechanisms. Similarly, studies of financial inclusion sometimes need to better describe the products, programs, and policies that provide access to financial services and opportunities for children and youth to practice using those services.

Examples from the financial education literature include studies that describe financial education topics and features of curricula, but not ways in which the content is delivered, and/or whether instructors consistently deliver the content. Also, financial education programs tend not to explain why instructional content and methods are expected to result in knowledge gains and/or behavioral changes. This lack of specification makes it difficult to determine whether certain delivery mechanisms are more or less effective than others with different populations (Schuchardt et al., 2009).

Additional examples from research on financial inclusion point to the need in future studies to specify the interventions that are thought to increase the access to appropriate financial services, and how they are posited to operate in the lives of children and youth.

5.4.1 Research Recommendation

1. Develop or use financial education and financial inclusion interventions that are tightly conceptualized, well-articulated, and tested for efficacy in prior research whenever possible. In addition, education and inclusion interventions must:

- Be well aligned with the needs, circumstances, and desires of the target group of children and/or youth.
- Specify the content or product, along with the delivery mechanisms of the intervention, and give clear guidelines and indicators concerning how content and/or products are to be offered and delivered, including training requirements for implementers.



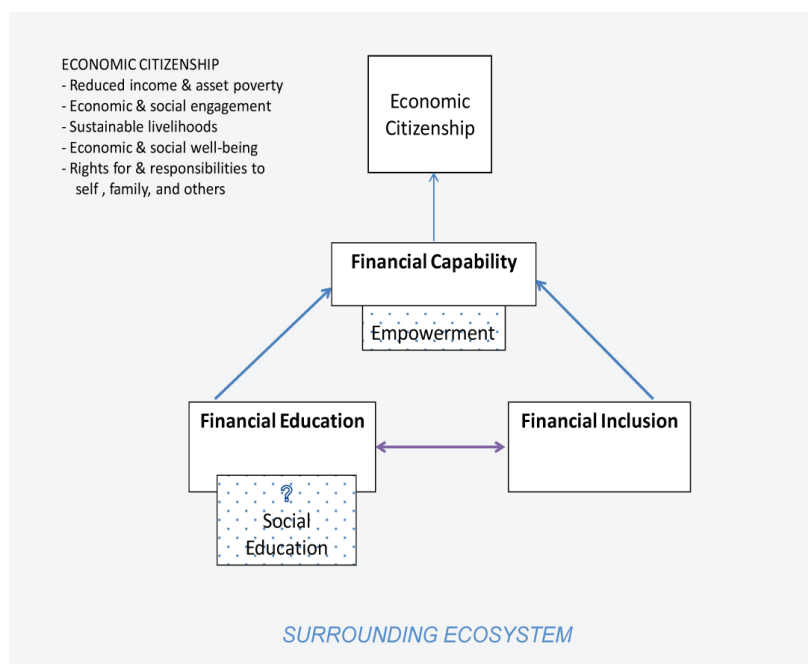


Figure 2. Model of Economic Citizenship for Consideration as a Guide to Future Research (White Paper Committee, CYFI Research Working Group, February 9-10, 2012)

- Be based on a theory of change – a set of ideas and assumptions about how the intervention will result in desired outcomes – that is supported by theory and/or evidence. This should include clearly identified target outcomes and an identification of factors that may facilitate (trips to the bank) or hinder (food insecurity) intended increases in the well-being of children and youth.

5.5 Measurement

Knowledge, attitudinal, and behavioral indicators are not consistently measured in financial education and financial inclusion program evaluations (Choi & Reid, 2010; McCormick, 2009; Schuchardt et al., 2009). A lack of standardized instruments to measure: (1) access to and opportunities to use financial services and (2) youth financial knowledge, attitudes, and behaviors makes it difficult to draw meaningful comparisons of findings from studies in the field.

For example, most financial education studies reviewed fail to report results of factor analyses and/or internal consistency of scales. Exceptions include Varcoe, Martin, Devitto, and Go (2005) who report reliabilities of $\alpha=.70$ to $.81$ for their Financial Behavior Scales, $\alpha=.86$ for Financial Fitness for Life (FFFL) tests (Walstad & Rebeck, 2005) and $\alpha=.85$ for the Financing Your Future (FYF) survey (Walstad, Rebeck, & MacDonald, 2010). Lucey (2005) assessed the Jump\$tart financial literacy surveys, finding moderately high internal consistency for both the 1997 and 2000 surveys, yet low to moderate consistencies for subscales. The author also found limited evidence for construct, congruent, and predictive validity

and the presence of social bias, with survey content being more relevant to students with higher socioeconomic status.

In addition, the authors are aware of no financial education or financial inclusion studies that used cognitive interviewing to determine the developmental validity of measures (Woolley, Bowen, & Bowen, 2004). In cognitive interviewing, respondents are asked to read an item or a question and state what they think the question is asking in order to assess comprehension. Respondents are also asked to explain why they gave a certain response to the item or question to assess retrieval (de Leeuw, Borgers, & Smits, 2004). This method may be particularly important to ensure that children and youth understand financial constructs tools, products, as well as other program and policy components, and in the way we expect them to.

In addition to measuring outcomes, future studies should take care to observe fidelity and dosage to determine whether financial education and financial inclusion interventions were implemented as intended and the “amount of” such interventions that children and youth received, respectively.

5.5.1 Research Recommendations

2. Develop core measures of financial access and services as well as financial knowledge, attitudes, and behaviors that can be validated across different settings and with different children and youth using confirmatory factor analysis methods, starting with the use of cognitive interviews. In the least, test for the internal consistency



of scales and subscales using methods like Cronbach's alpha.

3. Try to use direct measures of behavior, such as savings deposits or the observed ability of youth to count money, engage in real or simulated financial transactions, write a simple budget, etc.
4. Develop supplementary measures aligned with intended outcomes that fit particular social, economic, and cultural contexts and relate to individual, family, and community financial and material well-being.

5. Do not depend solely on quantitative measures but use qualitative methods like semi-structured interviews and discussion groups to help understand the complexity of financial inclusion and financial education among children and youth.

6. Record observations of significant events that occur during the intervention period that may affect and help explain outcomes for the treatment and/or control/comparison groups, e.g. one or both groups is exposed to a new financial literacy marketing campaign of a bank during the course of a study.

7. Observe intervention activities to record the extent to which they are implemented in accordance with the original plan for the intervention. In financial education interventions, have program staff members or instructors complete forms that indicate what was implemented (or not) for each session or event. In financial inclusion studies, work with program staff members to clearly record any changes in the products, programs, or policies that were originally designed to increase access to and use of appropriate financial services.

8. Record the participation of each child and youth, such as the number of group sessions attended, hours of financial education received, number of trips to the financial institution holding the accounts, take-up of new financial products by children, youth, and family members, etc.

5.6 Research Design

Three key problems in financial inclusion and financial education research design limit the ability of researchers to make causal inferences, i.e. to state with confidence that the financial inclusion and/or financial education efforts and not some other factor(s) explain observed outcomes:

- Lack of random assignment. To date, no results from a randomized control trial concerning the effectiveness of financial inclusion or financial education for children and youth have been published. Only a few of the studies reviewed in this paper used quasi-experimental designs with comparison groups to estimate a counterfactual condition—what happens if youth do not receive the financial

inclusion and/or the financial education intervention? Most studies use single group, non-experimental designs to speak to program outcomes. Even if such studies use pre/post (“before and after”) measures, history (things that happen outside of financial education that might affect outcomes) and maturation (children and youth’s natural growth in intelligence and ability) effects may, in part, explain outcomes.

- Lack of longitudinal designs. Most studies examine short-term outcomes and do not conduct follow-up measures several months or a few years later to determine whether the benefits of financial inclusion and/or financial education have “stuck” with youth.
- Self-selection. Some studies assess outcomes for children and youth who choose to participate in financial inclusion and/or financial education interventions. Self-selection into treatment and control groups creates selection bias, making it difficult to disentangle the treatment effects of financial inclusion and financial education from other, unobserved factors such as motivation.
- Lack of cluster designs. Children and youth often interact in clusters, such as at schools. If students from both the treatment and control or comparison groups attend the same school, it is possible that students from the control or comparison group will receive some indirect exposure to financial inclusion and/or financial education from students from the treatment group.

5.6.1 Research Recommendations

9. Increase the use of experimental designs with randomized assignment into treatment and control groups.

10. Consider quasi-experimental designs and methods using comparison groups, regression discontinuity, regression point displacement, switching replications, or waitlist control groups when randomization is infeasible or unethical.

11. Consider use of multiple treatment arms to assess relative effects of delivery mechanisms, e.g. classroom financial education only and classroom financial education plus computer simulations; savings accounts for children and youth and savings accounts for children and youth in which deposits are matched.

12. Control for selection bias by comprising comparison groups with similar demographic and community characteristics as the treatment group and match groups based on self-selection (i.e. interest in participation in financial inclusion and/or financial education interventions) to help control for unobserved differences like motivation.



13. When feasible, conduct follow-up assessments several months or a few years after the intervention to test longer-term benefits, but only for hypothesized effects—changes from the intervention that you reasonably expect to be sustained.

14. Avoid using treatment and comparison or control groups from the same clusters, such as schools, to reduce the likelihood of contamination, which may bias results.

5.7 Analytical Methods

Studies of financial inclusion and financial education are beginning to use more advanced statistical methods to assess treatment effects. In addition to the lack of control or comparison groups, earlier studies failed to use methods like multiple regression to hold explanatory factors like gender, work experience, and household income constant when assessing the effects of the financial inclusion and/or financial education intervention. Still, there continue to be some analytical shortcomings of research in this field:

- Studies tend to analyze average treatment effects (ATE), such as mean differences in knowledge between treatment and control or comparison groups. While ATE is helpful to discern overall treatment effects, findings using ATE may mask effects based on dosage (youth who received 6 versus 12 hours of financial education; children who receive two bank accounts or products for different uses versus a single financial product) and subgroup differences (outcomes for girls may be different than for boys).
- Studies tend to separately analyze pre-post differences for treatment and control or comparison groups. This approach fails to capture the real degree of difference in outcomes between the two groups. Using a financial education example, if a treatment group had average pre/post financial literacy scores of 20 and 32, while the control or comparison group had scores of 18 and 23, studies tend to highlight whether the pre/post change was statistically significant for each group or assess just the post-test differences between the two groups.
- To control for history and maturation effects in the absence of randomized assignment (i.e. when using a comparison group), it is better to use a difference-in-differences approach. Using the example above, the average treatment group increase in financial knowledge was 12 units while the average control/comparison group increase was 5 units, so the actual difference between the groups—which would indicate the effectiveness of the treatment controlling for other factors—was 7 units (versus looking only at the treatment group increase of 12 units or the post-test difference of 11 units between the two groups).
- Studies that use comparison groups with quasi-experimental designs may use covariance control with multiple regression, yet fail to use additional methods to adjust for selection bias. If the treatment and comparison group samples have statistically significant differences that may affect outcomes (gender, household income, prior exposure to financial services and/or financial education, work history, etc.), a propensity score analytical method should be considered to adjust for selection effects.
- Studies do not appear to use adjustments for cluster effects. Because children and youth often interact in clusters such as schools, observations cannot be assumed to be independent because children and youth interact and may influence one another. Thus, a statistical adjustment may be warranted.

5.7.1 Research Recommendations

15. Use subset efficacy analyses to assess outcomes based on varying levels of financial services and financial education and subgroup differences in outcomes.
16. Use a difference-in-differences approach to determine the difference between pre-post, within-subjects differences of the treatment and control groups.
17. Use a propensity score method (e.g. propensity score matching, propensity score weighting, matching estimators) to adjust for selection bias when the treatment and comparison groups are not statistically balanced.
18. Consider the use of robust estimators for standard errors in regression analyses when there is intraclass correlation (i.e. outcome scores for youth in the same cluster such as a school or a classroom are correlated).

5.8 Conclusion

In sum, the review of theoretical and empirical literature presented in this paper points to a number of directions for future research on economic citizenship, financial capability, financial inclusion, and financial education among children and youth. In addition to the implications for modeling economic citizenship discussed above, some key findings that emerge from this review are:

- Work in the field is proceeding at a much more rapid pace than research on financial capability, financial inclusion, and financial education among children and youth. Descriptions of financial inclusion products, programs, and policies, along with examples of financial education programs and approaches, are contained in a companion report that can be



found at the Child and Youth Finance International web site.

- Overall, the theoretical and empirical work to date suggests that financial inclusion, in addition to financial education, will likely be necessary to build the financial capability of children and youth.
- There is an especially compelling and immediate need for more rigorous research designs that can help disentangle the effects of “bundles” of financial inclusion and financial educational interventions. Fortunately, some research projects are now underway, as described in the financial capability section of this paper, to help us begin to assess comparative contributions to the financial and economic well-being of children and youth.
- One particular suggested component of economic citizenship that requires a research effort similar to the one taken in producing this paper is sustainable livelihoods. Beyond the scope of this paper, a review of the research on livelihoods education will require the gathering and commissioning of a group of scholars with expertise in training and education for jobs, entrepreneurship, trades, and careers for children and youth as prepare for and reach adulthood.
- As the research on economic citizenship of children and youth grows, we are hopeful studies in languages other than English will become more available and accessible. One limitation of this review of the research on financial capability, financial inclusion, and financial education is that the studies we included are limited to those written in English. Further, while we included key studies worldwide, our coverage of studies from English-speaking countries is better. In future research on economic citizenship of children and youth, we believe that research in various parts of the world needs to be funded and that resources should be routinely available for translation of key studies.

In closing, future research on economic citizenship for children and youth will be greatly enhanced if the theoretical and empirical literatures we review in this paper, and the recommendations we make in this section, are carefully considered in the earliest stages of planning interventions and research.



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Table 1: Outcomes Associated with Financial Inclusion of Children and Youth

Citation	Country	Intervention & Delivery Mechanisms	Sample & Methods	Key Findings	Program and Policy Implications	Key Limitation(s)
1. Elliot & Beverly (2010b)	USA	Owning an account designated for education (youth school savings)	White and Black youth in the US with a high school diploma or a General Equivalency Diploma (GED) aged 15 or older in 2002 (N=453). College attendance is measured in 2005, when youth were 19 to 22 years old.	Youth account ownership and savings predict college attendance while parent savings and net worth do not. Account ownership has a larger effect on college attendance than school savings.	Policies that aim to increase youth account ownership and savings may play an important role in increasing college attendance.	Sample is limited to White and Black youth in the US.
2. Elliot, Choi, Destin & Kim (2011)	USA	Children's savings	Data for this research come from the Panel Study of Income Dynamics (PSID) and its supplements. The sample is restricted to 453 Black and White youth and to children who have graduated high school.	The study finds evidence of a reciprocal relationship between children's savings and college-bound identity. Savings in 2002 had a positive significant association with college-bound identity in 2007. Further, college-bound identity in 2002 had a positive significant relationship with savings in 2007.	The potential for multiple positive effects may make policies that seek to build assets among children particularly promising. Asset-building policies that seek to build both children's savings and college-bound identity may be most effective at increasing the number of students with positive college outcomes.	Sample is limited to White and Black youth in the US who are high school graduates.
3. Elliot, Jung, Friedline (2010)	USA	Children's saving accounts	This study uses 2002 data from the PSID and its supplement. The sample includes white or black children 12–18 years of age in 2002 currently enrolled in a US public school (N=1,063).	Findings indicate a positive relationship between children's savings accounts and children's math scores. The study also suggests that wealth held by children is likely to mediate the relationship between household wealth and children's math scores.	The findings lend support to policies that promote building wealth held by children, and suggest that conventional savings accounts may not be an adequate mechanism for reducing educational inequality. Low-wealth children may need to have access to progressively funded savings accounts that offer matched savings or other deposits from public and/or private sources.	This study is cross-sectional. Without longitudinal data, casual relationships cannot be assessed. Therefore, study findings should be interpreted cautiously.

4. Ssewamala & Ismayilova (2009)	Uganda	Children's saving accounts, matched savings, and training in building assets.	The sample is comprised of 277 AIDS-orphaned youths (ages 11–17) from 15 comparable schools, who were randomly assigned to either the usual care condition (n=138), which involves provision of counseling and education-related supplies, or the experimental condition (n=148), in which participants also receive matched savings accounts.	The analyses indicate that poor families in rural Uganda can and do save for their youths if provided with support and incentives. Analyses also find statistically significant differences between youths in the experimental and control groups on attitudes toward saving, academic performance, educational aspirations, and health-related behaviors.	The results suggest that savings-related interventions have a place in the care and support of orphaned youths in poor sub-Saharan Africa, where the number of such youths is steadily increasing. The results also suggest that matched-savings programs might achieve positive long-term effects on the participants by incorporating asset-building training..	It is not possible to identify the specific aspects of the programmatic impact outcomes reported in this study as the program is implemented as a bundle of services that include financial education and the matched savings account.
5. Erulkar & Chong (2005)	Kenya	Integrated savings, credit, business support and mentoring	This study uses longitudinal data collected from Tap and Reposition Youth (TRY) project participants. The project targeted out-of-school adolescent girls and young women aged 16 to 22 residing in low income areas of Nairobi. In all, 326 participants and their matched controls were interviewed at baseline, and 222 pairs were interviewed at endpoint.	While TRY participants and their controls had comparable income levels and household assets at baseline, girls who had participated in TRY had significantly higher levels of income and assets compared to controls at endpoint. TRY participants also had significantly more savings and demonstrated more liberal gender attitudes compared to controls. However, their reproductive health knowledge was not significantly higher.	For this group of girls, the TRY model appeared to be effective in improving girls' status on a range of economic indicators. However, the experience from TRY suggests that rigorous micro-finance models may be appropriate for a sub-set of girls, especially those who are older and perhaps less vulnerable. The model was not as appropriate for the most vulnerable girls, which is reflected in the attrition findings.	The study's limitations are the lower than hoped-for response rate at endpoint, (68%), selection bias, and the high attrition rate, each of which may result in bias.
6. Kalyanwala & Sebstad (2006)	India		Qualitative study involving in-depth interviews with adolescent girls and young women aged 13–25 who participated in one or more savings programs. A quota sampling strategy was drawn based on age, religion and, type of account. A total of 76 adolescent girls and young women were	Findings underscore the fact that young people in resource-poor settings often have access to money, either by way of wages and/or gifts. Findings also highlight the limited decision-making authority or control the girls and women in this study have over economic resources and accounts.	The study suggests that there is considerable potential and an unmet need for providing meaningful savings options for adolescent girls and young women like those in this study. Financial literacy programs are needed that apprise young females about savings options available to them, the processes and	The findings from this study are considered preliminary. The non-probability sampling method means that findings cannot be generalized.



mechanisms for opening and operating savings accounts, and the credit options that may be associated with the savings account ownership.

interviewed.

7. Mensch, Grant, Sebastian, Hewett & Huntington (2004)	India Reproductive health information, vocational counseling and training, and assistance with opening savings accounts	A quasi-experimental pre- and posttest design was used in which adolescent girls aged 14–19 residing in slum areas of Allahabad in Uttar Pradesh, India were compared with girls of the same age residing in control-area slums.	Girls exposed to the intervention were significantly more likely to have knowledge of safe spaces, be members of social groups, score higher on the social skills index, be informed about reproductive health, and spend time on leisure activities than were the matched control respondents.	This short-term program did not alter the structure of opportunities available, but appeared to increase awareness, social skills, and knowledge. Suggested that future interventions should involve many more contact hours with the effort to developing group cohesion, communication, negotiation, and decision making skills.	Differences in baseline and endline sample sizes suggest sampling challenges which could bias findings. Measurement errors were also suspected.
8. Scanlon & Adams (2009)	USA Children and youth saving account program	The study presents data from a qualitative study of a youth savings account program. In-depth interviews were conducted with 30 youth ages 14–19 who were participants in the Saving for Education, Entrepreneurship, and Down payment (SEED) national asset-building initiative in the US.	The findings indicate that holding accounts generated a sense of financial security, even for those with low balances. The finding that low savers may experience reduced self-esteem is cause for concern. Financial education classes are not popular with youth even though they report that the classes helped them gain financial knowledge.	Findings demonstrate the need for strategies for delivering saving services and financial education that will appeal to youth; culturally competent practice for racial and class backgrounds; interventions that increase family interactions around savings behavior; and policy structures to increase the likelihood of successful asset building.	Deeper and richer data like these from qualitative studies are not generalizable, but rather suggestive.
9. Sherraden, Johnson, Guo & Elliot (2010)	USA School-based financial education and children's savings account	The study uses a quasi-experimental design, with a treatment group of students who were in kindergarten and first grade in a public elementary school (n = 72), and a comparison group of students in the second and third grade at the same school in the same year (n =	Elementary school children who participated in the program scored significantly higher on a financial literacy test taken in fourth grade compared to another group of students in the same school who did not participate. These findings held while controlling for the	School-based financial education and children's savings accounts could provide all children with access to a program similar to the one studies here. Individual school districts, schools, teachers, staff from nonprofits, and local financial institutions could	There may be selection bias. Because the program involved a bundle of financial services and financial education, it is not clear which components of the program explain higher scores. The study sample is small, and cannot be made.



			23).	effects of parent education and income on test scores.	build on these policy instruments to make their programs meet the needs of the student body.
10. Elliot & Beverly (2010a)	USA	Savings or bank account	The sample includes Black and White older teens and young adults who were not in high school in 2007. The final sample of 1,003 youth includes 795 Whites and 208 Blacks. Youth age in 2007 ranges from 17 to 23	In multivariate analyses, both household net worth and youth school savings are strong positive predictors of college progress soon after high school. Contrary to our hypotheses, parental savings is not a significant predictor of college progress.	This study indicates that school savings and asset holding may improve educational outcomes for young people. The potential for savings and assets to have direct and/or indirect effects on educational outcomes may make asset building programs an effective strategy for staying “on course” toward college graduation.
11. Austrian, 2011	Kenya	Financial education, savings accounts, and safe spaces	Male and female adolescents in Kibera provided information that was used to help develop the program design. The study sampled adolescents from four ethnically distinct villages in Kibera. The study was longitudinal.	Girls participating in the program were significantly more likely than their peers to know at least one contraceptive method and to know that HIV can be transmitted through sexual intercourse; have a long-term financial goal; be saving on a weekly basis.	The three-part model of safe spaces, financial education, and savings has the potential, when properly implemented, has promise for increasing the well-being of these girls. Findings suggest the need to engage community organizations to work in partnership with financial institutions to form and maintain a network of girls’ groups.
12. Curley, Ssewamala & Han (2010)	Uganda	Workshops that focus on asset building and career planning; Mentors to reinforce learning; Child development accounts (CDAs).	This study uses longitudinal data from at baseline and 10 months later from experimental group (n= 133) and comparison group (n=141). Participants are HIV/ AIDS orphaned children in rural Uganda.	Children in the program, who were offered the opportunity to save, did save. Findings suggest that participants are more likely to be confident about achieving their educational plans in the future compared to their counterparts in the comparison group. Older children are more likely to report lower grades	The study excluded HIV/AIDS orphans who were not currently in school. Findings may not apply to school children in urban areas. Short time duration between baseline and follow up; findings may differ over longer periods of time. .





	<p>compared to their younger counterparts.</p> <p>disadvantaged children.</p>
<p>13. Elliot (2009)</p> <p>USA</p>	<p>Accounts for school savings</p> <p>This study uses 2002 data from the Panel Study of Income Dynamics (PSID) and the Child Development Supplement (CDS) to the PSID. In the 2002 panel there were 1065 children.</p> <p>Findings suggest that child savings accounts are significantly associated with math achievement. Further, college expectations are significantly associated with math achievement when controlling for college aspirations. There is also a significant relationship between child school savings accounts and math achievement when controlling for college expectations.</p> <p>Child savings accounts show promise in helping children at risk for having academic difficulties make decisions about attending college that are in line with their aspirations.</p> <p>The findings from this cross-sectional study do not indicate causality. Factors outside of the models tested may help explain outcomes of interest.</p>
<p>14. Elliot & Nam (2012)</p> <p>USA</p>	<p>Adolescent school savings</p> <p>White (N=534) and Black (N=469) adolescents/ young adults in the US who were 16 to 19 years old in 2002, and 17 to 23 in 2007.</p> <p>White young adults are more likely to be on course in terms of college enrollment and college progress than Black young adults. School savings held as adolescents is significantly related to both White and Black young adults' college progress while household net worth is not. Further, parental savings for children is not significantly related to college progress among White or Black young adults.</p> <p>Savings for school held in the name of an adolescent may help build a sense of perceived control which may, in turn, help them stay on course in terms of college when they are young adults. Policies that promote adolescents' school savings may be an especially effective way to increase college attendance and graduation rates among Black young adults.</p> <p>The study includes limited data on adolescents' savings and educational outcomes.</p>
<p>15. Elliot, Chow & Loke (2011)</p> <p>USA</p>	<p>Youth savings accounts</p> <p>Data from the 2007 Transition to Adulthood sample which consisted of 1,003 Black and White high school students on their families is analyzed in this study.</p> <p>Tests of the effects of savings for school and certainty of graduating from a 4-year college, which were measured while the youth were still in high school, on college success. Findings suggest that youth savings is more effective when paired with positive expectations for</p> <p>Programs can be designed to increase student motivation by having students examine their future goals. Policies that help youth establish school savings are likely to have positive effects on college success. Youth who hold school savings and develop college-bound</p> <p>Comparisons in the study required a four-group design: (1) high school youth with school savings who were certain they would graduate from a 4-year college; (2) those with such savings who were not certain about college (3) those with no savings who</p>

		college graduation.	identities while still in high school are likely to be more successful in college than those with only one or the other.	were certain that they would graduate from college and (4) those with no savings who were also no certain that they would graduate from college. Other unobserved factors may explain findings. Sample is limited to Black and White high school students in the US.
16. Ssewamala, Alice, Bannon & Ismayilova (2008)	Uganda	Child savings accounts, family microenterprises, and scholarships to fight poverty and promote health and social functioning.	Using an experimental, longitudinal design 96 AIDS-orphaned adolescents from seven comparable primary schools in Rakai district of southern Uganda were randomly assigned to experimental (n=50) and comparison conditions (n=46).	At 12-month follow-up, adolescents in the experimental group had improved their HIV prevention attitudes scores, whereas the scores for the comparison group had decreased. Adolescents reported a significant increase in educational plans, whereas the comparison group reported a decrease.
17. Ssewamala, Han, Neilands, Ismayilova & Sperber (2010)	Uganda	A combined microfinance youth empowerment and health-promotion approach that targeted families raising AIDS-orphaned adolescents	Cluster-randomized experimental design with data from 289 orphaned adolescents in 15 comparable primary schools in the Rakai district in Uganda.	Children in the treatment group reported significantly lower intentions of engaging in sexual risk-taking behaviors than those in the comparison group. Boys reported a higher level of intentions to engage in sexual risk-taking behavior than did girls. Older adolescents were more likely to report higher intentions to engage in sexual risk-taking behaviors than younger peers.
18. Ssewamala, Isomayilova, McKay,	Uganda	A combined microfinance youth empowerment and	277 AIDS-orphaned youth were studied immediately before their transition to	While program participated increased their asset holding, the combined financial and longitudinal study period,
				These findings suggest that AIDS-orphaned adolescents can benefit from a simple and feasible family economic intervention. Representing a departure from individual-level programs focused on behavioral risks for HIV infection, economic interventions may effect change by giving adolescents and their families a means to improve their lives in tangible and rewarding ways.
				Findings suggest that incorporating an economic empowerment component in programs aimed at reducing sexual risk-taking behaviors among orphaned adolescents may help reduce intentions to engage in such behaviors.
				The modest sample size, a relatively short follow-up period, and an exclusive focus on school-going adolescents in a rural setting are limitations. Additionally, the analyses in this study focused on intentions, rather than actual sexual behaviors.



Sperber, Bannon & Alicea (2010)	health-promotion approach that targeted families raising AIDS-orphaned adolescents	secondary school. Participants were from 15 primary schools with similar socioeconomic and educational characteristics.	in the program. Both girls and boys in the control condition demonstrated an increased “approval” of risky sexual behaviors.	health promotion approach appears to work better for boys than girls in terms of attitudes toward sexual risk-taking behaviors.	and the exclusion of adolescents not in school. Also, findings from research in this rural setting may not be applicable for adolescents in urban areas.
19. Bantia & Shell (2009)	Mongolia Financial education; microfinance programming; child savings accounts.	The study reports on a year of qualitative research and pilot testing of a full-scale campaign targeting 14-18 year old girls with earned income.	Girls as young as 10 regularly accumulate money, actively manage it, and see the benefit in having a safe place to save it.	On average, WWB found that even young, low-income girls had the potential to save close to USD 6 per month. Financial education messages were important in encouraging girls to open accounts during the pilot.	Though richer and deeper understandings may be gained, findings from qualitative studies like this one are not generalizable.
20. Baum & Steel (2010)	USA Information provision on responsible borrowing	This study examined the characteristics of undergraduate student debt using National Postsecondary Student Aid Study.	Among 2007-08 bachelor's degree recipients, about two-thirds graduated with student debt. Among these, 25% had borrowed \$30,500 or more. The frequency of high debt is higher among independent than among dependent students. Among dependent students, high debt levels are not correlated with family income.	Findings suggest the need for policies designed to protect students from unmanageable debt. Also, students need better information about the postsecondary choices and responsible borrowing, before they incur the levels of debt that would put their future financial security at risk.	Analyses are limited to the use and reporting of descriptive statistics.
21. Ssewamala, Han & Neilands (2009)	Uganda Economic empowerment intervention	The study used an experimental design in which 267 adolescents were randomly assigned to receive an economic empowerment intervention or usual care for orphaned children. The study measured mental health functioning using 20 items of a standardized measure for self-esteem first developed in the US. Overall health was measured on the basis of self-report.	Data gathered at 10-month follow-up showed significant positive effects of the economic empowerment intervention on adolescents' self-rated health and mental health functioning. Additionally, health and mental health functioning were found to be positively associated with each other.	The results of this study suggest that asset theory, which has primarily been tested in Western industrialized countries, can be studied in other cultures and countries. This includes developing countries like Uganda, where many families and children face severe socioeconomic hardship including inadequate health services, which can hamper children's physical and psychosocial development.	Data includes some self-report measures; Relatively short study period; No data on family income due to the difficulty of obtaining reliable and valid information from respondents who are adolescents.
22. Elliot, Kim,	USA Savings and account	This study uses 2002 data	Both savings and account	The ways in which wealth	This study is cross-sectional,



<p>Jung & Zahn (2010)</p>	<p>ownership</p>	<p>from the PSID/CDS. The analysis sample for this study includes African American and Caucasian children in the US who were between the ages of 12 to 18 and enrolled in public schools in 2002.</p>	<p>ownership may increase children's educational expectations, which may in turn increase academic efforts and achievement.</p>	<p>shape educational outcomes seem to vary based on type of wealth (parental net worth, homeownership, or children's school savings), race of child (African American or Caucasian), and academic domain (math or reading).</p>	<p>so causal interpretations are not possible. Further, unobserved variables could explain the findings, especially given that some characteristics of parents and children were not included in the analyses.</p>
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Table 2: Studies on Outcomes Associated with Financial Education for Children and Youth

Citation	Country	Intervention & Delivery Mechanisms	Sample & Methods	Key Findings	Program and Policy Implications	Key Limitation(s)
1. Danes, Huddleston-Casas, & Boyce (1999)	USA	Classroom-based FE National Endowment for Financial Education (NEFE) High School Financial Planning Program curriculum	Non-experimental High school students who completed a 13-item financial knowledge, behavior & confidence survey immediately after curriculum. At 3 months, half of students sustained knowledge gains, a third sustained behavior changes, and 40% increased their confidence in managing their money.	Statistically significant changes in knowledge, behavior & confidence immediately & 3 months after curriculum. At 3 months, half of students sustained knowledge gains, a third sustained behavior changes, and 40% increased their confidence in managing their money.	Teaching personal finance in high schools can positively impact financial knowledge, behaviors and confidence among adolescents.	Selection & attrition biases not sufficiently addressed; lack of a comparison or control group to assess treatment effects; reliability and validity of instrument unreported.
2. Fox & Bartholomae (1999)	USA	Classroom-based FE Completion of an undergraduate financial management course.	Non-experimental ; Cross-sectional survey of undergraduate students at a large Midwestern university (N=419) using Kolb's Learning Style Inventory and course grade. OLS regression was used to assess impact on course grade from several predictors, including learning style.	Learning style and student demographic characteristics were not significant predictors of course grade, yet student grade point average and major were. Students mostly (80%) preferred learning through concrete experience while few (13%) had learning styles for which lecture is best suited.	Motivation may explain why family financial management majors performed better than non-majors. Teaching financial management should move away from abstract conceptualization toward active experimentation. Students may learn more when they are also working and managing earnings.	Limited generalizability of findings from sample of mostly white (88%) undergraduate students of a large, Midwestern university in the U.S.
3. Danes (2004)	USA	Classroom-based FE National Endowment for Financial Education (NEFE) High School Financial Planning Program curriculum	Non-experimental High school students who completed a 13-item financial knowledge, behavior & confidence survey immediately after curriculum (N=5,329) & at 3 month follow-up (N=324) using "post-then-pre" test methods.	Statistically significant changes in knowledge, behavior & confidence immediately & 3 months after curriculum. 59% & 60% had changed spending & saving patterns at 3 month follow-up, respectively.	Teaching personal finance in high schools can positively impact financial knowledge, behaviors and confidence among adolescents.	Selection & attrition biases not sufficiently addressed; lack of a comparison or control group to assess treatment effects; reliability and validity of instrument unreported.
4. Varcoe, Martin, Devitto, & Go (2005)	USA	Classroom-based FE "Money talks: Should I be listening?" curriculum	Non-experimental ; Cross-sectional pre-post test survey measuring financial knowledge and self-reported financial behaviors among high school students ages 13 to 20 (N=114) in four California counties.	Students showed significant gains in financial knowledge and self-reported saving, price comparison, and using sales behaviors after receiving the curriculum, but not for talking with their families about money and	Students can benefit from increased financial literacy. Schools should incorporate more financial management content. However, because financial education is not a requirement in most schools, alternative delivery channels	Selection bias; no control or comparison group to compare outcomes; no multivariate analyses to control for student and family characteristics; content delivery varied across teachers; intervention

Citation	Country	Intervention & Delivery Mechanisms	Sample & Methods	Key Findings	Program and Policy Implications	Key Limitation(s)
				impulse buying. Boys had significantly lower savings scores at post-test than girls yet showed greater gains in financial knowledge. Girls talked more with their families about money.	should be used, such as games and after-school programs. Content should be age appropriate, relevant to teens' lives, and taught in an interactive manner.	was not sufficiently described.
5. Danes & Haberman (2007)	USA	Classroom-based FE National Endowment for Financial Education (NEFE) High School Financial Planning Program curriculum	Non-experimental High school students who completed a 14-item financial knowledge, behavior & confidence survey immediately after curriculum (N=5,329).	Statistically significant differences between girls and boys in financial behaviors, with boys saving, spending and talking about money with their families more and having more debt. Financial concepts learned in the classroom and discussed with families also differed by gender, with girls focusing more on budgeting and spending decisions while boys focused more on saving, investing, and financial planning. Girls had greater gains in knowledge regarding unfamiliar financial concepts.	Girls may benefit more from formal, classroom-based financial education than boys. Financial education efforts should take into account the different financial attitudes, experiences, and gender role expectations of girls and boys. Financial education should be mandated in schools adopting a systemic model linking schools, families, and financial professionals.	Multivariate analyses to control for covariate predictors of outcomes were not used; reliability and validity of instrument unreported.
6. Gray, Sebstad, Cohen, & Stack (2009)	Bolivia, Sri Lanka	Classroom-based FE. Three organizations gave education programs focusing on budgeting, debt management, and savings.	Non-Experimental; Focus groups before and after training sessions. Surveys before and after training sessions.	Increased understanding of product characteristics in loan evaluation. Knowledge on calculating debt capacity. Increased understanding on need to save. Ability to identify parts of a budget. Identifying and finding ways to cut costs was the most successful behavior change for participants.	Budgeting behaviors are easier to put into practice than savings and debt management, due primarily to the amount of control a person has on budgeting versus savings and debt management. Financial education should be catered to the students. Financial education should be paired with practical experiences.	Surveys did not take into account other financial instruments that may be present. Did not take into account other factors that could influence day to day decision making.
7. Hartley, Sadoq, Saoudi, Katerberg, & Denomy (2010)	Morocco	Financial Literacy Training YouthInvest project - 100 hours of	Non-experimental; Case study that reports data from participant interviews and program monitoring and	Preliminary program outcomes showed that almost 100% of participants said they started to save by the	Experiential learning may promote saving and use of financial services among youth.	This study depicts findings only as preliminary. No comparison or control group was used to discern





Citation	Country	Intervention & Delivery Mechanisms	Sample & Methods	Key Findings	Program and Policy Implications	Key Limitation(s)
8. Bernheim, Garrett, & Maki (2001)	USA	financial literacy training emphasizing experiential learning over 3 months using the Global Financial Education Program curriculum for governmental, youth-serving organizations.	evaluation data for youth ages 15-24 (N=1,480) in three regions.	end of the program; 75% would not have opened a savings account without the program, 64% increased their account balances. 90% said the program helped them make progress in achieving financial goals.	Education may be an important tool for promoting saving.	treatment effects nor is it clear whether outcomes are due to financial literacy training or a different intervention component.
8. Bernheim, Garrett, & Maki (2001)	USA	Classroom-based FE Whether respondents were exposed to state-mandated personal finance content in high school through courses in household finance, consumer education, or economics.	Observational; Cross-sectional household survey of adults (N=2,000) ages 30-49 who graduated high school between 1964-1983. Comparison of financial behaviors between adults who received and did not receive financial education in high school.	Exposure to mandated personal finance content in high school was associated with greater saving and net worth in later adult years, controlling for a host of factors such as income and having frugal parents.	Education may be an important tool for promoting saving.	Cluster effects such as economic differences between states with and without financial education may explain differences in saving and net worth.
9. Tennyson & Nguyen (2001)	USA	Classroom-based FE Exposure to mandated personal finance education – either a mandated course or test.	Observational; Cross-sectional survey of high school students (N=1,643) in 65 schools in 31 states, using data from the 1997 Jump Start financial literacy survey. OLS regression was used to assess impact of mandates on financial literacy, controlling for student, school, and state characteristics.	Mandates were not generally associated with higher financial literacy scores, yet mandates requiring teaching of a specific course were. Topic areas of savings/investing and income showed significant relationships, but not money management and spending/debt.	The form of a curriculum mandate may be important in determining financial literacy among high school students.	No observations of whether non-mandated students received personal finance education; variation in mandate implementation across states makes discerning relationship with financial literacy difficult.
10. Mandell & Klein (2007)	USA	Classroom-based FE Whether students had taken a course in money management or economics.	Observational; Stratified random sample of high school seniors (N=5,775); Jump Start Coalition 49 item financial literacy survey	No differences in financial literacy scores among students who took and did not take courses; higher financial literacy is associated with relevant	Motivation is a key factor that explains financial literacy. Financial education efforts need to help youth see how financial literacy is related to their future goals.	Unclear whether data balancing methods were used to adjust for selection bias;

Citation	Country	Intervention & Delivery Mechanisms	Sample & Methods	Key Findings	Program and Policy Implications	Key Limitation(s)
11. Peng, Bartholomae, Fox & Cravener (2007)	USA	Classroom-based FE Whether respondents had taken personal finance courses in high school and/or college.	Observational; Cross-sectional survey of college graduates (N=1,039) intended to replicate Bernheim et al (2001). Observed predictors of investment knowledge and savings included financial education, financial experience, income and inheritances, and demographic characteristics using a 46-item web-based survey similar to instrument used by Bernheim et al (2001) except for investment knowledge items.	future goals like getting a college degree. Hierarchical regression analyses conducted on sets of predictors to explain variance in investment knowledge and saving. Participation in a college course with personal finance associated with higher levels of investment knowledge, but not for a high school course. Greater experience with bank accounts and investment assets also associated with greater investing knowledge.	Findings lend support to the “teachable moment” wherein college students learn more because of greater use of credit, savings, and debt management. Also, young adults may learn more from having financial experiences, such as using financial services.	Limited generalizability of findings from sample of alumni of one large, Midwestern university in the U.S.; sample selection bias; low response rate; no observations of financial course content.
12. Cole & Shastry (2009)	USA	Classroom-based FE. Replication of Bernheim, Garrett, & Maki (2001) study that examined the effects of prior exposure to state mandated financial education in high school on financial behaviors and outcomes.	Observational; Basic analytical approach of Bernheim, Garrett, & Maki (2001) was followed, yet the sample was drawn from the 2000 Census and was much larger (N=3.6 million) and the dependent variable from Census data was reported income from savings and investments, rather than savings rate. Savings and investment market participation coded as a dummy variable – any versus no income from savings and investments. Also, state fixed-effects and birth cohort fixed effects added to model	Exposure to mandated personal finance content in high school was not associated with participation in savings and investment markets. Those who graduated from high school just prior to the imposition of mandates had identical savings and investment participation rates as those who graduated following mandates.	Evidence shows that education, but not specifically financial education, is associated with savings and investment participation. Financial literacy courses tend to be short and cover basic topics, yet more rigorous evaluations are needed.	Observational study design limits conclusions about the effectiveness of financial education that could otherwise be drawn from randomized experimental evidence.
13. Shim, Barber, Card, Xiao, &	USA	Classroom-based FE. Students asked	Observational; Cross-sectional survey of	Support was found for a hierarchical model in which	Parental behaviors, high school work experience, and	Findings may not generalize to young adults not





Citation	Country	Intervention & Delivery Mechanisms	Sample & Methods	Key Findings	Program and Policy Implications	Key Limitation(s)
Serido (2010)		the number of personal finance-related courses they had taken or seminars or workshops received as high school students.	N=2,098 college freshmen (62% female; 33% racial minorities) with questions concerning parent financial socialization, socioeconomic status, high school work experience, exposure to financial education in high school, and financial knowledge, attitudes, and behaviors. A structural model of hierarchical financial socialization processes tested using Structural Equation Modeling (SEM).	anticipatory socialization (parent teaching, high school work, high school education) was associated with financial learning, then attitudes, and healthy financial behaviors. Parent direct teaching had a stronger direct effect on financial knowledge than high school work or receipt of financial education.	high school financial education all shape financial attitudes, knowledge, and behavior among college students though the role of parents is especially strong. Parents should be encouraged and supported to offer financial education in the home. High school financial education should not just teach financial management, but seek ways to enhance self-efficacy and “methods for wise and even virtuous use of financial resources”.	attending college. Self-report measures of behavior may not be accurate. Number of financial education courses measured, but not types or amounts of instruction. Interactions among predictive constructs were not assessed nor was temporal precedence established to understand how constructs predict outcomes over time.
14. Bell, Gorin, & Hogarth (2009)	USA	Classroom-based FE. Soldiers	Quasi-Experimental; Sample included mostly male (86%), young adult soldiers in a treatment group (N=199) that received financial education and in a comparison group (N=293) that did not. In addition to assessing financial education outcomes, differences in self-reported financial behaviors were assessed across both groups based on having taken a finance/consumer education course in high school.	Controlling for various factors such as gender, education, and pre-military financial experiences, having taken a high school course was associated with having a savings account for short-term savings goals and saving regularly, but not for several other financial behaviors. It was also associated with a negative outcome – having paid an overdraft fee in the past 6 months.	Mixed evidence concerning the association of high school financial education and self-reported financial behaviors suggests that financial education may be necessary, but not sufficient in promoting financial security.	Dependence on self-reported financial behaviors, limited generalizability to young members of the military. Unclear exactly what soldier’s exposure to financial education in high school was.
15. Harter & Harter (2009)	USA	Classroom-based FE. Saving, spending, credit, and money management themes of the Financial Fitness for Life (FFFL) curriculum.	Quasi-Experimental; Sample included elementary (N=744), middle (N=699), and high school (N=995) students in economically distressed counties in eastern Kentucky. Assessed	Statistically significant improvements in financial knowledge observed for all three levels of students who received the FFFL curriculum. Greater academic ability, being white, and being male were	FFFL is a more effective method of increasing financial literacy than general methods of teaching financial concepts in the classroom across all grade levels.	Unclear what the comparison group condition of financial education as usual comprised; use of FFFL scores as dependent variables in models not clearly explained; details concerning constructs

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			financial knowledge using separate FFFL tests for middle, high, and upper elementary school. OLS regression used for FFFL test scores controlling for academic ability, gender, race, and grade level. Students given either the FFFL curriculum or an existing method of financial education.	also significant predictors of higher test scores. Academic ability was a much stronger predictor than receipt of FFFL.		measured by FFFL tests not offered; no psychometric properties of FFFL tests reported.
16. Mandell & Klein (2009)	USA	Classroom-based FE Full semester, personal financial management course completed 1-4 years earlier	Quasi-experimental; Matched samples of high school students from three high schools in the same school system who took or did not take a course 1-4 years prior to the study (N=79);	Students who took a course had an average financial literacy score of 68.7% compared to 69.9% for students who did not and were not more savings-oriented. No significant differences found between the two groups on self-reported financial behaviors.	Financial education courses in high school may not impact financial behavior in young adulthood. Content and/or delivery mechanisms may need to be re-considered, including interventions that are more interactive, enjoyable, relevant, and engage youth's motivations.	Small sample size; social interaction effects as subjects were from same schools; sample balance was not assessed and corrected;
17. Amin et al (2010)	Bangladesh	Classroom-based FE & Mentoring-based FE. Alternative pedagogical techniques for enhancing financial literacy in a pilot school-to-work transition program offered by the Population Council in partnership with BRAC and the Under-Privileged Children's Education Program (UCEP).	Quasi-Experimental; Two treatment arms tested different pedagogical methods for offering financial education among girls ages 14-19 who were members of BRAC clubs and UCEP schools. The mentoring arm sample (N=222) received group mentoring-based financial education. Mentors were assigned to groups of 5-6 girls, facilitating brainstorming, discussion, and analysis sessions for each of the following topics: financial values & responsibilities, planning,	The three groups were well balanced on observed demographics like age and education. Knowledge of budgeting and savings increased from pre to post test for both treatment arms, but there were no significant pre-post differences in knowledge of loan options and loan repayment factors. Both treatment arms also showed significant pre-post differences in financial attitudes & self-reported financial behaviors, yet no significant differences were found between the two treatment arms.	Both types of FE have a positive short-term impact on youth's financial knowledge, attitudes, and self-reported behaviors, yet mentoring-based FE is no more effective than traditional classroom-based FE. Because mentoring effects occur through the development of relationships, a longer treatment period is needed to adequately test differences with classroom-based FE.	Financial knowledge, attitude, & self-reported behavior items measured nominally (yes/no). Within-group pre-post differences assessed; it is unclear whether or how between-group differences were analyzed. A limited set of covariates were used for multivariate analyses, excluding observations of household income, assets, and/or material security. Authors do not report whether the 3 study groups were randomly assigned. Outcomes were measured only at the end of each





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18. Walstad, Rebeck, & MacDonald (2010)	USA	Video-Assisted Classroom-Based FE. Financing Your Future (FYF) DVD-based curriculum and lesson plans.	savings, credit, & budgeting. The teaching arm sample (N=178) received a traditional 20-hour, classroom based program offered by teachers who provided instruction on the same set of topics. A control group (N=191) received no financial education.	Students who received the FYF materials showed statistically significant increases in total and all subscale knowledge while comparison group subjects did not. These results were upheld in regression models controlling for student characteristics, pretest scores, teacher characteristics, and course types.	Video-based financial education increases personal finance knowledge across a range of different types of high school courses, even when controlling for important characteristics.	Methods to achieve statistical balance between the treatment and comparison groups on covariates to adjust for selection bias were not used.
19. Sherraden, Johnson, Guo, & Elliott (2010)	USA	Classroom-based FE, clubs "I Can Save" (ICS): Classroom-based financial education, savings accounts & matches, & savings clubs.	Quasi-experimental; Treatment (N=35), comparison (N=18) & non-study (N=55) groups of elementary school students; mixed methods, including Financial Fitness For Life (FFFL) survey, in-depth child interviews, teacher focus groups, & ICS program data.	Significantly higher financial literacy scores for treatment group students in 4 th grade, controlling for parental education and income.	Children may gain financial knowledge when they and their parents receive financial education and be more motivated to learn when they use financial services.	Small sample and effect size; sample selection and group assignment biases; unclear what components of ICS explain treatment effects; FFFL measures knowledge only;
20. Gray, B. & Chanani, S. (2010).	India	Mixed delivery; Learning Games health and financial education curriculum delivered to adolescent girls via	Experimental; Adolescent girls and their mothers in rural India randomly assigned into receiving financial Learning Games (N=220) in mother-	Adolescent girls who received financial content experienced significantly greater money management confidence than control group girls, but not	Repayment issues for loans participants had taken and deteriorating economic conditions cited as reasons for the lack of improvement in savings rates. Financial	Treatment group had to be subdivided into Intent-to-Treat (ITT) and Learning Games participation subsamples, which resulted in unbalanced treatment and

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21. García Bohórquez (2012)	Colombia	Bengal, India. Financial content includes ways to save money, bargaining, spending priorities, and savings plans. “Finance for Change,” an initiative of the Colombia Central Bank, several Secretaries of Education, and Dividend for Colombia, trains teachers to incorporate basic economics and personal finance to students in 9 th and 10 th grades. Since 2006, FFC has trained over 400 teachers, covering approximately 18,000 students.	at baseline, and 6 and 12 month follow-ups.	This research uses propensity score matching to estimate short-term impact of a program of economic and financial education (EEF) on knowledge, skills, attitudes, and economic behaviors of 1,518 high school students.	No differences in bargaining. Confidence was observed at 12 month follow-up. Financial games were less popular with girls than the health games. The program increases economic and financial knowledge of young people, but not their ability to implement what they learned.	Small sample size and low participation rates limited ability to detect Intent-to-Treat (ITT) effects. Programs should enhance their impact on attitudes and skills.	Retrospective evaluation and propensity score matching only allows for controlling observable variables.



