

Running head: FINANCIAL CAPABILITY IN LOW-INCOME FAMILIES

Financial Capability, Money Management, and Developmental Resources for Young Children in  
Low-Income Families

by

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Degree of Doctor of Philosophy

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## ABSTRACT

The financial and social vulnerability of low-income families with young children requires a thoughtful and multidimensional response. Much of the research in this area has been undertaken with insufficient attention to social structures that serve as a foundation for poverty. Recent scholarship on financial capability, which is thought to be a construct that includes both financial knowledge and inclusion in the mainstream financial sector, provides the conceptual framework for this dissertation. One central purpose of the study is to examine the individual and interactive associations between financial knowledge and financial inclusion and: (1) money management as well as (2) developmental resources for young children in low-income households. This study uses longitudinal survey data from low-income parents of Head Start children (n=681). Associations were tested using multiple regression methods and controlling for demographic and socioeconomic characteristics. Study findings on financial inclusion suggest that owning a savings account appears to help explain money management and developmental resources for young children in the home more than owning a checking account for families in this study. Further, both financial knowledge and financial inclusion seem to be more consistently associated with developmental resources for young children than money management. Implications for policy, practice, theory and research are discussed.

**Keywords:** Financial capability, financial knowledge, financial inclusion, money management, resources for children, low-income families

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## CHAPTER 1: INTRODUCTION

Low-income parents often have inadequate resources to maintain a healthy family life and shape future opportunities for themselves and their children. Lack of economic resources impairs parents' abilities to invest in their children's nutrition, health and education; increases harsh parenting, and exposes children to higher levels of developmental risks (Gershoff, Aber, Raver, & Lennon, 2007). Very young children are at the greatest disadvantage, because they are experiencing the costs of poverty at developmentally crucial stages and key periods of transition (Elder, 1999). The accumulated early developmental disadvantage creates an early gap between low-income children and their more affluent counterparts with long-term negative consequences that are difficult to overcome in adulthood (Ratcliffe & McKernan, 2012; Isaacs & Magnuson, 2011).

It is important to note that income poverty is only one dimension of disadvantage among low-income families. Other disadvantages such as lack of financial knowledge, lack of access to affordable financial services, and asset poverty also have negative influences on the wellbeing of low-income families (Loke, 2015; M. W. Sherraden & Barr, 2005; M. S. Sherraden, 2010; 2013). Low-income families need financial knowledge to deal with an increasingly complex financial world and make decisions in their best financial interests (Collins, 2013; Hilgert, Hogarth & Beverly, 2003; Altman, 2011). Low-income families also need access to basic financial services and asset-building opportunities that enable them to fully participate in social and economic life (M. W. Sherraden, 1991; 2001; 2009; Bucks, Kennickell, Mach & Moore, 2009). The combination of knowledge and inclusion in the mainstream financial sector is thought to result in financial capability for low-income families (M. S. Sherraden, 2010; 2013). Financial capability, in turn, may help improve financial behaviors, financial stability, long-term economic

development, and wellbeing of children (M. S. Sherraden, 2010; M. W. Sherraden, 1991; 2001; 2009; Hogan, Solheim, Wolfgram, & Rodriguez, 2004).

There is a growing consensus that financial knowledge and skills may prepare low-income people to make informed financial decisions to their best financial interest (Peng, Bartholomae, Fox & Cravener, 2007; Collins, 2013; 2010; Hilgert, Hogarth & Beverly, 2003; Altman, 2011). However, people also make decisions based on products and services accessible to them in the financial sector. Access to financial products and services can have a positive impact on financial wellbeing (M. W. Sherraden & Barr, 2005) by helping low-income families manage cash flow spikes and smooth consumption (Grinstein-Weiss, Shanks & Beverly, 2014), improving the ability to mitigate risks and manage income shocks (Becker, 1991; M. W. Sherraden, 1991), and increasing asset-building opportunities that are crucial for the upward mobility of low-income families (Huang, Nam & M. W. Sherraden, 2015; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013). The positive effects of financial inclusion together with financial knowledge may play a key role in improving the financial wellbeing of low-income families, thereby reducing child poverty and its negative lifelong effects.

The financial situation of low-income families has recently worsened, in part, due to lack of financial knowledge, use of predatory financial services, and the resulting high-interest rate debts (Caskey, 2005; Archuleta, Dale & Spann, 2013; Elliott & Nam, 2013; M. S. Sherraden, 2013). The requirements of mainstream financial institutions create barriers for low-income families to own and use safe and affordable financial products and services (Scanlon, 2001; Oliver & Shapiro, 1997; Zhan & M. W. Sherraden, 2003). When low-income families lack access to the mainstream financial products and services, they often turn to alternative or predatory financial services, such as payday lenders, that are expensive and may lead to problem



debt (Caskey, 2005; Squires & Kubrin, 2006). This growing vulnerability of low-income families requires a thoughtful and multidimensional response at individual and structural levels (Scanlon, 2001; M. S. Sherraden, 2013). Pairing individual and structural level responses may contribute to the positive financial functioning of low-income families in ways that lead to improved wellbeing and life chances. One social work approach that pairs individual and structural intervention and has received growing attention in the past few years involves building the financial capability of low-income people in order to help secure their financial stability, thereby making upward mobility on the economic ladder possible (M. S. Sherraden, 2010; 2013).

The ever-growing economic hardships among low-income families also suggest that social workers must develop an increased interest in financial capability in order to improve the financial knowledge of clients and facilitate structural changes to increase their access to affordable financial services (Loke, 2015). Towards this end, increased knowledge about financial capability is necessary to guide more effective practice and policy approaches (Peng, Bartholomae, Fox & Cravener, 2007; Lyons & Scherpf, 2004). While there is some research on the independent contributions of financial knowledge and financial inclusion to the wellbeing of low-income families, there is little scholarship to date on their combined or interactive effects. Further, we have very little research on the effects of parental financial knowledge and financial inclusion on the wellbeing of young children in low-income families. Based on these knowledge gaps, pressing research needs include studies addressing the independent and combined effects of financial knowledge and financial inclusion on the social and economic wellbeing of low-income families with young children. In this dissertation, controlling for demographic and socioeconomic characteristics, I tested the relationships between financial knowledge, financial inclusion, and several measures of social and economic wellbeing of low-income parents with

pre-school children. To set the stage for this dissertation study, in the following section I discuss the shifting meaning of financial capability.

### **The Shifting Meaning of Financial Capability**

The meaning of the term “financial capability” is shifting because of the work of a group of scholars in social work and related disciplines (M. W. Sherraden, 1991; 2001; 2009; Hogan, Solheim, Wolfgram, Nkosi & Rodriguez, 2004; M. W. Sherraden & Barr, 2005; Birkenmaier, M. S. Sherraden & Curley, 2013). Even in the recent past, financial capability has had a variety of meanings in different studies focusing on various aspects of the construct (FINRA, 2009; 2012; PACFC, 2013; Atkinson, McKay, Kempson & Collard, 2006; Dixon, 2006). Most of these aspects of financial capability in the literature have been measured on the basis of individual level variables such as financial knowledge, specific financial behaviors, or psychological characteristics, such as motivation (Atkinson, McKay, Kempson & Collard, 2006; Dixon, 2006). By applying a deeper theoretical understanding, starting with the work of Amartya Sen and Martha Nussbaum, scholars today are broadening the definition of the term “financial capability” to include both individual and structural level components (see, for example, M. S. Sherraden, 2010; 2013).

Margaret Sherraden was one of the first social work scholars to discuss this shift in meaning. She writes, “... ‘financial capability’ often is used synonymously with ‘financial literacy’ or more broadly to refer to a set of individual qualities - including knowledge and skills, attitude, habit, motivation, confidence, self-efficacy, and behavior - that lie within the individual” (M. S. Sherraden, 2013, p.4). She then points out that this narrow use of the term financial capability puts little, if any, emphasis on social structures that often act as barriers to financial wellbeing. Even the President’s Advisory Council on Financial Capability (PACFC,

2013) has largely emphasized financial literacy, giving limited attention to inclusion in the mainstream financial sector. Although a 2013 report by PACFC sometimes mentions “access” and “financial products,” its primary efforts have focused on financial literacy (PACFC, 2013). Such definitions of financial capability primarily focus on individual level characteristics, minimize the role of structural components and are inconsistent with Sen and Nussbaum’s capability framework.

The Noble Prize-winning philosopher and economist, Amartya Sen, first articulated the concept of capability in the 1980s, and Martha Nussbaum further developed the concept by applying it to human development and social welfare. Sen (1987) asserts that capabilities should be seen as freedoms and opportunities people have to achieve various life styles, and that such freedoms and opportunities determine the kind of life they are able to lead. He writes, “...capabilities are notions of freedom in the positive sense; what real opportunities you have regarding the life you may lead” (Sen, 1987, p. 36). While Sen’s focus is on freedom to evaluate and pursue opportunities that may enhance wellbeing, Nussbaum emphasizes human development, individual dignity, and social justice. Nussbaum writes that people need both individual abilities and social opportunities to be capable and to achieve wellbeing (Nussbaum, 2000). The key points are that internal characteristics and external social structures are interactive, and that this interaction shapes the wellbeing of individuals (Nussbaum, 2011). Thus, capability is not just an individual characteristic but also includes features of the social environment (Sen, 1987; 1993; Nussbaum, 2000).

As applied to financial wellbeing of low-income families, financial capability is seen as the ability to act based on financial knowledge and skills in combination with one’s inclusion in mainstream financial structures and institutional arrangements (M. S. Sherraden, 2013). Such

inclusion requires access to appropriate and helpful financial products and services as well as the opportunity to use such products and services to enhance one's financial and social well-being (M. S. Sherraden, 2013; M. W. Sherraden, 1991; 2001; 2009; Hogan, Solheim, Wolfgram, Nkosi & Rodriguez, 2004; M. W. Sherraden & Barr, 2005). According to this definition, "people need both financial knowledge and access to financial products and services to be financially capable" (M. S. Sherraden, 2013, p. 4). Access to financial products and services that are affordable and of high quality provides financially vulnerable individuals the opportunity to make decisions in the financial mainstream, just as financially secure people are able to do. Such access and opportunity is known as financial inclusion, and evokes the structural component of financial capability (M. S. Sherraden, 2010; 2013). In other words, individual characteristics such as financial knowledge and skills along with aspects of the social structure that determine access and opportunity together constitute a person's financial capability. It is also important to note that any conceptualization of financial capability that minimizes its structural components is inconsistent with the roots and longstanding focus of the social work profession.

It is a problem in social work, given our longstanding person-in-environment (PIE) focus, to ignore social structural features that shape financial wellbeing of low-income families. Social structural features play a crucial role in financial capability because they affect various aspects of the financial life of low-income families (M. S. Sherraden, 2010). For example, structural features shape financial behavior and the financial decision making process of low-income families because institutional arrangements determine the array of accessible opportunities for mainstream financial services (Powell & DiMaggio, 1991). In other words, although people make financial decisions based on their internal abilities, structural arrangements influence both internal abilities and the set of financial choices available to them (M. S. Sherraden, 2013;

Nussbaum, 2011). Therefore, it is difficult to adequately understand the financial wellbeing of low-income families in isolation from their environmental context. Thus, in this dissertation, financial capability is defined, consistent with the PIE perspective we use in social work, by taking both individual and structural factors into account.

### **Financial Capability and Low-Income Families**

Low-income families make various financial decisions as part of their daily routines, including where to buy groceries, how much to save from a paycheck, how to pay bills, how much to spend on credit cards, how much to spend for entertainment, and how much to spend on their children (Chang, Hanna & Fan, 1997). All these financial decisions and more are influenced by knowledge about the financial world and the availability of choices in their environments. The financial decisions that low-income people make are influenced by access to a range of financial products and services, from simple vehicles like saving and checking accounts to more complex vehicles such as those involving credit, insurance policies and retirement accounts (Altman, 2011; Collins, 2013; 2010; Hilgert, Hogarth & Beverly, 2003). The availability of financial services options may improve the array of opportunities for low-income families in ways that help them make decisions in their best financial interests (Hogan, Solheim, Wolfgram, Nkosi & Rodriguez, 2004; M. W. Sherraden & Barr, 2005; M. S. Sherraden, 2013).

Since adequately understanding the wellbeing of families and children requires considering the role of both individual level factors and institutional arrangements (Schreiner & M. W. Sherraden, 2007; Nam, Kim, Clancy, Zager & M. S. Sherraden, 2013), if we ignore the barriers to mainstream financial services we may find it difficult to understand why low-income people choose to cash their paychecks for a fee rather than opening a bank account and perhaps even having the funds deposited electronically. Similarly, without information about structural

issues that limit access, we may not understand why many low-income individuals use predatory financial services, such as payday and title loans rather than obtaining credit from mainstream institutions (Lackie, Hui, Tattrie, Robson & Voyer, 2010; Bartholomae, Fox & Cravener, 2007). Similarly, we may question why immigrants would use high-priced money transfer services. We may even consider such decisions to be suboptimal, or irrational from an economics perspective, unless we consider the institutional barriers low-income people face in accessing affordable mainstream financial services (Bucks, Kennickell, Mach, & Moore, 2009).

However, when we bring institutional arrangements into the picture, it is not surprising that many low-income families use costly financial products even though they may exacerbate their financial situations (M. W. Sherraden & Barr, 2005; Bass & Campbell, 2013; Caskey, 1994; Squires & Kubrin, 2006). To begin with, most mainstream financial institutions offer products that clearly do not fit the needs of low-income people, contributing to the sense of alienation from the formal financial system (McKernan, Ratcliffe, & Nam, 2007; Mills, Gale, Patterson & Appostolov, 2006; Schreiner & M. W. Sherraden, 2007). Financial institutions frequently set high minimum account balances and have high overdraft fees, characteristics of many mainstream financial products and services that are not suited to low-income people who are often living paycheck-to-paycheck (Avery, Brevoort, Canner, 2010; Cohen-Cole, Duygan-Bump & Montoriol-Garriga, 2009). Further, when low-income people discover “hidden fees” for services or consequences of an inadvertently overdrawn account, they can respond as though a promise has been broken. Situations like these can help explain why low-income people sometimes use alternative financial products and services that are apparently not in the best interests of their families (Barr, 2004; Berry, 2005).

Since both financial knowledge and financial inclusion are important components of financial capability, I will describe the roles of financial knowledge and financial inclusion in the money management on low-income families and children in the following sub-sections. So far, we know more about the role of financial knowledge than the role of financial inclusion in the money management of low-income families. In addition, we have very limited knowledge about the role of financial capability and its components on the wellbeing of the children of low-income parents. In this study, I used money management as a proxy to measure the financial wellbeing of low income families, because positive financial practices, consistent use of money management strategies, and future money management may have positive implications to financial wellbeing. Similarly, I used developmental resources for children as a proxy or as an indicator of children wellbeing in low-income families. I start by describing the role of financial knowledge and inclusion in the money management of low-income families, and then continue by exploring the role of financial capability in the wellbeing of children in low-income families.

### **Financial Knowledge**

Financial knowledge refers to an understanding of basic financial concepts and features of financial products and services that help people make informed financial decisions (M. S. Sherraden, 2010). The term “financial knowledge” has been used synonymously with financial education and financial literacy in many studies (e.g. Hilgert, Hogarth & Beverly, 2003). However, in this study, I choose to use financial knowledge over financial education and financial literacy because it does not confuse knowledge itself with the process through which knowledge is gained. For example, financial knowledge can be gained through different methods including financial education, counseling, coaching, personal money management, or experience with financial products and services (Collins, Morduch, Rutherford & Ruthven, 2009).

Regardless of how knowledge is built, a basic understanding of financial concepts, as well as features of financial products and services, is important for all families, but is particularly critical for low-income families because financial burdens for these families can be overwhelming (Peng, Bartholomae, Fox & Cravener, 2007). In the current financial environment, it is easy for low-income families to fall victim to predatory lenders who offer high cost products, such as payday loans and title loans, especially because many lack adequate financial knowledge (Lyons & Scherpf, 2004). Many low-income families use payday loans, for example, although a typical two-week payday loan with a \$15 fee per \$100 fee equates to an annual percentage rate (APR) of almost 400 percent (Barr, 2004; Berry, 2005). By comparison, APRs on credit cards can range from about 12 percent to 30 percent (Caskey, 2005). Use of such loans is, at least in part, due to lack of access to affordable financial products and services in the financial mainstream. However, in the face of growing evidence that many Americans lack sufficient financial knowledge and skills, as measured by simple questions regarding concepts such as APR, it is reasonable to assume that lack of financial knowledge may also contribute to financial decisions that generate high costs. As a result, the financial situation of low-income families can be exacerbated through use of expensive financial products and services that are often marketed in deceptive ways.

Studies that have focused on financial knowledge suggest that such knowledge affects spending, savings, and debt management in positive ways (Clancy, Gristein-Weiss, and Schreiner, 2001). Such studies suggest that financial education may help people in low-income households make advantageous financial choices and decisions. However, other studies show that financial education does not have a strong impact on financial behavior and practices (Fernandes, Lynch & Netemeyer, 2014), suggesting the importance of combining financial



education with appropriate financial products and services because low-income people can learn more about financial matters when they have experience with the actual financial world. This suggestion is consistent with the concept of financial capability. Although financial knowledge is important for money management, the effects of financial education alone are not strong or long lasting when access, inclusion and related structural factors are not also addressed.

### **Financial Inclusion**

Although institutional arrangements in the financial realm are central to financial capability, many low-income individuals do not have access to mainstream financial products and services (M. W. Sherraden & Barr, 2005). Thus, many people with low incomes are excluded from the mainstream financial sector (Bucks, Kennickell, Mach & Moore, 2009). Requirements of mainstream financial institutions create barriers for low-income individuals to own and use safe and affordable financial products and services. For example, establishing good credit can be difficult for low-income families as well because few lenders consider alternate credit measures such as regularity in paying utility bills or consistency in paying rent in establishing credit worthiness (Avery, Brevoot, Canner, 2010; Cohen-Cole, Duygan-Bump & Montoriol-Garriga, 2009). These and other related factors contribute to the exclusion of many low-income individuals from mainstream financial products and services.

Some additional concrete examples may help to illustrate other social structures and institutional arrangements that serve to keep people with lower incomes from becoming financially capable. “Good jobs” in modern US society come with retirement benefits, which allow employees to save money in a safe, secure, and often growing investment instrument for a more financially secure retirement. In addition, it is not unusual for employers to contribute to retirement accounts, in part because they receive tax incentives to do so. Employees with

retirement plans can also receive tax incentives for retirement saving and can do such saving through their employers' direct deposit systems. However, many low-wage jobs do not offer easy access to direct deposit, let alone retirement plans or employer matches (Beverly & M. W. Sherraden, 1999). Thus, at least part of the financial exclusion of low-income families has to do with lack of access to institutional arrangements that non-poor people take for granted. The relative absence of such financial arrangements through employment in many part-time, low-wage, and service sector jobs contributes to the exclusion of a growing number of workers from the financial mainstream (Edin, Shaefer & Luke, 2015).

Moving to an example of financial exclusion at the community level, banks and other mainstream financial institutions are often entirely absent in neighborhoods with large numbers of low-income families (Bass & Campbell, 2013). After opening more than 15,000 branches across the U.S. in the decade leading up to the financial crisis, banks began retreating from lower-income neighborhoods even as the industry posted its second most profitable year on record in 2013 (Bass & Campbell, 2013). According to census and federal banking data, federally insured banks and credit unions have closed 1,826 branches since late 2008, and 93 percent of closings have been in neighborhoods where household incomes are below the national median (Bass & Campbell, 2013). This decline of banks and credit unions limits access to basic financial services for families in low-income neighborhoods. Many of these families end up paying high fees for activities such as cashing checks and settling utility bills. The dearth of banks in these neighborhoods contributes to the financial exclusion of low-income individuals, which in turn impedes the development of financial capability. This signals the growing number of low-income American families now living on a cash-only basis (FDIC, 2009), with no connection to any mainstream facilities or banking services.

Thus, many low-income families have no access to checking privileges, credit services, bank loans, or a safe place to save. Instead, pawnshops, check-cashing outlets, and other alternatives provide such individuals with essential financial services they cannot obtain elsewhere (M. S. Sherraden, 2013). Thus, in addition to their historical reputation as predatory, pawnshops and check-cashing outlets play key financial roles for disadvantaged families and communities (FDIC, 2009). These alternative financial services often provide greater access than mainstream financial institutions and help low-income families meet their financial service needs (Pew Health Group, 2010). However, fringe financial services lack consumer protection, can be expensive and may lead to problem debt because many alternative financial services engage in unfair, deceptive, or fraudulent practices (Squires & Kubrin, 2006). These unpleasant features of the alternative financial sector providers often worsen the financial situations of low-income families. This reality suggests that structural changes are needed in order to make sure low-income families have access to quality and affordable financial products and services. Such access may be necessary to help strengthen the financial capability of low-income families, improve their financial stability, and support their long-term economic and social development.

### **Financial Capability and Developmental Resources for Children**

Financial inequities and poverty undermine the wellbeing of a significant number of American families with young children. In the United States, an estimated 25% of families with infants and toddlers live below the poverty line, and 13% live in deep poverty (Murphey, Cooper & Forry, 2013). Murphey and colleagues (2013) note that despite the social welfare system's efforts to provide supplemental resources for those who are vulnerable, only a small percentage of eligible families receive the income support and program services available to them. The reality of such disparities in economic resources has consequences for child outcomes in the

U.S., particularly for the large and growing population of non-white children (U.S. Census Bureau, 2013). My interest in studying financial capability in low-income families with young children stems from my concern about increasing poverty rates in families with young children, and growing income and asset gaps by race and ethnicity.

Research has documented the detrimental effects of family poverty on children's health, behaviors, and achievement (Cooper & Stewart, 2013), and other ways that family poverty may affect the wellbeing of children (Becker, 2002). Primarily, children's access to opportunities depends on the availability of family income (Becker, 2002; Cooper & Stewart, 2013). Low-income families must cover many expenses with limited resources, and family income may be allocated to cover current basic needs rather than invested in children's future development (Becker, 2002). In addition to income poverty, asset poverty is of particular concern because of its negative effects on achieving developmental goals such as higher education for children who grow up in households without wealth (M. W. Sherraden, 1991; 2003).

In the past two decades, scholars have begun to examine the contributions of family economic resources other than income to the wellbeing of low-income children, especially by focusing on the role of assets (M. W. Sherraden, 2003). A large body of work on economic deprivation suggests that different economic resources might have dissimilar effects on the wellbeing of low-income parents and their children (M. W. Sherraden, 1991; Becker, 1991). For example, Michael Sherraden (1991) pointed out the importance of assets for future development in addition to the flow of income for current consumption. In times of economic emergency or hardship, assets such as savings can make it possible to sustain a more stable lifestyle (Grinstein-Weiss, Shanks & Beverly, 2014). From a social-psychological perspective, owning assets and

receiving income are also viewed differently from one another, affecting the thoughts and behaviors of parents in different ways (Scanlon, 2001).

Research suggests that children in families with greater assets can access opportunities related to positive outcomes that are less likely to be available to children in poorer families (Green & White, 1997; Zhan & M. W. Sherraden, 2003). In addition, without the potential buffer that assets provide in times of unemployment and emergency expenses, children in low-income families can suffer (M. W. Sherraden, 1991; Scanlon, 2001; Oliver & Shapiro, 1997). Helping low-income, low-wealth families to save and build assets could improve near-term economic security, and also help children in such households succeed academically and achieve future economic success (Green & White, 1997; Zhan & M. W. Sherraden, 2003). This scholarship on household assets and the wellbeing of children has led to a focus on financial capability because financial knowledge and inclusion are assumed to be prerequisites for low-income families to build financial assets and achieve financial wellbeing.

There have been important gains in knowledge concerning the effects of financial capability for the wellbeing of low-income families and children. Most notably, there have been advances in knowledge concerning the effects of Individual Development Account (IDA) programs. IDAs are designed to provide financial education as well as incentives such as matching dollars that encourage participants to save and think about future developmental goals. Research has found evidence of positive benefits to personal and family wellbeing associated with IDAs. Examples of these benefits include improvements in future orientation, self-efficacy (Sherraden & McBride, 2010), household financial stability (Leckie, Hui, Tattrie, Robson & Voyer, 2010; Mills, Gale, Patterson, Engelhardt, Eriksen & Apostolov, 2008), and educational outcomes operating in part through increased aspirations and expectations (Zhan, 2006; Zhan &

M. W. Sherraden, 2003). In addition, financial inclusion may also play an important role in promoting homeownership among lower-income families, which often has additional positive effects on the wellbeing of children through residential stability and better neighborhoods, schools, and access to services (Oliver & Shapiro, 1997).

Based on existing theoretical and empirical literature, one of the premises of this study is that financial capability may help improve low-income parent's investment in children in the short-term and reduce poverty among low-income families in the long term. The improved investment in early childhood can open a unique and long-lasting window of opportunity for the cognitive, physical and social development of low-income children. These early gains in childhood can create a more level-playing field for children from economically disadvantaged families and may allow more equal access to better education and jobs later in life, changes that may help in breaking the vicious cycle of poverty.

### **Study Rationale**

While empirical evidence on financial capability is limited, the effort being made by scholars in social work and other disciplines to examine financial capability among low-income people is off to a good start. One question that has already emerged from discussions within social work on financial capability is "What are the discrete and summative contributions of financial knowledge at the individual level and inclusion in the mainstream financial sector to the well-being of low-income families and children?" To date, we have more research on the discrete, or independent, contributions of financial knowledge and financial inclusion than on their combined effects. The suggestion that efforts to increase financial knowledge and financial inclusion are most effective when combined leads to a hypothesis of interaction effects. In addition, we have more evidence on the role of financial capability in shaping financial

wellbeing than its role in the wellbeing of children in low-income families. For example, we have little evidence on the discrete and combined effects of parents' financial knowledge and inclusion on various child wellbeing measures such as parent school involvement, home resources for children, and enrichment activities.

There is obviously much more work to be done to fully examine the respective, and perhaps interactive, roles that financial knowledge and inclusion in the mainstream financial sector play in the wellbeing of low-income families with young children. Increased knowledge about financial capability among low-income families will be necessary to guide more effective practice and policy approaches. Based on current knowledge gaps, I believe the most pressing research questions are those that address the independent and combined effects of financial knowledge and financial inclusion on the social and economic wellbeing of low-income families and their children.

Combining financial knowledge with financial inclusion is thought to give low-income families the opportunity, not just the ability, to act in their best financial interests. Financial capability is important for low-income families because financial knowledge allows them to make informed financial decisions that are in their best interests (Mandell, 2008; M. S. Sherraden, 2010; Huston, 2010), and financial inclusion provides the opportunity to do so in the financial mainstream, just as financially secure people are able to do (M. S. Sherraden, 2013). However, the effect of financial capability on the wellbeing of low-income families with young children is just beginning to be explored. Thus, the intent of this study is to contribute towards narrowing this knowledge gap by focusing on the independent and joint contributions of financial knowledge and financial inclusion on the wellbeing of low-income families with children.

## CHAPTER 2: LITERATURE REVIEW

In this chapter, I review theoretical and empirical literature on the independent and combined contributions of financial knowledge and financial inclusion to the wellbeing of low-income families with young children. Some of my measures of wellbeing focus on money management of parents and others focus on developmental resources for young children in low-income families. I start by reviewing theoretical literature in order to first conceptualize major terms, and describe major concepts that are central to the conceptual framework of this study. In the subsequent section, I will review empirical literature on the individual and combined contributions of financial knowledge and financial inclusion to the wellbeing of low-income families with young children.

### **Theoretical Review**

In this sub-section, I review theoretical literature on the independent and combined contributions of financial knowledge and financial inclusion to the wellbeing of low-income families with young children. I will begin my review by conceptualizing family wellbeing and elaborating the capability approach, which is the major theoretical base for this study. In the subsequent sections, I will review theoretical literature by focusing on the contributions of financial capability to the wellbeing of low-income families and children.

### **Conceptualizing Family Wellbeing**

The theoretical and empirical literature on family wellbeing is extensive, but largely inconsistent in terms of conceptualization. Moreover, most of this literature does not define the term family wellbeing explicitly but rather depends on indicators or outcomes to characterize its meaning (Munford & Sanders, 1999). A growing body of literature on family wellbeing is continually attempting to conceptualize the term across disciplines as theorist and researchers



work to strengthen the wellbeing of families (Meadows & Taylor, 2007). Nevertheless, the term family wellbeing is still defined inconsistently depending on discipline specific views, theoretical foundations, and research milieu.

Defining and measuring family wellbeing is even more complex than operationalizing individual wellbeing consistently. Various philosophers, psychologists, and economists have attempted to specify the dimensions of wellbeing by compiling lists of potential common factors such as happiness and life satisfaction (Kammann, 1983; Mehnert, Kraus, Nadler & Boyd, 1990), fulfillment of human needs (Maslow, 1970), necessary resources such as income and employment (Townsend, 1979; Hollander, 2001), and achievement of human capabilities (Sen, 1987; Nussbaum, 2000). Given these variations, the term wellbeing becomes even more complex when families are brought into the picture, because individual wellbeing is often influenced by family wellbeing and these two dimensions are consequently interdependent (Linacre, 2007). As a result, many scholars are skeptical as to whether a consensus can be reached in conceptualizing wellbeing, let alone family wellbeing (Pollard & Lee, 2003; Moore, 2007).

The need to develop a comprehensive and a widely accepted conceptual definition for family wellbeing is a pressing issue, because it is increasingly important to guide policy and research, justify measures, and help build a consistent evidence base (Munford & Sanders, 1999). However, at present, the term family wellbeing is conceptualized in a variety of ways, in part, based on different theories, such as ecological systems theory, family systems theory, and resource theory, or depending on the research context and purpose. Some scholars have attempted to define the term family wellbeing. For example, Sing and colleagues (2001) define family wellbeing as “the emotional, social, and economic wellbeing of children, parents, and families” (p.1) while McKeown, Pratschke, and Haase (2003) define family wellbeing as “...

both physical and psychological wellbeing [of family members] as well as the quality of relationships between parents and the quality of parent-child relationships” (p.5). Rigg and Pryor (2007) define family wellbeing as “...the ability to perform functions and practices for the benefits of the group and individuals” (p.23). These three varying definitions show that the term family wellbeing is a multidimensional concept, and that scholars view family wellbeing from different angles, including social, financial, and psychological aspects of families. In addition, like individual wellbeing, family wellbeing can be conceptualized in terms of functions, needs, and the fulfillment of needs. Despite the breadth of prior efforts to conceptualize family wellbeing, or perhaps because of this breadth, it is possible to specify some core family functions or needs in order to examine different aspects family wellbeing in various domains.

In this study, my conceptualization of family wellbeing follows both ecological systems theory and resource theory. The ecological systems theory is consistent with the person-in-environment (PIE) perspective because this theory acknowledges that the wellbeing of individuals and families cannot be adequately understood apart from the ecosystem (Munford & Sanders, 1999). On the other hand, resource theory provides a way of conceptualizing family wellbeing using the availability and interpersonal exchange of resources in family relationships in achieving a high state of wellbeing and overall quality of family life (Rettig & Leichtentritt, 1999; Sing, Hill & Mendenko, 2001). Resource theory focuses on the extent to which families own and provide resources, such as services, goods, money, and information, in order to meet the personal needs of all family members, and thereby, carry out essential functions as a central institution in society (Rettig & Leichtentritt, 1999). This theory emphasizes the importance of economic and non-economic resources in a family unit, and the interaction between them in shaping family wellbeing. In this study, family wellbeing is defined as the ability of a family

group to own or provide financial and non-financial resources to its individual members in order to meet their personal needs, and effectively carryout its essential functions as a family while taking into account external social and structural factors.

This definition of family wellbeing is consistent with the PIE perspective in social work, which is a practice-guiding principle that highlights the importance of understanding individuals and families in light of the environmental contexts in which they live and act (Kondrat, 2008). The definition is also congruent with the capability approach, which is a major theoretical framework that shapes this study. The capability approach conceptualizes wellbeing by bringing the role of individual abilities and external conditions into the same picture (Sen, 1987). The key points of this theoretical framework are that internal characteristics and external social structures are interactive and that this interaction shapes the future wellbeing of individuals and families (Nussbaum, 2011). The following section describes the theoretical underpinnings of the capability approach, provides its brief history, illustrates distinctive features that distinguish it from traditional economic theories, and conceptualizes wellbeing based on capabilities.

### **The Capability Approach**

The capability approach is a fairly recent theoretical framework that provides a way of understanding human development and wellbeing that differs from more traditional rational choice and other neo-classical economic perspectives. Amartya Sen, a Noble Prize-winning philosopher and economist from India, pioneered this theoretical framework in the 1980s and 1990s (Sen, 1987; 1993; 1999). A central figure among many scholars from many disciplines who have worked on capabilities is the philosopher Martha Nussbaum who made significant contributions to furthering the intellectual foundation of the capability approach (Nussbaum, 1988; 1990; 1995; 2000; 2011). Nussbaum's attempts to develop Sen's framework includes, but

is not limited to, developing a list of central capabilities that are hypothesized to lead to wellbeing (Nussbaum, 1990). Although the capability approach was first articulated in the 1980s, both Sen and Nussbaum indicate that some aspects of their work are influenced by early philosophical underpinnings from Aristotle, Adam Smith and Karl Marx (Sen, 1987; Nussbaum, 1990).

The capability approach rests on the idea that freedom is crucial to the achievement of wellbeing (Sen, 1987). The approach also suggests that freedom should be defined, at least in part, as having the capability to achieve wellbeing. The capability approach argues that what matters most for wellbeing is the freedom people have to achieve what they value. Sen states that this is because freedom allows what people are “able to be” and “able to do” and that these opportunities determine the kind of life they lead (Sen, 1985, p. 10; 1993, p. 31; 1992; p. 40). This is in sharp contrast to the more common understanding of wellbeing, which is most often measured on the basis of either income or happiness, what economists refer to as utility (Clark, 2007). As its distinctive characteristic from traditional neo-classical economic theory, the capability approach suggests that non-monetary indicators of wellbeing are better measures of people’s freedom to achieve what they value in life (Sen, 1993). Sen argues that focusing on capabilities brings individual abilities and external conditions into the same picture. This argument is crucial because it suggests that evaluation and measurement of wellbeing must take the role of structural arrangements into account in addition to factors that lie within individuals.

This theoretical proposition can be adequately understood by closely looking at the conceptual definitions that Sen (1987) provides to illustrate the difference between capabilities and what he calls “functionings” (p. 8). This conceptual distinction is essential to sufficiently understand the capability approach. Sen defined functionings as “beings and doings” and

capabilities as freedom to achieve “beings and doings” (Sen, 1985, p. 10; 1999, p. 71). In simple terms, functionings are what people actually are able to be (e.g. healthy, happy, or financially stable) and/or what they are able to do (e.g. manage financial resources, make rational financial decisions, prepare for decent jobs, and save for future developmental goals). In contrast, capabilities are freedoms that come from structural opportunities that people need to have in order to achieve desired functionings (Sen, 1987; 1999). When we apply this concept to financial wellbeing, functionings what people are able to be and able to do in the financial world while capabilities are the freedom or structural opportunities they have to achieve their desired financial functionings (Banerjee, 2016). Therefore, the assessment of financial wellbeing should not be limited to evaluating current financial realities of people’s lives such as income and assets, but it should be based on evaluating both the abilities and opportunities that combine to create those realities.

Thus, capabilities are prerequisites to desired functionings because people without both individual abilities and true freedom to access opportunities in the larger society cannot achieve what they want “to be” or what they what “to do.” For example, if individuals value financial stability, their success depends on the capability or freedom to achieve financial stability, or in other words, on their financial abilities and the financial opportunities that are afforded them by surrounding social structures and institutional arrangements. This example shows that without both individual ability and access to advantageous social structures people cannot achieve their desired functionings. Sen’s argument is very important here because what we might call the social infrastructure of a society, or even the societal or opportunity architecture, determines whether or not resources can be effectively transformed into valued outcomes.

Thus, it is the combination of individual abilities and access to advantageous social structures that allows people the freedom to achieve what they desire in life. Conversion of resources into valued outcomes can be influenced by individual abilities. As applied to financial well-being, people who have knowledge of financial planning and budgeting may do well in converting resources into valued outcomes by effectively managing financial resources, making ends meet, or saving for college and retirement. However, structural level factors also shape the opportunity structure such that conversion of resources into desired outcomes is influenced by what social and institutional arrangements allow and prohibit (Sen, 1987; 1993; 1999). For example, in a society where oppression and inequality exist, converting resources into valued outcomes can be constrained by structural factors such as discriminatory rules and regulations.

Nussbaum (1995) applies the capabilities approach to human development and wellbeing, suggesting that both individual level factors and external conditions are crucial to wellbeing. Nussbaum's approach suggests that people need individual abilities such as knowledge and skills, as well as access to external opportunities within advantageous social structures to achieve wellbeing (Nussbaum, 1988; 1990; 1995; 2000; 2011). Therefore, according to Nussbaum, improving wellbeing is not only a matter of enhancing individual abilities but also a matter of changing environmental conditions to increase the array of opportunities available to people in developing their capabilities and securing their wellbeing (Nussbaum, 1988; 1990; 1995; 2000).

### **The Concept of Financial Capability**

I will continue my review of theoretical literature by covering the application of the capability approach to money management of low-income families. This section describes the ways in which financial capability has been conceptualized, the components of financial capability, and its role in enhancing the wellbeing of low-income families. The section also

explores and examines the conceptual framework of financial capability as it applies to social work practice by examining both the individual and structural components of the construct.

Similar to the articulations of capability approach, the concept of financial capability captures both individual and structural factors that may influence wellbeing (M. S. Sherraden, 2013). According to this concept, people need both financial knowledge and skills at the individual level as well as access to financial products and services in order to build financially secure lives. People who are financially knowledgeable and skilled are thought to be able to make financial decisions that are in their best financial interests (Huston, 2010; Butrica, Harris, Perun & Steuerle, 2014). Further, people who have access to the structural financial market may have the opportunity to use quality and affordable financial products and services that will improve their financial outcomes (Beverly, M. W. Sherraden, Cramer, Shanks, Nam & Zahn, 2008). According to the concept of financial capability, people need both financial knowledge and access to financial products and services simultaneously to be financially capable.

Some scholars have been skeptical of the need to combine financial knowledge with financial products and services in order to reduce financial vulnerability (Lyons, Chang & Scherpf, 2006). This skepticism, in part, comes from scholars who have studied financial education and suggest that financial knowledge alone will reduce financial vulnerability (Lyons, Chang & Scherpf, 2006). In responding to this skepticism, it is important to review studies that examine the effects of financial education on financial wellbeing. For example, a recent meta-analysis conducted by Fernandes, Lynch, and Netemeyer (2014) on the effect of financial education on financial behaviors suggests that financial education alone explains a very small amount of the variance in financial behaviors. This may be related to findings from earlier

studies demonstrating that people do not tend to retain the financial knowledge they obtain from financial education over time (Mandell, 2004).

Two schools of thought have helped shape our growing understanding of financial capability. The first is institutional theory, which emphasizes the role of institutions and institutional arrangements in money management (Beverly, M.W. Sherraden, Cramer, Shanks, Nam & Zahn, 2008; M.W. Sherraden, 1991; M.W. Sherraden & Barr, 2005). Institutional theory details the ways in which the financial wellbeing of individuals is shaped by structural arrangements including rules, regulations, opportunities, and norms. Institutional theory provides ways to think about how access and opportunity to financial products and services help determine the financial wellbeing of everyone in society, including the financially vulnerable.

The second scholarly body of work that has informed our understanding of financial capability is behavioral economics. Behavioral economics focuses on the effects of psychological, cognitive and emotional factors on the financial decisions and choices of individuals (Thaler & Sunstein, 2008; Maital, 1982). This school of thought helps us understand that habit and inertia exert considerable force in shaping financial behaviors. For example, in the absence of a strong incentive to change retirement account allocations from certain kinds of investments to others, most people with retirement accounts do not change their allocations, often making no new allocation decisions over the course of their tenure with an employer (Butrica, Harris, Perun & Steuerle, 2014). Similarly, change was required at the federal policy level in recent years to allow companies to establish retirement accounts for their employees, unless the employees opt out, because a large portion of new employees never get around to signing the paperwork necessary to qualify for employer contributions to retirement savings (Butrica & Smith, 2012).



Behavioral economics is thought to operate much the same way in the lives of people who are financially vulnerable (Thaler & Sunstein, 2008). This suggests that increasing financial capability will involve making institutional arrangements operate automatically on behalf of financially vulnerable people as much as possible. Further, we should not require any more active decision-making or behavioral changes of low-income people than are required of people without financial challenges (Butrica, Harris, Perun & Steuerle, 2014) who rely on institutional arrangements such as direct deposit, automatic matching of retirement savings, tax benefits for homeownership and retirement saving, and electronic “auto” bill pay to achieve and maintain economic stability and financial well-being.

Informed by institutional theory and behavioral economics, then, the concept of financial capability suggests that people make financial decisions based on their internal abilities such as financial knowledge and skills and also on the basis of institutional arrangements, access and opportunities related to financial products and services available to them (M. S. Sherraden, 2013). The argument for financial knowledge is that knowledge allows people to make informed financial decisions that are in their best interests (Mandell, 2008; 2009; M. S. Sherraden, 2010; Huston, 2010). Access to financial products and services that are affordable and of high quality, as well as supported by institutional arrangements that facilitate their use, provides financially vulnerable individuals the opportunity to make decisions in the financial mainstream, just as financially secure people are able to do. Thus, the combination of financial knowledge and financial inclusion is thought to give people, and especially low-income people, the ability and the real opportunity to act in their best interests, shaping the overall wellbeing of their families.

**Financial Capability and Wellbeing of Children: Theoretical Overview**

In this sub-section, I describe the theoretical relationship between financial capability and wellbeing of children. This relationship is not yet well established in either the theoretical or the empirical literature. However, as discussed in the previous sections, we have some evidence that financial knowledge and financial inclusion may improve the money management of low-income families, expand opportunities to save and build assets, and help low-income families achieve upward mobility (Loke, 2015; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013; Grinstein-Weiss, Shanks & Beverly, 2014). These gains at the family level may mean that parents have more resources available to invest in their children (Hilgert, Hogarth & Beverly, 2003; McKernan, Ratcliffe & Nam, 2007; Huang, Nam, and M.W. Sherraden, 2015), which may allow for better nutrition, health care, and education, creating a more level playing field for children from economically disadvantaged families.

Children in low-income families start life on unequal economic footing, and this has adverse implications for their future wellbeing. Prior studies suggest that both timing of poverty and persistent childhood poverty present obstacles to future social and economic wellbeing (Doyle, Harmon, Heckman, Tremblay, 2009; Ratcliffe & McKernan, 2012). Poverty early in life has been linked to behavioral problems (Duncan, Brooks-Gunn & Klebanov, 1994), and it has also been linked with lower academic achievement than poverty experienced in later childhood and adolescence (Brooks-Gunn & Duncan, 1997). Children born in low-income families have worse adolescent and adult outcomes than children born in more affluent families (Ratcliffe & McKernan, 2012). Prior research shows that children who are born in low-income families and persistently experience childhood poverty are significantly more likely to be poor as adults, drop

out of high school, have teen premarital births, and have patchy employment records compared with those not low-income at birth (Ratcliffe & McKernan, 2012).

One clear explanation for the poor outcomes of children in low-income families is that fewer economic resources are available to these families to invest in their children than in high-income families, and this lack of investment may lead to poor outcomes for children (Bradley & Corwyn, 2002; Furstenberg & Hughes, 1995). First, low-income families have fewer resources to purchase goods and services, including those goods that are valuable in maintaining basic child welfare, such as food and clothing (Becker, 2002; Jencks & Mayer, 1990). Second, these families may lack economic resources to invest in opportunities that can enhance the cognitive and social development of their children, resulting in less money for books and enrichment activities, living in neighborhoods with poorer school districts, and less than optimal future planning for post-secondary school opportunities (Abrams & Gibbs, 2002; Epstein, 2001). In addition, family economic resources may have indirect effects on child outcomes by limiting parents' investments in non-financial realms. One example of this is the way that living in poverty can make it more difficult for parents to be heavily involved in their child's education (McLoyd, 1990). This example is important because of prior research suggesting that a higher level of educational involvement by parents is related to academic success for students (Epstein, 2001). Overall, proposed explanations regarding the ways in which the lack of economic resources may limit parents' ability to invest in their children focus our attention on the possible long-lasting costs of poverty for children in low-income families.

Financial capability may improve low-income parents' ability to invest in their children and shape their preparations for their children's post-secondary education, which may increase the chances that those children will attend college. For example, some studies show that financial

capability plays an important role in parents' decisions to participate in college saving programs (Huang, Nam, and M.S. Sherraden, 2013). Parents who lack financial knowledge may not know about the available structural opportunities to save for their children (Sherraden, Johnson, Guo, & Elliott, 2010; Loke, 2015; Cole & Shastry, 2008; Urban, Schmeiser, Collins & Brown, 2015). They may not know about such financial vehicles for investing in their children's postsecondary education (Huang, Nam, and M.W. Sherraden, 2015). However, to effectively save for children's education, all families and especially low-income families must have access to such vehicles (Stuhldreher, 2010; McKernan, Ratcliffe & Nam, 2007). Theoretically, parent financial capability as measured on the basis of knowledge combined with access to appropriate financial vehicles is thought to be positively associated with investing in children's future developmental goals, including post-secondary education and training.

If low-income children fail, in part, because their parents cannot make sufficient investments in their future, then the life chances of low-income children can be improved by providing families with the means to make the investments. Primarily, parent's ability to invest in their children depends on adequate family income (Becker, 2002; Cooper & Stewart, 2013). However, financial knowledge, opportunities to efficiently manage financial resources, and public or private contributions to asset-building accounts for the future developmental needs of children can also play crucial roles in shaping the wellbeing of low-income families and children (M.W. Sherraden, 1991; Becker, 1991). This is because different economic resources may have different welfare effects. For example, resources when held as assets can be used to smooth out irregularities in income and can provide those who own assets with a sense of control and personal security (Grinstein-Weiss, Shanks & Beverly, 2014). In this way, helping low-income, low-wealth families to save and build assets could improve near-term economic security, and

also help children in such households succeed academically and achieve future economic success (Green & White, 1997; Zhan & M.W. Sherraden, 2003). In the aggregate, prior scholarship on household assets and the wellbeing of children has led to a focus on financial capability because financial knowledge and inclusion in the mainstream financial sector are assumed to be necessary among low-income families who seek to build financial assets and achieve financial wellbeing.

One of the underlying purposes of this study is to explore the role that financial capability may play in improving the well-being of low-income families. In addition to the benefits of financial knowledge, which helps low-income families make informed financial decisions, access to basic financial products and services in the financial mainstream, such as checking and savings accounts, has the potential to make multiple positive contributions to the wellbeing of children in low-income families (Loke, 2015; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013; Grinstein-Weiss, Shanks & Beverly, 2014; Hilgert, Hogarth & Beverly, 2003; McKernan, Ratcliffe & Nam, 2007; Huang, Nam, and M.W. Sherraden, 2015). First, having access to such accounts may reduce transaction costs when families make payments and cash checks, for example, which may help them save money, and this saving can be used to pay for other family needs (M.S. Sherraden; 2010; 2013; McKernan, Ratcliffe & Nam, 2007). Second, an overwhelming body of evidence shows that providing low-income people with opportunities and incentives to save may help them begin to build assets for the future (Scanlon, 2001; Oliver & Shapiro, 1997).

With savings, families are more able to protect themselves from income shocks and can thereby better plan for the future (McKernan, Ratcliffe & Nam, 2007; Grinstein-Weiss, Shanks, & Beverly, 2014). Moreover, with improved financial inclusion, low-income families can

smooth out consumption and increase investment in their families, including improving parents' ability to invest in their children's nutrition, health, and education (Green & White, 1997; Zhan & M.W. Sherraden, 2003). This improved investment in children in low-income families can open a unique and long-lasting window of opportunity for the cognitive, physical, and social development.

### **Empirical Review**

In this sub-section, I review empirical literature on the independent and combined contributions of financial knowledge and financial inclusion to the wellbeing of low-income families. Then, I will continue my review with an emphasis on findings from studies on financial capability and the wellbeing of children in low-income families.

#### **Empirical Review of Financial Knowledge and Money Management**

The existing body of research on financial knowledge focuses on examining the impact of financial education on financial behaviors, and it has yielded inconsistent results (Hilgert, Hogarth & Beverly, 2003; Altman, 2011). Some studies suggest that financial education has a positive relationship with positive financial behaviors while others find no evidence for the impact of financial education (Bernheim, Garrett & Maki, 2001; Cole & Shastry, 2008). For example, an early study conducted by Bernheim, Garrett and Maki (2001) found positive impacts of mandated financial education classes on financial behaviors and practices. This study found that adults aged 30 to 49 who grew up in states that mandated personal finance courses had higher saving rates than those who grew up in states that had no mandate. Cole and Shastry (2008), however, re-examined the same question using census data and found no impact of financial education mandates on financial practices. In an attempt to reconcile these findings, some studies suggest that different samples may explain the inconsistent results because the

sample for the earlier study included high school graduates from 1960s to 1980s, while the later study analyzed data from the 2001 Survey of Consumer Finance (Mandell & Klein, 2009).

Turning to a study of another financial outcome, the effects of financial education mandates appear to be associated with improved credit scores and reduced delinquency rates for young adults (Urban, Schmeiser, Collins & Brown, 2015).

Systematic reviews also suggest that the relationship between financial education and financial behaviors is inconsistent. One of the comprehensive literature reviews is Hogarth's (2006) review of twenty-three published and unpublished studies. Hogarth was cautiously optimistic about financial education's impacts. Similarly, Martin (2007) concluded that evidence of benefits of financial education is promising but far from definitive. Other researchers were less optimistic about the benefits of financial education and have been critical of the rigor of the evaluation literature. Hathaway and Khatiwada (2008) suggested that rigorous evaluation is lacking and that there is little evidence that financial education affects behavior. While financial education is thought to lead to financial knowledge which, in turn, is theorized to lead people to act in their best financial interests, Lyons and Neelakantan (2008) note that people also make financial decisions based on financial opportunities available to them. Overall, prior research suggests that there is a correlation between financial knowledge and behavior, although the direction of causality remains unclear. As Hogarth, Beverly, and Hilgert (2003) suggest, the association between financial knowledge and behavior does not necessarily mean that more knowledge improves behavior. Perhaps more experience in financial activities, or learning by doing, leads to more financial knowledge.

There have been a few financial education studies that have focused specifically on low-income people. Some of these suggest that financial education has positive effects on the

financial knowledge and financial practices of people with low-incomes (Collins, 2013; Hilgert, Hogarth & Beverly, 2003; Altman, 2011). Collins (2013) examined the impact of mandatory financial education among low-income families in subsidized housing. The study finds that mandatory financial education may lead to improvements in self-reported financial knowledge, financial practices, and savings. Similarly, Hilgert, Hogarth and Beverly (2003) and Altman (2011) suggest that financial education may help people in low-income households make advantageous financial choices and decisions. One limitation of this empirical literature to date is that the studies have relied on self-reported financial knowledge and financial practices.

A meta-analysis on financial education, financial knowledge and financial behaviors that includes more than 200 prior studies indicates that financial education interventions explain only 0.1 percent of financial behavior variance across populations studied, and even less of the variance in financial behavior among low-income individuals (Fernandes, Lynch & Netemeyer, 2014). This study suggests that financial education as it is being offered currently may not be enough to shape large changes in financial behavior. Perhaps different curricular approaches to financial education, or different content, is required. For example, financial education interventions in the future might focus on financial planning skills, confidence to be proactive in financial matters, and understanding investment risks and benefits. Or perhaps, as suggested by conceptual work on financial capability, we will discover in future studies that financial education is more effective when paired with appropriate and affordable financial services and products.

The study by Fernandes and colleagues (2014) also suggests that the effect of financial education on financial knowledge and financial behavior fades as time passes. They note that it may be difficult to retrieve and apply knowledge from education to later financial decisions,



particularly decisions coming years after the educational experience. Content knowledge may be better delivered when financial education is tied to particular financial decisions which may improve perceived relevance, as well as minimize forgetfulness. The study suggests that there must be some immediate opportunity to act and put new knowledge to use or it will be forgotten. In a suggestion that concurs with the work on financial capability, Fernandes and colleagues (2014) suggest the importance of combining financial education with appropriate financial products and services because low-income people can learn more about financial matters when they have personal experience operating in the mainstream financial sector.

A review of empirical literature on measures of financial knowledge also reveals major conceptual problems in prior research as well as several practical limitations. First, there is a shortage of studies that examine financial knowledge with particular emphasis on low-income families. Therefore, most of the studies reviewed in this sub-section cover the general US population, not low-income groups only. Second, since current financial education approaches do not appear to result in long-lasting financial education for general populations, let alone low-income groups, we need to know if there are better content and teaching methods for the clients and communities that are the main concerns of social workers (Fernandes, Lynch & Netemayer, 2014). Further, financial educational and knowledge needs may vary across low-income groups that differ on the basis of age, gender, cultural identity, religious tradition and other factors (M. S. Sherraden, 2010). Moreover, since financial education is only one way of gaining financial knowledge, focusing on financial education to measure financial knowledge gives little attention to the effects of other sources of financial knowledge, such as financial socialization, financial counseling, coaching and advising. Despite these limitations, financial education studies do

provide us with some relevant information about the level of financial knowledge in the United States and suggest that there may be some impact of financial knowledge on financial wellbeing.

### **Empirical Review of Financial Inclusion and Money Management**

Financial inclusion is another important component of financial capability. Recent theoretical and empirical work indicates that access to appropriate financial products and services is crucial to enhance financial stability and security among low-income families (M.S. Sherraden, 2013; Schreiner & M.W. Sherraden, 2007; Nam, Kim, Clancy, Zager & M.S. Sherraden, 2013). For the purposes of this proposal, I use the term financial inclusion to refer to access to, and opportunities to regularly use, mainstream financial products and services (Caskey, 1994, 2005; M.S. Sherraden, 2010, 2013). As described later in the methods chapter, I will measure financial inclusion on the basis of ownership of checking and savings accounts. M.S. Sherraden (2010) notes that financial products and services that are affordable, reliable, and easy to use are widely considered to be most appropriate for low-income populations (M.S. Sherraden, 2010). Based on this understanding of financial inclusion, I will start my review of empirical literature on financial inclusion with studies on the limited access of low-income people to appropriate financial products and services.

National statistics indicate that one in twelve American households are unbanked (FDIC, 2009), a term that is used to refer to households that own no accounts in mainstream financial institutions. This figure becomes even larger when we narrow our focus to low-income households; almost a quarter of low-income households do not have access to mainstream financial products and services (Bucks, Kennickell, Mach & Moore, 2009). Schwartz (2011) suggests that bank rules, including eligibility criteria, are major factors that contribute to the financial exclusion of low-income families. In addition, irregular income and small account

balances may prevent low-income individuals from holding or maintaining a bank account (M.S. Sherraden, 2010). Other access barriers include geographical locations of mainstream financial institutions, high fees to maintain an account, and inconvenient hours of operation (Berry, 2005; Schwartz, 2011).

A nationally representative study conducted by FINRA (2009) indicates that 71% of unbanked people sometimes use high cost money orders and check cashing services to pay bills. Other studies also indicate that, when people lack access to the financial mainstream, they often use payday loans, car title loans, and “rapid tax refunds” which are, in reality, high interest loans. Many of these alternative lenders are expensive, unfair or deceptive (Caskey, 1994; 2005; Barr, 2004; Berry, 2005). Overall, the research indicates that when low-income families turn to alternative financial products and services, they expose themselves to hefty expenses if not outright deception.

Turning to the role of financial inclusion in the money management of low-income families, studies based on asset-building initiatives like Individual Development Accounts (IDAs) have provided evidence that inclusion may be associated with positive saving behaviors (Schreiner & M.W. Sherraden, 2007). When IDAs were first proposed, the most common critique was that the poor would not be able to save from their meager incomes because they do not even have adequate income to make ends meet, let alone saving for future developmental goals. However, empirical evidence on IDAs has consistently demonstrated that the poor can save when provided with access to a safe and secure account with appropriate incentives (McKernan, Ratcliffe & Nam, 2007; Mills, Gale, Patterson & Appostolov, 2006; Schreiner & M.W. Sherraden, 2007). For example, McKernan and colleagues (2007) found that IDA participants in their study saved, on average, \$16.60 per month consistently for four years. A

particularly interesting finding from their study is that nearly half of the participants were not savers before they opened their IDAs.

In addition to improving savings, the McKernan, Ratcliffe and Nam (2007) study showed that the institutional supports participants receive from IDA programs might increase homeownership. For example, the rate of homeownership almost doubled among low-income black renters while they were IDA participants (an increase from 6 to 11 percent). Similarly, Mills and colleagues (2006) reported positive impacts of IDA participation on homeownership. Interestingly, the study by Mills and his colleagues (2006) found a negative impact on financial assets for the IDA participants they studied. However, this negative impact on financial assets happened because the IDA participants used their financial assets to buy homes. Overall, these studies indicate that low-income families can save and build assets when the institutional supports, including access to safe and secure bank accounts and incentives, are in place.

To date, we have limited evidence on how different types of financial products, such as checking accounts, transaction accounts, dedicated saving accounts for college and other developmental purposes, loans, and retirement accounts may affect the financial wellbeing of low-income families. However, there are empirical studies that suggest a relationship between savings account ownership and saving (McKernan, Ratcliffe & Nam, 2007; Schreiner & M.W. Sherraden, 2007; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013). For example, a recent study conducted by Nam and colleagues (2013) indicates that low-income IDA participants who own savings accounts save more than those who do not own savings accounts.

Further, studies of financial inclusion indicate that saving among low-income people may increase when they are encouraged to save through incentives (Stuhldreher, 2010; McKernan, Ratcliffe & Nam, 2007; Mierzwa, 2007; Tufano, 2009; Mills, Gale, Patterson & Appostolov,

2006; Schreiner & M.W. Sherraden, 2007). For example, a saving program called “Save to Win” encourages low-income people to open savings accounts and save with a chance to win \$100,000 for opening and maintaining a savings account with regular deposits. The program attracted more than 11,000 low-income people and, together, they saved \$8.6 million in one year’s time (Stuhldreher, 2010). A large proportion of these low-income individuals had not saved regularly in the past.

Another program called “Keep the Change” created an innovative program to help low-income customers by owning a debit card and using it regularly for purchases (Mierzwa, 2007; Tufano, 2009). The bank deducts a few cents from customers’ debit cards by rounding the amount to the nearest dollar on every purchase, transfers those small amounts to their savings account, and matches these savings one-to-one. In 18 months, the aggregate savings of the 4.3 million customers who signed up for this savings scheme reached \$400 million (Mierzwa, 2007). While evidence on “Keep the Change” suggests positive results in improving savings, its accessibility to many low-income households is questionable. Although early evaluations of the program (e.g. Tufano, 2009) indicate that “Keep the Change” is accessible, affordable and easy to use, the program operates within banks in the financial mainstream whose services are not particularly designed to address the needs of low-income families. However, such a program could be replicated in low-income communities and its effects evaluated to see if it results in increased savings among financially vulnerable groups.

In the above sub-section, I have discussed evidence on the role of financial inclusion in the financial wellbeing of low-income families. The research on financial inclusion shows that many low-income families in the United States do not have access to basic financial products and services. In addition, some turn to predatory financial products that exacerbate their financial

situations. Evidence on financial inclusion suggests that low-income families can save and build assets when they have appropriate institutional support, including incentives. Overall, a review of the empirical literature on financial wellbeing suggests that institutional facilitators may lead to positive financial outcomes for low-income families. However, the research is sparse and many more studies are needed on this component of financial capability among low-income families.

### **Empirical Review of Financial Capability and Money Management**

Evidence on the role of financial capability in the money management of low-income families is also limited. Only a few studies examine the effects of combining financial knowledge with financial inclusion in the form of financial products and services. The empirical evidence that does exist is somewhat mixed. In this sub-section, I will review empirical literature on the contribution of financial capability to the money management of low-income families.

There is some evidence that indicates financial capability may lead to positive financial practices, including regular saving. For example, Han, Grinstein-Weiss and M.W. Sherraden (2007) examine the effect of IDAs on regular saving in the large American Dream Demonstration (ADD) experiment serving low-income families in Tulsa, Oklahoma. Those in the treatment group participated in the IDA program while those in the control group received usual services from the multi-service agency hosting the ADD initiative, but did not open IDAs or receive the associated financial education. The findings of the study indicated that those in the treatment group were more likely to save money regularly than those in the control group. Because an IDA and financial education were bundled together in this study, it was not possible to discern the independent contribution of each to regular saving among this group of low-income participants.

Another study examines the role of financial capability in shaping financial outcomes of young adults using the 2012 National Financial Capability Study (Friedline, West & Schuetz, 2015). The study examined the association between financial capability and five outcome variables including emergency savings and use of alternative financial services. Findings indicate that financial capability is associated with the likelihood of saving for emergencies. Participants who had saving accounts and participated in financial education were more likely to save for emergencies than those having savings accounts alone or financial education alone. Findings also indicate that financial capability reduces the likelihood of using predatory financial services, such as payday lenders, that often worsen the financial situations of low-income families. The findings of this study, overall, indicate that combining financial education with a savings account increases advantageous financial outcomes more than having a savings account alone or receiving financial education alone.

These findings and those of the study by Han and colleagues (2007) are similar to those from another quantitative study by Peng, Bartholomae, Fox and Cravener (2007), which suggests that financial capability may be associated with positive financial practices. Peng and colleagues (2007) examined the impact of high school and college financial education on investment knowledge, and found no significant relationship between the two. However, experience with financial products and services were associated with investment knowledge and saving. The most interesting finding of this study is that experience with financial products and services explained more of the variance in financial knowledge and saving than financial education.

An outcome of a different nature was studied by Adams and Shibikom (2014) who explored financial capability and perceived economic strain among low-income families. They found that financial knowledge was negatively associated with perceived economic strain, but

only for households that owned a bank account. Unlike the current study, the research by Adams and Shibikom (2014) did not control for demographic or socio-economic characteristics.

Qualitative studies also suggest the importance of combining financial education with financial products and services for advantageous financial outcomes among low-income individuals (M.S. Sherraden & McBride, 2010; Scanlon, Buford & Dawn, 2009). M.S. Sherraden and McBride (2010) found that IDAs that combine financial education classes with matched savings accounts increased saving among participants. Similarly, Scanlon and colleagues (2009) examined the contributions of savings accounts and financial education in a SEED youth demonstration program. Their in-depth interviews with youth ages 14 through 19 demonstrated that study participants reported the bundled account and financial education services improved their saving patterns.

Other researchers question the importance of combining financial education with products and service to improve the wellbeing of low-income families. For example, Lyons and Scherpf (2004) questioned the importance of combining financial education with savings accounts, and emphasized the value of financial education over financial products in improving financial practices in low-income families. Paralleling the emphasis of their earlier scholarship, they suggest that we should not evaluate the success of a program based on number of accounts one owns but based on how a program improves the knowledge and skills of participants in pursuit of better financial decision making.

Lackie, Hui, Tattrie, Robson, and Voyer (2010) conducted a randomized study on an IDA program in Canada called Learn\$ave. Opposite the suggestion of Lyons and Scherpf (2004) reviewed above, the Canadian study found that while matched saving accounts increased advantageous saving behaviors of study participants, the addition of financial education did not



increase saving beyond the deposits to the matched accounts themselves. The study indicates that the control group with matched savings only saved as much as the treatment group that received matched savings and 15 hours of case management services that included financial education.

In the above sections, I have discussed empirical evidence on the role of financial capability in the financial wellbeing of low-income families. Those studies reviewed above have included both components of financial capability – financial knowledge and financial inclusion, or access to mainstream financial products and services – in one way or another. The following sub-section reviews empirical literature on the contributions of financial knowledge and financial inclusion to the wellbeing of children in low-income families.

### **Empirical Review of Financial Capability and the Wellbeing of Children**

There is growing evidence of the importance of financial capability in optimal financial decision-making and financial wellbeing (Cole & Shastry, 2008; Urban, Schmeiser, Collins & Brown, 2015). Among low-income and disadvantaged families, financial capability is especially important because financial challenges are more critical, while financial literacy is low (Mandell, 2008; Peng, Bartholomae, Fox & Cravener, 2007), and families are less likely to have access to financial services (Stuhldreher, 2010; McKernan, Ratcliffe & Nam, 2007). For these economically disadvantaged families, there may be particularly important effects of financial capability on the wellbeing of low-income families (M.S. Sherraden, Johnson, Guo & Elliott, 2010). The positive effects may include improved opportunity for low-income families to build and accumulate assets (Huang, Nam, and M.W. Sherraden, 2015; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013), reduced transaction costs (M.W. Sherraden & Barr, 2005; Bass & Campbell, 2013; Caskey, 1994; Squires & Kubrin, 2006), and better financial management practices (Urban, Schmeiser, Collins & Brown, 2015), which may improve economic resources

available for children (Hilgert, Hogarth & Beverly, 2003; McKernan, Ratcliffe & Nam, 2007; Huang, Nam & M.W. Sherraden, 2015). Availability of more economic resources in low-income families may mean parents can spend and invest more on their children's nutrition, health, and education (Jencks & Mayer, 1990). In addition to improving financial investments on children, financial capability may help improve investment on children, such as involvement in children education (Bradley & Corwyn, 2002).

Several studies found the positive effect of subsidized asset-building opportunities such as Individual Development Accounts (IDAs) and Children's Development Accounts (CDAs) on the wellbeing of children. For example, using data from the SEED Oklahoma experiment, Huang, Nam, and M.S. Sherraden (2013) found the positive effect of financial capability on saving for children education. While all children in the treatment group had a state-owned CDA, parents with higher levels of financial knowledge were more likely to open a second individually owned CDA for the child's education than parents with lower financial knowledge.

Similarly, a recent study by Huang, Nam, M.W. Sherraden, and Clancy (2015) found that access to CDAs, financial knowledge, and financial capability have positive associations with asset accumulation for children's postsecondary education. Most interestingly, this study shows that CDAs have stronger effect for participants with more financial knowledge than for those with lower levels of financial knowledge. This finding indicates that access to CDAs moderates the association between financial knowledge and asset accumulation. In other words, financial knowledge is helpful in asset accumulation, but only for parents of children who have CDAs. This finding shows that the combined effects of financial knowledge and financial inclusion are more significant than the effect of either aspect alone. However, the study found weak association between financial capability and savings for children's postsecondary education.

In addition to evidence from prior studies suggesting that financial capability may improve opportunities for low-income families to build financial assets (Mills, Gale, Patterson & Apostolov, 2006; Caskey, 1994, 2005; M.S. Sherraden, 2010; 2013), there are also studies linking financial capability and financial stability in times of economic difficulty (McKernan, Ratcliffe & Nam, 2007; Schreiner & M. W. Sherraden, 2007; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013), and the ability of parents to provide educational and other developmental experiences for their children (Oliver & Shapiro, 1997). The educational outcomes of children could also be indirectly influenced by assets through parental expectations, future orientation, parent involvement, and positive socialization (Page-Adams & Vosler, 1996; Scanlon & Page-Adams, 2001, 2006). For example, McBride, Lombe, and Beverly (2003) found that low-income parents were more likely to plan for the education of their children after they joined a matched savings program.

In addition, there is evidence on the important role parents play in their children's financial education and socialization (Lührmann, Serra-Garcia & Winter, 2015). Just as with other forms of socialization, financial socialization begins in childhood (Shim, Barber & Card, 2010; M.S. Sherraden, 2010). A growing body of research suggests the benefits of developing financial knowledge at an early age. Further, because children show significant progress in terms of their economic understanding when they are between 6 and 12 years of age, facilitating the development of financial knowledge and attitudes needs to begin when children are young (Webley & Nyhus, 2006; Friedline, 2015; OECD, 2014; Whitebread & Bingham, 2013). Financial socialization occurs through different channels; school, work, and family can each play a role (Shim, Barber & Card, 2010). However, studies show that parents have the strongest impact on financial socialization (Lührmann, Serra-Garcia & Winter, 2015). Indeed, one of the

reasons that programs designed to build assets for children often include financial education opportunities for parents is because of the central role they can play in their children's financial education and financial socialization (Lusardi, Mitchell & Curto, 2010). Financial knowledge and financial skills obtained through financial socialization at a young age may act as a catalyst for sensible financial behavior and wealth accumulation later in life (Beverly & Burkhalter, 2005; Martin & Oliva, 2001).

Overall, studies show that parental financial and non-financial resources are critical predictors of both economic wellbeing and positive child development outcomes (Jencks & Mayer, 1990). Further, financial capability may improve opportunities to build financial resources (Huang, Nam, and M.W. Sherraden, 2015; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013). Children whose parents have more economic resources are expected to have a better chance of succeeding in childhood and adulthood (Oliver & Shapiro, 1997; M.W. Sherraden, 1991). Children who receive non-financial resources from their parents, such as quality parental care, also have a higher probability of having positive developmental outcomes than their peers (Ginsburg, 2007). In general, children in low-income families have less developmental opportunities such as fewer home resources, less parental involvement, and fewer enrichment activities compared to children in more affluent families (Bradley & Corwyn, 2002; Furstenberg & Hughes, 1995). Economically advantaged children have more opportunities to become successful in adulthood, at least as measured by educational attainment, income, and wealth (Mulder & Smits, 1999; Orr, 2003; Shobe & Page-Adams, 2001). Disparities in access to opportunity may, of course, be replicated across generations.

Despite growing evidence on the ways that economic resources may affect the wellbeing of children, we know little about the discrete and combined roles of parents' financial knowledge

and financial inclusion on child wellbeing. Some important factors that have not been fully explored yet are the contribution of parents' financial knowledge and inclusion to indicators of child wellbeing such as parent involvement in children's education, resources in the home for children, and enrichment activities. The wellbeing of children may not be solely influenced by financial resources, but also by non-financial resources that are essential for children's cognitive, behavioral, and social development (McLoyd, 1990). Studies suggest that the limited availability of such non-financial family resources can result in relatively high risks of cognitive and behavioral problems for young children (Bradley & Corwyn, 2002).

### **Empirical Review on Measures of Developmental Resources for Children**

In this study, I will use three measures to explore the role of financial capability on developmental resources for children. These are: number of parent involvement at school, number of resources in home for children, and books, reading, and enrichment activities. In this section, I will present relevant empirical literature to explore the role of these measures on the wellbeing of children.

Parent involvement in children's school takes a variety of forms, including involvement in the home and involvement in the school (Epstein, Sanders, Simon, Salinas, Jansorn & Van Voorhis, 2002). Involvement in the home includes helping children with homework and having discussions with children about school (Epstein, 2001). Involvement in the school includes attending open houses and meetings, as well as communication with teachers and other parents in the child's school (Abrams & Gibbs, 2002). Prior research has made an overwhelming case for parent involvement in children's education. The evidence that parent involvement improves student achievement is now incontrovertible; numerous studies point to parent involvement as a key determinant of children's success in school (Bloom, 1984; Dombusch & Ritter, 1988;

Henderson, 1987; Kagan, 1984). Reviews of family involvement research indicate that children whose families are more involved display higher levels of achievement than children whose families are less involved (Barton & Coley, 2007). For example, Dearing, Kreider, Simpkins, and Weiss (2006) found that between kindergarten and fifth grade increases in family involvement were associated with improvements in children's literacy achievement. Similarly, Sheldon and Epstein (2005) found that activities that engage families and children in discussing mathematics at home contribute to higher academic performance in mathematics.

Researchers agree that levels of parental involvement are lower for low-income families than their wealthier counterparts (Abrams & Gibbs, 2002; Epstein, 2001; McLoyd, 1990). Starting at birth, parents' involvement with their children's education can buffer the effects of poverty on children's acquisition of language, cognitive, and social competencies that foster achievement in elementary school (Shonkoff & Phillips, 2000). Yet, the socioeconomic consequences of poverty limit parents' resources including the emotional capacity to provide critical learning experiences for their young children (Abrams & Gibbs, 2002). Such limitations may result in parents talking infrequently with their children about their education and participating only minimally in child-focused learning activities (Evans, 2004; Hart & Risley, 1995). Low-income children with less involved parents often gain fewer benefits from schooling than children coming from higher income homes (Epstein, 2001).

Resources for children in the home come in the form of various goods and services that parents make available to their children that can be used to help them develop including toys, musical instruments, sporting goods, special lessons, computers, and Internet service (Bradley & Corwyn, 2002; Furstenberg & Hughes, 1995). Enrichment activities, on the other hand, refer to specific activities for children that are designed to improve their learning and development. Such

enrichment activities include encouraging children to read for enjoyment, taking children to museums, and introducing children to musical and theatrical performances (Bradley & Corwyn, 2002). Virtually all economic models of “household production” (Becker, 1991) assume a large role for resources in the home for children and enrichment activities in the creation of children’s human capital. Studies suggest such resources in the home and enrichment activities provide children opportunities to play and learn simultaneously, and that such activities are fundamental to children’s health, happiness and future life chances (Ginsburg, 2007). The lack of resources for children in the home and enrichment activities restrict children’s opportunity to play and learn, and may have a profound effect on their life experience in general, as well as a more specific impact on cognitive development (Gleave, 2009; Becker, 1991).

Not surprisingly, parents with better financial resources tend to be more able than less wealthy parents to spend money on their children’s human capital development by making essential resources at home and enrichment activities available (Furstenberg & Hughes, 1995). Economic theories suggest that income and assets provide parents with the ability to purchase or arrange for goods, services, and enriching experiences that are beneficial to children (Becker, 2002; Oliver & Shapiro, 1997; M.W. Sherraden, 1991). Reduced economic circumstances are likely associated with a decrease in the ability of parents to purchase these goods or make arrangements for services and experiences that promote child development (Thompson, Detterman & Plomin, 1991; Haveman & Wolfe 1994).

For families with fewer financial resources, economic deprivation constrains children’s futures, primarily by limiting access to essential resources and activities that are vital for the development of human capital (Becker, 2002; M.S. Sherraden, 2010). Since low-income families are forced to make decisions between current consumption and investments in their children’s

futures, most of their financial resources are spent on basic needs (McLoyd, 1990). In addition, low-income families live with continuous financial hardship, and day-to-day survival often distracts parental attention from their children and discourages them from making long-term plans for their children (Abrams & Gibbs, 2002; McLoyd, 1990).

The empirical literature has established the relationship between family income, resources for children in the home, and enrichment activities (Becker, 1991; Ginsburg, 2007). A growing body of evidence also suggests the relationship between family assets and the wellbeing of children (Oliver & Shapiro, 1997). However, so far, we have little evidence about the contributions of parents' financial capability to improved circumstances for low-income children.

My review of the theoretical and empirical literature suggests that we need future research on low-income families that explores the independent and combined effects of financial knowledge and financial inclusion, and measures social and economic well-being on the basis of outcomes that include, but go beyond, financial behaviors. To date, we have more research on the discrete, or independent, contributions of financial knowledge and financial inclusion than their combined effects. The suggestion that efforts to increase financial knowledge and financial inclusion are most effective when combined leads to the hypothesis of interaction effects. My conclusion is that there remains more work to be done to examine the respective, and perhaps interactive, roles that financial knowledge and inclusion in the mainstream financial sector play in the wellbeing of low-income families with young children. In this study, outcomes of interest include money management and developmental resources for children as detailed below in my research questions.



### Research Questions

1. When controlling for demographic and socioeconomic characteristics, are financial knowledge and financial inclusion significantly associated with money management of low-income families as measured by number of positive financial practices used in household, consistency in use of money management strategies, and financial future orientation?
2. When controlling for demographic and socioeconomic characteristics, is financial capability, which is the interaction between financial knowledge and financial inclusion, significantly associated with money management of low-income families as measured by number of positive financial practices used in household, consistency in use of money management strategies, and financial future orientation?
3. When controlling for demographic and socioeconomic characteristics, are financial knowledge and financial inclusion significantly associated with developmental resources for young children in low-income families as measured by number of resources for children at home, number of types of parental involvement at school, and books, reading, and enrichment activities?
4. When controlling for demographic and socioeconomic characteristics, is financial capability, which is the interaction between financial knowledge and financial inclusion, significantly associated with developmental resources for young children in low-income families as measured by number of resources for children at home, number of types of parental involvement at school, and books, reading, and enrichment activities?

## CHAPTER 3: METHODS

### **Design**

In this study, I used quantitative research methods to assess the individual and combined associations between the components of financial capability and the wellbeing of low-income families with young children. This longitudinal study analyzes secondary data from a larger research project called Michigan Saving for Education, Entrepreneurship, and Downpayment (MI SEED), which was part of a national demonstration of Child Development Accounts (CDAs). My study does not involve CDAs but focuses instead on the relationships between financial capability for MI SEED families at baseline and measures of wellbeing four years later. The following sections provide details about the larger research project, data set, sample, measures, and analysis plan for my study.

### **Larger Survey Research Project and Data**

MI SEED was part of a national initiative, called Saving for Education, Entrepreneurship, and Downpayment (SEED), which was designed to develop, implement, and research the use of initial and matching deposits in building assets for children and youth (Adams, 2008; Beverly, Clancy & M.W. Sherraden, 2014). The national initiative based on Sherraden's (1988, 1991) theory of wellbeing based on assets. MI SEED was one of 12 asset-building programs across the US that opened savings accounts for low-income children and youth with initial deposits, and matched any additional deposits made by parents and others. Savings in these accounts are dedicated for future developmental goals, such as college education, and nearly all of the Child Development Accounts (CDAs) in the SEED initiative were state college savings accounts (529s).

MI SEED was launched in 2004 by the Oakland Livingston Human Services Agency (OLHSA), which operated the asset building initiative through 2008. OLHSA is a community action agency in Pontiac, Michigan that provides a wide variety of services to low-income families in an economically distressed area north of Detroit. The agency recruited parents of 3- and 4-year old children attending its 14 Head Start centers, many of whom opened CDAs for their young children and agreed to participate in two telephone surveys, one at the start and the other at the end of MI SEED.

MI SEED data were collected from low-income parents of Head Start children through telephone surveys conducted by RTI International (Marks, Rhodes, Engelhardt, Scheffler, Wallace, 2009). To recruit survey participants for the study, OLHSA mailed letters about the research including protocols for the protection of human subjects to parents of children enrolling in the Head Start centers in fall 2004. OLHSA staff members also discussed the study with parents who did not respond to the letters at their children's Head Start program as the school year began. Altogether, 790 parents agreed to participate in the baseline (2004) telephone survey, which included both components of financial capability as well as numerous indicators of money management and developmental resources for children in low-income families.

Four years later, a follow-up survey was administered in fall 2008 by RTI International (Marks et al., 2009). The attrition rate was relatively low (13.2%) between baseline and follow-up surveys, with 686 individuals completing both surveys (Marks et al., 2009). Of these, only five surveys were removed from the analysis sample because of large amounts of missing data, resulting in an analysis sample for my study of 681. In secondary analysis, I used the MI SEED data to answer questions regarding associations between financial capability components at one

point in time and measures money management and developmental resources for children four years later among low-income families with young children.

### **Survey Instrument**

Baseline and four-year follow-up telephone surveys were conducted by RTI International (Marks et al., 2009). The survey instrument covers household resources and various measures of money management and developmental resources for children. Money management outcomes of interest in the survey are household financial practices, consistent money management, and orientation to saving. The survey also includes measures of developmental resources for children that are central to my study such as resources for children at home, parental involvement in education, and enrichment activities. Turning to explanatory constructs, the MI SEED survey data set includes measures of both individual level and structural level components of financial capability. At the individual level, the survey asks financial knowledge questions and also covers questions regarding financial inclusion in the form of ownership of bank accounts as a measure of institutional access to mainstream financial services. Secondary analysis of this data allowed me to examine relationships between the components of financial capability and measures of money management and developmental resources for young children in low-income families.

One of the strengths of the MI SEED data set is its measure of financial knowledge about basic aspects of the mainstream financial world such as interest rates, consequences of overdrawing bank accounts, and rates of return. These items gave me the opportunity to measure financial knowledge directly, rather than using financial education as a proxy. Many prior studies have used financial education as a measure of financial knowledge (see, for example, Friedline, West & Schuetz, 2015; Collins, 2013; Lyons & Scherpf, 2004; Hilgert, Hogarth & Beverley, 2003; Clancy, Gristein-Weiss & Schreiner, 2001). However, financial education is only one

process through which financial knowledge can be acquired. Not only are there other ways to acquire financial knowledge, but there are more direct ways to measure the construct.

Fortunately, the MI SEED data include direct measures of financial knowledge.

The other strength of the data set is that it provided an opportunity to measure financial inclusion using different types of bank accounts, including savings and checking accounts. Many financial capability studies measure financial inclusion using savings account ownership only (see, for example, Nam, Kim, Clancy, Zager & M. S. Sherraden, 2013; Schreiner & M.W. Sherraden, 2007). While savings accounts are an important type of financial product for everyone, there are a wide variety of financial products and services available, some of which may be more useful on a day-to-day basis for low-income families. For example, having a transaction account (i.e. checking or debit account) may be used more regularly in low-income households. Further, both checking and savings accounts may increase the wellbeing of low-income families, either alone or in combination. Thus, MI SEED data set provides the opportunity to explore the relationships among ownership of various types of bank accounts and wellbeing for this sample of low-income families with young children.

To summarize, the MI SEED data set includes the two components of financial capability (financial knowledge and financial inclusion) as well as indicators of money management and developmental resources for children, and the data were collected at two points in time four years apart. This data set creates the possibility to examine the relationships between the individual and structural components of financial capability at baseline and measures of wellbeing in low-income families with young children at follow-up.

## Dependent Variables

### Money Management Measures

In this study, my dependent variables are money management and developmental resources for children. Turning first to money management outcomes of interest, items in the follow-up MI SEED survey provides the opportunity to construct measures of household financial practices, consistent money management, and orientation to saving. I describe each of these measures and discuss their distributions in my sample below.

**Number of positive financial practices used in household.** My household financial practices measure is based on the number of positive financial practices that participants report undertaking. Financial capability is thought to be associated with positive household financial practices (M.S. Sherraden, 2013; Schreiner & M.W. Sherraden, 2007; Nam, Kim, Clancy, Zager & M.S. Sherraden, 2013) such as (1) using coupons or frequent buyer cards when buying groceries, (2) having a written budget or spending plan, (3) trying to save a regular amount of money each month, and (4) hesitating to use money that has been saved. In this study, these four items had yes/no response categories and I added the number of affirmative answers to the four items, so that the minimum possible score is zero and the highest possible score is four. Positive financial practice scores were well distributed in the sample (mean= 2.57; SD= 1.038) and acceptable skewness (-.430) and kurtosis (-.442) values. The median value of positive financial practices was three.

**Consistency in the use of money management strategies.** The second outcome measure of interest in my study is consistent money management (4 items;  $\alpha = .496$ ) among MI SEED parents. Implications of this reliability measure are included in the discussion chapter below. The survey data included four items at follow-up with possible responses of “rarely,” “sometimes,”

and “often.” These four items are: (1) “we set financial goals for the future”, (2) “we follow our financial plans”, (3) “we keep track of spending” and (4) “friends and relatives expect me to help them out when I have extra money.” Using an additive process and reverse coding, scores can range from 4 to 12 with higher scores indicating more frequency in the use of consistent money management strategies. Consistent money management was normally distributed among parents in the sample (mean= 8.86; SD= 1.919) and acceptable skewness (-.255) and kurtosis (-.595) values. The median value of consistent money management was nine.

**Financial future orientation.** Using another three items from the follow-up survey, I created a third measure of money management, which is financial future orientation (3 items;  $\alpha = .338$ ). Implications of this reliability measure are included in the discussion chapter below. Items included in this outcome of interest are measures of: (1) spending versus saving a hypothetical “extra” \$200, (2) shorter versus longer timeframe used when thinking about money management, and (3) less versus more emergency savings parents believe is necessary. The highest possible score on orientation to saving is 9 and would be the score for a parent in the sample who would save all of the hypothetical “extra” \$200, has a timeframe for money management of more than one year, and believes that it is necessary for a family to have more than \$1,000 in emergency savings. The lowest possible score on orientation to saving is 3 and would be the score for a MI SEED parents who would spend all of the “extra” \$200, has a current month timeframe for money management, and believes that the amount needed for family emergencies is less than or equal to \$1,000. Orientation to saving was normally distributed in the sample (mean= 5.83; SD=1.480) and acceptable skewness (.048) and kurtosis (-.693) values. The median value of financial future orientation was six.

### **Measures of Developmental Resources for Children**

In my review of the literature, I noted some aspects of family wellbeing in relation to developmental resources for children that have important implications for child development including learning resources for children at home, parent involvement at school, and enrichment activities (Gleave, 2009; Ginsburg, 2007; Barton & Coley, 2007; Webley & Nyhus, 2006). The MI SEED follow-up survey included items that measured these outcomes of interest, and each of the variables that I used to measure developmental resources for children is described below.

**Number of resources for children at home.** Four items in the 2008 follow-up survey asked parents about the availability of resources in the home that are associated with the cognitive and/or social development of children (Marks et al., 2009). These include musical instruments, special lessons, computers, and Internet service. The responses to these questions were “yes” or “no.” I added the affirmative (“yes”) answers to these four dichotomous questions so that the minimum possible score for resources in the home is zero and the maximum possible score is four. The distribution of number of resources for children at home (mean=2.57; SD=1.187) had low skewness (-.515) and kurtosis (-.649) values. The median value of number of resources for children at home was three.

**Number of types of parental involvement at school.** Six items from the MI SEED follow-up survey address various aspects of parent involvement in their child’s school in the past 12 months. Examples of these items cover attendance at events such as PTA meetings, back-to-school nights, parent-teacher conferences, fundraisings, plays, sports, concerts, and science fairs. Parent involvement at school is the number of six kinds of involvement that parents report at their child’s school, so the minimum possible score is zero and the maximum value is six. The distribution of parent involvement at school is relatively high (mean=4.44; SD=1.429), making



for a borderline but acceptable skewness (-.953) value. The kurtosis value (.448) is also acceptable.

**Books, reading, and enrichment activities.** The four items from the MI SEED follow-up survey that I used to measure child enrichment activities (4 items;  $\alpha = .395$ ) are: number of books the child has, how often the child reads for enjoyment, frequency of trips to museums with parents, and frequency of trips to musical or theatrical performances with parents. Implications of this reliability measure are included in the discussion chapter below. The first of these items had four response categories and the other items offered five response categories, such that adding the responses originally resulted in possible scores that range from 4 to 19. However, since the frequency distribution in the bottom and top 10 percentile were too low, this variable was re-coded by taking the distribution below the bottom 10 percentile and the distribution above the top 90 percentiles into one category respectively. This resulted in possible scores that range from 1 to 7. Enrichment activities are normally distributed for my study sample (mean=4.18; SD=1.717) and acceptable skewness (-.099) and kurtosis (-.738) values. The median value of books, readings and enrichment activities was four.

## **Independent Variables**

### **Measure of Financial Knowledge**

To have financial knowledge is to have an understanding of basic financial concepts and basic features of financial products and services such that one can make informed financial decisions. This term is used synonymously with financial education and financial literacy in many studies (e.g. Hilgert, Hogarth & Beverly, 2003). However, in this study, I choose to use financial knowledge over financial education and financial literacy because it is a broader term that does not confuse the outcome with the process through which knowledge is gained.

The MI SEED dataset provides an opportunity to measure the financial knowledge of participants directly without relying on proxy measures. The follow-up survey included questions to test participant knowledge on some basic aspects of the financial world such as compound interest, tax breaks, overdraft warnings, Average Percentage Rate (APR) of interest, and Rates of Return (ROR). The items are five true or false questions, and correct responses are added to create a financial knowledge measure. The minimum possible score is one, while the maximum possible score is six. One means none of the financial knowledge questions were answered correctly while six means all questions were answered correctly. Higher scores mean that respondents answered more questions correctly, and are therefore an indication of better financial knowledge. The financial knowledge score is normally distributed for my study sample (mean=2.54; SD=1.405) and acceptable skewness (-.062) and kurtosis (-.774) values. The median value of financial knowledge was three.

### **Measures of Financial Inclusion**

Following Margaret Sherraden's (2013) discussion of financial inclusion, I define such inclusion for the purposes of this study as "...having access to a safe place to deposit money, a place to store precautionary savings..." (p. 12). In this study, the term "financial inclusion" refers to ownership of checking and/or savings accounts. Participants were asked whether they or their spouse had a checking account and a savings account. These data allowed me to create three measures of financial inclusion that I used iteratively in my analyses. These are checking account ownership, savings account ownership, and ownership of both checking and savings accounts. By using these measures one at a time, I tested the associations between different types of accounts, as well as a combination of accounts, and various measures of wellbeing in my study. Ownership of bank accounts had adequate splits between those who own and do not own

savings accounts (own, n=379, 55.7%; do not own, n= 302, 44.3%), checking accounts (own, n=405, 59.5%; do not own, n=276, 40.5%), and both savings and checking accounts (own, n=281, 41.3%; do not own, n= 400, 58.7%).

### **Measure of Financial Capability**

Financial capability is defined as financial knowledge at the individual level paired with financial inclusion, or ownership of mainstream financial products and services (M.S. Sherraden, 2010; 2013). In this study, financial capability is measured on the basis of financial knowledge and ownership of bank accounts, and because the two may be interactive in affecting the lives of low-income families, an interaction term is created to represent financial capability. Multiplying the financial knowledge score by each of the financial inclusion measures created the necessary interaction terms. Values of the financial knowledge variable range from one to six, while all the three inclusion variables are dichotomous. Therefore, the minimum possible financial capability score is one, while the maximum possible score is twelve. Within this range, there are nine possible values for this variable, because seven, nine, and eleven are not mathematically possible scores in this multiplicative variable. Three interaction terms were created to measure financial capability by multiplying the financial knowledge score with each inclusion measure for parents in the sample.

This multiplicative measure of financial capability can capture the possible interactive nature of financial capability better than an additive measure of financial capability, which has been used in the past by some scholars to measure the term (e.g. West & Friedline, 2016). To illustrate, the financial capability measure in this study ranges from one to twelve. However, if I had used an additive measure of financial capability, by dichotomizing both knowledge and inclusion, my financial capability variable would have only four possible values. This could

result in the loss of some detail in the data, and thus the possible lack of precision in measuring the interaction of financial knowledge and financial inclusion. Further, had I used an additive measure without first dichotomizing financial knowledge, the knowledge items may have easily obscured the inclusion measure. For example, a study participant who answered one of the five financial knowledge items correctly and owned both a checking and a savings account would end up with the same financial capability score as a participant who answered three of the five knowledge correctly but did not own any bank accounts. By using the multiplicative measure of financial capability, I can capture the possible interactive nature of financial knowledge and financial inclusion in exploring the role of financial capability in the wellbeing of low-income families with young children in this study.

### **Control Variables**

Five variables indicating demographic and socioeconomic characteristics of the sample were used as controls in this study. In addition to demographic characteristics of the sample, two of the control variables used in this study measure household financial resources in the forms of income and assets. Prior research informs us that income and assets affect various aspects of family wellbeing, and that the impact of these different types of household resources may affect wellbeing somewhat differently (McKernan, Ratcliffe & Nam, 2007; Schreiner & M. W. Sherraden, 2007; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013). Since the purpose of this study is to examine the independent roles of financial capability and its components on money management and developmental resources for children, I included the effects of income and assets in my regression models. Moreover, key demographic characteristics at baseline such as marital status, race/ethnicity, education, and employment may affect money management and developmental resources for children (Magnuson & Berger, 2009; Horton & Thomas, 1998;

Becker, 2002), so I controlled for these effects in my analyses. In the following sections, I describe the control variables in this study.

### **Income and Employment**

In this study, I controlled for income and employment in analyzing the associations between financial capability and its components with money management and developmental resources for children. Employment is defined as a condition of having a paid work (Mishel, Bivens, Gould & Shierholz, 2012), and income is defined as money received on a regular basis from employment, investments, or government transfers (DeNavas-Walt, Proctor & Smith; Chapin, 2013). The wellbeing of families and children is determined in large part by parents' employment and generation of household income (Becker, 2002; DeNavas-Walt et al., 2012). In this study, slightly more than half of the participants (51.4%) were employed. Household income at baseline is a six level categorical variable, where "1" means less than \$5,000 and "6" means more than \$30,000 in annual income. Because I am looking at truncated income in this study using data from low-income families all of whom are eligible for subsidized pre-school, household income is normally distributed. It is worth noting that one-third of the families in the study were living on \$10,000 or less per year at baseline.

### **Homeownership**

The best asset measure in the MI SEED data set is homeownership. Regarding homeownership, while the majority of the participants (71.2%) did not own their homes at baseline, a substantial minority (28.8%) were homeowners as their children entered pre-school at baseline. Given that all of the families in the study were living on incomes low enough to make them eligible for subsidized early childhood education, and that most of the parents in the sample were relatively young, the proportion of homeowners in this study is somewhat surprising. In

2005, the national homeownership rate for three-person households with incomes below \$44,000 was 52.9 percent (Olsen, 2007). As alluded to above, the typical household income in this sample was much lower with both the mode and median income falling between \$15,000 and \$18,000 per year. Despite this extreme income poverty, 28.8% of participants owned their homes. This proportion of homeownership in my sample may reflect, in part, the impact of inheritance of homes given the history of the surrounding community, which in past decades had a thriving manufacturing sector with unionized employees and a diverse middle class. This homeownership split in the sample gave me the opportunity to control for assets as I tested the associations between financial knowledge, financial inclusion, money management, and developmental resources for young children in low-income families.

### **Marital Status**

The MI SEED dataset provides an opportunity to control for the effects of parental marital status at baseline. Among the study participants, 46.7 percent had never been married. Of the remaining sample members, 34.9 percent were currently married and 18.2 percent had been married at a previous point in time. Controlling for marital status is particularly important in this study because nearly all participants in this study were female. Mother-only families are more likely to be poor because of the relatively low earning capacity of women, the fiscal challenges of balancing work and home demands, and the related cost of child care services especially for those who work nights and weekends (Waldfogel, Craigie & Brooks-Gunn, 2010; Hiller & Barrow, 2011). Since marital status as well as poverty status may be associated with outcomes of interest, both are controlled for in this study. I re-coded marital status to create a dichotomous variable to avoid the lack of stability that may have resulted in analysis from an unevenly split

non-ordinal trichotomy. The created marital status variable had an adequate split between those who were never married (n=318) and those who were previously or currently married (n=363).

### **Race**

Race is used as a control variable in this study. Racial differences in family background are associated with disparities in various aspects of wellbeing of American families (U.S. Census Bureau, 2012). For example, racial inequality in wealth ownership is among the most extreme and persistent forms of stratification in the United States (Conley, 1999; Oliver & Shapiro, 1997). Therefore, in order to examine the associations between the components of financial capability and the measures of wellbeing in this study, I controlled for race. I created a dichotomous variable for the purposes of analysis, resulting in an adequate split between White (n=315) and People of Color (n=366).

### **Education**

In this study, education is measured as the highest level of schooling completed by parents. Since prior studies suggest that there is a link between educational attainment, income, and savings (Mishel, Bernstein & Shierholz, 2009), as well as wellbeing of children (Correll & Bernard, 2007), I controlled for the educational attainment of parents in exploring the relationships between financial knowledge, inclusion, and capability and outcomes of interest. Education is an ordinal variable with a relatively similar proportion of the sample not completing high school (28.3%), completing high school or GED (31.6%) and completing at least some education beyond high school (39.9%).

### **Methods of Analysis**

The purpose of this study is to examine the independent and combined associations of the two components of financial capability with money management and developmental resources for young children in low-income families, controlling for income and assets as well as key demographic variables such as marital status, race/ethnicity, education and employment. In order to address my research questions, first, I described the variables and their associations using univariate and bivariate analyses, and I then used multiple regression analysis to test partial correlations in multivariate models. In the following sub-sections, I describe the univariate, bivariate, and multivariate analytical techniques used in this study.

#### **Univariate Analysis**

My analysis began by developing a comprehensive understanding of each variable in my overall study at a univariate level. First, I have observed the frequency distribution of each variable of interest in order to understand the implications of each distribution for my study and identify variables that require cleaning and recoding. After variables that require data cleaning were identified and cleaned, variables were re-coded in order to make all variables unidirectional. Further, some variables were re-coded to create adequate splits between categories. As indicated above, I re-coded two control variables (marital status and race) into dichotomous variables to create adequate splits for later stages of analysis. Further, I re-coded one dependent variable (enrichment activities) to normalize its distribution as described in the dependent variables section above. After variables were re-coded, the frequency distribution of each variable of interest was again analyzed and interpreted.



### **Bivariate Analysis**

Bivariate analysis included examination of the relationships between the independent, control, and outcome variables using Pearson's Correlation ( $r$ ) and Point-Biserial Correlation ( $r_{pb}$ ) analysis. Pearson's Correlation Coefficient ( $r$ ) is used to measure the relationship between two continuous variables while Point-Biserial Correlation Coefficient ( $r_{pb}$ ) is used to examine associations between dichotomous and continuous variables (Keith, 2006). First, the associations between independent variables were observed to see if the correlation coefficients were large enough to indicate serious problems with multicollinearity. Multicollinearity is considered a serious problem when the correlation coefficients measuring the association between two independent variables is greater than .5 (Mertler & Vannatta, 2010). Next correlation coefficients and statistical significance were assessed to examine the associations between key variables in the study. Bivariate analysis suggests that the three financial inclusion measures are highly correlated, as well the related financial capability measures. Therefore, in my multivariate analyses, I included only one measure of financial inclusion at a time when I tested the associations between financial inclusion and outcomes of interest. Similarly, I included only one measure of financial capability, or interaction terms representing the joint effects of financial knowledge and financial inclusion, at a time in multivariate models.

### **Multivariate Analysis**

Following univariate and bivariate analyses, I began testing multiple regression models that represent my research questions. Multiple regression is a powerful methodological technique that is used to learn about simultaneous relationships between several independent variables and a dependent variable (Keith, 2006). Multiple regression can be used when we want to assess the association between independent and dependent variables while controlling for the simultaneous

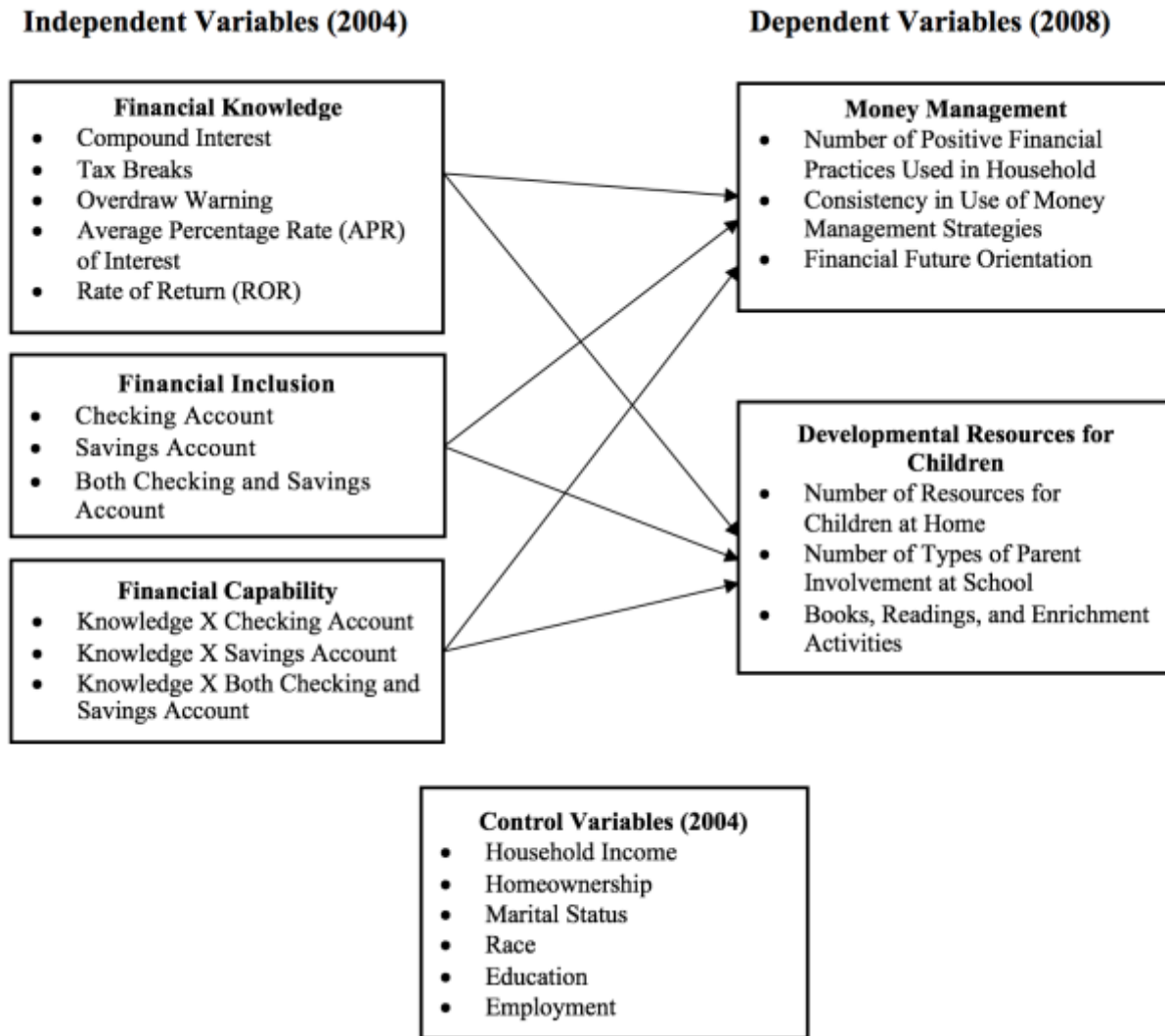
associations between other independent and control variables with the dependent variable.

Multiple regression analysis also tests the ability of the regression model as a whole to explain variance in the dependent variable.

In other words, multiple regression analysis assesses the amount of variance in the dependent variable that is explained by the model as well as the relative contributions of each independent variable to the total variance explained (Mertler, 2010). In my study, the overall variance explained by the models I am testing is expected to be modest, given that the families in my sample are low-income, have young children and, thus, often experience complex problems in achieving high levels of social and economic wellbeing. Further, my main purpose in this study is to examine the components of financial capability and their associations with a number of different measures of family wellbeing. For this reason, I focused on partial correlation coefficients and patterns of associations between financial knowledge, financial inclusion, and financial capability with money management and developmental resources for young children in low-income families.

Additionally, multiple regression is a flexible and robust methodological technique in that the independent variables can be continuous or categorical, and interactions between variables can be incorporated into models (Omre, 2009). Independent and control variables in this study incorporate both continuous and categorical variables. I also examined the possible interactions as suggested by the recent conceptualization of financial capability (M.S. Sherraden, 2010; 2013). Therefore, multiple regression is a good analytical technique for the variables of interest in this study. Figure 1 is a simplified overall research model that helps to illustrate my approach to multiple regression analyses in this study.

Figure 1: Overall Research Model for Multiple Regression Analyses



As shown in Figure 1, my analyses included a total of six dependent variables. Three of these are money management variables and the other three are variables measuring developmental resources for children. Also, my analysis included four independent variables of central importance in this study: one financial knowledge variable and three measures of financial inclusion. Using these independent variables, I have also created three interaction terms representing financial capability by multiplying financial knowledge with each measure of inclusion.

According to the concept of financial capability, financial knowledge and financial inclusion may be interactive in shaping the wellbeing of low-income people (M.S. Sherraden, 2010; 2013). In other words, financial knowledge and financial inclusion may have joint effects on wellbeing for low-income families. In order to test the conceptualization of financial capability, I included three interaction terms one at a time in my regression models. Consistent with Margaret Sherraden's (2013) conceptualization, the interaction terms represent the joint relationship between financial knowledge and one of the three measures of financial inclusion.

When I tested the individual components of financial capacity which are financial knowledge and financial inclusion on measures of wellbeing, I controlled for five variables measuring socioeconomic and demographic characteristics of sample members including income, homeownership, marital status, race, education, and employment. I controlled for the same demographic and socio-economic variables when I tested the interactions between financial knowledge and financial inclusion on outcome measures. The control variables were entered first in each regression model as a block. I then entered the financial capability variables into the equations.

In the first step of multiple regression analysis, I tested the associations between financial knowledge and financial inclusion and three measures of money management and three measures of developmental resources for children, controlling for variables measuring socioeconomic and demographic characteristics. Using three measures of financial inclusion, one at a time, resulted in a total of nine regression models testing associations between financial knowledge and financial inclusion and three measures of money management. Likewise, another nine regression models tested the associations between financial knowledge and financial inclusion and three measures of developmental resources for children. As a result, a total of eighteen multiple

regression models were used to test the independent associations between the components of financial capability, financial knowledge and financial inclusion, and money management and developmental resources for children, controlling for demographic and socioeconomic characteristics.

In the second step of multiple regression analysis, I tested the associations between financial capability and three measures of money management and three measures of developmental resources for children, controlling for variables measuring socioeconomic and demographic characteristics. Using terms that represent the interaction between financial knowledge and financial inclusion, I tested nine regression models of the associations between financial capability and the measures of money management in this study, as well as nine regression models of the associations between financial capability and measures of developmental resources for children. In both sets of tests, I controlled for demographic and socioeconomic characteristics. As a result, I have tested a total of thirty-six multiple regression models in this study and analyzed the results, in part, by looking for patterns of associations.

In order to organize my findings for the sake of clarity, I have presented one table of multiple regression findings for each of the six dependent variables in the next chapter. In each of the six tables, the first three columns contain information on the associations between financial knowledge, financial inclusion, and the particular outcome measure while the last three columns provide results on the associations between financial capability and that outcome measure of wellbeing. I refer to these tables in my narrative description of findings from my multivariate analyses of the associations between financial knowledge, financial inclusion, and financial capability and money management and developmental resources for young children in low-income families.

## CHAPTER 4: RESULTS

In this chapter, univariate, bivariate, and multivariate results are presented and described. Univariate analysis included observing frequency distributions and measures of central tendency. Tables 1 through 4 show univariate statistics describing variables used in the analysis. Bivariate analysis included observing associations between independent variables, and examining correlation coefficients and statistical significance to assess the associations between key independent and dependent variables in the study. Tables 5 through 9 present bivariate analysis results. Finally, multiple regression models testing the independent and joint associations between financial capability components dependent variables while controlling for variables describing demographic and socioeconomic characteristics are presented and described. Tables 10 through 16 present multivariate analysis results.

### **Univariate Analysis**

The sample for this study consists of 681 low-income parents of Head Start children. Table 1 presents the demographic characteristics of the sample. As shown, nearly all participants were female (n= 633, 93%), and over half of the study participants were married or previously married at the time of the study (n=363, 53.3%). The sample included slightly more people of color (n=366, 53.7%) than whites (n=315, 46.3%). While almost 40% (n=272) of the participants had more than a high school education, substantial proportions of the sample had only finished high school (n=215, 31.6%) or had not completed high school (n=193, 28.3%). Just over half of the study participants were employed (n=350, 51.4%). The sample for the study is comprised of low-income families where one-third (n=220) of the families were living on \$10,000 or less per year while only 14.1 percent (n=96) were living on more than \$30,000 annually at baseline. A minority (n=196, 28.8%) were homeowners at baseline.

**Table 1. Demographic and Socioeconomic Characteristics of Sample (n=681)**

Demographic Characteristics	N	%
Female	633	93
Marital Status		
<i>Never married</i>	318	46.7
<i>Married or previously married</i>	363	53.3
Race		
<i>People of color</i>	366	53.7
<i>White</i>	315	46.3
Education		
<i>Less than high school education</i>	193	28.3
<i>High school diploma or GED</i>	215	31.6
<i>More than high school education</i>	272	39.9
Employed	350	51.4
Household Income		
<i>Up to \$5,000</i>	79	11.6
<i>\$5,001-\$10,000</i>	141	20.7
<i>\$10,001-\$15,000</i>	117	17.2
<i>\$15,001-\$20,000</i>	103	15.1
<i>\$20,001-\$30,000</i>	95	14.0
<i>\$30,001 and above</i>	96	14.1
Own Home	196	28.8

Turning to financial capability variables (see Table 2), financial knowledge scores were fairly distributed; 60 participants (8.8%) correctly answered none of the five questions, while 108 (15.9%) correctly answered one of five, 155 (22.8%) correctly answered two of five, 181 (26.6%) correctly answered three of five, 116 (17%) correctly answered four of five, and 61 (9%) correctly answered all five questions. The median financial knowledge score was three correct responses to five financial knowledge questions. This finding is consistent with other studies that documented the levels of financial knowledge in the US using survey questions measuring financial knowledge (Lusardi & Mitchell, 2006; 2009; Lusardi, 2011). Similar to this study, for example, Lusardi (2011) found that less than 10 percent of respondents were able to

**Table 2: Descriptive Statistics of Financial Capability Variables (n=681)**

Variables	n	%
Financial Knowledge Score		
1	60	8.8
2	108	15.9
3	155	22.8
4	181	26.6
5	116	17.0
6	61	9
Financial Inclusion		
<i>Checking Account</i>		
Own	405	59.5
Do not own	276	40.5
<i>Savings Account</i>		
Own	379	55.7
Do not own	302	44.3
<i>Both Checking &amp; Savings</i>		
Own	281	41.3
Do not own	400	58.7

answer all questions correctly, and highlighted that people lack financial knowledge about basic concepts in finance. Turning to financial inclusion, ownership of bank account had an adequate split between those who own and do not own a checking account, a savings account, and both accounts (see Table 2). The three dichotomous financial inclusion variables indicate that almost 60 percent (n=405, 59.5%) of the participants own a checking account, and 55.7 percent (n=379) own a savings account, while only 41.3 percent (n=281) own both checking and savings accounts.

In terms of dependent variables measuring money management, Table 3 provides descriptive data on the three financial outcomes of interest in this study. Almost all parents (n=661, 97.1%) reported using one or more of five positive household financial practices, with a median of three positive household financial practices in the sample. Consistent money



**Table 3: Descriptive Statistics of Money Management Variables (n=681)**

Variables	n	%
Number of Positive Financial Practices used in Household		
0	20	2.9
1	91	13.4
2	180	26.4
3	258	37.9
4	132	19.4
Consistency in use of Money Management		
4-Low	8	1.2
5	21	3.1
6	59	8.7
7	83	12.2
8	103	15.1
9	136	20.0
10	124	18.2
11	87	12.8
12-High	60	8.8
Financial Future Orientation		
3-Low	35	5.1
4	109	16.0
5	139	20.4
6	168	24.7
7	132	19.2
8	79	11.6
9-High	19	2.8

management was normally distributed among parents in the sample with a median frequency of nine. The third measure of money management, financial future orientation, was normally distributed in the sample with a median value of six.

Turning to the dependent variables measuring developmental resources for children in this study, Table 4 presents descriptive statistics on these three outcome variables: resources for children at home, parent involvement at school, and enrichment activities. Nearly all parents in the survey (n=639, 93.8%) reported the availability of one or more resources for children at

**Table 4: Descriptive Statistics of Developmental Resources for Children Variables (n=681)**

Variables	n	%
Number of Resources for Children at Home		
0	42	6.2
1	96	14.1
2	148	21.7
3	221	32.5
4	174	25.6
Number of Types of Parent Involvement at School		
0	10	1.5
1	20	2.9
2	47	6.9
3	67	9.8
4	155	22.8
5	200	29.4
6	182	26.7
Books, Reading, and Enrichment Activities		
1	56	8.2
2	66	9.7
3	104	15.3
4	164	24.1
5	135	19.8
6	77	11.3
7	79	11.6

home, with a median of three resources of four possible resources for children at home. The distribution of parent involvement at school was relatively high. Almost all parents (n=671, 98.5%) reported involvement in one or more types of parent activities at their child's school, while more than three quarters of parents (n=604, 80%) reported three or more types of parent involvement at school. The median parent involvement at school was five of the six types of parent activities. Enrichment activities score was fairly distributed in the sample, with a median of 4 of 7 possible.

### Bivariate Analysis

Bivariate analysis included examination of the relationship between the independent, control and dependent variables using Pearson's Correlation ( $r$ ) and Point-Biserial Correlation ( $r_{pb}$ ) analysis as appropriate given the variable level of measurement. Pearson's Correlation Coefficient ( $r$ ) is used to examine the relationship between two continuous variables while Point-Biserial Correlation Coefficient ( $r_{pb}$ ) is used to examine associations between dichotomous and continuous variables. First, the associations between independent variables were observed to check if correlations are large enough to indicate serious problems with multicollinearity. Multicollinearity between the three different measures of financial inclusion were logical and expected. Therefore, these alternative measures of inclusion and interaction terms were analyzed in separate models in the multivariate analysis stage. Next correlation coefficients and statistical significance were assessed to examine the associations between independent and dependent variables in the study. Bivariate correlation results are presented in Tables 5 through Table 9.

Table 5 presents bivariate analysis results of financial capability measures, control variables, and money management measures. Beginning with the association between financial capability variables and money management measures, financial knowledge was significantly associated with two of the three money management measures (household financial practices,  $r = .166$ ,  $p < .01$ ; consistent money management,  $r = .083$ ,  $p < .05$ ). Owning a savings account is the only financial inclusion measure that was associated with all the three money management measures (household financial practices  $r_{pb} = .089$ ,  $p < .05$ ; consistent money management  $r_{pb} = .110$ ,  $p < .01$ ; financial future orientation  $r_{pb} = .141$ ,  $p < .01$ ). Owning both a checking and a savings account is significantly associated with two of the three money management measures (consistent money management  $r_{pb} = .115$ ,  $p < .01$ ; financial future orientation  $r_{pb} = .119$ ,  $p < .01$ ).

**Table 5: Correlations of Money Management Measures, Financial Capability Variables, and Control Variables (n=681)**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Financial Knowledge ( <i>r</i> )													
2. Checking Account ( <i>r</i> <sub>pb</sub> )	.232**												
3. Savings Account ( <i>r</i> <sub>pb</sub> )	.230**	.335**											
4. Both Checking & Savings ( <i>r</i> <sub>pb</sub> )	.255**	.692**	.748**										
5. Marital Status ( <i>r</i> <sub>pb</sub> )	.042	.288**	.130**	.211**									
6. Race ( <i>r</i> <sub>pb</sub> )	.100**	.148**	.016	.072	.178**								
7. Education ( <i>r</i> )	.326**	.238**	.170**	.202**	.072	-.020							
8. Employment ( <i>r</i> <sub>pb</sub> )	.144**	.119**	.072	.111**	-.009	.042	.055						
9. Household Income( <i>r</i> )	.290**	.373**	.272**	.382**	.357**	.196**	.184**	.140**					
10. Home Ownership ( <i>r</i> <sub>pb</sub> )	.067	.287**	.169**	.251**	.328**	.204**	.072	-.031	.307**				
11. Household Financial Practices ( <i>r</i> )	.166**	.050	.089*	.062	.050	-.042	.134**	-.008	.132**	-.014			
12. Consistent Money Management ( <i>r</i> )	.083*	.071	.110**	.115**	.068	.048	.087*	-.042	.049	.025	.220**		
13. Financial Future Orientation ( <i>r</i> )	-.038	.067	.141**	.119**	.085*	-.164**	.045	.007	.056	.080*	.169**	.249**	

## Notes:

- r* Pearson's Correlation
- r*<sub>pb</sub> Point-Biserial Correlation
- \*\* Significant at p< .01 level
- \* Significant at p< .05 level

Turning to the association between the control variables and money management measures, only two control variables, education ( $r = .134$ ,  $p < .01$ ), and household income ( $r = .132$ ,  $p < .01$ ), were significantly associated with household financial practices. This means, respondents with higher level of education and income are more likely to have higher levels of positive household financial practices their peers. The only control variable that was significantly associated with consistent management was education ( $r = .087$ ,  $p < .05$ ). Three control variables were significantly associated with financial future orientation. These are marital status ( $r_{pb} = .085$ ,  $p < .05$ ), race ( $r_{pb} = -.164$ ,  $p < .05$ ), and home ownership ( $r_{pb} = .080$ ,  $p < .05$ ). This means, married respondents, white respondents, and homeowner parents have significantly higher levels of financial future orientation than their peers.

To summarize the bivariate analysis of money management in the sample, the individual measures of financial capability, variables describing demographics and socioeconomic characteristics, and three money management outcome variables were analyzed using Pearson's Correlation ( $r$ ) and Point-Biserial Correlation ( $r_{pb}$ ). Money management variables were measured four years after financial knowledge and financial inclusion. Financial knowledge was associated with two of three money management measures; household financial practices and consistent money management. Turning to financial inclusion measures, owning a savings account was consistently associated with all the three measures of money management while owning a checking account was not significant across all measures of money management. Turning to problems with multicollinearity, the association between financial inclusion measures indicate problems with multicollinearity. The association between owning a checking account and owning both a checking and a savings account ( $r_{pb} = .692$ ,  $p < .01$ ), and the association between owning a savings account and both a checking and a savings account ( $r_{pb} = .748$ ,  $p < .01$ ) were too

large ( $r_{pb} > .5$ ) indicating problems with multicollinearity. Therefore, in the multivariate analysis stage, the financial inclusion measures were entered separately in regression models to avoid overstating the effects of financial inclusion variables.

Table 6 presents bivariate correlation results of financial capability measures, control variables, and measures of developmental resources for children. To begin with financial capability variables, financial knowledge was significantly associated with resources for children at home ( $r = .268$ ,  $p < .01$ ), parent involvement at school ( $r = .152$ ,  $p < .01$ ), and enrichment activities ( $r = .144$ ,  $p < .01$ ). Owning a savings account was also consistently associated with all the three measures of developmental resources for children [resources for children at home ( $r_{pb} = .213$ ,  $p < .01$ ); parent involvement at school ( $r_{pb} = .166$ ,  $p < .01$ ); enrichment activities ( $r_{pb} = .096$ ,  $p < .05$ )] while owning a checking account was significantly associated with two of the three measures of developmental resources for children [resources for children at home ( $r_{pb} = .286$ ,  $p < .01$ ); parent involvement at school ( $r_{pb} = .081$ ,  $p < .05$ )]. Owning both a checking and a savings account was significantly associated with resources for children at home ( $r_{pb} = .245$ ,  $p < .01$ ), parent involvement at school ( $r_{pb} = .150$ ,  $p < .01$ ) and enrichment activities ( $r_{pb} = .077$ ,  $p < .05$ ).

Turning to the association between the control variables and measures of developmental resources for children, all the control variables were significantly associated with resources for children at home [marital status ( $r_{pb} = .225$ ,  $p < .01$ ); race ( $r_{pb} = .159$ ,  $p < .01$ ); education ( $r = .304$ ,  $p < .01$ ); employment ( $r_{pb} = .131$ ,  $p < .01$ ); income ( $r = .266$ ,  $p < .01$ ); homeownership ( $r_{pb} = .170$ ,  $p < .01$ )]. This means, married respondents, white respondents, parents with higher levels of education and income, employed parents, and homeowner parents reported having more resources for their children at home than their peers. The only control variables that were

**Table 6: Correlations of Measures of Developmental Resources for Children, Financial Capability Variables, and Control Variables (n=681)**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Financial Knowledge ( <i>r</i> )													
2. Checking Account ( <i>r<sub>pb</sub></i> )	.232**												
3. Savings Account ( <i>r<sub>pb</sub></i> )	.230**	.335**											
4. Both Checking & Savings ( <i>r<sub>pb</sub></i> )	.255**	.692**	.748**										
5. Marital Status ( <i>r<sub>pb</sub></i> )	.042	.288**	.130**	.211**									
6. Race ( <i>r<sub>pb</sub></i> )	.100**	.148**	.016	.072	.178**								
7. Education ( <i>r</i> )	.326**	.238**	.170**	.202**	.072	-.020							
8. Employment ( <i>r<sub>pb</sub></i> )	.144**	.119**	.072	.111**	-.009	.042	.055						
9. Household Income( <i>r</i> )	.290**	.373**	.272**	.382**	.357**	.196**	.184**	.140**					
10. Home Ownership ( <i>r<sub>pb</sub></i> )	.067	.287**	.169**	.251**	.328**	.204**	.072	-.031	.307**				
11. Resources for Children at Home ( <i>r</i> )	.268**	.286**	.213**	.245**	.225**	.159**	.304**	.131**	.266**	.170**			
12. Parent Involvement at School ( <i>r</i> )	.152**	.081*	.166**	.150**	-.001	.070	.170**	.066	.145**	.056	.283**		
13. Enrichment Activities ( <i>r</i> )	.114**	-.045	.096*	.077*	.014	-.067	.141**	.035	.069	.003	.198**	.309**	

## Notes:

- r* Pearson's Correlation
- r<sub>pb</sub>* Point-Biserial Correlation
- \*\* Significant at  $p < .01$  level
- \* Significant at  $p < .05$  level

significantly associated with parent involvement at school were education ( $r=.170$ ,  $p<.01$ ) and income ( $r=.145$ ,  $p<.01$ ), while education ( $r=.141$ ,  $p<.01$ ) was the only control variable associated with enrichment activities. In other words, parents with higher levels of education and income have significantly higher levels of involvement in their children's education than their peers with lower level of education and income. In addition, parents with higher levels of education reported significantly higher levels of enrichment activities than their peers with lower level of education.

To summarize the bivariate analysis measures of developmental resources for children in the sample, the individual measures of financial capability, variables describing demographics and socioeconomic characteristics, and three variables measuring developmental resources for children were analyzed. Financial knowledge, owning a savings account, and owning both a checking and a savings account were consistently associated with all three measures of developmental resources for children, while owning a checking account was associated with two of the three measures of developmental resources for children. The only control variable that was consistently associated with all measures of developmental resources for children was education. Income was significantly associated with two measures of developmental resources for children, while the rest of control variables were associated with only one of these measures. Overall, there is a more consistent pattern of significant associations between components of financial capability and measures of developmental resources for children than measures of money management.

Turning to bivariate analysis on the joint or interactive associations between financial capability variables and money management measures, bivariate analysis was conducted using three interaction terms representing financial capability. These are the interaction between



**Table 7: Correlations of Money Management Measures, Interaction Terms, and Control Variables (n=681)**

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Knowledge X Checking ( $r$ )												
2. Knowledge X Savings ( $r$ )	.778**											
3. Knowledge X Both Accounts ( $r$ )	.892**	.913**										
4. Marital Status ( $r_{pb}$ )	.174**	.092*	.141**									
5. Race ( $r_{pb}$ )	.154**	.066	.107**	.178**								
6. Education ( $r$ )	.357**	.321**	.330**	.072	-.020							
7. Employment ( $r_{pb}$ )	.164**	.142**	.152**	-.009	.042	.055						
8. Household Income( $r$ )	.410**	.359**	.413**	.357**	.196**	.184**	.140**					
9. Home Ownership ( $r_{pb}$ )	.219**	.146**	.199**	.328**	.204**	.072	-.031	.307**				
10. Household Financial Practices( $r$ )	.143**	.162**	.143**	.050	-.042	.134**	-.008	.132**	-.014			
11. Consistent Money Management ( $r$ )	.083*	.104**	.107**	.068	.048	.087*	-.042	.049	.025	.220**		
12. Financial Future Orientation ( $r$ )	.016	.065	.056	.085*	-.164**	.045	.007	.056	.080*	.169**	.249**	

## Notes:

- $r$  Pearson's Correlation
- $r_{pb}$  Point-Biserial Correlation
- \*\* Significant at  $p < .01$  level
- \* Significant at  $p < .05$  level

financial knowledge and owning a checking account, the interaction of financial knowledge and owning a savings account, and the interaction between financial knowledge and owning both a checking and a savings account. Table 7 presents bivariate correlation results of interaction terms representing financial capability and money management measures. The interaction between financial knowledge and owning a checking account was significantly associated with household financial practices ( $r = .143$ ,  $p < .01$ ) and consistent money management ( $r = .083$ ,  $p < .05$ ). The interaction between financial knowledge and owning a savings account also significantly associated with household financial practices ( $r = .162$ ,  $p < .01$ ) and consistent money management ( $r = .104$ ,  $p < .01$ ). Similarly, the interaction of financial knowledge and owning both a checking account and a savings account was also significantly associated with household financial practices ( $r = .143$ ,  $p < .01$ ) and consistent money management ( $r = .107$ ,  $p < .01$ ).

Table 8 presents bivariate correlation coefficients associated with the interaction terms representing financial capability and measures of developmental resources for children. The interaction of financial knowledge and owning a checking account was significantly associated with two of the three developmental resources for children measures [resources for children at home ( $r = .335$ ,  $p < .01$ ); parent involvement at school ( $r = .160$ ,  $p < .01$ )]. The interaction between financial knowledge and owning a savings account was associated with all the three measures of developmental resources for children [resources for children at home ( $r = .302$ ,  $p < .01$ ); parent involvement at school ( $r = .203$ ,  $p < .01$ ); enrichment activities ( $r = .132$ ,  $p < .01$ )]. The interaction between financial knowledge and owning both a checking and a savings account was also significantly associated with all three measures of developmental resources for children [resources for children at home ( $r = .312$ ,  $p < .01$ ); parent involvement at school ( $r = .196$ ,  $p < .01$ ); enrichment activities ( $r = .116$ ,  $p < .01$ )].

**Table 8: Correlations of Developmental Resources for Children Measures, Interaction Terms, and Control Variables (n=681)**

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Knowledge X Checking ( <i>r</i> )												
2. Knowledge X Savings ( <i>r</i> )	.778**											
3. Knowledge X Both Accounts ( <i>r</i> )	.892**	.913**										
4. Marital Status ( <i>r<sub>pb</sub></i> )	.174**	.092*	.141**									
5. Race ( <i>r<sub>pb</sub></i> )	.154**	.066	.107**	.178**								
6. Education ( <i>r</i> )	.357**	.321**	.330**	.072	-.020							
7. Employment ( <i>r<sub>pb</sub></i> )	.164**	.142**	.152**	-.009	.042	.055						
8. Household Income( <i>r</i> )	.410**	.359**	.413**	.357**	.196**	.184**	.140**					
9. Home Ownership ( <i>r<sub>pb</sub></i> )	.219**	.146**	.199**	.328**	.204**	.072	-.031	.307**				
10. Resources for Children at Home ( <i>r</i> )	.335**	.302**	.312**	.225**	.159**	.304**	.131**	.266**	.170**			
11. Parent Involvement at School ( <i>r</i> )	.160**	.203**	.196**	-.001	.070	.170**	.066	.145**	.056	.283**		
12. Enrichment Activities ( <i>r</i> )	.060	.132**	.116**	.014	-.067	.141**	.035	.069	.003	.198**	.309**	

## Notes:

- r* Pearson's Correlation
- r<sub>pb</sub>* Point-Biserial Correlation
- \*\* Significant at  $p < .01$  level
- \* Significant at  $p < .05$  level

Table 9 presents summary of bivariate results. Overall bivariate analysis suggests that there is a more consistent pattern of significant associations between components of financial capability, financial knowledge and financial inclusion, and measures of developmental resources for children than measures of money management. This consistency in pattern can also be seen in the bivariate associations between interaction terms representing financial capability and outcome measures. In other words, financial capability as measured on the basis of the interaction of financial knowledge and financial inclusion appears to be more consistently related to measures of developmental resources for children than to money management measures in this study. In addition, owning a savings account, or both a checking and a savings accounts, were associated with outcome measures in a more consistent manner than owning a checking account

### **Multivariate Analysis**

In this section, results of multivariate analyses are described. The purpose of these analyses is to test the independent and joint associations between the components of financial capability, financial knowledge and three measures of financial inclusion, and money management and developmental resources for young children in low-income families, controlling for variables describing demographic and socioeconomic characteristics. Multivariate analyses included tests of six models for each outcome measure regressed on financial knowledge, one of three measures of financial inclusion, and control variables. Data on the three money management variables and three developmental resources for children variables in this study were collected four years after baseline data were gathered on financial knowledge and financial inclusion. Tables 10 through 15 present multivariate analysis results. In each table, the first three models test the individual associations between financial capability components, financial knowledge and one of three measures of financial inclusion, and money management

**Table 9: Summary of Key Bivariate Findings**

Independent Variables	Money Management			Developmental Resources for Children		
	Household Financial Practices	Consistent Money Management	Financial Future Orientation	Resources for Children at Home	Parent Involvement at School	Enrichment Activities
<b>Independent Associations</b>						
Financial Knowledge*	<.001	<.05	NS	<.001	<.001	<.01
Financial Inclusion						
<i>Checking Account</i> **	NS	NS	NS	<.001	<.05	NS
<i>Savings Account</i> **	<.05	<.01	<.001	<.001	<.001	<.01
<i>Both Accounts</i> **	NS	<.01	<.01	<.001	<.001	<.05
<b>Joint Associations (Financial Capability)</b>						
Knowledge X Checking	<.01	<.05	NS	<.001	<.01	NS
Knowledge X Savings	<.01	<.01	NS	<.001	<.01	<.01
Knowledge X Both	<.01	<.01	NS	<.001	<.01	<.01

Notes: NS = Not Significant

\* = Pearson's Correlation Coefficient ( $r$ )

\*\* = Point-Biserial Correlation Coefficient ( $r_{pb}$ )

and developmental resources for children measures. The last three models, in each table, test the joint or interactive associations between the components of financial capability and money management and developmental resources for children measures.

### **Findings on Household Financial Practices**

Table 10 presents multiple regression results. In the first model, multiple regression analysis was conducted to test the associations between financial capability variables, financial knowledge and financial inclusion, as measured by ownership of a checking account, at baseline, and household financial practices of low-income parents of young children four years later. Controlling for variables that describe demographic and socioeconomic characteristics, the only component of financial capability that was associated with household financial practices is financial knowledge ( $r=.117$ ,  $df=.031$ ,  $p<.01$ ). Further, among the control variables, only income ( $r=.096$ ,  $df=.029$ ,  $p<.05$ ) was associated with household financial practices. Regression results also indicate that the overall model is significant, explaining 5.1% of the variance in household financial practices [ $R^2=.051$ ,  $F(8, 673) = 4.539$ ,  $p<.001$ ].

In testing Models 2 and 3, alternate measures of financial inclusion were used in regressing household financial practices on financial knowledge, financial inclusion, and control variables. Owning a savings account was the measure of financial inclusion used in Model 2, and owning both a checking and a savings account was the measure of financial inclusion used in Model 3. Consistent with the results of the test on the first model, only financial knowledge (Model 2,  $r=.111$ ,  $df=.031$ ,  $p<.01$ ; Model 3  $r=.116$ ,  $df=.031$ ,  $p<.01$ ) and income (Model 2,  $r=.081$ ,  $df=.029$ ,  $p<.05$ ; Model 3  $r=.094$ ,  $df=.030$ ,  $p<.05$ ) significantly contributed to explaining the variance in household financial practices. Regression results indicate the overall models were

**Table 10: Positive Household Financial Practices Regressed on Financial Capability Measures and Control Variables (n=681)**

<b>Variables</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Financial Knowledge	.117** (.031)	.111** (.031)	.116** (.031)			
Checking Account	-.017 (.091)					
Savings Account		.031 (.084)				
Both Accounts			.010 (.089)			
Knowledge x Checking				.084* (.015)		
Knowledge x Savings					.105** (.014)	
Knowledge x Both Accounts						.081* (.015)
Income	.096* (.029)	.081* (.029)	.094* (.030)	.094* (.029)	.090* (.029)	.092* (.030)
Homeownership	-.052 (.096)	-.058 (.095)	-.054 (.095)	-.065 (.095)	-.063 (.095)	-.064 (.095)
Race	-.064 (.081)	-.063 (.081)	-.065 (.081)	-.063 (.082)	-.057** (.081)	-.059 (.081)
Marital Status	.031 (.088)	.028 (.087)	.030 (.087)	.020 (.087)	.026 (.087)	.023 (.087)
Education	.075 (.051)	.071 (.051)	.074 (.051)	.080* (.051)	.079* (.051)	.085* (.051)
Employment	-.043 (.080)	-.046 (.080)	.044 (.080)	-.044* (.080)	-.043 (.080)	-.042 (.080)
<b>MODEL R<sup>2</sup> (df)</b>	<b>.051*** (1.017)</b>	<b>.052*** (1.017)</b>	<b>.051*** (1.017)</b>	<b>.045*** (1.020)</b>	<b>.049*** (1.018)</b>	<b>.044*** (1.020)</b>

## Notes:

- \*\*\* Significant at p < .001 level
- \*\* Significant at p < .01 level
- \* Significant at p < .05 level

N.B Financial knowledge and financial inclusion variables are excluded from Model 4 to 6 to avoid problems with multicollinearity.

both significant [Model 2  $R^2=.052$ ,  $F(8, 673) = 4.60$ ,  $p<.001$ ]; [Model 3  $R^2=.051$ ,  $F(8, 673) = 4.523$ ,  $p<.001$ ], explaining just over 5% of the variance in household financial practices.

Next financial capability was tested on household financial practices in a series of three regression models. In Model 4, the interaction of financial knowledge and owning a checking account was tested while controlling for demographic and socioeconomic characteristics. The interaction term representing financial capability was significantly associated with household financial practices ( $r=.084$ ,  $df=.015$ ,  $p<.05$ ). Three control variables were also significantly associated with household financial practices in test of Model 4. These are income ( $r=.094$ ,  $df=.029$ ,  $p<.05$ ), education ( $r=.080$ ,  $df=.051$ ,  $p<.05$ ), and employment ( $r=-.044$ ,  $df=.080$ ,  $p<.05$ ). Regression results indicate the overall model significantly predicts household financial practices [ $R^2=.045$ ,  $F(7, 674) = 4.518$ ,  $p<.001$ ] but explains a bit less of the variance (4.5%) in household financial practices than earlier models.

In Model 5, the interaction of financial knowledge and owning a savings account represented financial capability. Controlling for demographic and socioeconomic characteristics, financial capability was significantly associated with household financial practices ( $r=.105$ ,  $df=.014$ ,  $p<.01$ ). In the test of Model 5, the control variables that were significantly associated with household financial practices once again included income ( $r=.090$ ,  $df=.029$ ,  $p<.05$ ) and education ( $r=.079$ ,  $df=.051$ ,  $p<.05$ ). Further, the association between race and household financial practices is significant ( $r=-.057$ ,  $df=.081$ ,  $p<.01$ ) in the test of this model. Regression results also indicate that the overall model significantly explains variance in household financial practices [ $R^2=.049$ ,  $F(7, 674) = 5.104$ ,  $p<.001$ ] accounting for 4.9% of the variance.

Consistent with tests of Models 4 and 5, the results of testing financial capability as measured on the basis of the interaction between financial knowledge and owning both a



checking and a savings account in Model 6 show that financial capability is significantly associated with household financial practices ( $r=.081$ ,  $df=.015$ ,  $p<.05$ ). Once again, the only control variables that were significantly associated with this outcome were income ( $r=.092$ ,  $df=.030$ ,  $p<.05$ ) and education ( $r=.085$ ,  $df=.051$ ,  $p<.05$ ). Also consistent with earlier tests, Model 6 significantly explain variance in household financial practices [ $R^2=.044$ ,  $F(7, 674) = 4.471$ ,  $p<.001$ ] explaining a relatively small amount of the variance (4.4%) in this outcome.

To summarize the multiple regression analyses of household financial practices in low-income households with young children, models of the independent and joint associations between financial capability components, financial knowledge and one of three measures of financial inclusion, and household financial practices were tested controlling for variables describing demographic and socioeconomic characteristics. Altogether, six models were tested and all of them were significant and explain between 4.4% and 5.2% of the variance in household financial practices. In tests of independent associations between the components of financial capability and household financial practices, controlling for all other variables in the model, financial knowledge was consistently associated with household financial practices while financial inclusion was not, regardless of whether it was measured on the basis of owning a checking, savings, or both accounts. However, in tests of the interactions, financial capability was consistently significant in helping to explain the variance in household financial practices. The only control variable that was significantly associated with household financial practices across all six models was income. Education was also significantly associated with household financial practices in the three models that tested financial capability.

### Findings on Consistent Money Management

Table 11 presents multiple regression results from tests of six models of consistent money management. In testing Model 1, multiple regression analysis was conducted to test the associations between financial capability variables, as measured by ownership of a checking account at baseline, and consistent money management of low-income parents of young children four years later. Controlling for demographic and socioeconomic characteristics, none of the financial capability components nor the control variables significantly contributed to explaining variance in consistent money management. Regression results also indicate that the overall model does not significantly explain variance in consistent money management.

In testing Models 2 and 3, alternate measures of financial inclusion were used in regressing consistent money management. Owning a savings account was the measure of financial inclusion used in Model 2, and owning both a checking and a savings account was the measure of financial inclusion used in Model 3. In both Models, only financial inclusion (Model 2,  $r=.088$ ,  $df=.156$ ,  $p<.05$ ; Model 3  $r=.090$ ,  $df=.166$ ,  $p<.05$ ) was significantly associated with consistent money management. None of the variables demographic and socioeconomic characteristics of sample were significantly associated with this outcome when controlling for the components of financial capability. Regression results indicate the overall models both significantly explain variance in consistent money management [Model 2,  $R^2=.026$ ,  $F(8, 673) = 2.282$ ,  $p<.05$ ]; [Model 3,  $R^2=.027$ ,  $F(8, 673) = 2.317$ ,  $p<.05$ ], explaining less than 3% of variance in this outcome.

Next financial capability was tested on consistent money management in a series of three regression models. In Model 4, the interaction of financial knowledge and owning a checking

**Table 11: Consistent Money Management Regressed on Financial Capability Measures and Control Variables (n=681)**

<b>Variables</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Financial Knowledge	.054 (.058)	.045 (.058)	.045 (.058)			
Checking Account	.033 (.170)					
Savings Account		.088* (.156)				
Both Accounts			.090* (.166)			
Knowledge x Checking				.049 (.027)		
Knowledge x Savings					.081* (.026)	
Knowledge x Both Accounts						.081* (.015)
Income	-.003 (.055)	-.011 (.055)	-.019 (.056)	-.002 (.055)	-.007 (.055)	-.010 (.055)
Homeownership	-.017 (.180)	-.021 (.178)	-.026 (.179)	-.018 (.178)	-.018 (.177)	-.021 (.178)
Race	.035 (.153)	.042 (.153)	.040 (.142)	.035 (.153)	.041 (.152)	.038 (.152)
Marital Status	.045 (.165)	.048 (.163)	.045 (.163)	.047 (.163)	.051 (.163)	.049 (.163)
Education	.057 (.097)	.055 (.095)	.054 (.096)	.064 (.099)	.058 (.095)	.057 (.095)
Employment	-.059 (.150)	-.059 (.149)	-.062 (.149)	-.057 (.150)	-.058 (.149)	-.060 (.149)
<b>MODEL R<sup>2</sup> (df)</b>	<b>.020 (1.910)</b>	<b>.026* (1.904)</b>	<b>.027*; 1.903</b>	<b>.018 (1.911)</b>	<b>.022*(1.907)</b>	<b>.022* (1.906)</b>

## Notes:

- \*\*\* Significant at p< .001 level
- \*\* Significant at p< .01 level
- \* Significant at p< .05 level

N.B Financial knowledge and financial inclusion variables are excluded from Model 4 to 6 to avoid problems with multicollinearity.

account was tested while controlling for demographic and socioeconomic characteristics. In this model, neither the interaction term representing financial capability nor the control variables significantly contributed to explaining the variance in consistent money management. Regression results also indicate that the overall model do not significantly predicted variance in consistent money management.

In testing Models 5 and 6 alternate interaction terms were used in regressing consistent money management on financial capability and control variables. The interaction of financial knowledge and owning a savings account was used in Model 5 representing financial capability, and the interaction between financial knowledge and owning both a checking and a savings account was used in Model 6. In both Models, controlling for variables that describe demographic and socioeconomic characteristics, financial capability was significantly associated with consistent money management (Model 5,  $r=.081$ ,  $df=.026$ ,  $p<.05$ ; Model 6,  $r=.081$ ,  $df=.015$ ,  $p<.05$ ). Controlling for financial capability variables, none of the control variables significantly contributed to explaining variance in consistent money management. Regression results indicate the overall models of both significantly explain variance in consistent money management [Model 5  $R^2=.022$ ,  $F(8, 672) = 2.171$ ,  $p<.05$ ]; [Model 6  $R^2=.022$ ,  $F(7, 674) = 2.184$ ,  $p<.05$ ], both explaining 2.2% of the variance in this outcome.

To summarize the multiple regression analyses of consistent money management, models of the independent and joint associations between financial capability variables, financial knowledge and three measures of financial inclusion, and consistent money management were tested controlling for variables describing demographic and socioeconomic characteristics. Of the six models tested, four of them significant and explain between 2.2% and 2.7% of the variance in consistent money management. In tests of individual associations between financial

capability components, financial knowledge and financial inclusion, and consistent money management controlling for other variables in the models, financial knowledge was not associated with consistent money management in any of the three models. However, owning a savings account and owning both a checking and a savings account were associated with consistent money management though owning a checking account was not. Similarly, in tests of financial capability, the interaction of financial knowledge and owning a savings account, and the interaction of financial knowledge and owning both a checking and a savings account were significantly associated with consistent money management while the interaction between financial knowledge and checking account was not a significant. None of the control variables in any of the six models were significant in explaining the variance in consistent money management.

### **Findings on Financial Future Orientation**

Table 12 presents multiple regression results from tests of six models of financial future orientation regressed on financial knowledge, financial inclusion, financial capability, and control variables. In the first model, multiple regression analysis was conducted to test the associations between financial capability variables, financial knowledge and financial inclusion, as measured by ownership of a checking account at baseline, and financial future orientation of low-income parents of young children four years later. Controlling for demographic and socioeconomic characteristics, none of the financial capability components significantly contributed to explaining variance in financial future orientation. Among the control variables, only race ( $r = -.194$ ,  $df = .116$ ,  $p < .001$ ) was significantly associated with financial future orientation. Regression results indicate that the overall model significantly explains 5.4% of the variance in financial future orientation [ $R^2 = .054$ ,  $F(8, 673) = 4.758$ ,  $p < .001$ ].

**Table 12: Financial Future Orientation Regressed on Financial Capability Measures and Control Variables (n=681)**

<b>Variables</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Financial Knowledge	-.055 (.044)	-.069 (.044)	-.064 (.044)			
Checking Account	.040 (.129)					
Savings Account		.123* (.118)				
Both Accounts			.095* (.126)			
Knowledge x Checking				-.011 (.021)		
Knowledge x Savings					.043 (.020)	
Knowledge x Both Accounts						.031 (.021)
Income	.035 (.042)	.023 (.041)	.019 (.042)	.034 (.042)	.019 (.042)	.021 (.042)
Homeownership	.069 (.136)	.064 (.134)	.062 (.136)	.078 (.135)	.074 (.135)	.074 (.135)
Race	-.194*** (.116)	-.186*** (.115)	-.190*** (.116)	-.194*** (.116)	-.197*** (.116)	-.197*** (.116)
Marital Status	.063 (.125)	.067 (.123)	.064 (.124)	.074 (.124)	.076 (.124)	.074 (.124)
Education	.029 (.073)	.027 (.072)	.027 (.073)	.024 (.073)	.009 (.072)	.012 (.072)
Employment	.014 (.114)	.014 (.113)	.012 (.113)	.014 (.114)	.009 (.113)	.009 (.114)
<b>MODEL R<sup>2</sup> (df)</b>	<b>.054*** (1.449)</b>	<b>.067*** (1.439)</b>	<b>.061*** (1.443)</b>	<b>.050*** (1.451)</b>	<b>.051*** (1.449)</b>	<b>.051*** (1.450)</b>

Notes:

- \*\*\* Significant at p< .001 level
- \*\* Significant at p< .01 level
- \* Significant at p< .05 level

N.B Financial knowledge and financial inclusion variables are excluded from Model 4 to 6 to avoid problems with multicollinearity.

In testing Models 2 and 3, alternate measures of financial inclusion were used in regressing household financial practices on financial knowledge, financial inclusion, and control variables. Owning a savings account was the measure of financial inclusion used in Model 2, and owning both a checking and a savings account was the measure of financial inclusion used in Model 3. Controlling for variables that describe demographic and socioeconomic characteristics, the only component of financial capability that was significantly associated with financial future orientation in both models is financial inclusion (Model 2,  $r=.123$ ,  $df=.118$ ,  $p<.05$ ; Model 3  $r=.095$ ,  $df=.126$ ,  $p<.05$ ). Among the control variables, only race (Model 2,  $r=-.186$ ,  $df=.115$ ,  $p<.001$ ; Model 3,  $r=-.190$ ,  $df=.116$ ,  $p<.001$ ) was associated with financial future orientation. Regression results indicate the overall models of both significantly explain variance in financial future orientation [Model 2  $R^2=.067$ ,  $F(8, 673) = 5.977$ ,  $p<.001$ ]; [Model 3  $R^2=.061$ ,  $F(8, 673) = 5.423$ ,  $p<.001$ ], explaining over 6% of the variance in this outcome.

Turning to the remaining three models, financial capability was tested on financial future orientation in a series of three regression models (Model 4 through Model 6). Representing financial capability, the interaction of financial knowledge and owning a checking was used in Model 4, the interaction of financial knowledge and owning a savings account was used in Model 5, and the interaction of financial knowledge and owning checking and savings account was used in Model 6. Controlling for variables that describe demographic and socioeconomic characteristics, the interaction between financial knowledge and financial inclusion was not associated with financial future orientation in any of the three models. Among the control variables, only race (Model 4  $r=-.194$ ,  $df=.116$ ,  $p<.001$ ; Model 5  $r=-.197$ ,  $df=.116$ ,  $p<.001$ ; Model 6  $r=-.197$ ,  $df=.116$ ,  $p<.001$ ) was associated with financial future orientation across the models. Regression results indicate that the overall models significantly explain about 5% of the

variance in financial future orientation [Model 4  $R^2=.050$ ,  $F(7, 674) = 5.026$ ,  $p<.001$ ; Model 5  $R^2=.051$ ,  $F(7, 674) = 5.199$ ,  $p<.001$ ; Model 6  $R^2=.051$ ,  $F(7, 674) = 5.108$ ,  $p<.001$ ].

To summarize the multiple regression analyses of financial future orientation, models of the independent and joint associations between financial capability variables, financial knowledge and one of three measures of financial inclusion, and financial future orientation were tested controlling for variables describing demographic and socioeconomic characteristics. Overall, six models were tested and all of them were significant and explain between 5% and 6.7% of the variance in financial future orientation. In tests of the individual associations between financial capability components, financial knowledge and financial inclusion, and financial future orientation controlling for other variables in the models, financial knowledge was not associated with this outcome across the models. Turning to tests of financial inclusion, owning a savings account and owning both a checking and a savings account were associated with financial future orientation while owning a checking account was not. In tests of the interaction between financial knowledge and financial inclusion, none of the interaction terms representing financial capability were significant in explaining variance in financial future orientation. The only control variable that was associated with financial future orientation was race. Race was negatively associated with financial future orientation across the six models indicating that parents of color had higher score on the financial future orientation measure than white parents in the sample, controlling for all other variables in the regression models.

### **Findings on Resources for Children at Home**

Turning now to measures of developmental resources for children in this study, Table 13 presents multiple regression results from tests of six models of resources for children at home were regressed on financial knowledge, financial inclusion, financial capability, and control



variables. In the first model, multiple regression analysis was conducted to test the associations between financial capability variables, financial knowledge and financial inclusion, as measured by ownership of a checking account at baseline, and resources for children at home four years later. Controlling for variables that describe demographic and socioeconomic characteristics, both components of financial capability [financial knowledge,  $r = -.126$ ,  $df = .032$ ,  $p < .001$ ; owning a checking account,  $r = -.112$ ,  $df = .095$ ,  $p < .01$ ] were significantly associated with resources for children at home. Four control variables were also significantly associated with resources for children at home in test of Model 1. These are race ( $r = .095$ ,  $df = .085$ ,  $p < .05$ ), marital status ( $r = .120$ ,  $df = .092$ ,  $p < .01$ ), education ( $r = .213$ ,  $df = .054$ ,  $p < .001$ ), and employment ( $r = .084$ ,  $df = .084$ ,  $p < .01$ ). Regression results also indicate that the overall model is significant and explains 20.6% of the variance in this outcome [ $R^2 = .206$ ,  $F(8, 673) = 24.638$ ,  $p < .001$ ].

In testing Models 2 and 3, alternate measures of financial inclusion were used in regressing resources for children at home on financial knowledge, financial inclusion, and control variables. Owning a savings account was the measure of financial inclusion used in Model 2, and owning both a checking and a savings account was the measure of financial inclusion used in Model 3. Consistent with the results of the test on the first model, both financial knowledge (Model 2,  $r = .123$ ,  $df = .032$ ,  $p < .001$ ; Model 3  $r = .125$ ,  $df = .032$ ,  $p < .001$ ) and financial inclusion (Model 2,  $r = .100$ ,  $df = .088$ ,  $p < .01$ ; Model 3  $r = .089$ ,  $df = .093$ ,  $p < .05$ ) significantly contributed to explaining variance in resources for children at home. Also consistent with the earlier test, four control variables were significantly associated with resources for children at home in test of these two Models. These are race (Model 2  $r = .106$ ,  $df = .085$ ,  $p < .01$ ; Model 3  $r = .103$ ,  $df = .085$ ,  $p < .01$ ), marital status (Model 2  $r = .135$ ,  $df = .091$ ,  $p < .001$ ; Model 3  $r = .0131$ ,  $df = .091$ ,  $p < .001$ ), education (Model 2  $r = .223$ ,  $df = .053$ ,  $p < .001$ ; Model 3  $r = .222$ ,

**Table 13: Resources for Children at Home Regressed on Financial Capability Measures and Control Variables (n=681)**

<b>Variables</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Financial Knowledge	.126*** (.032)	.123*** (.032)	.125*** (.032)			
Checking Account	.112** (.095)					
Savings Account		.100** (.088)				
Both Accounts			.089* (.093)			
Knowledge x Checking				.161*** (.015)		
Knowledge x Savings					.165*** (.015)	
Knowledge x Both Accounts						.153*** (.015)
Income	.062 (.031)	.068 (.031)	.061 (.031)	.067 (.031)	.068 (.031)	.065 (.031)
Homeownership	.038 (.100)	.046 (.099)	.043 (.100)	.038 (.099)	.045 (.099)	.040 (.100)
Race	.095* (.085)	.106** (.085)	.103** (.085)	.096* (.085)	.109** (.085)	.105** (.085)
Marital Status	.120** (.092)	.134*** (.091)	.131*** (.091)	.127** (.091)	.136*** (.091)	.132*** (.091)
Education	.213*** (.054)	.223*** (.053)	.222*** (.054)	.218*** (.054)	.227*** (.053)	.228*** (.053)
Employment	.084** (.084)	.091* (.083)	.088* (.084)	.087* (.084)	.092** (.083)	.091* (.084)
<b>MODEL R<sup>2</sup> (df)</b>	<b>.206*** (1.065)</b>	<b>.203*** (1.066)</b>	<b>.202*** (1.067)</b>	<b>.201*** (1.067)</b>	<b>.202*** (1.066)</b>	<b>.199*** (1.068)</b>

## Notes:

- \*\*\* Significant at p< .001 level
- \*\* Significant at p< .01 level
- \* Significant at p< .05 level

N.B Financial knowledge and financial inclusion variables are excluded from Model 4 to 6 to avoid problems with multicollinearity.

df=.054,  $p<.001$ ), and employment (Model 2  $r=.091$ , df=.083,  $p<.05$ ; Model 3  $r=.088$ , df=.084,  $p<.05$ ). Regression results indicate the overall models significantly explain just over 20% of the variance in resources for children at home [Model 2  $R^2=.203$ ,  $F(8, 673) = 24.449$ ,  $p<.001$ ]; [Model 3  $R^2=.202$ ,  $F(8, 673) = 21.214$ ,  $p<.001$ ].

Turning to tests on financial capability, interaction terms measuring financial capability were tested on resources for children at home in a series of three regression models. In Model 4, the interaction of financial knowledge and owning a checking account was tested while controlling for demographic and socioeconomic characteristics. The interaction of financial knowledge and owning a checking account was significantly associated with resources for children at home ( $r=.161$ , df=.015,  $p<.001$ ). Four control variables were also significantly associated with household financial practices in test of Model 4. These are race ( $r=.096$ , df=.085,  $p<.05$ ), marital status ( $r=.127$ , df=.091,  $p<.01$ ), education ( $r=.218$ , df=.054,  $p<.001$ ), and employment ( $r=.087$ , df=.084,  $p<.05$ ). Regression results indicate the overall model significant and explains just over 20% of the variance in resources for children at home [ $R^2=.201$ ,  $F(7, 674) = 24.232$ ,  $p<.001$ ].

In testing Models 5 and 6 alternate interaction terms were used in regressing resources for children at home on financial capability and control variables. Representing financial capability, the interaction of financial knowledge and owning a savings account used in Model 5, while the interaction of financial knowledge and owning both a checking and a savings account used in Model 6. Controlling for demographic and socioeconomic characteristics, in both models, financial capability was significantly associated with resources for children at home (Model 5  $r=.165$ , df=.015,  $p<.001$ ; Model 6  $r=.153$ , df=.015,  $p<.001$ ). Consistent with the earlier tests, four control variables were significantly associated with resources for children at home in tests of

these two Models. These are race (Model 5  $r=.109$ ,  $df=.085$ ,  $p<.01$ ; Model 6  $r=.105$ ,  $df=.085$ ,  $p<.01$ ), marital status (Model 5  $r=.136$ ,  $df=.091$ ,  $p<.001$ ; Model 6  $r=.132$ ,  $df=.091$ ,  $p<.001$ ), education (Model 5  $r=.227$ ,  $df=.053$ ,  $p<.01$ ; Model 6  $r=.228$ ,  $df=.053$ ,  $p<.001$ ), and employment (Model 5  $r=.092$ ,  $df=.083$ ,  $p<.01$ ; Model 6  $r=.091$ ,  $df=.084$ ,  $p<.01$ ). Regression results indicate the overall models were significant and explain about 20% of the variance in resources for children at home [Model 5  $R^2=.202$ ,  $F(7, 674) = 24.262$ ,  $p<.001$ ]; [Model 6  $R^2=.199$ ,  $F(7, 674) = 23.903$ ,  $p<.001$ ].

In summary of the multiple regression analyses of resources for children at home in low-income households with young children in this study, six models were tested and all of them significantly explain between 19.9% and 20.6% of the variance in resources for children at home. It is important to note that the explanatory ability of resources for children at home models is much improved over the variance explained by money management outcomes. In tests of associations between financial capability variables, financial knowledge and financial inclusion, and resources for children at home controlling for all other variables in the model, both financial knowledge and financial inclusion were consistently associated with resources for children at home. In tests of financial capability, the interaction terms representing financial capability were consistently significant in helping to explain the variance in resources for children at home. However, financial capability did not explain anymore variance than the models that included measures of financial knowledge and inclusion. Further, four control variables (race, marital status, education and employment) were significantly associated with resources for children at home across all six models.

### Findings on Parent Involvement at School

Table 14 presents multiple regression results from tests of six models of parent involvement at school regressed on financial knowledge, financial inclusion, financial capability, and control variables. In the first model, multiple regression analysis was conducted to test the associations between financial capability variables, financial knowledge and financial inclusion, as measured by ownership of a checking account at baseline, and parent involvement at school four years later when most of the children in this study were in second or third grade. Controlling for variables that describe demographic and socioeconomic characteristics, neither of the financial capability components significantly contributed to explaining variance in parent involvement at school. In this model, two control variables were significantly associated with parent involvement at school. These are income ( $r=.090$ ,  $df=.040$ ,  $p<.05$ ) and education ( $r=.123$ ,  $df=.071$ ,  $p<.01$ ). Regression results also indicate that the overall model is significant and explains 5.5% of the variance in this outcome [ $R^2=.055$ ,  $F(8, 673) = 4.874$ ,  $p<.001$ ].

In testing Models 2 and 3, alternate measures of financial inclusion were used in regressing parent involvement at school on financial knowledge, financial inclusion, and control variables. Owning a savings account was the measure of financial inclusion used in Model 2, and owning both a checking and a savings account was the measure of financial inclusion used in Model 3. In both Models, controlling for variables that describe demographic and socioeconomic characteristics, the only component of financial capability that was associated with parent involvement at school is financial inclusion (Model 2  $r=.111$ ,  $df=.114$ ,  $p<.01$ ; Model 3  $r=.078$ ,  $df=.122$ ,  $p<.05$ ). Further, among the control variables in both models, only the educational attainment of the parent (Model 2  $r=.116$ ,  $df=.070$ ,  $p<.01$ ; Model 3  $r=.116$ ,  $df=.070$ ,  $p<.01$ ) was associated with parental involvement in children's education. Regression results indicate the

**Table 14: Parent Involvement at School Regressed on Financial Capability Measures and Control Variables (n=681)**

<b>Variables</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Financial Knowledge	.066 (.042)	.050 (.042)	.055 (.042)			
Checking Account	-.004 (.125)					
Savings Account		.111** (.114)				
Both Accounts			.078 * (.122)			
Knowledge x Checking				.060 (.020)		
Knowledge x Savings					.112** (.019)	
Knowledge x Both Accounts						.107** (.020)
Income	.090* (.040)	.072 (.040)	.070 (.041)	.086* (.040)	.070 (.040)	.069 (.040)
Homeownership	.022 (.131)	.011 (.129)	.010 (.131)	.014 (.130)	.014 (.129)	.011 (.130)
Race	.050 (.112)	.057 (.111)	.053 (.112)	.050 (.112)	.055 (.111)	.052 (.111)
Marital Status	-.060 (.121)	-.065 (.119)	-.066 (.119)	-.066 (.119)	-.060 (.119)	-.063 (.119)
Education	.123** (.071)	.116** (.070)	.116** (.070)	.123** (.070)	.111** (.069)	.114** (.069)
Employment	.033 (.110)	.030 (.109)	.028 (.109)	.032 (.110)	.028 (.109)	.028 (.109)
<b>MODEL R<sup>2</sup> (df)</b>	<b>.055*** (1.397)</b>	<b>.067*** (1.389)</b>	<b>.061*** (1.393)</b>	<b>.054*** (1.397)</b>	<b>.065*** (1.389)</b>	<b>.062*** (1.391)</b>

Notes:

- \*\*\* Significant at p< .001 level
- \*\* Significant at p< .01 level
- \* Significant at p< .05 level

N.B Financial knowledge and financial inclusion variables are excluded from Model 4 to 6 to avoid problems with multicollinearity.

overall models were significant and explain over 6% of the variance in parent involvement at school [Model 2  $R^2=.067$ ,  $F(8, 673) = 5.986$ ,  $p<.001$ ]; [Model 3  $R^2=.061$ ,  $F(8, 673) = 5.416$ ,  $p<.001$ ].

Next financial capability was tested on parent involvement at school in a series of three regression models. Representing financial capability, the interaction of financial knowledge and owning a checking was used in Model 4, the interaction of financial knowledge and owning a savings account was used in Model 5, and the interaction of financial knowledge and owning a checking and a savings account was used in Model 6. Controlling for variables that describe demographic and socioeconomic characteristics, the interaction between financial knowledge and financial inclusion was significantly associated with parent involvement at school in two of the three models, those in which inclusion was represented by ownership of savings accounts or checking and savings accounts (Model 5  $r=.112$ ,  $df=.019$ ,  $p<.01$ ; Model 6  $r=.107$ ,  $df=.020$ ,  $p<.01$ ). Among the control variables, only parent education (Model 4  $r=.123$ ,  $df=.070$ ,  $p<.01$ ; Model 5  $r=.111$ ,  $df=.069$ ,  $p<.01$ ; Model 6  $r=.114$ ,  $df=.069$ ,  $p<.01$ ) was consistently associated with parental involvement in children's education. Income (Model 4  $r=.086$ ,  $df=.040$ ,  $p<.05$ ) also was significantly associated parent involvement at school, but only in the model testing the interaction between financial knowledge and owning a checking account. However, the financial capability did not help to explain any more variance than the models that included measures of financial knowledge and inclusion. Regression results indicate all three models were significant and explain between 5.4% and 6.5% of the variance in parent involvement at school [Model 4  $R^2=.054$ ,  $F(7, 674) = 5.500$ ,  $p<.001$ ]; [Model 5  $R^2=.065$ ,  $F(7, 674) = 6.661$ ,  $p<.001$ ]; [Model 6  $R^2=.062$ ,  $F(7, 674) = 6.308$ ,  $p<.001$ ].

To summarize the multiple regression analyses of parental involvement in children's education, models of the independent and joint associations between financial capability variables, financial knowledge and one of three measures of financial inclusion, and parent involvement at school were tested controlling for variables describing demographic and socioeconomic characteristics. Altogether, six models were tested and all of them were significant and explained between 5.4% and 6.7% of the variance in parent involvement at school. In tests of individual associations between financial capability variables, financial knowledge and financial inclusion, and parent involvement at school controlling for other variables in the models, financial knowledge was not associated with this outcome in any of the three models.

Turning to measures of financial inclusion, owning a savings account and owning both a checking and a savings account were significantly associated with parent involvement at school. Owning a checking account was not significantly associated with parental involvement. In tests of financial capability, the interaction of financial knowledge and owning a savings account, and the interaction of financial knowledge and owning both checking and savings accounts significantly explained the variance in parent involvement at school. Again the interaction of financial knowledge and owning a checking account did not help explain the variance in parent involvement at school. The only control variable that was significantly associated with parent involvement at school across all six models was the parent's educational attainment. Income was also significantly associated with parent involvement at school in the two of the six models.

### **Findings on Enrichment Activities**

Table 15 presents multiple regression results from tests of six models of enrichment activities. In the first model, multiple regression analysis was conducted to test the associations



between financial capability variables, financial knowledge and financial inclusion, as measured by ownership of a checking account at baseline, and enrichment activities for young children of low-income parents four years later. Controlling for variables that describe demographic and socioeconomic characteristics, financial knowledge ( $r=.078$ ,  $df=.059$ ,  $p<.05$ ) significantly contributed to explaining variance in enrichment activities. Owning a checking account ( $r=-.108$ ,  $df=.173$ ,  $p<.05$ ) was negatively associated with enrichment activities. Further, among the control variables, only education ( $r=.118$ ,  $df=.098$ ,  $p<.01$ ) was significantly associated enrichment activities. Regression results also indicate that the overall model was significant and explains 4.4% of the variance in enrichment activities [ $R^2=.044$ ,  $F(8, 673) = 3.827$ ,  $p<.001$ ].

In testing Models 2 and 3, alternate measures of financial inclusion were used in regressing enrichment activities on financial knowledge, financial inclusion, and control variables. Owning a savings account was the measure of financial inclusion used in Model 2, and owning both a checking and a savings account was the measure of financial inclusion used in Model 3. In both models, none of the components of financial capability significantly contributed to explaining variance in enrichment activities. Among the control variables, race (Model 3  $r=-.077$ ,  $df=.156$ ,  $p<.05$ ) was negatively associated with enrichment activities in one of the models, while education was positively associated with enrichment activities in both models [Model 2  $r=.098$ ,  $df=.098$ ,  $p<.05$ ]; [Model 3  $r=.099$ ,  $df=.098$ ,  $p<.05$ ]. Regression results indicate the overall models were significant and explain a little more than 3% of the variance in enrichment activities [Model 2  $R^2=.035$ ,  $F(8, 673) = 3.075$ ,  $p<.01$ ]; [Model 3  $R^2=.033$ ,  $F(8, 673) = 2.885$ ,  $p<.01$ ].

**Table 15: Books, Readings, and Enrichment Activities Regressed on Financial Capability Measures and Control Variables****(n=681)**

<b>Variables</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Financial Knowledge	.078* (.059)	.059 (.059)	.063 (.059)			
Checking Account	-.108** (.173)					
Savings Account		.055 (.160)				
Both Accounts			.029 (.170)			
Knowledge x Checking				-.001 (.028)		
Knowledge x Savings					.083* (.027)	
Knowledge x Both Accounts						.066 (.028)
Income	.056 (.056)	.027 (.056)	.028 (.057)	.051 (.056)	.027 (.056)	.029 (.057)
Homeownership	.011 (.182)	-.012 (.181)	-.011 (.183)	-.008 (.182)	-.012 (.181)	-.013 (.181)
Race	-.074 (.155)	-.075 (.156)	-.077* (.156)	-.073 (.156)	-.074 (.155)	-.076 (.156)
Marital Status	.021 (.167)	.003 (.166)	.003 (.167)	.000 (.166)	.004 (.166)	.002 (.166)
Education	.118** (.098)	.098* (.098)	.099* (.098)	.120** (.098)	.100* (.097)	.103** (.097)
Employment	.025 (.152)	.015 (.152)	.014 (.153)	.023 (.153)	.015 (.153)	.016 (.152)
<b>MODEL R<sup>2</sup> (df)</b>	<b>.044*** (1.938)</b>	<b>.035** (1.946)</b>	<b>.033** (1.948)</b>	<b>.028** (1.952)</b>	<b>.035*** (1.945)</b>	<b>.032** (1.948)</b>

Notes:

- \*\*\* Significant at p< .001 level
- \*\* Significant at p< .01 level
- \* Significant at p< .05 level

N.B Financial knowledge and financial inclusion variables are excluded from Model 4 to 6 to avoid problems with multicollinearity.

Next the financial capability measures were tested on enrichment activities in three regression models. Representing financial capability, the interaction of financial knowledge and owning a checking account was used in Model 4, the interaction of financial knowledge and owning a savings account was used in Model 5, and the interaction of financial knowledge and owning checking and savings account was used in Model 6. Controlling demographic and socioeconomic characteristics, financial capability was significantly associated with enrichment activities only in Model 5 ( $r=.083$ ,  $df=.027$ ,  $p<.05$ ) where financial capability is measured by the interaction of financial knowledge and owning a savings account. Among the control variables, only education (Model 4  $r=.120$ ,  $df=.098$ ,  $p<.01$ ; Model 5  $r=.100$ ,  $df=.097$ ,  $p<.05$ ; Model 6  $r=.103$ ,  $df=.097$ ,  $p<.01$ ) was associated with enrichment activities. Regression results indicate the overall models were significant and explain between 2.8% and 3.5% of the variance in enrichment activities across the three models [Model 4  $R^2=.028$ ,  $F(7, 674) = 2.768$ ,  $p<.01$ ]; [Model 5  $R^2=.035$ ,  $F(7, 674) = 3.455$ ,  $p<.001$ ]; [Model 6  $R^2=.032$ ,  $F(7, 674) = 3.197$ ,  $p<.01$ ].

### **Summary of Multivariate Findings**

Table 16 provides summary of key multivariate findings. To summarize the multiple regression analyses of enrichment activities in the sample, models of the independent and joint associations between financial capability variables, financial knowledge and one of three measures of financial inclusion, and enrichment activities were tested controlling for variables describing demographic and socioeconomic characteristics. Altogether, six models were tested and all of them were significant and explained between 2.8% and 4.4% of the variance in enrichment activities. In tests of the individual associations between financial capability variables, financial knowledge and financial inclusion, and enrichment activities controlling for other variables in the models, financial knowledge was significantly associated with enrichment

activities in one of the three models. Turning to tests of financial inclusion, only ownership of a checking account was significantly associated with enrichment activities, but it was negatively associated with this outcome. In tests of financial capability, only the interaction between financial knowledge and owning a savings account was significantly associated with enrichment activities. The only control variable that was significantly associated with enrichment activities across all six models was parental education. Race was also significantly associated (negatively) with enrichment activities, but only in one of the six models. While race was only significant in one of the six models of enrichment activities, the direction of relationship indicates that parents of color report higher levels of enrichment activities than their white peers.

**Table 16: Summary of Key Multivariate Findings**

Outcome Measures	Individual Associations				Joint Associations (Financial Capability)		
	Knowledge	Checking	Savings	Both	Knowledge x Checking	Knowledge x Savings	Knowledge x Both
<b>Money Management</b>							
Household Financial Practices $R^2 = 4.4-5.2\%$	*				*	*	*
Consistent Money Management $R^2 = 0-2.7\%$			*	*		*	*
Financial Future Orientation $R^2 = 5.1-6.7\%$			*	*			
<b>Developmental Resources for Children</b>							
Resources for Children at Home $R^2 = \sim 20\%$	*	*	*	*	*	*	*
Parent Involvement at School $R^2 = 5.5-6.7\%$			*	*		*	*
Enrichment Activities $R^2 = 2.8-4.4\%$	*	*				*	

Note: \* = Significant Associations

## CHAPTER 5: DISCUSSION

This dissertation focuses on financial capability, money management, and developmental resources for young children in low-income families. Specifically, the individual and joint associations between financial capability components, financial knowledge and financial inclusion, and money management and developmental resources for children are tested. In this final chapter, I discuss the findings of the study in relation to research questions, and then I discuss the implications of findings for policy, practice, theory and research. The discussion follows the same order as my review of empirical literature.

First, findings on the independent associations between the components of financial capability, financial knowledge and financial inclusion, and money management and developmental resources for children in low-income families are interpreted. This is followed by a discussion of findings on the role of financial capability in money management and developmental resources children in low-income families. Throughout the discussion, I am guided by the conceptual understanding of financial capability as a construct that incorporates both financial knowledge and financial inclusion.

### **The Role of Financial Knowledge in Low-Income Families**

#### **Associations between Financial Knowledge and Money Management**

One of the purposes of this study is to test the associations between financial knowledge and money management as measured by household financial practices, consistent money management, and financial future orientation among low-income families with young children. Theoretically, financial knowledge is thought to have a positive effect on the money management of low-income families (Collins, 2013; Hilgert, Hogarth & Beverly, 2003; Altman, 2011). However, findings from my multivariate analysis demonstrate mixed results. Controlling

for variables describing demographic and socioeconomic characteristics, financial knowledge was significantly associated with household financial practices, but not with consistent money management or financial future orientation.

My findings suggest that those who have greater financial knowledge are more likely to have positive household financial practices than those who have less financial knowledge. In this study, household financial practices included items such as using coupons or frequent buyer cards when buying groceries, having a written budget or spending plan, trying to save a regular amount of money each month, and hesitating to use money that has been saved. However, I do not find significant associations between financial knowledge and either consistent money management or financial future orientation.

These findings are similar to the existing body of research examining the impact of financial knowledge on financial wellbeing which suggests that the relationship between financial education and financial wellbeing is inconsistent (Fernandes, Lynch & Netemeyer, 2014). Some prior studies use financial education as a proxy for financial knowledge and find that such education has a positive effect on financial wellbeing (Bernheim, Garrett & Maki, 2001; Urban, Schmeiser, Collins & Brown, 2015), while others find little or no evidence of such an effect (Cole & Shastry, 2008; Hathaway & Khatiwada, 2008; Fernandes, Lynch & Netemeyer, 2014). In this literature, the study by Fernandes and colleagues (2014) is seen as particularly strong because it is a meta-analysis covering 188 prior studies testing the effects of financial knowledge and financial literacy on financial behaviors.

Turning to control variables, tests of the associations between demographic and socioeconomic characteristics and measures of money management were largely nonsignificant. Among the control variables in this study, income is significantly associated with household

financial practices, but not with consistent money management or financial future orientation. It may be that the inconsistent association between income and measures of money management in this study are related to the fact that the income range is constrained in the sample, given that 85 percent of participants were living on \$30,000 or less per year at baseline.

Aside from income, the only other control variable that has a significant association with money management is race, but only when money management is measured on the basis of financial future orientation. Interestingly, race is negatively associated with orientation to saving which suggests that people of color are more likely to have a higher level of financial future orientation than their white peers given the way these variables are coded in this study. This finding is noteworthy because prior studies have found that racial minorities are in worse shape in terms of adequacy of savings than white Americans (Lusardi, 2005; Wolff, 2000). However, many studies that have examined racial differences in savings have measured saving rates and saving behaviors rather than financial future orientation. Perhaps minorities are behind their white peers in terms of savings not because they lack financial future orientation, but because of issues such as discrimination, relatively low wages and benefits, and other socioeconomic characteristics that may account for at least some of the racial differences in savings.

To summarize, although prior studies suggest that financial knowledge may improve the financial wellbeing of low-income families (e.g. Collins, 2013; Hilgert, Hogarth & Beverly, 2003), the findings from this study provide only limited support for this assertion. This is because financial knowledge was significantly associated with only one of the three money management measures in this study. However, findings suggest that financial knowledge is indeed related to household financial practices that are likely to be advantageous for the financial wellbeing of low-income families.



**Associations between Financial Knowledge and Developmental Resources for Children**

One of the questions I asked in this study was whether or not financial knowledge is significantly associated with developmental resources for children in low-income families in my sample. The results of multiple regression models testing the association between financial knowledge and developmental resources for children in low-income families suggest that financial knowledge was significantly associated with resources for children in the home and enrichment activities for children, but not with parental involvement in children's education, when controlling for demographic and socioeconomic characteristics. Among the control variables, only education was consistently associated with the three measures of developmental resources for children.

Theoretically, although not well established empirically, financial knowledge is thought to be positively associated with the wellbeing of parents by improving their ability to make financial decisions in the best interest of their families and invest in their children (Bradley & Corwyn, 2002; Furstenberg & Hughes, 1995; M.S. Sherraden, 2013). These associations may be related to parental ability to make informed financial decisions to build and accumulate assets, reduce transaction costs, and improve financial practices, which may increase economic resources available in the home (Grinstein-Weiss, Shanks & Beverly, 2014; Green & White, 1997). Availability of economic resources may, in turn, mean that parents can spend and save more money for their children. These investments in low-income children may improve their chances of succeeding in both childhood and adulthood because of related developmental opportunities such as resources in the home and enrichment activities in their early years (Bradley & Corwyn, 2002).

Although the association between financial knowledge and developmental resources for children measures yielded mixed results in this study, the amount of variance explained in the model for resources for children at home is much higher than in models for the other outcome measures. Financial knowledge along with other variables in the regression model explained approximately 20 percent of the variance in resources for children in the home. This is in contrast to the variance explained in other outcome measures, which varies from 0 to less than 7 percent. It is important to note that this explanation of variance may not be directly attributed to financial knowledge, because control variables that were not significant in their associations with other outcomes came into play in the model of resources for children at home. Thus, this finding should be interpreted with caution but suggests that further investigation in the future may be fruitful in better understanding the relationship between financial knowledge and wellbeing of low-income families with young children.

### **The Role of Financial Inclusion in Low-Income Families**

#### **Associations between Financial Inclusion and Money Management**

Financial inclusion is thought to be a key component of financial capability, and access to financial products and services are thought to improve the money management of low-income families (M.S. Sherraden, 2010). In order to test this, one of the questions I asked in this study was whether or not financial inclusion is positively associated with money management in my sample. I measured money management on the basis of three dependent variables: household financial practices, consistent money management, and financial future orientation. Three different measures of financial inclusion were also used, one at a time, in my analyses. Results on the association between financial inclusion and money management measures demonstrate mixed results. Controlling for variables describing demographic and socioeconomic

characteristics, financial inclusion when measured on the basis of owning a savings account (with or without a checking account) is significantly associated with consistent money management and financial future orientation. However, financial inclusion does not appear to be related to household financial practices regardless of how such inclusion is measured.

Turning to control variables, the associations between variables describing the demographic and socioeconomic characteristics and money management were largely nonsignificant. Four of the six control variables, namely homeownership, marital status, education, and employment, do not appear to be associated with money management. Among control variables, income has a significant positive association with household financial practices, but not with consistent money management or financial future orientation. The other control variable that has a significant association with money management is race, but only when measured on the basis of financial future orientation. Because of the negative association of race with financial future orientation, my findings here once again suggest that people of color are more likely to have higher levels of financial future orientation than their white peers.

Previous scholarship suggests that access to financial products and services may contribute to financial functioning and family economic wellbeing (Beverly, M.W. Sherraden, Cramer, Shanks, Nam & Zahn, 2008; M.W. Sherraden, 1991; M.W. Sherraden & Barr, 2005; M.S. Sherraden, 2013). For example, Margaret Sherraden (2013) suggests that financial inclusion gives people, and especially low-income people, the real opportunity to act in their best interests, shaping the overall wellbeing of their families. Findings from this study suggests that those who own a savings account are more likely to manage their money consistently than those who do not have a savings account. Further, my findings suggest that those who own a savings account are more likely to have financial future orientation than those who do not have a savings

account. However, financial inclusion in the form of owning a checking account does not appear to be significantly associated with money management.

Prior scholarship on financial inclusion has often focused on the role of savings or owning a savings account (McKernan, Ratcliffe & Nam, 2007; Schreiner & M.W. Sherraden, 2007). Studies on the role of checking accounts have been more limited, and this led me to want to test the association between owning a checking account and the money management of low-income families. The findings from this study suggest that not all types of financial products work the same way in improving the money management of low-income families. While owning a savings account is associated with two of the three money management measures, owning a checking account does not appear to be associated with any of the measures of money management in this study.

Owning a savings account and owning a checking account may have different associations with money management because of differences in the nature and purposes of the accounts. By nature, checking accounts are transactional accounts, meaning banks expect account holders to frequently take out money, with few restrictions on the timing or amount of those transactions. However, money contained in savings accounts is of a different nature, and people may think about saved money differently. Savings accounts typically do not have check payment privileges or debit cards attached to them, so in many cases, savings account holders need to withdraw or transfer saved money before using it for consumption. In addition, according to Thaler (1999) money saved in a savings account is often considered less fungible in peoples' "mental accounting" than other financial resources, reducing the propensity to make withdrawals from savings accounts (p. 184). Thaler (1999) defines mental accounting as a set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial

activities, and notes that mental accounting involves the assignment of specific accounts to different activities. Thaler (1999) asserts that it is most tempting to spend cash on hand and money in checking accounts. Money in this category is routinely spent on an on-going basis. Less tempting to spend is money in the form of wealth, which includes a range of asset accounts such as savings accounts, stocks and bonds, mutual funds, and so on. In addition to Thaler's proposition, owning a savings account in itself serves as a reminder to save for some people (Karlan, McConnell, Mullainathan & Zinman, 2014), and facilitates "default saving" through institutional arrangements such as direct deposit and automatic transfer of funds into savings (M. S. Sherraden, 2010; 2013).

To summarize, financial inclusion when measured on the basis of ownership of a savings account may improve money management as measured on the basis of consistent money management and financial future orientation. However, "financial inclusion" as an indicator of wellbeing could be problematic because owning different types of accounts may have dissimilar implications for low-income families. The findings from this study suggests that owning a savings account may be more beneficial in terms of money management among low-income families with young children than owning a checking account. These findings suggest that we need more research that examines the effect of different types of accounts in order to adequately understand the role of financial inclusion in improving life chances of low-income families of low-income families.

### **Associations between Financial Inclusion and Developmental Resources for Children**

One of the purposes of this study is to test the associations between financial inclusion and developmental resources for children in low-income families as measured by resources for children at home, parent involvement at school, and enrichment activities. Findings from

multivariate analyses demonstrate the generally positive associations of financial inclusion with developmental resources for children in low-income families in this study. Controlling for variables describing demographic and socioeconomic characteristics, financial inclusion has a consistent significant association with resources for children at home, regardless of how financial inclusion is measured.

When financial inclusion is measured on the basis of owning a savings account or owning both a checking and a savings account, it also helps to explain parental involvement in children's schooling. Mirroring the pattern of associations in analyses of money management, owning a checking account was not significantly associated with parent involvement at school. Turning to enrichment activities, owning a savings account (with or without a checking account) was not found to have a significant association with enrichment activities, and owning a checking account appears to have a small negative association with enrichment activities. However, I interpret this finding cautiously without further study because it seems unlikely that it can be interpreted to mean that those who do not own a checking account are more likely to invest in enrichment activities for their children than those who own a checking account.

Theoretically, financial inclusion is thought to have an association with developmental resources for children in low-income households and this association may be happening in at least a couple of different ways. First, financial inclusion improves the opportunity to build and accumulate assets, reduces transaction costs (e.g. free check cashing), and enhances financial knowledge and financial management practices, all of which may improve economic resources available for children (Hilgert, Hogarth & Beverly, 2003; McKernan, Ratcliffe & Nam, 2007; Huang, Nam, and M.W. Sherraden, 2015). Availability of more economic resources may provide an opportunity for low-income parents to invest in their children. Financial inclusion, and the

often related economic resources, may also help to improve the investments of low-income parents in their children (Bradley & Corwyn, 2002). This association is thought to result, in part, by changes in parents' thinking and behavior as they accumulate economic resources. From a social-psychological perspective, the experiences receiving income and accumulating economic resources may be viewed differently from one another, affecting one's thoughts and behaviors in different ways (Scanlon, 2001). These attitudinal and behavioral effects may be important for household wellbeing in families, including low-income families.

My findings related to the associations between financial inclusion and economic and socio-psychological wellbeing of low-income families explain two important, but unexpected, results. Regression models in this study were tested to address the research questions, which include the associations between financial knowledge and financial inclusion and various measures of family wellbeing. While my expectation was that financial knowledge and financial inclusion would be better able to help explain money management outcomes than developmental resources for children outcomes, the findings of this study suggest that financial knowledge and financial inclusion are more likely to be significant in models of developmental resources for children than models of money management.

The second important and unexpected finding is the explanatory effectiveness of the model for resources for children at home as compared with the other dependent variables in my study. While testing the associations between financial knowledge and financial inclusion and resources for children at home, both were significant in their explanatory ability, regardless of whether financial inclusion was measured on the basis of checking account ownership, savings account ownership, or both. This finding was not replicated in tests of models of any of the other dependent variables. Further, most of the control variables in this model (marital status, race,

education, and employment) were significantly associated with resources for children at home, while only one or two control variables were significantly associated with other dependent variables. My models that tested resources for children in the home explained approximately 20 percent of variance in this outcome, as compared to much lower proportions of variance explained in other measures of family wellbeing (from 0 to less than 7 percent across other outcomes).

These results, taken together, suggest that financial inclusion (especially when measured on the basis of ownership of a savings account) may improve developmental resources for children in low-income families (especially as measured on the basis of resources for children at home) perhaps by changing parental attitudes and behaviors as well as purely financial factors in the household. In other words, there may be other pathways through which financial inclusion helps to improve the wellbeing of children in low-income families besides enhancing financial opportunities, decisions and behaviors. Further, the case of resources for children at home is interesting in that more control variables that describe demographic and socioeconomic characteristics came into play, having a significant influence on and helping to explain more of the variance in this outcome than others along with the significant associations of both financial knowledge and financial inclusion as measured with the basis of owning a savings account. Additional studies in the future will be required to begin researching, specifying, and testing more comprehensive models of the associations of financial knowledge and financial inclusion with family wellbeing.



## **The Role of Financial Capability in Low-Income Families**

### **Associations between Financial Capability and Money Management**

Financial capability is the construct in this study that represents the interaction between financial knowledge and financial inclusion, and is measured on the basis of ownership of bank accounts. One of the purposes of this study was to test the associations between financial capability and money management in low-income families in my sample. Results from multivariate analysis demonstrates that, controlling for variables describing demographic and socioeconomic characteristics, financial capability is significantly associated with household financial practices and consistent money management, but not financial future orientation. Financial capability is significantly associated with household financial practices regardless of how inclusion is measured. However, when inclusion is measured on the basis of owning a checking account, I did not find a significant association between financial capability and consistent money management. This finding is similar to earlier findings on the relationship between financial inclusion and money management, which suggest that not all types of bank accounts are associated in the same way with measures of money management for low-income families.

Turning to control variables, the associations between variables describing the demographic and socioeconomic characteristics and money management were largely nonsignificant. Among control variables, income and parental education has a consistent significant positive association with household financial practices, but not on consistent money management or financial future orientation. The other control variable that has a significant association with money management when measured on the basis of household financial practices and financial future orientation, but not with consistent money management, is race.

Because of the negative association between race and household financial practices as well as financial future orientation, my findings suggest that people of color are more likely to have positive household financial practices and a higher level of financial future orientation than their white peers. Employment is also negatively associated with household financial practices indicating that those who were unemployed reported more positive household financial practices than their employed peers. This is perhaps because unemployed people who are already have low-income are likely to be more careful in terms of financial practices, and they may use strategies lower their spending, such as, using coupons or frequent buyer cards when buying groceries, in order to get the maximum value from each dollar they spend.

My findings on financial capability build on the work of other social work scholars and colleagues who have suggested that people need both financial knowledge at the individual level as well as access to affordable financial products and services in order to build financially secure lives (Beverly, M. W. Sherraden, Cramer, Shanks, Nam & Zahn, 2008; M.S. Sherraden, 2010; 2013). According to the concept of financial capability, people make decisions that contribute to their wellbeing and the wellbeing of their families based on their internal abilities including financial knowledge and also on the basis of access and opportunities related to needed financial products and services (M. S. Sherraden, 2013). While financial knowledge allows low-income people make informed financial decisions (Huston, 2010), access to financial products and services provides financially vulnerable people the opportunity to actually take action on those decisions because of their inclusion in the financial mainstream (Loke, 2015; Grinstein-Weiss, Shanks & Beverly, 2014).

In this study, controlling for demographic and socioeconomic characteristics, those who are both financially knowledgeable and own a bank account are more likely to engage in positive household financial practices, such as using coupons when buying groceries, having a written budget, and hesitating to spend money they have previously saved. Similarly, those who are both financially knowledgeable and own a savings account are more likely to manage their money, as measured on the basis of consistently setting financial goals for the future, following their financial plans, and keeping track of their spending. These findings provide modest for the conceptualization of financial capability, and the proposition that such capability is related to money management.

### **Associations between Financial Capability and Developmental Resources for Children**

One of the questions I asked in this study was whether or not financial capability is significantly associated with developmental resources for children in low-income families in my sample. Findings from multivariate analysis suggest that financial capability was significantly associated with all three measures of developmental resources for children when inclusion was measured on the basis of owning a savings account. Further, financial capability was consistently associated with resources for children at home, controlling for variables describing demographic and socioeconomic characteristics, regardless of the type of account that represents inclusion in the financial capability measure. However, financial capability was significantly associated with parent involvement at school only when inclusion was measured on the basis of ownership of a savings account. Mirroring findings discussed earlier, financial capability was also significantly associated with enrichment activities, but only when the inclusion measure is owning a savings account. Thus, I again found consistency in findings suggesting that owning a savings account may be more advantageous for low-income families than owning a checking account.

Turning to control variables, only education was consistently associated with all three measures of developmental resources for children in this study when controlling for financial capability. Race, employment, and marital status were also significantly associated with various measures of developmental resources for children, but these associations were not consistent across models. Further, homeownership does not appear to be related to any of the money management or developmental resources for children outcomes of interest in this study.

Financial capability is thought to be associated with developmental resources for children because it improves both the ability to make informed financial decisions in the best interest of their families and the opportunity to use mainstream financial products and services to act on those decisions. My findings build on the work of scholars who have suggested the central role of financial capability in improving the wellbeing of low-income households (Thaler & Sunstein, 2008; Nam, Kim, Clancy, Zager & M. W. Sherraden, 2013; Becker, 2002; Jencks & Mayer, 1990). In addition to improving the odds of financial investment in children, financial capability is thought to improve investment in children such as investing time to be actively involved in their education. This effect is thought to be due, in part, to changes in the way low-income parents think and behave that may occur as they accumulate more economic resources (Sherraden & McBride, 2010). Theoretically, the experience of getting income and accumulating assets may affect one's thoughts and behaviors in different ways (Scanlon, 2001). The effects of having assets in the form of savings on parental thoughts and behavior may ultimately make meaningful contributions to the wellbeing of children in low-income households. For example, one way that financial capability may work to improve developmental resources for children in low-income families is by first increasing future orientation or hopefulness for the future among parents, which in turn may lead to greater investments of time, energy, and tangible resources in

their children (Ansong, Chowa, Grinstein-Weiss, 2013; Shobe & Page-Adams, 2001). To test explanations of this kind in the future, longitudinal designs with data collected at more than two points in time would be necessary.

Overall, while the findings of this study addressed the individual and joint associations between the components of financial capability and the wellbeing of low-income families, the findings of the study suggest the benefits of savings account ownership over checking account and the ability of financial capability and its components help to explain children outcomes more consistently than financial outcomes. The ability of models to explain outcomes for families in this study was weak, except for the measure of resources for children at home. The model testing resources for children at home explained approximately 20 percent of variance in this outcome, with either financial capability or its components, as well as marital status, race, education, and employment being associated with resources for children at home. Future research is needed to better understand why resources for children at home was better explained by financial capability and its components than the other outcomes in this study.

### **Implications of Findings**

Implications of findings from this study follow from the conceptual foundation of financial capability, which suggests that efforts to strengthen financial capability, especially in low-income families, may lead to positive money management and developmental resources for children in low-income families. In the following sub-sections, I discuss the implications of findings from my study for policy, practice, theory and research. At the end, I discuss the strength and limitations of this dissertation study.

### **Policy and Practice Implications**

In the past few decades, income and assets have been skewed increasingly in favor of the affluent, while households with low-incomes have stagnated despite government spending on public assistance programs for those with the lowest earning abilities and income levels (M. W. Sherraden, 1991; Bradley & Corwyn, 2002, M.S. Sherraden, 2013). Although income-based policies help some low-income families make ends meet (M. W. Sherraden, 1991; Ratcliffe & McKernan, 2010), these programs have not addressed other disadvantages among low-income families such as lack of financial knowledge, lack of access to affordable financial services, and asset poverty that worsens the situation of low-income families. The positive associations between financial capability and financial and, especially, children outcomes when controlling for demographic and socioeconomic factors in this study lend some support for policies and programs that help lower-income families build financial capability. As applied to this discussion, policies that work to improve financial knowledge and access to financial products and services may have the effect of improving money management and developmental resources for children in low-income families.

Policies and programs designed to improve financial knowledge may be important for the wellbeing of low-income families. Literature on financial knowledge suggests that, people, especially low-income people, need financial knowledge to make informed financial decisions (Collins, 2013; Hogarth & Beverly, 2003; Altman, 2011). Findings from this study suggest that financial knowledge is indeed related to positive household financial practices that are likely to be advantageous for the financial wellbeing of low-income families. Low-income people in this study who had higher levels of financial knowledge were more likely to use coupons and frequent buyer cards when buying groceries, have a written budget or spending plan, save a

regular amount of money each month, and be hesitant to use money that they had saved in the past. Therefore, policy efforts that are designed to improve the financial knowledge of low-income families may have positive effects on household financial practices, which can contribute to their overall financial wellbeing.

Efforts to develop policies and programs to increase financial inclusion by “banking the unbanked” may also have important implications for the money management of low-income families. The findings from this study suggest that financial inclusion is related to consistent money management and financial future orientation in certain circumstances for low-income families with young children. These positive associations include setting financial goals for the future, following a financial plan, keeping track of spending, and having a longer time frame in mind when considering money management. Low-income parents may benefit financially from such thought processes and behaviors, as well as pass related habits along to their children through day-to-day discussion and modeling.

One of the questions addressed in this study with particular importance for policy and practice addresses the benefits of combining programs designed to improve financial knowledge with financial products and services. Today, low-income people are required to make increasingly complex financial decisions in their daily lives and shoulder overwhelming financial burdens (Collins, 2013; Hilgert, Hogarth & Beverly, 2003; Altman, 2011). Financial knowledge can improve low-income people’s ability to make informed decisions that are advantageous to household financial wellbeing. However, financial knowledge may not be enough to achieve wellbeing without the opportunities to act on those decisions by virtue of their inclusion in mainstream financial services. The findings from this study suggest that financial knowledge as it interacts with ownership of a savings account, has a significant association with two of the

three measures of money management measured here. These findings hold whether the savings account is owned in conjunction with a checking account or not. However, it is important to be cautious in expanding interpretation beyond the significance of partial correlation coefficients because the ability of financial capability to explain variance in the money management outcomes of interest in this study was quite low regardless of whether the models included financial capability interaction terms or individual financial knowledge and inclusion.

If future research indicates support for the hypotheses that lower-income people who have adequate financial knowledge together with access to financial products and services are more likely to achieve their financial goals, smooth consumption, save regularly, and avoid financial adversities and negative shocks, then a call for policies and programs that build financial capability will be strengthened. This may help to level the playing field for low-income families as compared to their wealthier counterparts, at least in terms of improving their financial knowledge, increasing asset building opportunities, and reducing their transaction costs. These changes may have a positive impact on the financial stability and wellbeing of low-income families and, perhaps eventually, their upward mobility.

Further, the effect of financial capability may go beyond money management or financial wellbeing to improving developmental resources for children in low-income families. Financial capability may improve low-income parents' ability to invest in their children. In this study, financial capability has positive association with resources for children at home regardless of whether financial inclusion is represented by ownership of a checking account, a savings account, or both. Financial capability also helped explain developmental resources for children outcome of parent involvement at school when financial inclusion was measured on the basis of owning a savings account.



Again, the interpretation of the relationships between interaction terms representing financial capability and measures of developmental resources for children in this study must proceed with caution because the variance explained in two of the three developmental resources for children outcomes was quite low regardless of whether the models included financial capability interaction terms or terms representing financial knowledge and ownership of bank accounts separately. The exception to this pattern was the model for resources for children at home outcome, which explained approximately 20% of the variance in this outcome.

The interpretation of the explanatory efficacy of the models in explaining resources for children at home may be as simple as the notion that parents with higher levels of financial knowledge and opportunities to act on that knowledge by using their bank accounts acquire more resources for their children at home. However, the fact that more demographic and socioeconomic variables were significant in the model testing resources for children at home as compared to other outcomes of interest in this study when controlling for financial capability or its components suggests that this variable and other related measures may deserve a closer look in future studies of financial capability among low-income families with young children.

If future studies find similar patterns of relationships between financial capability and wellbeing, we will have a better understanding of the roles played by financial knowledge and financial opportunities in shaping the wellbeing of children in lower-income households. In addition, the sense of control which results from improved money management may contribute to investments in children, such as investing time to be actively involved in children's education. In this way, helping low-income and low-wealth families to build their financial capability could improve economic security over time, and also help children in such households succeed academically and ultimately achieve future economic success.

Prior literature suggests that structural changes are needed in order to help strengthen the financial capability of low-income families (Squires & Kubrin, 2006; M.S. Sherraden, 2010; 2013). Such changes will necessarily include modifications to the opportunity architecture of the mainstream financial sector to meet the specific needs of low-income families. One way to do this would be to design and fund social programs that facilitate partnerships between community-based organizations and community development financial institutions (CDFIs). Banks and credit unions that are CDFIs have a mission to invest in and serve economically distressed communities, along with expertise in developing and delivering financial education, products, and services that are especially designed for low-income population. Since CDFIs are financial institutions that are dedicated to delivering responsible and affordable financial products and services to help low-income, low-wealth, and other disadvantaged people and communities, establishing CDFIs for households like those in my study may help unbanked families to join the economic mainstream. Further, by financing community businesses, including small businesses, CDFIs may help to improve job growth and retention in economically distressed communities.

### **Theory and Research Implications**

The findings from this study also have important implications for theory and future research. The interaction between financial knowledge and financial inclusion when measured on the basis of owning a savings account is significantly associated with five of the six measures of money management and developmental resources for children in low-income families of interest in this study. This finding lends some support to the conceptualization of financial capability, which suggests that combining financial knowledge with financial inclusion gives low-income families the opportunity, not just the ability, to act in their best financial interests. The one

exception was financial future orientation which did not appear to be sensitive to financial capability, when financial capability is measured as an interaction between financial knowledge and owning a savings account for the families in this study.

The efficacy of financial capability in shaping wellbeing has also been questioned in at least two prior studies (Lyons & Scherpf, 2004; Lackie, Hui, Tattrie, Robson & Voyer, 2010). These studies along with the lack of financial capability efficacy in financial future orientation in my study suggest that understanding the contribution of financial knowledge and financial products in building financial capability will require more theoretical work and research in the future. Of particular importance is the need for longitudinal experimental studies with control groups that can help us tease out the effects of financial knowledge and financial inclusion using tests of more comprehensive models with different data sets and on different outcomes indicative of family wellbeing.

The findings from this study also suggest that different kinds of financial products may have dissimilar effects on the wellbeing of low-income families. In this study, owning a savings account was consistently associated with the wellbeing of low-income families than with owning a checking account. Similarly, combining financial knowledge with a savings account has more consistent association than combining financial knowledge with a checking account. Prior studies testing the effects of financial capability (Mills, Gale, Patterson & Appostolov, 2006; McKernan, Ratcliffe & Nam, 2007) have largely focused on the effects of combining knowledge with savings account ownership, so little is known about the effects of combining financial knowledge with other kinds of financial products on wellbeing. These results suggest the need for more research that sorts out the effects of different kinds of financial products, such as savings accounts, checking accounts, retirement accounts, and investment accounts. Future

research should also focus on testing the effects of financial capability by combining financial knowledge with different kinds of financial products and services to provide direction for effective policy [perhaps modeled on policies such as the Home Mortgage Disclosure Act (HMDA) and the Community Reinvestment Act (CRA)], and evidence-based practice. Such testing would help us better specify theoretical models of financial capability as well.

Beyond money management, financial capability may make contributions to developmental resources for children in low-income households. In this study, financial capability is significantly associated with developmental resources for children as measured on the basis of resources for children at home, parent involvement at school, and enrichment activities for children. Prior studies testing the effects of financial capability, however, exclusively focus on financial wellbeing (McKernan, Ratcliffe & Nam, 2007; Mierzwa, 2007; Tufano, 2009; Mills, Gale, Patterson & Appostolov, 2006; Schreiner & M.W. Sherraden, 2007). As a result, we know very little about the effects of financial capability on the wellbeing of children in low-income families. The findings of this study suggest that financial capability may be associated with the wellbeing of children at least as much as with financial wellbeing of low-income families with young children. Future research should focus on examining the relationship between financial capability and a wide range of indicators of family wellbeing.

There are suggestions from the scholarship on household assets that helping low-income, low-wealth families to save and build assets could improve near-term economic security, and also help children in such households succeed academically and achieve future economic success (Green & White, 1997; Zhan & M. W. Sherraden, 2003). However, financial capability is often seen as a prerequisite for asset building among low-income families. Without an affordable and secure place to save money, it is difficult if not impossible to accumulate assets, especially in the

context of day-to-day family life in which there are many demands and few resources. This suggests that future theoretical work and research on the relationship between financial capability and the wellbeing of low-income families should include longitudinal analyses in order to model and test the effects over time of policies and programs designed to increase financial capability, build financial assets, and ultimately enhance the wellbeing of lower-income families with young children. Better understanding of the effects on financial knowledge, financial inclusion, and financial capability on the wellbeing of this group can contribute to the development of effective policies and programs, and ultimately may help close the growing income and wealth gaps that are widely seen as threatening to social and economic stability in US society.

### **Strengths and Limitations of the Study**

This dissertation study has both strengths and limitations. One strength of the study is that it adds to early empirical work testing the conceptualization of financial capability, which is consistent with the person-in-environment perspective in social work, by taking individual and structural factors into consideration. Second, in this study financial knowledge is measured directly instead of relying on financial education as a proxy for financial knowledge which has been common in this field. Third, the MI SEED dataset used in this study came from a relatively large sample of lower-income parents with young children and included data at two points in time with four years between baseline and follow-up. The dataset also included measures of money management and developmental resources for children, financial knowledge and financial inclusion, as well as key characteristics of sample. These strengths of the dataset provided opportunities to test the contribution of financial capability to money management and resources for children controlling for important demographic and socioeconomic characteristics.

This dissertation study is not without limitations that must be taken into consideration. The first, and perhaps most important, limitation is that the parents who participated in this study enrolled their children in Early Head Start and also agreed to participate in the MI SEED research. Thus, they self-selected into the study rather than being randomly selected. In addition to selection bias which limits the generalizability of findings, the largest threat to internal validity is the absence of a control group. A second threat to internal validity is history in that baseline data was collected before the beginning of the Great Recession, and follow up data was collected just after the Recession began in Michigan. Interestingly, the timing of the study and the Recession made any improvement in outcomes of interest, and especially financial wellbeing measures, less likely. So even findings of weak positive effects of financial capability and its components are perhaps noteworthy in context. Third, testing is a possible threat to internal validity. For example, since participants were asked the same questions to measure their financial knowledge at baseline and follow up, the pre-test may have had some effect on the scores at follow-up. However, since there was a four-year gap between baseline and follow-up, the effect of testing is of less concern than the limitations discussed above.

Moreover, the Cronbach's alpha ( $\alpha$ ) coefficient of the three outcome variables that require alpha reporting is low, indicating low internal consistency among items measuring each outcome. These outcome variables are consistency in money management strategies ( $\alpha=.496$ ), Financial future orientation ( $\alpha=.338$ ), and books, readings and enrichment activities ( $\alpha=.395$ ). This could have contributed to the largely nonsignificant associations between the two components of financial capability and money management outcome measures. In the future, it is important to develop a standardized money management and enrichment activities measures to improve their internal consistency by testing these items across different data sets and removing

items with low factor loadings in each measure. Developing such a standardized measure can minimize the limitations of these measures so that we can better understand the impact of financial capability on the money management and developmental resources for children in low-income families.

### **Conclusion**

The research questions addressed in this dissertation are, when controlling for demographic and socioeconomic characteristics: 1) Are financial knowledge and financial inclusion significantly associated with money management of low-income families as measured by number of positive financial practices used in household, consistency in use of money management strategies, and financial future orientation? 2) Is financial capability significantly associated with money management of low-income families as measured by number of positive financial practices used in household, consistency in use of money management strategies, and financial future orientation? 3) Are financial knowledge and financial inclusion significantly associated with developmental resources for young children in low-income families as measured by number of resources for children at home, number of types of parental involvement at school, and books, reading, and enrichment activities? 4) Is financial capability significantly associated with developmental resources for young children in low-income families as measured by number of resources for children at home, number of types of parental involvement at school, and books, reading, and enrichment activities?

Multiple regression analyses were used to answer these questions with longitudinal data from 681 low-income parents of Head Start children. Results of tests on regression models demonstrate that the association between financial capability components, financial knowledge and financial inclusion, and some of the money management and developmental resources for

children measures of interest in this study are significant. Further, financial capability, when inclusion is measured on the basis of owning a savings account was significantly associated with two of three money management outcomes and with all three developmental resources for children outcomes.

These findings are important for several reasons. First, they are consistent with the conceptualization of financial capability as both an individual and structural level construct incorporating financial knowledge as well as financial inclusion, which was measured in this study as ownership of bank accounts. Second, financial capability and its components had at least as much impact on children outcomes as on money management outcomes of interest in this study. While the models tested here typically explained small proportions of the variance in outcomes, financial knowledge and financial inclusion help explain approximately 20% of the measure of resources for children at home, when controlling for demographic and socioeconomic characteristics. Third, owning a savings account appears to be a better measure of financial inclusion than owning a checking account in terms of its ability to help explain variance in measures of wellbeing for the low-income families in this study. This finding holds for those who own a savings account with or without also owning a checking account, and also when testing independent effects of financial inclusion or joint effects of financial knowledge and financial inclusion. Future research on the relationship between financial capability and wellbeing for children in low-income families should be designed to address various pathways through which financial capability may have such effects. Such research in the future will help us better develop theory, test effects, design policies and establish programs to help low-income families with young children.



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