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PARENTAL INVOLVEMENT AND LITERACY ACHIEVEMENT OF
KINDERGARTEN CHILDREN**

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CONNECTIONS BETWEEN PARENTAL MARITAL STATUS, PARENTAL
INVOLVEMENT AND LITERACY ACHIEVEMENT OF KINDERGARTEN
CHILDREN

A dissertation submitted in partial fulfillment
of the requirements
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ST. JOHN'S UNIVERSITY

New York

by

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ABSTRACT

CONNECTIONS BETWEEN PARENTAL MARITAL STATUS, PARENTAL INVOLVEMENT AND LITERACY ACHIEVEMENT OF KINDERGARTEN CHILDREN

Saumendra Nath De

Marital relations and family structure have evolved over the years. Transformations in marriage, divorce, and cohabitation have altered family life in many parts of the world including the United States. Single-parent families are on the rise. Social scientists are concerned with the diminishing role of family and imminent decline in parental involvement in child's education. This demands a closer look into the effects of parental marital relationships on parents' involvement and children's literacy outcomes. The current study examined the connections between parental marital status, parental involvement, and literacy outcomes of kindergarten children by using the nationally representative, Early Childhood Longitudinal Studies Kindergarten Class of 2010-11 dataset. The results showed that the reading scores of the children living in intact families with two parents were statistically significantly higher than their peers living with single parents and other guardians after taking demographics including age, gender, race/ethnicity, language, socio-economic status, and location of schools into account. The demographic characteristics of children had differential impact on the association between parental marital status and children's reading scores. The results also indicated that parental involvement statistically significantly mediated the association between parent marital status and children's reading

scores. However, the study posed a challenge on the common belief that two parents are always better for children's literacy outcomes, finding that single parents had enhanced parental involvement compared to. This suggests that the association between family structure and children's outcomes could not be considered in isolation from demographic variables. The importance of the study lies in its contribution to inform the policy and practice of the nuances of family relation and its complex interplays with demographics and children's outcomes that would help the educators to devise suitable interventions to address the needs of children from diverse families.

Keywords: Literacy. Fragile families. Marital status, Parental involvement. Socio-economic status.

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“Have you also learned that secret from the river; that there is no such thing as time? That the river is everywhere at the same time, at the source and at the mouth, at the waterfall, at the ferry, at the current, in the ocean and in the mountains, everywhere and that the present only exists for it, not the shadow of the past nor the shadow of the future.”

— *Hermann Hesse, Siddhartha*

Knowledge is like the ceaseless flow of river that emerges from a source which is not bounded by time and merges into the ocean which is beyond time. It doesn't exist in the shadow of past nor the shadow of the future. Rather, it hails from the past, exist in the present, and flows into the future. The quest of knowledge for humans is endless and exists from time immemorial. It is that exquisite quest of knowledge that have brought me to the course of PhD in Literacy.

It is with real pleasure that I express my sincere gratitude to Dr. Evan Ortileb, a Professor and Director of Manhattan Campus where he serves as the Coordinator of the PhD Program in the School of Education for his continuous counsel, guidance, and encouragement for the PhD course work including the dissertation. I am especially thankful to Dr. Kyle Cook, Assistant Professor of St. John's University for her incisive guidance, mentorship, and extraordinary support for my dissertation work. No thanks are deep enough to record my indebtedness to her. I am extremely grateful to the dissertation committee for its continuous support and all Professors of St. John's University including Dr. Michael Sampson who was one of the members of my dissertation committee for providing me such a wonderful learning platform. I am also thankful to my friends for their unconditional support and cooperation.

At the end, I record my thanks to my parents whose constant support and inspiration have incessantly encouraged me to come up to this stage of dissertation. My father, who is 85 years of age and a high achiever himself, has always been a source of my inspiration and has continuously been encouraging me to pursue and complete my PhD. I have always told him that I will achieve it one day. Nothing in my life including this dissertation would have been possible without the unbounded love and blessings of my late mother overseeing all my activities from heaven. The acknowledgement for this landmark achievement of my life would not be completed if I don't recognize the immense contribution of my lovely wife and two treasured sons in my growing up and the sacrifice they have made to allow me in pursuing my career at the high cost of my lessened participation in their life's events. I sincerely hope that the flavors of blessings of my teachers, friends, parents, family and well-wishers would keep me advancing and I pray that I am never devoid of such generous persons around me.

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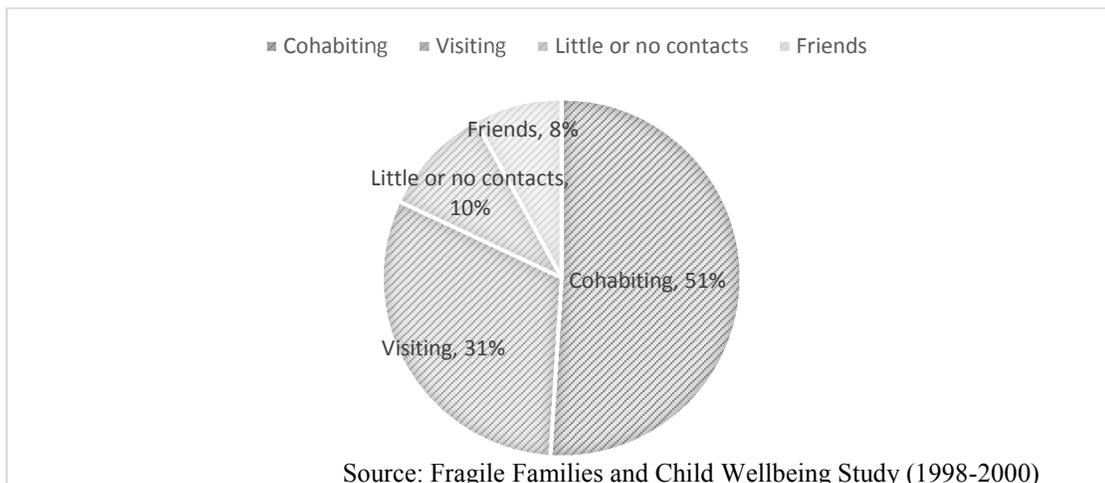
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CHAPTER 1: INTRODUCTION

Marriage as a social institution has evolved over the years. The social and legal significance of marriage has eroded in recent decades (Lundberg & Pollak, 2015). The stability in marital relationships is increasingly being weakened in many countries. In a vastly changing family structure in different parts of the world including the United States, the complexity of family relationships is growing, and children are increasingly growing up with both biological and non-biological parents and in kinship systems that are complicated by a succession of multiple partnerships (Cherlin, 2009). The creation of steady unions between married couples has become far more challenging than it was before (Furstenberg, 2014). The Baseline National Report of the Fragile Families and Child Wellbeing Study indicated that the proportion of children born to unmarried parents has increased dramatically during the past forty years and close to one third of such births are occurred outside of marriage-like relationships (McLanahan et. al., 2003). According to the report, only half of the unmarried parents were living together at the time of child's birth as shown in Figure 1 below:

Figure 1-Unmarried Parent's Relationship Status at Child's Birth (1998-2000)



Furthermore, according to the United States Census Bureau's population survey of 2018, there were 35.7 million single-person households in 2018, composing 28 percent of all households. Incidentally, single-person households in the United States represented only 13 percent of all households in 1960 (US Census Bureau Population Survey 2018). The population survey of 2018 further indicated that about 27 percent of children under the age of 15 who live in married-couple families stay with their mother at home, compared to only 1 percent who stay with their father at home. A prominent definition of family was provided by Phillip Cohen (2014) who stated that families are groups of related people bound by connections that are biological, legal, and emotional, and that family entails expectation of care and commitment. A unique sense of bond and belongingness thus tie the family to maintain the well-being of its members. Coming from India, a land with historical roots of traditional family system with strong bonds, my viewpoint on the concepts of family revolves around a strong, stable, and enduring family where the members are attached with shared love, belongingness, and emotional bonds and fortified by an unconditional commitment of shared responsibilities for the well-being of each member of the family.

A child growing up in single parent family or living with unwed parents is often at risk of adequate parental care and concerns. The 2001 Fragile Families and Child Wellbeing Study (FFCWS), conducted by the Center for Research and Child Well-being (CRCW), defined the families consisting of children with single parents or non-biological parents as fragile families. The incidence of fragile families has considerably increased in the U.S. during the past four decades (Amato & Maynard, 2007). Fragile marital relationships between biological parents impact the well-being and education of the

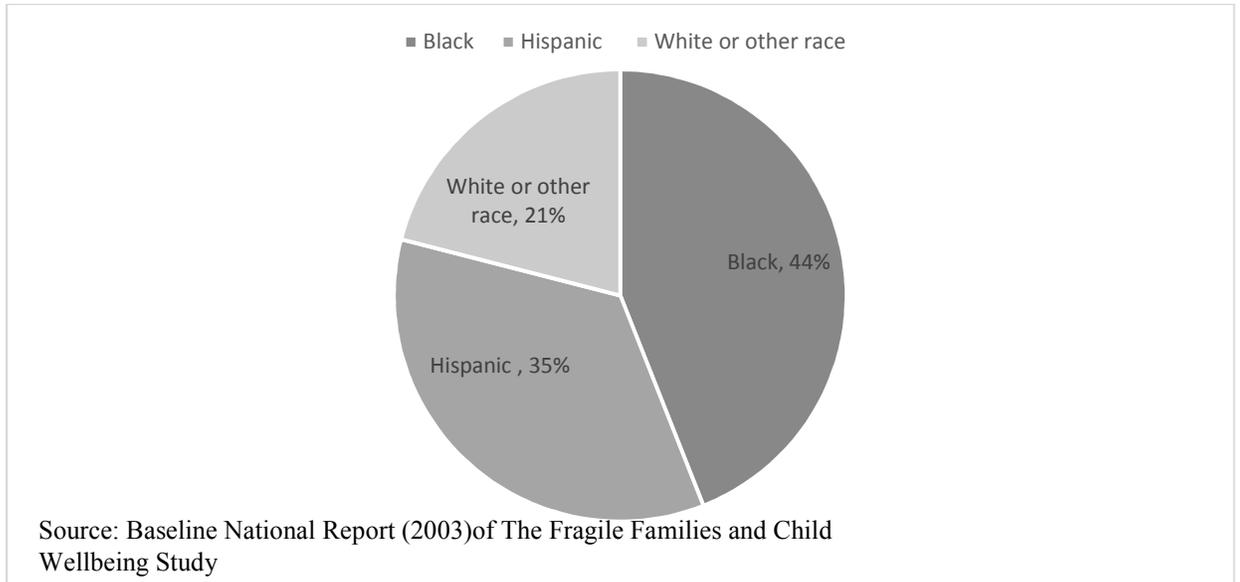
children (Waldfogel, Craigie, & Brooks-Gunn, 2010). Empirical evidence showed that children who grew up living in an intact household with both biological parents seemed to do better, on an average, on wide range of social indicators including behavioral outcomes, cognitive functioning and academic achievement than did children who grew up in single-parent households (McLanahan & Sandefur, 1994). Fremstad and Boteach (2015) emphasized three S's of family, namely, structure, stability, and strength of parental relationships in a family, and suggested that they had a positive impact on children's emotional and economic security and overall wellbeing. McLanahan and Sandefur (1994) in their landmark study on single parent families and child well-being, identified that students living in households with both biological parents were less likely to drop out of high school and more likely to enroll in college, compared to the students living with single or divorced parents. Parents' have significant role in children's education and well-being. Grolnick and Slowiaczek (1994) defined parental involvement as the dedication of resources by the parent to the child within a given domain. Parental involvement entails parents' investment in the education of children (Larocque, Kleiman, & Darling, 2011). Parental involvement is significantly related to the academic performance of children (Topor, Keane, Shelton, & Calkins, 2010). However, several fragile family and child welfare studies indicate that poorer quality of parental relationship is linked with less parental involvement with children.

Effect of Demographics

It is difficult to measure the effect of demographics on unmarried mother and/or parent's marital relationship. However, it is interesting to see the demographic profiles of parents impacted by fragile marital relationships. The Baseline National Report of the

Fragile Families and Child Wellbeing Study (McLanahan et. al., 2003) shows the race/ethnicity of unmarried mothers as shown in Figure 2 below:

Figure 2-Race/Ethnicity of Unmarried Mothers



The minority children are more likely to be exposed to socioeconomically stressful environments, and some researchers have indicated that their sustained socio-economic deprivation and existing social disadvantages sometimes outweigh the stressful impact of parents living apart (McLoyd, Cauce, Takeuchi, & Wilson, 2000). This is known as the socio-economic stress hypothesis. The family stress theory, on the other hand, focusses on family's ability to cope with the stressful situations and crisis. The family's ability to cope up with and respond to stressful conditions of life depends on the nature of stressful events and the resources available to facilitate the coping (Fomby, Mollborn, & Sennott, 2010). The socio-economic disadvantages therefore have the potential to undermine the family's ability to adapt to possible stressful situations caused by the negative consequences of divorce and fragile family relationships. Cross (2019) used the nationally representative longitudinal data to investigate the extent to which

racial/ethnic variations mediate the effect of family structure on children's academic outcomes and identified that differences in socio-economic resources and racial/ethnic variation influence the association between family structure and educational attainment.

Children living in poverty experience multiple deprivations including ill-health, hunger, malnutrition, and neglected learning environments (Nambissan, 2010). Sirin (2005), in his meta-analytical study, indicated that children's socio-economic status (SES) was one of the strongest correlates of academic performance. According to the U.S. Census Bureau, out of around 11 million single parent families with children under the age of 18, more than 80 percent were headed by single mothers (US Census Bureau Population Survey, 2018). Single mothers, in comparison with married mothers, are more likely to be in disadvantageous positions before and after childbirth in terms of economic conditions (Lichter, Graefe, & Brown, 2003). The 2018 U.S. Census indicated that 40 percent of children with single mother live in poverty while only 12 percent of children in two parent families are poor. Children in families that experience instability in living arrangements, are more likely to continue living in poverty for protracted periods and have social and emotional problems (McLanahan & Sandefur, 1994).

Connections with Parental Involvement

Family structures are increasingly being changed, but research continuously demonstrates that parent/family involvement in children's education significantly contributes, in a variety of ways, to improve student outcomes related to learning and school success (Hill & Tyson, 2009). But, although parents may be aware of the overarching importance of their involvement in children's education, various life-context barriers might affect parental involvement (Hornby & Lafaele, 2011). These life-context

barriers include environmental context, family socio-economic status, parents' knowledge and skills to help children, and time and energy. Although parental involvement has been identified by many researchers to have positive impacts on the educational attainment of children, its relationship with academic achievement would lose significant explanatory power if the environmental context of parental involvement is not taken into account (Chun & Devall, 2019). Several studies have also shown that children do better and continue in education longer when their parents demonstrate higher aspirations and expectations than when their parents show relatively lower aspirations and expectations (Jeynes, 2011). A number of meta-analyses have also been carried out to examine the linkages between parental involvement and children's academic achievement. These meta-analyses identify that various dimensions of parental involvement are positively linked to academic achievement with varying effect sizes ranging from small to moderate (Fan & Chen, 2001). Positive impacts of parental involvement on student academic outcomes have also been recognized by school administrators, teachers, and policy makers (Graves & Wright, 2011). However, the presence of more parents in the workforce, the transcendental changes of human lives in fast pace environment, and the declining role of families have contributed to an apparent decline in parental involvement in education (Jeynes, 2010). It is important to look together into the interlinkages between parental marital status, parent involvement and literacy outcome.

Conceptual and Theoretical Framework

Definition of Literacy

Literacy is defined as the process of using reading and writing for constructing meaning through multiple interactions in socially situated practices (Frankel, Becker, Marjorie, & Pearson, 2016). It encompasses wide-ranging beliefs, attitudes, and social practices. Literacy is “inextricable” from the social, cultural, institutional, and political practices in and through which the individuals read, write, speak and listen (Gee, 1999, p. 356). The 1948 Universal Declaration of Human Rights has recognized the ability to read and write as a fundamental human right. According to UNESCO, Literacy is the ability to identify, understand, interpret, create, communicate and compute using printed and written materials associated with varying contexts. People need to be literate for socio-economic progress both individually and in the context of the development and growth of a community, society or country. However, equity in global literacy education has eluded the children of the world. The situation in the United States is no different. The 2003 National Assessment of Adult Literacy (NAAL), the nationally representative and continuing assessment of English language literary skills of American adults of age 16 and older, has identified 11 million adults to be non-literate in English and 30 million to fall at below basic prose literacy level. Hispanic and Black adults accounted for 39 and 20 percent respectively of the below basic population. The National Commission on Adult Literacy, 2008 indicated that every year, one in three young adults (equivalent to 12 million people) drop out of high school. According to the Commission, about 2 million immigrants come to US each year in search of jobs and better lives, but around 50 percent of them have low literacy levels and lack high school education and English language skills. The National Center for Families Learning (NCFL), a U.S. based organization working to eradicate poverty through education solutions for families, has identified low

family income and a mother's lack of education to be the two biggest risk factors that hamper a child's early learning and development. Children's reading scores improve when their parents are involved in helping them learn to read (Jeynes, 2012). But unfortunately, with the literacy divide in the world where 39 percent of the adults are illiterate including 41 million adults in the United States who are either illiterate in English or fall below the basic proficiency level in English, the inequality in educational opportunities starts at home.

The International Covenant on Economic, Social, and Cultural Rights of 1966 state that education shall be equally accessible to all based on merit and individual capability. According to UNESCO, literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider community. However, equal opportunities and access to education have plagued the educational world due to a plethora of demographic factors including the disadvantageous position of a child right at the time of birth due to parental marital relationships and low socio-economic status that in turn may potentially influence parental involvement in children's education and impact their literacy achievement. A number of theorists suggested that improving school entry academic skills of disadvantaged students resulted in reducing the proportion of children with poor educational outcomes (Duncan & Magnuson, 2013). Empirical research has also established a strong residual effect of socio-economic disadvantage early in life that are not mediated by school entry academic skills (Chittleborough, Mittinty, Lawlor, & Lynch, 2014). The current study aimed to examine the complex interactions among the parental marital relations, parental involvement and literacy outcomes of kindergarten

children. The study also looked into the dynamic interplays of demographics including low SES and ethnicity on the variables of interests, namely, parental marital relations, parental involvement and literacy achievements of kindergarten children.

Theoretical Framework

The theoretical framework of the study was based on the premise of social and human capital theory (Coleman, 1988; Lin, 2001). Social Capital entails a network of interpersonal relationships, reciprocity, trust, cooperation and social norms (Portes, 1998). According to Putnam (2001), social capital refers to connection among individuals through social networks based on reciprocity and trustworthiness that arise from them. Human capital, on the other hand, refers to individual's knowledge, skills, educational attainment and other attributes that affect a person's ability to do productive work (Coleman, 1988; Lin, 2001). Coleman's (1988) social capital theory indicated that intra- and inter-household relations affect the transmission of human and social capital to children. Knowledge is culturally coded (Kucer, 1985) and cognitive processes including reading, writing, and thinking skills are influenced by the zone of proximal development related to a child's learning that is embedded within the socio-cultural context (Vygotsky, 1978; 1986). Literacy involves higher order cognitive skills and is learned by the children through interactions with their families and communities. The learning processes are thus markedly influenced by students' socio-cultural background and related practices. Gee (2012) developed a viewpoint on language that emphasized the connections among language, embodied experience, and situated action and interaction in the world. He argued that what is relevant to learning literacy is not English in general, but specific varieties of English that he termed as social languages. An individual's cognitive and

motivational processes of reading and writing are profoundly impacted by the socio-cultural surroundings including family parental relations, contexts, events, and situations. Social and human capital in the context of a child's family and learning are delicately inter-linked. Coleman and Hoffer (1987) emphasized the importance of social capital of the family on child's educational development and indicated that if human capital possessed by parents is not complemented by social capital embodied in parental relations, the educational growth of children is affected. It was therefore imperative to situate the study on the premise of social and human capital theory to understand the nuances of the social nature of the literacy learning and the significance of parental social capital in terms of parental relationships and parental involvement on the human capital, namely, the educational attainment of children.

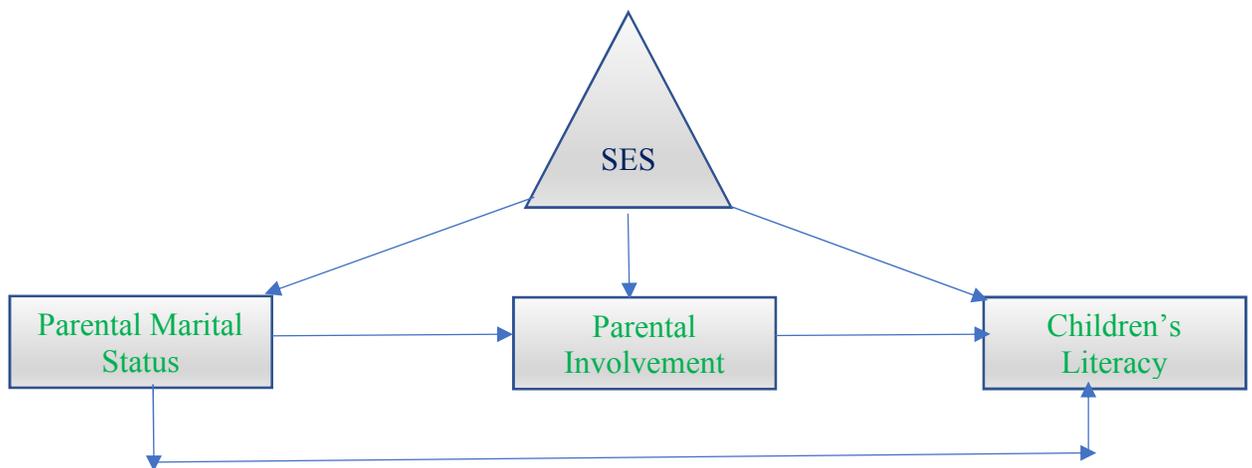
Parental involvement entails participation of parents in both home and school learning activities of children. Epstein (2001) has mentioned about six different types of parental involvement that involve parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community. The educators and sociologists have argued that in modern society, parental involvement is especially important due to increasing family dissolution rates and associated sociological pressures on children (Jeynes, 2012). While the voluntary parental involvement, on average, results in higher educational outcomes of children, the school based parental involvement programs have the potential to reinforce students' literacy achievement (Jeynes, 2010). The theoretical debate on parental involvement often revolves around the voluntary parental involvement and/or school-based parental engagement programs that can make a difference in raising the grades and scores of children. Some social scientists

propounded that human expressions of love, care, and concern expected from parents are primarily voluntary acts (Hughes & Black, 2002; Jeynes, 2010). However, some social scientists are of the opinion that schools can play an important role to teach parents on how to become more engaged with children to bolster their educational attainments (Epstein, 2001). This perspective is grounded on Social Learning Theory or Behavioral Theory (Mapp, Johnson, Strickland, & Meza, 2008) which prescribes that learning takes place in social context and new behavior can be acquired by observing and modeling appropriate behavior (Kumpulainen & Wray, 2002).

Conceptual Framework

The present study looked into the pathways of direct and indirect effect of parental marital status and parental involvement on the literacy scores of children and the pathways leading from one or more of these independent variables to the outcome variable, namely, the children's literacy outcomes as shown in the Figure 3 below:

Figure 3-Pathways of the Effect of Parental Marital Status and Parental Involvement on the Literacy Outcomes of Children



As shown in Figure 3 above, the connection between parental marital status, parental involvement, and children's literacy outcome was examined.

The Statement of Problem

The general problem addressed in this study, was how children's outcomes were related to the complexity of family structure and parental involvement, and if the children from families with low SES were affected more than their other counterparts in terms of parenting practices and literacy outcomes. The learning needs and educational outcome of children living with single parent or non-biological parents can potentially be affected as parents play an important role in children's education and overall well-being. Wilder (2014) in the meta-synthesis of studies that focused on the relationship between parental involvement and students' academic achievement confirmed the significant role of parental involvement in children's academic achievement. However, the paradigm shifts in the family structure and striking increase in the number of families headed by a single parent (McLanahan & Casper, 1995) demanded a closer look into the effects of family structure and/or parental marital relationships on parental involvement and children's literacy outcomes. The effect of demographic variables including age, gender, race, language, location of schools, and socio-economic status were also examined because of potential differential impact of these variables on family structure, parental involvement, and student outcomes. For example, past studies indicated that low socio-economic status had negative consequences for children (Duncan & Brooks-Gunn, 1997).

Significance of the Study

The issues of parents' marital status, ethnicity, and low SES on the academic performance of students have generally been investigated in isolation from one another (Poyrazli & Kavanaugh, 2006). However, an examination of their interplays was imperative to understand the contextual variables impacting literacy achievements of

children, particularly in view of social, economic, cultural, and technological changes in recent times that had altered the tenets of family structure impacting the lives of children. Wilder (2014) advocated to more effectively capture the association between parental involvement on children's outcomes. There was a need to do more research to find out if parental marital status influenced parental involvement that in turn impacted the children's outcomes. However, not many studies were done to look together at parental marital status, parental involvement, and child outcomes. Lack of literacy achievement among children from fragile families, particularly those with low socio-economic status, is a social challenge. The current study, therefore, examined the pathways of parental marital status, parental involvement, and students' outcome; and looked into the interplay of diverse demographics, including race/ethnicity and SES on such pathways.

Purpose Statement

The purpose of the study was to examine how single parenthood and absence of both biological parents in households and parental involvement were related to a student's literacy achievement by using data from nationally representative, Early Childhood Longitudinal Studies, Kindergarten Class of 2010-11 (ECLS-K-2011). The independent variables were parental marital status, (i.e. biological parents living together with the child; biological parents not living together, single parenthood (father or mother); one of the parents living in a marriage like relationship with someone who was not the child's biological father/mother) and parental involvement (whether or not parents tell stories, read books, help in studies, play with the child, and participate in school activities). The dependent variable was mainly children's reading IRT scale

scores. In addition, the effects of demographics of the children including age, gender, race, language, location of schools, and SES were also measured.

Research Questions

The current study aimed to answer the following research questions:

1. What is the relationship between parental marital relationship status and kindergarten children's reading scores?
2. Does parental involvement mediate the association between parent marital status and kindergarten children's reading scores?

Hypotheses

Based on the research questions mentioned above, the following hypotheses were formulated for the purpose of the study:

1. I hypothesized that there was a statistically significant difference in the literacy scores between children who lived with both biological parents and the children who either lived with single parent or with one biological parent cohabiting with another partner and/or with non-biological parents.
2. There was a statistically significant difference in the parental involvement between children who lived with both biological parents and the children who either lived with single parent or with one biological parent cohabiting with another partner and/or with non-biological parents.

Definition of Terms

The definition of key terms used in the study are described below to clarify their underlying meaning in the research.

Parents in the study included biological father and mother. Other adults providing guardianship to the children were not considered for the purpose of this study.

Family structure referred to the number of parents in the household, two-parent families or single-parent families.

Fragile families included cohabiting conditions of children where biological parents were not living together with the child; single parenthood; one of the parents living in a marriage like relationship with someone who was not the child's biological father/mother; and other cohabiting conditions of the children that did not include both biological parents.

Single parent family referred to a family where a parent lived with dependent children either alone or in a household, without a spouse or partner.

Parent Involvement referred to the extent of time, support and motivation provided by the parents for children's academic activities and literacy achievements. Epstein (2001) indicated specific activities of parental involvement as home based (e.g. playing games with the child); school-based (e.g. attending parent-teacher conference); and community based (e.g. visiting zoo).

Literacy was construed as the process of using reading, writing, and oral language to extract, construct, integrate, and critique meaning through interaction and involvement with multimodal texts in the context of socially situated practices (Frankel, Becker, Marjorie, & Pearson, 2016).

Socio-economic-status included parent's education, occupation, and household income for the purpose of this study. Although, there were some disagreements on the combination of variables used in measuring SES, Sirin (2005) in his meta-analytic review

indicated an apparent agreement on Duncan, Featherman, & Duncan's (1972) definition of the tripartite nature of SES that incorporated parental income, parental education, and parental occupation as the three main indicators of SES.

Assumptions

The study used the public version of the national data set, ECLS-K-2011 (Tourangeau et. al., 2015) developed by National Center for Education Statistics. The design of the ECLS-K-2011 and its survey instruments was guided by a conceptual framework of children's development and learning that emphasized the interaction among the surrounding environments in which the students lived. The comprehensive study of children's environment and experiences were made from the information derived through surveys. Interviews and questionnaires administered to the children, parents, school administrators, teachers, and caregivers were the major data collection instruments. Filtering data through individual bias is very important for any survey methods both from the perspective of interviewer and interviewees. The consistency of interview data is also an area of concern when the coverage of topics is wide, and volume of data is as large as that of ECLS-K-2011. Besides, the errors in surveys can be introduced from various sources including participants, survey questions and interviews, interviewers, and data collection methods. The ECLS-K-2011 contacted key educational organizations prior to the study and received endorsements of many national associations and organizations representing parents, school administrators, and teachers. For the purpose of current study, it was assumed that they abided by their commitment to support the study with unbiased opinions and the respondents provided honest answers to the survey questions. Further the field staff assigned with the responsibilities of data

collection tasks were assumed to be adequately trained and competent for conducting surveys and making assessment. It was also assumed that the non-response bias was adequately managed, and overall consistency and quality of data was maintained through adequate quality assurance mechanism throughout the data collection phases.

Summary

Marriages have evolved in the United States since 1950 and couples increasingly prefer co-habitation to marriage with a growing fraction of child births taking place outside marriage (Lundberg & Pollak, 2015). This has led to family instability and single parent families with potential impact on children's well-being and literacy outcomes. Research shows that children who grow up in single-parent families do not fare well as those reared in two parent families, on an average (McLanahan & Sandefur, 1994; McLanahan, Tach, & Schneider, 2013). Tobishima (2018) indicated that single parenthood negatively impacts the academic achievement of children.

Parents influence their children in multiple ways. The changing family trajectories have a detrimental effect on parent's involvement in children's education. The relationship between parental involvement and academic achievement is affected by various other factors including ethnicity and socio-economic factors (Kohl, Lengua, & McMahon, 2000). However, the research studies that manage to control for the effect of some of these variables were rarely done, although they are valuable to provide more clarity of the effect of parent involvement on student achievement (Wilder, 2014). There are also gaps in the study to explore the pathways of parental marital status, parent involvement, low socio-economic status, and academic outcome of students. Equity in education has eluded the educational world. The children who are devoid of being raised

up in intact households with both biological parents are at risk of disproportionate socio-emotional and educational support in comparison to their other counterparts growing up in intact households. The current study looked together at parental marital status, parental involvement, and literacy outcomes of children; and delved deep into the interplays of these variables for children of diverse demographics including those coming from different socioeconomic backgrounds.

The broader aim of the study was to inform the policy and practice on the potential negative impacts in the literacy attainment of the children coming from fragile families, especially those with low socio-economic status who need them the most for socio-economic empowerment and progress both at individual and community levels.

CHAPTER 2: LITERATURE REVIEW

The dominant model of nuclear family household in the late 1960s are fast disappearing in the post-modern world. Goode (1963) predicted a general convergence to the conjugal family based on strong marital bonds, but the demands of an emerging economy and increasing participation of women in the labor force raised the divorce rates leading to a complex family system created by divorce and remarriage (Cherlin & Furstenberg, 1994). The unions embedded in marriages are not organized the way they were 50 years ago and the stability in marriages have increasingly become challenging (Furstenberg, 2014). The number of single parent families are on the rise. The rapidly changing family structure associated with low human capital produces complexity over time in family systems and fosters growing levels of inequality (Furstenberg, 2014). Equity in education has plagued the educational world. A large number of students suffer from the lack of equity in education and struggle academically, socially, and psychologically. There are multiple reasons for the imbalance in the equity of education including the disruption of the family unit (Brandon, 1992), low SES and cumulative negative environmental factors (Duncan, Brooks-Gunn & Klebanov, 1994), and lack of parental involvement (Epstein, 1996).

The Definition and Concept of Family

It is not precisely known when the concept of family originated, although it was probably between two million and 100,000 years ago (Gough, 1971). Social scientists and researchers have provided many definitions of families. Gough (1971) defined family as a married couple or other group of adult kinsfolks who cooperate economically and in the upbringing of children and all or most of whom share a common dwelling. Kyle

(1991) described the family to be a social unit best designed by the biological, social, and psychological needs as the foundation of the human community. Families remained as strong social bonds across the vistas of time. Is it possible to have a universal definition of family? Researchers tried to find an answer to this question but largely argued that such a definition is either not possible (Settles, 1987) or only possible to discuss in relation to categories of definitions (Troost, 1990) because the definition of family will vary based on situational context while the universal definition would require that the definition be applicable to all societies and situations, historically, developmentally, and cross-culturally. Family definitions are linked to ideological differences and driven by history, culture, and situational requirements (Munro & Munro, 2003). The dilemma of a common definition of family thus persisted among the sociologists, cultural anthropologists and family researchers (Troost, 1990). Hanson and Lynch (1992) provided a broader situational definition of family and described family to be a unit that include individuals who are related by blood or marriage as well as those who have made a commitment to share their lives. One of the most explicit examples of a situational definition was provided by Bould (1993) who defined family to be an informal unit where those who cannot take care of themselves can get the care at the time of need. Family has also been viewed as a social group by many sociologists. However, the involuntary nature and intense emotional ties attached to a family have made it a distinct social group. Researchers (Day, Gilbert, Settles, & Burr, 1995) have drawn a distinction between a family and social group and described the distinctive attributes of a family that include: (a) family membership may be involuntary and entails a connection that is relatively more permanent in nature, (b) actions of family members can be hidden resulting in a

safe environment for openness and honesty, (c) family members may be more intricately bonded with emotional ties; (d) there is often a shared world view of family members, and (e) most importantly, there is often a biological connectedness that is not present in any other form of social groups. Thus, no one definition of family applies to all situations and cultures. Although theoretical definitions are important for research purposes, it is important for the researchers to adopt a conceptual approach in the light of a set of assumptions to examine social phenomena and consider the practical or situational definitions of family that may be appropriate in specific situations and circumstances (Munro & Munro, 2003).

Paradigm Shifts in the Family Structure

Social scientists have linked kinship systems with family patterns. The kinship systems are mechanisms that link conjugal families in ways that integrate the general social structure and reinforce the ability of the society to reproduce itself in an orderly fashion (Farber, 2001). According to Farber (2001), kinship performs these social functions primarily in two ways: (a) firstly, kinship fosters social ties during the lifetime of related persons through relationships defined by blood ties and marriage, and (b) secondly, kinship enables the temporal continuity of family connections over generation, albeit the limited lifespan of a family's members. The kinship systems and family patterns cut across diverse historical periods from ancient or medieval times to modern civilizations. Historically, families were described as extended families that comprise of parents, children, grandparents, and other relatives living in one household. Extended family households were prevalent throughout Europe, Asia, and Americas. Households were extended lineally (e.g. comprising of grandparents or grandchildren), collaterally

(e.g. aunts, uncles, nephews, and nieces), or affinally (e.g. through marriage). Affinal relationships were primarily based on marriage and cohabitation. From sociological and anthropological perspective, extended family ties form the basis for understanding social networks in both traditional and contemporary societies, while the historical value of extended family lies in its role to shape the direction of social, economic, and demographic change (Wagner, 2003). One of the remarkable features of extended family has been its adaptability to changing social conditions. For example, it has been noticed that the extended family provides much-needed support under stressful life conditions when young adults face divorce or unemployment, or when older adult members become widowed and/or their health deteriorates (Lee, 1999).

The beginning of 19th century following the colonization period brought transformation in the society and the extended family structure began to be gradually replaced by the nuclear family structure where families comprise of parents and their children and bonded with love, affection, emotional attachments and nurturance, and psychological security. Malinowski (1913), a prominent anthropologist, argued that the nuclear family had to be universal because it filled the basic biological need in the form of caring for and protecting infants and young children. According to him, no culture could survive, unless the birth of the children was linked to both father and mother in legally based parenthood. It is commonly believed that nuclear family gained momentum as a result of industrialization with smaller families better posited to meet the demands of industrialized economy. The social, economic, and political transformations inflicted by industrialization gave rise to proliferation of nuclear families in western countries because nuclear family was free to move as economy demands, making it fit to the needs

of industrialized society (Parsons, 1955). Nuclear family was essentially characterized by domestic privacy and strong emotional bonds between spouses and between parents and children. In many parts of the world, including the United States, family was considered to be a lifelong marital union between a man and women. Divorce was very uncommon and was viewed as a social ignominy during early 1900s (Furstenberg & Cherlin, 1991). The two world wars, the dropping of the atom bomb on Hiroshima and Nagasaki, the Women's Rights movement, and the Civil Rights movement brought huge changes in the social expectations. The quest for personal liberation, gratification, and defiance to established authority and conventions took over (Magnet, 1992). Massive industrialization and breakdown of gender-based labor led to the growth of women labor force, raise the standards of household consumption, and altered the role of women in a family. The breakdown of families and rising divorce rates in the United States beginning in the mid-1960s were attributed to increasing rates of educational attainments and participation of women in the labor force. From the late 1960s to present day, the participation of women in workforce increased exponentially, marriage age began to rise, women began to feel more empowered and tend to pursue careers and full-time employment, use of contraceptives steadily increased, and the fertility of married couples declined accordingly (Furstenberg, 2014).

The globalization, technological advancement, market-based capitalist economic, and social system have prompted hedonistic, individually oriented value system that is at odds with the traditional family system (Harbison & Robinson, 2003). The resurgence of women's movements, concerns about human rights, improvements in reproductive and contraceptive technologies have raised concerns and thrown new sets of questions on the

usefulness and purpose of family as a social institution. In growing numbers, young couples tend to settle for cohabitation and give birth to children without being legally married (Lundberg & Pollak, 2015). The number of non-traditional families and blended families are steadily increasing. According to Chalker (1986), blended family comprises of a child living with a stepfather or stepmother as a result of remarriage. Individuals are increasingly beginning to experiment with new and alternative ways to develop meaningful relationships, not always within the confines of marriage.

Cohabitation, or the sharing of households by unmarried intimate partners are increasingly becoming commonplace in many parts of the world including the United States. In Sweden and other Scandinavian countries, cohabitation has become so common that it has almost become a social institution in itself. Cohabiting couples are characterized with the diversity of personal relationships. Macklin (1983) while explaining the diversity of cohabiting relationships discussed about four types of cohabiting relationships including: (a) temporary or casual relationships, in which couple tend to cohabit for convenience or other pragmatic reasons, (b) going together, in which couple is affectionately attached to each other but has no plans to marry in near future, (c) transitional, in which the couple prepares for marriage, and (d) an alternative to marriage, wherein the couple opposes marriage on ideological and other grounds. Amid increasing visibility and tolerance for a variety of relationships during 1990s, sociologists are concerned with the deteriorating value system of family.

The single-parent households are also on the rise. There has been a dramatic increase in the single parent families in the United States in last three decades of the twentieth century (Feltey, 2003). The increase in the number of families headed by one

parent has a considerable influence on the social, economic, and cultural context of family life. The circumstances of single parenthood are varied. Single parents can be divorced, widowed or never married with varying levels and types of social and economic resources. There can be another form of parenthood outside of marriage where a single woman may choose to bear or adopt and raise children alone. Historically, single parent families sprang from parental death. However, the contemporary single parent families in the United States are a result of changing social and cultural trends, increased rates of divorce and non-marital child rearing, increased opportunities for women employment, decreased employment opportunities for men, and the availability of welfare benefits that enable women to set up their own households (Rodgers, 1996). Parenthood is a challenging task even in the best of conditions. The challenges are exacerbated with one parent taking responsibilities of child rearing. Coping with childrearing becomes difficult for single parents due to responsibility overload arising from the need to make all decisions and provide the basic necessities of life for the family by one parent, task overload arising from the overwhelming demands for work, housework, and parenting by one person, and emotional overload arising from the responsibility of the single parent to be always available to meet their own and children's emotional needs (Feltey, 2003). Across cultures, races, and ethnic backgrounds, children need to be loved and supported by parents for their physical and psychological well-being. McLanahan and Sandefur (1994) examined how growing up in various types of family structure including divorced and unwed single parent families affect child well-being and identified that even after controlling for the selection of different types of individuals into different types of family structure, the children belonging to divorced or unwed mother's households fared worse

than their counterparts in households with the presence of both biological parents throughout their childhood and adolescence. On the attributable factors, McLanahan and Sandefur (1994) argued that income was an important factor for poorer outcomes of children in single parent families. The authors argued that since single parent families, on an average, have only half of the income of the two parent families, the difference accounted for about half of the gap between the two sets of children from single parent families and two-parent families. The authors further identified that poorer parenting skills and behaviors in single-parent families account for the other half of the gaps between the two sets of children described above. These gaps persisted even after controlling a variety of demographic and socio-economic factors.

The changes in the family structure as an adaptation to the changing conditions of society as described above reflect the broader societal changes in values, culture, and relationships. Macklin (1983) noted that family has not lost its significance or relevance but continues its age-old process of evolution, maintaining many of its traditional structural patterns, values, and roles while adapting to the changing socio-economic circumstances and cultural ideologies. However, the high divorce rates, increased rates of pre-marital sexuality, cohabitation, and extramarital sex have pointed towards the deterioration of family values (Seccombe, 1991). The falling importance of marriage and family systems has not only eroded the unique value system and socio-psychological bonds within a family but also has put the children at risks due to diminished quality and quantity of time and care being devoted to them by their biological parents in post-modern era.

Parental Involvement in Children's Education

Parent's marital relation has tremendous impact on the family atmosphere. The child's home provides the basic foundation of learning and socialization, and apart from other variables, the quality and characteristics of the home environment have important consequences for child outcomes (Carlson & Corcoran, 2001). Social scientists are concerned with the diminishing role of family and imminent decline in parental involvement in child's education in the fast pace modern society (Jeynes, 2010). Larocque, Kleiman, and Darling (2011) stated that family involvement can generally be defined as the parents' or caregivers' investment in their children's education. Jeynes (2005) defined parental involvement to be the parental participation in the educational processes and experiences of the children.

Parental involvement encompasses a variety of components including parents' participation in home and school activities of children, assisting them with homework and a variety of cognitive tasks, and motivating the children for academic achievements. Epstein (2001) indicated six different types of parental involvement that include parenting (child rearing and creating conditions that support child's education), communicating (fostering communication and cooperation between home and school), volunteering (sharing time and talent to support the academics of children), learning at home (helping children at home with academic work), decision making (participation in decisions related to school's programs and activities that impact children, and collaborating with the community (cooperation between schools, families, and community groups). Researches have demonstrated that parental involvement positively

contributes, in a variety of ways, to improve student's academic achievements (Graves & Wright, 2011; Larocque, Kleiman, & Darling, 2011; Wilder, 2014).

The aspirations for children's academic achievement are manifested through parental involvement in a variety of ways that not only provides support for homework and studies but also provides the required motivation for academic excellence and psycho-social support. Parental involvement is thus not a single construct, but multifaceted in nature and subsumes a wide variety of parental behavioral patterns and parenting practices (Taylor, Hinton, & Wilson, 1995). Jeynes (2005) identified a strong relationship between parental involvement and academic achievement among urban students irrespective of their gender and ethnicity. Parents' involvement in the learning activities at home has significant bearing on the academic achievement of children (Erion, 2006). Academic socialization that includes parents' expectations for children's academic achievement, fostering academic inspirations in children, discussing various learning strategies, and planning for the future of the children have significant impact on children's literacy achievement (Hill & Tyson, 2009). The family structures have changed over the period and the massive advancement of technology has changed the educational world and introduced a new era of digital literacy but the importance of parental involvement in the educational attainment of children has remained constant.

Various Dimensions of Parental Involvement

Parental involvement in the education of their children not only makes them aware of the parents' aspirations and expectations, but also facilitates children's learning and engagement in school by sustaining students' learning interests across contexts (Wong et al., 2018). Parental educational aspirations have a positive effect on the

academic achievement of children (Schoon, Parsons, & Sacker, 2004). The meta-analytic study conducted by Fan and Chen (2001) to synthesize the literature about the relationships between parental involvement and students' academic achievement indicated that parental aspirations/expectations for children's educational attainment had the strongest relationship with student academic achievement among all indicators of parental involvement. Parental involvement includes a variety of forms and encompasses a broad spectrum of parenting practices. The ways in which culturally diverse families are involved in their children's education differ. However, researchers tend to have segmented the parental involvement into two major dimensions, home-based parental involvement (Epstein, 2001), and school-based parental involvement (Jeynes, 2003). Parental involvement has been considered as a multidimensional construct that comprises of parental behaviors and parenting practices on children's education at home and in school (Englund, Luckner, Whaley, & Egeland, 2004). The categorization of parental involvement as home-based or school-based is useful because it represents the common but distinct ways in which most public schools and policymakers in the United States interprets parental involvement (Puccioni, 2018).

Home-based Parental Involvement

According to Epstein (2001), parental involvement at home entails: (a) helping the children with homework; (b) supporting schoolwork, (c) regular conversation with the children about their school activities and studies, and (d) demonstrating aspirations and expectations for their children's academic achievement. Home-based parental activities such as monitoring schoolwork is beneficial for improving children's academic achievement and social relations (Tam & Chan, 2009). The home-based parental

involvement during early childhood entails early literacy and numeracy practices. Studies have shown that shared book reading, telling stories, and singing songs not only motivate the children to acquire literacy related skills but also positively influence reading performance (Boyce, Innocenti, Roggman, Norman, & Ortiz, 2010). Epstein (2001) suggested that parents' support for children's homework fosters parent-child communication and can also open up a line of communication between parents and teachers, increase family involvement in school activities, and help to improve children's educational achievement. There are however some studies that indicated negative associations between parents' assistance to children's homework and their mathematics and reading achievements (Desimone, 2001). The plausible explanation for such inconsistent findings is that parental involvement is a multi-dimensional and complex construct and comprises of a broad range of parental behaviors relating to parents' active participation in home and school activities and general interests in their children's academic performance (Fan & Chen, 2001). Chen and Zhu (2017) indicated that the complexity of the construct of parental involvement may not be the only reason for inconsistent findings regarding the association between parental involvement and children's educational attainment and suggested that items for assessing parental involvement might be limited to specific groups that violate the assumption of measurement variance leading to inconsistent results and mixed conclusions across studies.

School-based Parental Involvement

The school-based parental involvement includes: (a) establishing communication with the teachers about children's performance in school, (b) participation in school

meetings, (c) participation in the life of the school, and (d) participation in various formal bodies like school committees and parents' associations (Pomerantz, Kim, & Cheung, 2012). School-based involvement entails parents' active participation in school settings, such as parent-teacher meetings and extracurricular activities that provide opportunities to the parents to have interaction with teachers, school administrators and other parents (Epstein, 2001). Studies have shown that school-based parental involvement in the form of attending school meetings, volunteering in school activities, and serving of formal bodies such as school committees have positive association with children's academic achievement (Galindo & Sheldon, 2012). However, similar to the outcomes of various studies between home-based parental involvement and children's educational attainment, there were inconsistent findings across studies on the association between school-based parental involvement and academic achievement of students. For example, Jeynes (2005) in his meta-analytic study to examine the effects of parental involvement on urban elementary school students identified that parents' attendance to school functions did not yield statistically significant association between school-based parental involvement and academic achievement. Children in their formative years, between 5-18 spend approximately half of their waking hours at school or school related activities (Miller, 2002). Therefore, both school and the family have significant bearing on child's development (Paylo, 2011). Given the importance of families, schools, and the family school relationships on children outcomes, researchers emphasize on bringing parents and schools together to foster positive child outcome through comprehensive multi-systemic parent school framework (Berryhill & Vennum, 2015). Studies also continue to identify the positive role of parental involvement and school-based partnerships on the

academic achievement of students (Hill, Liang, Price, Polk, Parella & Savitz-Romer, 2018).

The academic socialization as one of the parental involvement measures is also an important predictor of the literacy achievement of children (Hill & Tyson, 2009). According to Hill and Tyson (2009), academic socialization refers to parent's engagement in academic activities of the children that encompasses: (a) conveying parental expectations on educational outcomes and parental beliefs on educational values and their usefulness, (b) connecting schoolwork to educational objectives, (c) fostering educational and occupational goals, and (d) preparing and motivating children for academic attainments and future plans. The parental expectation on children's educational outcomes is also an important component of parental involvement. The meta-analytic study of Jeynes (2005) on the effects of parental involvement on children's educational outcomes have identified parental expectations as one of the strongest components of parental involvement that drive improved academic outcomes. The parent-school involvement encompasses academic socialization because it conveys the message to the children about the importance of schoolwork and the value of good performance in school for a better future (Hill & Tyson, 2009). Parents also socialize their children with regard to academics by encouraging them to try hard and do well in school, which is referred to as effort socialization (Bempechat, Graham, & Jimenez, 1999). Overall, parental involvement in children's education is multi-dimensional. In addition to the direct parental involvement in home-based and school based activities, the indirect parental involvement in the form of academic socialization that include parents communicating the value of education and its utility to the children promote

academic success and foster a link between school activities and future goals and aspirations (Hill & Tyson, 2009).

Studies have applied ecological systems theory to conceptualize parental involvement as a primary process factor that indicates the interactions between parents and children in connection with educational attainment (Chun & Devall, 2019). Bronfenbrenner (1974) was one of the pioneers to emphasize on the qualities and processes taking place in ecological settings in which children and adolescents are embedded and defined the enduring form of interactions among persons and objects of the surrounding environment as primary processes and strong predictors of developmental outcomes. The ecological system model of Bronfenbrenner (1999) comprises primarily of four systems, namely, microsystem, mesosystem, exosystem, and macrosystem. While microsystem refers to home, school, and community; mesosystem comprises of two microsystems such as the combination of school and home or the school and the community with the developing individual functioning within both systems. Exosystem is the interaction between two environmental contexts that influences a child's development, such as a stressful work-life event of a parent can indirectly impact the child as the parent may tend to exert the frustration on child. Macrosystem, on the other hand, refers to the socio-economic environment of the children. The use of ecological system model as a theoretical framework to examine the role of parental involvement on the academic success of children is appropriate because the processes and conditions within individual's environment including the home environment that influence human development is encapsulated in the theory and research postulated by the ecological systems theory (Bronfenbrenner, 1999).

The Impact of Low Socioeconomic Status

The instability of a fragile family is exacerbated when there is a socio-economic deprivation. Jalovaara (2003) indicated that both parents' economic resources have important bearing on marital stability. Limited economic resources can have a detrimental effect on relationship quality, stability, and coping resources in families (Conger, Conger, & Martin, 2010). Lower-income couples either legally married or cohabiting suffer from economic hardship and resentment that lead to conflict, mistrust, and recrimination. The higher order of stress overturns the emotional relationship. This impacts family relationships. There are strong relations between family status variables including socio-economic status, marital relationships, and ethnicity; and parental involvement in children's education. Inadequate well-being including poverty and cumulative negative environmental factors have significant impact on literacy outcomes of students. (Duncan, G., Brooks-Gunn, J. & Klebanov, P., 1994; Smith, J., Brooks-Gunn, J., & Klebanov, P., 1997; Biro, M., Smederevac, S., & and Tovilovic, S., 2009).

Children from low socio-economic status (SES) exhibited dismal literary performance compared to middle SES children in many studies. Lee and Bowen (2006) have identified that poverty, race/ethnicity and parental education have played a significant role in children's educational achievement. Low socio-economic status impacts children's education and wellbeing directly and indirectly by limiting the opportunities and resources for socio-economic and cognitive development. It has been found that unlike students with higher socio-economic backgrounds, students who suffer from low SES living conditions are less likely to succeed in elementary and secondary schools and attend subsequently to colleges or Universities for higher education (Daniel,

2009). The educational and social success of a child is influenced by characteristics of the family context. Likewise, characteristics of a family is largely influenced by its socio-economic status. Families facing chronic poverty often suffer from vicious cycle of poverty and lack of educational attainment over generations. Chouhan (2013) conducted a study on literacy and educational attainment of a marginalized class of people in India called Scheduled Castes in the Malda district of the state of West Bengal in India and identified that social discrimination and lack of welfare measures had impacted literacy among the marginalized group of people for successive generations.

The effect of low socio-economic status results from complex interactions of contextual factors that include parental unemployment and/or low income and low parental education that jeopardize the ability of parents to raise and educate children in healthy, stable families (Sirin, 2005). White (1982) conducted a meta-analysis on the effects of socio-economic status on children's academic achievement and found that variability in the measurement of SES including parental occupation, maternal education level, family income, and home environment were largely attributable to a wide variation in the correlations between measures of children's SES and academic achievement. Poverty leads to lack of resources. Parents living in poverty remain busy to maintain livelihood and manage daily chores of stressful life leaving less time to spend with children to parent them or involve in some way or the other in their lives. Studies continue to find that low socio-economic status negatively impacts children's developmental outcomes, both academically and socially, even after controlling for other family characteristics (Duncan & Brooks-Gunn, 2000). Exposure to poverty creates psychological stress that interferes with children's ability to regulate their emotions and

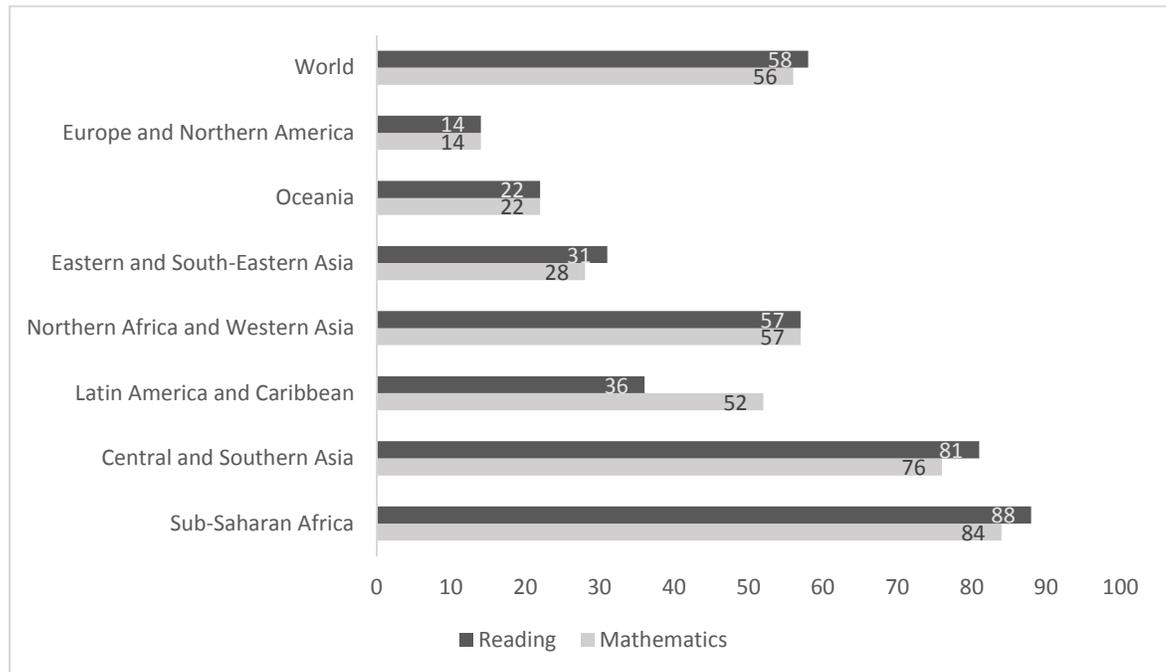
behavior (Cooper, 2010). Furthermore, economic pressure affects parents' mental health leading to less parenting (Conger et al., 1992). The Family Process Model elucidates the process by which the experience of economic pressure affects the mental health, parenting and subsequent child adjustment (Conger & Elder, 1994). Regardless of other demographic factors like ethnicity, financial hardship increases the risk of parental anxiety, emotional distress, marital conflict and poor parenting (Conger et al., 1992).

The 2006 PISA results argued that the United States has the largest existing achievement gaps among students compared to other developed countries. Reardon (2011) showed that the gaps in reading and math achievement between students from families at the 90th and 10th income percentile grew by about 40 percent between children born in the 1970s and the 1990s, but the US gaps seemed to have narrowed slightly for children born in the subsequent decade (Reardon & Portilla, 2016). Major bodies of educational policy research examined the achievement gap between the students and found it to be substantial among the students coming from low SES backgrounds (Delen & Bellibas, 2015). Researchers and policy makers in a number of developing and developed countries have made conscientious efforts to understand and alleviate the achievement problems of students who suffered from disadvantaged conditions due to low SES (Darling-Hammond, 2010).

The international organizations including United Nations and World Bank have increasingly focused on the achievement gaps between distinct groups of students based on their socio-economic status as education has been considered as a significant contributing factor for individual growth and community development. The United Nations Member States in 2015, has adopted 17 Sustainable Development Goals,

popularly known as 2030 Agenda for Sustainable Development, which set out a 15-year plan to achieve the Goals with the broad aim to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere in this planet. Obtaining quality education for all and ensuring equal access to inclusive education has been one of the goals (Goal 4) of sustainable development. However, the 2019 Sustainable Development Goals Report of the United Nations indicated a global learning crisis due to shockingly low proficiency rates in reading and mathematics as shown in the Figure 4 below:

Figure 4-Percentage of Children and Adolescents not Achieving Minimum Proficiency in Reading and Mathematics, 2015 (Percentage)



Source: UN Sustainable Development Report 2019

Overall, the existence of socio-economic achievement gap or disparity in the academic achievement between students from high and low socio-economic status is well-known in the field of educational research (Chmielewski, 2017). This has been a matter of concern for the International Organizations including the United Nations.

Plausible Explanations on Association between Low SES and Poor Outcomes

Given that low SES affects children's literacy outcomes, it is pertinent to understand why and how it occurs. Childhood poverty and development are complex phenomena and involve dynamic interactions of biological and psychosocial elements (Bradley & Crowyn, 2002). Lipina et al. (2013) analyzed the impact of poverty on the development of executive control, through information based on the assessment of combined neurocognitive paradigms and the identification of specific environmental mediators and concluded that children with unsatisfied basic needs had lower efficacy on cognitive tasks. Biro, Smederevac, and Tovilovic (2009) have indicated that socio-economic status, parent's education, financial health and stimulating educational climate affects the cognitive development and scholastic achievement. Ayoub et al. (2009) emphasized the positive effects of Early Head Start on cognitive skill performance among young children living in poverty.

Rothstein (2004) mentioned about the importance of non-cognitive skills for the achievement of low SES children and indicated that an exposure to appropriate life experiences for low SES students can help them develop some critical non-cognitive skills like perseverance, self-confidence and self-discipline that might benefit them for better academic outcomes in future lives. Chittleborough, Mittinty, Lawlor, & Lynch (2014) upheld through their research that progressive universal interventions (intense intervention for those with greater need) to improve school entry academic skills could raise population levels of educational achievement by 5 percent and reduce absolute socio-economic inequality in poor educational achievement by 15 percent. Nambissan (2010) focused on the education of children in poverty, taking India as a lens in her study

on poverty and education from an Indian perspective. She identified how poverty-stricken children experience multiple deprivations including ill-health, hunger, malnutrition, and neglected school environments that affect their learning. Armstrong (2010) indicated that poverty leads to malnutrition and neurological deficits that in turn impacts brain function and affects learning.

Parenting practices have important bearing on the social and cultural context of children's literacy interactions and development. However, low SES children suffer from sub-optimal parenting practices (Lareau, 1987). The socio-cultural perspective provides the lens to have a deeper understanding on the connection between the social, cultural and literacy practice in home setting through the interaction between parents and children (Drajea & O'Sullivan, 2014).

The Evolution of Kindergarten Education

The history of kindergarten can be traced back to the first half of nineteenth century when Froebel set up a school, unique in its kind, that became known as kindergarten (Headley, 1965). According to Headley (1965), Froebel described children as plants and teachers as gardeners. The term kindergarten emerged from this description of Froebel where kinder means child and garten means garden (Headley, 1965). The kindergarten was meant to impart education by teachers to the children from earliest years. The earliest roots of kindergarten in the United States can be traced back to 1848, when Germans were fleeing the country due to revolution (Headley, 1965). The advent of industrialization during the late 1800s and early 1900s caused many mothers to join the workforce making a shift away from maternal care at home to mothers choosing organizations to take care of their children (Muelle, 2005). The need and demand for

kindergartens began to escalate from this time. Kindergartens started gaining popularity and was looked as a kind of community center in the neighborhood (Shapiro, 1983). However, the widespread expansion of early childhood programs in the United States began in late 1960s. Enrolling young children ranging from infants to young children of 4 or 5 years old, in some form of out-of-home program became a social phenomenon (Zeng & Zeng, 2005). Gradually, kindergarten become one of the most widespread early childhood education programme in the United States. In 1960s, the organizations which supported actions to provide better educational opportunities for children under the age of six began to emerge and parents together with the organizations demanded for academically rigorous kindergartens to emerge (Headley, 1965). The acceleration of academic skills in the kindergarten curriculum began around this time. This was also the time when Piaget's theory of how children learn was considered in the kindergarten curriculum. Piaget advocated that children transform their own experiences to acquire meaningful concepts and laid emphasis on the importance of intrinsic motivation of children and a competence drive that leads children to learn (Mindess & Mindess, 1972). The kindergarten school day included reading, writing, speaking, listening, social studies, art, music and other activities (Headley, 1965). The age requirement of kindergarten also became an issue. However, most districts required the kindergarten students to be of age five (Mindess & Mindess, 1972). Over the years, kindergarten has evolved, and it is no longer seen as a place to get ready for school but a place to learn and develop (Morrison, 1998).

The teaching practices for kindergarten students have also evolved. The educational reforms worldwide have witnessed two major shifts in teaching and

assessment children of kindergarten students : (a) increasing emphasis on academic learning and increased use of assessment to support and monitor the progress of academic development of children, and , (b) use of play as a dominant pedagogical approach (Deluca, Pyle & Lapointe-McEwan, 2020). In the United States Education system, the kindergarten teachers are required to use a series of tests including diagnostic, interim, and readiness in order to measure and monitor student growth toward respective state standards (Roach, McGrath, Wixson, & Talapatra, 2010). The increasing monitoring of student achievement and development through assessment including the formative use of assessment to strengthen student learning is based on the research suggesting the value of assessment-driven teaching for early intervention, diagnosis, remediation, and enhanced pedagogy (Brown, 2011). The age-old social and personal development purpose for kindergarten education has not lost its significance altogether, but academic standards have been added to curricular expectations that require assessment-driven pedagogical practices to support both academic, social, and personal learning outcomes of kindergarten children. The adoption of play has also been increasingly adopted as appropriate pedagogy for teaching both personal and socio-personal outcomes (Pyle, Prioletta, & Poliszczuk, 2017). The United Nations Convention on the Rights of the Child (1989) that made a promise to every child to protect and fulfill their rights, by adopting an international legal framework, has recognized that at the heart of children's lives everywhere, is the right to play. Pyle, Prioletta, and Poliszczuk (2017) suggested that play in classroom learning entails a variety of children activities geared toward their imaginative and independent learning and involves a continuum of teacher directed playful learning, where the teacher purposefully constructs an activity to support the

learning of a specific skill through play, to child-directed free play with minimum to no intervention from the teacher. Empirical studies have continuously demonstrated the overarching pedagogical value of play and its potential for learning both academic and non-academic skills, particularly in the context of kindergarten and early childhood learning (Presser, Clements, Ginsburg & Ertle, 2015; Pyle, Prioletta, & Poliszczuk, 2017). With the growing emphasis on guided instruction and measurement of children growth toward academic expectations through formative and summative assessments, teachers are increasingly concerned on how to maintain the balance between the academic rigor for learning development and the use of play for socio-emotional development. This underpins the inherent tensions to integrate child-centered pedagogical practices for child development and academic performances into standards-based accountability and assessment policies that currently define K-12 education system (Brown, 2011).

The Importance of Early Childhood and Kindergarten Education

Early childhood education has profound impact on the intellectual development and literacy achievement of children. It allows the children to build a solid foundation for learning, acquire the much-needed human capital for future, and facilitate enhanced performance in school as well as in labor market (Decicca & Smith, 2013). The development of literacy skills is crucial for children's learning and studies have demonstrated that the earlier the literacy skills are developed by children, the better is the academic learning, both in early years and in later schooling (Elliott & Olliff, 2008). The high quality early childhood education is linked to reduced retention rates in schools, reduction in the need for special education services, reduction in the high school dropout

rates, lowered teen pregnancy rates, and decrease in the prevalence of living in poverty (Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010). The positive effects of early education continue into adolescence and adulthood. Ramey and Ramey (2005) indicated that with respect to standardized measures of intelligence, children attending quality early education programme scored five IQ points higher at the ages of 8, 12, 15, and 21 than did those children who did not have an opportunity to attend a quality early childhood program. The benefits of early education are especially important for disadvantaged children because the early school gap between them and their peers who are relatively in more advantageous socio-economic status may appear early and persist over a period of time impacting the overall literacy achievement of children (Cunha, Heckman, & Lochner, 2006). The pre-school and kindergarten education play a pivotal role in child's socio-personal development and readiness for upper grades in the school system. By and large, kindergarten marks the beginning of formal education of child. It is the most common entry point into public education for children in the United States and studies have indicated the value of developing academic skills at an early age including that at kindergarten level, as they are highly predictive of future academic achievement (Duncan et al., 2007; Van Oers & Duijkers, 2013). The kindergarten education and the literacy achievement of kindergarten children therefore continue to remain an overarching area of interests for policy makers and researchers.

The Effect of Family Process

Low SES cannot be isolated from family processes. Rather, there are interlinkages between SES, family processes, and children's achievement (Clark, 1983; White, 1982). Family processes have significant influence on children's developmental

outcomes. The term family processes involve various aspects of how families communicate, organize themselves, and delegate roles and responsibilities, in conjunction with what the families believe about their role in child development (Smith, Ronald, Dumas & Laughlin, 2004). The communication between the parents and children is very important for the development of social and personal skills of children. Dodge (1986) indicated that children coming from home environment with good communication are better equipped with social skills and problem-solving abilities and more likely to be involved in positive ways socially, behaviorally, and academically. Family support is intricately linked to family processes. The behavioral aspects of family support including emotional support and support for academic pursuits has a positive influence on educational achievement (Unger, McLeod, Brown, & Tressell, 2000). The interactions among family members and shared love and warmth has influence on the mental well-being of all members of the family including the children. The healthy processes among family members in terms of promoting the self-worth and dignity of family members, good communication, openness, closeness, and organization have a powerful influence on the psychological well-being of family members and adolescents (Feinauer, Larson, & Harper, 2010). Buehler (2020) indicated that family processes involve a variety of interactions that comprise family life such as supporting each other, sharing affection, communicating, solving problems, and even aggression and/or neglecting each other. According to Buehler (2020), these processes occur in dyads, triads, and whole family systems, and family member's cognitions and emotions are intricately linked with these processes. Interparental conflict impacts the well-being and behavior of the children. Harold, Elam, Lewis, Rice, and Thapar (2012) examined the interparental conflict and

youth antisocial behavior in the U.K. families with both genetically related and unrelated parent-child pairs and found that interparental conflict influenced the child behavior problems through the transmission of parent-to-child hostility in diverse family configurations with an exception that such transmissions were not established in genetically unrelated pairs. Parental harshness is also an important factor for the association between interparental conflict and children's behavioral problems (Grasso et. al., 2015). Li and Meier (2017) conducted a meta-analytic study to examine children's perceptions of feeling accepted by mothers and fathers and found that perceived acceptance by parents were positively associated with child outcomes and acceptance by mothers were more strongly associated with better socio-economic development of children.

Conger et. al. (2012) developed the Family Stress Model to account for family diversity and demographics in the process of family functioning and child and adolescent outcomes. The Family Stress Model suggests that multiple family stressors including economic hardship and pressures from socio-cultural stressors have negative cascading effect on parents' psychological well-being and quality of parental relationships leading to harsh parenting and reduced nurturant parenting that in turn affect the child and adolescent well-being. The development of Family Stress Model led to new formulations, hypotheses, and constructs of studies examining the family processes and child and adolescent outcomes in families with diverse demographics in terms of color, race, ethnicity, social locations, structural power, and socio-environmental and economic stressors (Buehler, 2020). Positivity in families including positive emotions, positive behaviors, cohesion, closeness, supportiveness, responsiveness, attachment, and

sensitivity are positively associated with better infant regulation in addition to better emotional regulation, fewer conduct problems, and less economic distress of young children (Leerkes & Bailes, 2019). Although maternal sensitivity has been studied more often than paternal sensitivity, both affect children's well-being (Johnson, Hawes, Eisenberg, Kohloff, & Dudeney, 2017). Positivity in the co-parenting relationship and constructive communication are associated with fewer behavior problems in children, both concurrently and over a period of time (Knopp et. al., 2017). Choi and Becher (2019) examined the association between co-parenting and child behavior problems by using data from the Fragile Families and Child Well-being Study and found that supportive co-parenting such as communicating affirmation, appreciation, and respect for each other's parenting, when children's age was about five was associated with fewer behavior problems four years later. Overall, family processes exist at multiple levels with varying levels of complexity but family cohesion in terms of closeness, support, and shared fun remains the central positive family strength (Washington, Rose, Colombo, Hong, & Coard, 2015) and such family positivity is associated with better emotional well-being and development of children (Leerkes & Bailes, 2019).

Social and Human Capital

A number of researchers (Bourdieu, 1986; Coleman, 1988) explained the impact of family processes on children's academic achievement with the help of social capital theory. Karl Marx (1867) first developed the notion of Capital Theory in the middle of 19th century. Marx's Capital theory was founded on the premise of surplus value generated from the labor of the exploited class and captured by the capitalists or bourgeoisie. However, the Capital Theory evolved over the years and social scientists

explored various types of Capital by drawing analogy with Marx's analysis of Capital. Lyda J. Hanifan was among the pioneers to explicitly use the term social capital in 1916. Social Capital, in essence, is the resources gained from social relationships (Coleman, 1990). It entails networks of interactions and socio-cultural exchanges that facilitate the promotion of children's physical and human capital which, in turn, are used to measure educational attainment (Lin, 2001). Families construe a critical social structure in educating children. According to Coleman (1988), children's socialization process primarily entails two classes of inputs. One class of inputs include opportunities and demands that can be provided by formal institutions like schools. However, the other class of inputs in the form of attitudes and efforts are mainly derived from children's more intimate environment, which is the social environment of the household. Parents have important contribution to the social capital children obtain from the household. Such a contribution is, however, dependent upon the family status and characteristics including family structure, parental relationships, and family socio-economic status. From the perspective of capital theory, family characteristics of a child comprise three principal components: financial capital, human capital, and social capital (Coleman, 1988; Lin, 2001). While financial capital includes family's socio-economic status, human capital involves parental education and involvement that contributes to the cognitive environment at home conducive to learning. Social capital, on the other hand, involves parent child relationships and interactions in learning activities. Parents exert positive influence on children by providing required motivation and support for learning by involving themselves in the learning activities (Epstein, 2001). Therefore, the family processes including the parent-child relationships and interactions reinforce the family

social capital and foster children's motivation to learning and promote educational attainment.

The social capital available to the children are diminishing gradually in recent times. Putnam (1995) observed that there has been marked growth in the human capital within the family owing to increased education level of parents, but the social capital representing the parent child relationships and the extent of exchange between parents and children on various socio-economic and personal matters have declined. This loss of social capital has an impact on the literacy achievement of children, particularly those coming from fragile families with low socio-economic status. The Capital Theory in the form of financial capital, human capital, and social capital explains the underlying factors influencing children's literacy outcomes (Coleman, 1988). According to Coleman (1988), family income (financial capital), the knowledge and experiences available to the child to draw upon (human capital) and the strength of social ties available to the child (social capital) influence the educational attainment of children. Parental involvement in children's education is also a form of social capital (McNeal, 1999). The social capital theory of Coleman (1988) indicated the importance of social relationship including that in family context and how social capital provides resources from which a child can draw upon to make academic progress. According to Coleman (1988), family social capital entails the bonds between parents and children that are useful in promoting child socialization and includes the time and attention spent by parents to interact with the child, participate in their literary and other activities, and promote their well-being. By expanding Coleman's theory of the intergenerational conversion process, social network theory, and Bourdieu's cultural capital theory, Wong (1998) identified that family capital

in the forms of human, financial, social, and cultural capital are important for the educational attainment of children.

A combination of human, financial, and social capital of a family impacts the educational attainment of children. For example, family socio economic status, generally measured in terms of parental education, income, or employment status or a combination thereof is recognized to be a contributing factor to educational disparities across disciplines (Duncan & Murnane, 2011). The human capital in the form of parental education is particularly important in contributing to children's academic outcomes as it has one of the strongest relationships with children's cognitive development (Reardon, 2011). Duncan et al. (2012) found that in the United States, there is more than 0.5 standard deviation difference in test scores between children whose parents have a college degree and their other counterparts whose parents have a high school degree. Differences in family's human capital therefore have significant implications on the literacy outcomes of students. Studies have also suggested that intergenerational transmission of educational attainment in families enriched with sound human capital is strong in many developed nations including the United States (Duncan et. al., 2012). The family structure is also very important because children with closer bonds to their parents are able to internalize their parents' socialization of values more closely (Parcel & Dufur, 2001). Thus, family social capital has immense potential to promote the educational attainment of children.

Mother's human capital in terms of maternal education is also positively associated with children's development and educational attainment (Sirin, 2005). Educated mothers are able to use the human, social, and financial capital in diverse ways

to foster children's development and academic outcomes. For example, an educated mother is more likely than the comparatively less educated mother to have social networks that contain knowledge and resources that can be useful for their child's educational requirements. Harding, Morris, & Hughes (2015) integrated the theories of human, cultural, and social capital with two developmental psychology theories, namely bio-ecological theory, and developmental niche theory, to examine how maternal education may impact children's education through a range of parental involvement and identified that in addition to maternal human capital, various other forms of capital including the family social capital interact across time and context to promote children's development. The authors explained that the development niche theory reflects on how children's academic development is enhanced by the systematic, repetitive and diverse nature of parenting practices while bioecological theory refers to a central psychological theory that emphasizes on the multiple nested structures in which children develop. The integration of capital theories helps to explain the family process, parenting practices, and mother's role in children's academic outcomes with each theory emphasizing attention to different aspects of this process. Overall, the mechanisms associated with different types of capital including the human and social capital are associated with each other synergistically in such a manner that their interaction is greater than the sum of their parts (Harding, Morris, & Hughes, 2015).

Gaps in Extant Literature

The ways in which the culturally diverse families are involved in their children's education differs, but family practices remain valuable for children's outcomes (Carter, 2002). Wilder (2014) in the meta-synthesis of studies that focused on the relationship

between parental involvement and students' academic achievement confirmed the significant role of parental involvement in children's academic achievement. However, the paradigm shifts in the family structure and striking increase in the number of families headed by a single parent (McLanahan & Casper, 1995) demand a closer look into the effects of family structure and/or parental marital relationships on parental involvement and the broader linkages of these variables on children's outcomes. Demographic variables including socio-economic status is also an important mediator of the effect of family structure on children because of potential association among family structure, parental involvement, and economic status as low incomes have negative consequences for children (Duncan & Brooks-Gunn, 1997). Poyrazli and Kavanaugh (2006) indicated that the issues of parents' marital status, ethnicity, and low SES on the academic performance of students have generally been investigated in isolation from one another. In view of the world-wide socio-economic and technological changes and changing family structure in recent times, an examination of the interactions among parental marital status and parental involvement is important to find out if and how they impact the literacy achievement of children. Wilder (2014) advocated for capturing the impact of parental involvement on children's outcomes more effectively. There is a need to do more research to find out if parental marital relationships influence parental involvement that in turn impact the children's outcomes. The current study, therefore, intends to address these gaps by looking at these variables together through examination of the pathways of parental marital status, parental involvement and students' literacy outcomes and a closer look into the complex interplays of demographics including race/ethnicity, and SES on such variables of interests along the pathways.

CHAPTER 3: RESEARCH METHODS

Data Source

The study used the data set of the Early Childhood Longitudinal Study Kindergarten Cohort 2011 (ECLS-K:2011) developed by the National Center for Education Statistics (NCES) which is the primary federal entity for collecting, analyzing, and reporting data related to education in the United States (Tourangeau et. al., 2015). ECLS-K-2011 was exceptionally broad in coverage and designed to provide a comprehensive and reliable data that could be used to describe and have an in-depth understanding on children's development and experiences in early grades and how these early experiences were related to their later development, learning, and experiences in school. The study had drawn together information from multiple resources to produce rich data of children from both public and private schools and coming from diverse socio-economic status and racial/ethnic backgrounds. The design of the study was guided by a framework of children's development and learning that emphasized the interrelationships between child and family; the child and school; the family and school; and the family, school, and community. Information was collected from the children, their families, schools, and care providers on various attributes of the children including cognitive, social, emotional, and physical development. Furthermore, information was collected on children's home, school, and classroom environment; educational activities at home, classroom curriculum, teacher qualifications, and before and after school care. ECLS-K-2011 provided wide array of current information about the elementary school children and data relevant to emerging policy related domains to the researchers to study how the

myriad of family, school, community, and individual factors were associated with educational and socio-emotional outcome of children over a period.

The ECLS-K-2011 is the latest in the Early Childhood Longitudinal Study Program and comprised data from the 2010-11 base kindergarten year through the 2015-16 school year, when most of the kindergarten students of 2010-11 were expected to be in the fifth grade. For the purpose of the current study, the data collected from the kindergarteners during the 2010-11 base year was analyzed. Furthermore, the kindergarten round of data collections for 2010-11 involved both Fall and spring data collections. However, the current study primarily analyzed the Spring data because some of the variables of interest, such as school-based parental involvement was not available in Fall. Another reason for considering the Spring data was that the dependent variable, namely, the reading achievement of kindergarten children measured through IRT scale during Fall might have been impacted by the school readiness and other environmental conditions of the children prior to their enrollment in kindergarten school.

Participants and Sampling Design

The study of ECLS-K-2011 involved approximately 18,174 children enrolled in 968 schools during the 2010-11 school year which was the base year of study. The sample of students were designed to be nationally representative of all students who were either studying in kindergarten or attained the kindergarten age and being educated in an ungraded school in the United States in 2010-11. The children of diverse demographics including varied socio-economic status and ethnicity and studying in both public and private schools were included. Besides, children who attended full-day and part-day programs, those who were in the kindergarten for the first time, and the kindergarten

repeaters were also included in the study. The optimal sample design to produce national level estimates demanded selection of a sample from the kindergarten children with equal probabilities of selection. This was achieved through multi-stage sampling that included selecting primary sampling units (PSUs) and schools with probabilities proportional to the number of children and selecting fixed number of children per school.

ECLS-K-2011 used three stage process to select the sample. The country was divided into PSUs that comprised geographical areas or groups of counties or contiguous counties and 90 such PSUs were included in the study, in the first stage. In the second stage, sample of public or private schools with kindergarten programs or the educated children of kindergarten age in an ungraded setting were selected within the sampled PSUs. Children enrolled in kindergarten and 5-year old children in ungraded schools or classrooms were selected within each sampled school, in the third stage. The schools were selected from a frame that was developed for the 2010 National Assessment of Educational Progress (NAEP). The PSUs and schools were selected with probability proportional to the measures of population size with a desired oversampling of Asians, Native Hawaiians, and other Pacific Islanders (APIs) to ensure that the sample included enough representation from these group of students to make an accurate estimate of them.

The first stage sampling frame comprised a list of 3,141 counties in the United States and the frame included 2007 Census Bureau population estimates of the total population in each county and the estimates of 5-year old children. The county level frame was used to form the list of PSUs. This was done by including larger counties as discrete PSUs or combining smaller contiguous counties into one PSU. The heterogeneity of the 5-year old Black and Hispanic students was considered while

forming PSUs subject to some constraints including the minimum number of 5-year-olds in the PSU being 380, the maximum distance between the farthest points within a PSU being 100 miles, and that the PSU being formed within a state boundary. The measure of size for schools were kindergarten enrollment adjusted to account the oversampling of APIs. Since the oversampling rate of APIs was 2.5, the measure size for school j in PSU i was

$$MPR_{ij} = 2.5 \times n_{API,ij} + n_{other,ij}$$

where $n_{API,ij}$ was the estimated count of kindergarten children from the API group and $n_{other,ij}$ was the number of all kindergarten children in school j in PSU i , the enrollment information being taken from the NAEP frames. The schools for which kindergarten data was missing from NAEP frame were assigned a size value of 12, which is half of the target sample of 23 children, per sample. There were total 11,174 public schools and 6,411 private schools in the sampling frame of ECLS-K-2011. Out of them, 118 (1.1 percent) from public schools and 266 (4.1 percent) from private schools have inputted data for kindergarten enrollment.

For sampling children, two independent sampling strata were formed within each school, one including API children and the other containing all other children. The sampling rate of API children was 2.5 times the rate of sampling used for non-API children. Within each stratum, children were selected using equal probability systematic sampling. If a sampled school had more than 23 children, then 23 children were selected; if a school had less than 23 children then all children were selected. Once the children were sampled, parent contact information was obtained from the school to contact their parents to obtain consent for the child to be assessed and conduct parent interview.

Teachers who taught the children and before- and after- care (BASC) providers of children were also included in the study. It is pertinent to note that the data related to teachers or before-and after-school care providers were included in the study by virtue of their connection to the sampled children. In other words, the teachers and care providers who did not provide instruction or care to the children respectively were not included in the study.

Study Components

Information was collected both through direct assessment of children and conducting surveys on their parents or guardians, general classroom teachers, special education teachers, school administrators, and before-and after- school care providers. Data were collected at a broad level on a wide range of topics. The study components are briefly described below:

- **Children** took various assessments including cognitive skills and knowledge according to their age and grade in each round of data collection.
- **Parents and guardians** provided valuable information about the children and their home environment. Parents and guardians were interviewed to ascertain the environmental conditions of the children including family structure, family literacy practices, parental involvement in school, household composition, family income, parent educational level, and various other demographic indicators.
- **Teachers** informed about the learning environment and the children they taught. They were interviewed to understand their own backgrounds, teaching practices, and classroom experiences for the sampled children.

- **Special education teachers and service providers** of sampled children who had an Individualized Education Program (IEP) were interviewed to provide information on their own background and on the nature and types of services provided to the children.
- **School administrators** provided information on the physical, organizational, and financial aspects of their schools, and on the schools' learning environment and programs.

Study Measures

The dependent variable for the study was primarily the children's literacy scores collected through the direct child assessment at the Spring Kindergarten rounds of the ECLS-K-2011. The direct child assessment included cognitive and physical measurement components and was administered directly to the sampled children by trained and certified child assessors. The cognitive assessment primarily focused on reading (language use and literacy), mathematics, and executive function (working memory and cognitive flexibility) in the Fall kindergarten round. Science assessment was added in the Spring kindergarten round. The language screener using two of the *preLAS* (Duncan & de Avila, 2000) subtests was used to screen language proficiency of the children who spoke a language other than English at home. These two subtests included tasks that required children to follow simple, direct instructions by the assessor in English and a picture vocabulary assessment that tested children's expressive vocabulary. All children, regardless of home language, received the language screener as the first component of the cognitive assessment. However, for the children with English as home language served as a practice for the rest of the assessment. All students received 18

items of the reading assessment in English plus two items from the *preLAS* tasks that make up the section of the reading assessment referred to as the English basic reading skills (EBRS) (Tourangeau et. al. 2015).

The independent variables for the study were the parental marital relationship determined by the household types and parental involvement. The effect of socio-economic status of children as a mediator was also examined. The related data were collected through surveys on children themselves, their parents, the school administrators, and teachers. The ECLS-K-2011 survey instruments were designed in such a way that it provided substantive information on the children's environmental factors including family structure and relationships, parental involvement, household status, parental employment, and various other demographic information including socio-economic status.

However, some of the variables in ECLS-K-2011 data set including the household type and SES were derived on the basis of information available from multiple resources and survey questionnaires and were known as composite variables. For example, determination of household composition variables was a multi-step process. At the beginning, it was determined from household roster variables if a mother (biological, adoptive, step or foster) and/or a father (biological, adoptive, step or foster) was present in the household. Subsequently, if there was no one identified as father and mother, then a female parent figure was identified as person 1 and if the female parent figure had a male spouse/partner, then the spouse/partner was identified as person 2. Thereafter the relationships of these parent figures with the children were identified. The composite values of household types mainly comprised of: (a) two biological/adoptive parents; (b)

one biological/adoptive parent and one other parent/partner; (c) one biological/adoptive parent only or single parent household; and (d) one or more related or unrelated guardians (e.g. grandmothers, grandfathers, other relatives and/or non-relatives living with the child).

The composite variable SES was computed at the household level from the information obtained through surveys in both fall 2010 and spring 2011. The SES variable comprised of five main components: (a) parent 1/guardian's education; (b) parent 2/guardian's education; (c) parent 1/guardian's occupational prestige score; (d) parent 2/guardian's occupational prestige score; and (e) household income. The parents' education composites were based on the fall 2010 or spring 2011 reports of the parent's highest educational level and whether the parents had a high school degree or its equivalent. For example, if the highest education level was missing but the parents reported to have a high school degree or its equivalent, then the composite was coded as 'high school diploma/equivalent'. The composites of parental education included the education level of both parents (birth, adoptive, step, and foster) and non-parent guardians.

The parents' occupation was coded based on the coding scheme of the Manual for Coding Industries and Occupations (U. S. Department of Education, National Center for Education Statistics, 1999). This coding manual was developed for the National Household Education Surveys Program and comprised of 22 occupation codes such as executives, administrative, and managerial occupations, engineers, social scientists, teachers, physicians, nurses, writers, technicians, agricultural workers, cleaners, production working and transport operations, laborers, and unemployed. These

occupational codes were recoded subsequently to determine the occupational prestige score based on the average of the 1989 General Social Survey (GSS) prestige score (Tourangeau et. al., 2015).

The household income data were mainly collected through surveys conducted in spring 2011. The parents were asked to report income by both broad range (\$25,000 or less or more than \$25,000) and by detailed range. When the household income reported by parents was close to or lower than 200 percent of the U.S. Census Bureau poverty threshold for a household of its size, the respondents were asked to report the exact household income nearest to \$1,000. However, since not all households were asked to report exact incomes, the mid-point of the detailed income range was used to compute the SES composite. The brief description of the survey instruments that were used to capture the above information relevant for the study is elucidated in the following paragraph.

The computer assisted parent interview (CAI) was developed using Blaise, a computer-assisted interviewing software. The parent interview comprised of a myriad of questions to assess the demographic information and surrounding environment of children including home environment, children's age at kindergarten, gender, race/ethnicity, primary language spoken at home, out-of-school activities, food security, parent education, parent involvement, household composition, household income, parent employment, and the involvement of nonresident parents. The average length of parent interview was approximately 45 minutes in both fall and spring kindergarten. The teacher level questionnaire was developed to collect information about various characteristics and experiences of the children related to their learning activities. The school

administrator questionnaire, on the other hand, included various topics including school policies, practices and school-family-community connections.

The current study analyzed the ECLS-K-2011 data from the baseline cohort comprising of 18,174 kindergarteners in the year 2010-11. The data was also examined to identify the final population for study based on the kindergarteners needed to be dropped from the study due to various factors including children who missed the direct assessment and/or who dropped between the fall and spring kindergarten rounds of assessment. The data included direct cognitive assessments of children as well as the information collected through surveys from their parents, teachers, and school administrators. The ECLS-K-2011 data were released in restricted-use and public-use versions. The public-use version was used for the present study. The study primarily focused on the relationship among parent's marital status, parent involvement, and children's literacy outcomes in kindergarten. The association between parental marital relationships and literacy outcomes of kindergarten children was also assessed. The dependent variable for the study was mainly the children's reading IRT scale scores at the end of the kindergarten.

The parental involvement variable included various measures of parent engagement like how often the parents met the child's teacher or attended the school conference, how often the parents told stories to the child, helped them to do crafts and homework, read books to the child, played games with them, and practiced reading, writing, or working with numbers together with the children. The items of activities related to parental involvement was combined to make two composite variables, one home-based and the other school-based involvement. Multiple regression was conducted

to assess if these two composite variables predicted the reading IRT scale scores (dependent variable) of the kindergarten children.

The parental marital status variable encompassed the presence of the types of parents in the household that included presence of two biological/adoptive parents, one biological/adoptive parent and one other partner, single parent, and other guardians. Parental marital relationship comprised of a categorical variable assigned with values on a nominal scale based on the presence of the type of parents in the household (e.g. both biological parents-1; one biological parent and a partner-2, single parent-3, and other guardians-4).

The ECLS-K-2011 had a complex multi-stage sampling design and entailed differential probabilities of selection at each sampling stage and needed to be weighted for population estimates to adjust various effects including non-response that could affect the estimates. Basically, the use of weight was important to produce estimates that were representative of the kindergarten cohort of children in 2010-11. In this study, Taylor Series method was used with appropriate sample weight, PSU, and stratum identifiers to apply weight in order to produce nationally representative estimates of kindergarten children.

The descriptive statistics were conducted for scale variables like kindergarten children's reading IRT scale scores, age, and SES to determine the average scores and standard deviations and frequency tables were constructed for categorical variables to determine the percentage of the sample falling in each category for each categorical variable like gender (male and female), race/ethnicity (White, Black, Hispanic, Asian,

and Others), primary language at home (English and non-English), and location of schools (city, suburb, town, and rural).

Variables of Interests

The variables of interest for the study included three sets: (a) dependent variables; (b) independent variables; and (c) covariates. These variables based on research questions are shown in Table-1 below:

Table 1-Variable Types and Names

Research question	Variable	Variable Name	Variable Type
1. What is the relationship between parental marital relationship status and kindergarten children’s literacy scores?	Dependent	Reading IRT Scale Score	Scale
	Independent	Types of parents in household	Nominal
	Covariates	Age at kindergarten entry	Scale
		Socioeconomic status composite measure	Scale
		Child sex	Nominal
		Child race/ethnicity	Nominal
		Child home language	Nominal
Location of schools	Nominal		
2. Does parental involvement mediate the association between parent marital relationship and kindergarten children’s literacy scores?	Dependent	Reading IRT Scale Score	Scale
	Mediator	Parental Involvement	Scale
	Independent	Types of parents in household	Nominal
	Covariates	Age at kindergarten entry	Scale
		Socioeconomic status composite measure	Scale
			Nominal
			Nominal

Research question	Variable	Variable Name	Variable Type
		Child sex	Nominal
		Child race/ethnicity	Nominal
		Child home language	
		Location of schools	

Missing Values and Multiple Imputation

The ECLS-K-2011 data set included some missing values. This happened because the respondents were free to refuse to respond to specific questions or to end or break-off interview at any time. Thus, there were missing data within the parent interviews related to home-based and school-based parental involvement. Missing data because of the refusal or non-response was coded as -9 in the ECLS-K-2011 data set. Moreover, several questions in the survey included an “other (specify)” field that allowed answers from respondents that did not fit into any specified categories. Although the text responses were recoded into one of the existing categories of answers based on other responses, this was not always possible. The data related to household types were affected by this. In instances where the household types were not correctly determinable or child relationship with the household members was not ascertainable, data were coded as -9 (not ascertained). Overall, the major reasons attributed to the missing values in ECLS-K-2011 data files included nonresponse (when a question was not answered within an otherwise completed interview), legitimate skips (when a question was not asked or skipped because of its irrelevance from the point of view of the responder), and/or unit non-response (when a respondent did not complete a part of an interview/questionnaire).

The missing values in ECLS-K-2011 were primarily coded as (a) -1 (not applicable, including legitimate skips), (b) -7 (refused – a type of non-response), (c) -8 (don’t know - a type of item non-response), and (d) -9 (not ascertained - a type of item

non-response). Furthermore, there were system missing codes (blanks) in the data files indicating that relevant data were missing due to unit non-response. For example, if a child's parent did not participate at all in the parent interview, all of the data associated with the questions from parent interview were coded as system missing (blank) for the child.

In addition, the composite variables including household types and SES also had missing values due to lack of relevant information on various demographic and other characteristics that were combined to formulate the composite variables. Therefore, prior to data analyses, data screening was done to find out missing values of variables under study as missing data might represent bias issues and measures were taken to appropriately substitute the missing values with valid values.

Firstly, such missing values were carefully analyzed with software and depending on the percentage of missing value and based on the research question, valid values were assigned to some of these missing values. For example, only 178 (1 percent) of 18,174 sample of kindergarteners could not choose their primary language. These cases were replaced with 'English' as primary language in order to have the data on primary language of the child classified into 'English' and 'Non-English'. In all other cases where the valid values cannot be replaced, multiple imputation method was applied to replace the missing values (Rubin, 1996).

Five iterations of multiple imputation were conducted resulting into five complete versions of the study data set that included no missing values. All the analyses for this study including the descriptive statistics were conducted on these five data sets.

Parental Involvement Variables

The parental involvement variables were created for this study in three steps. At the first step, the key questions asked during parent interviews on the parental involvement in the child's home-based and school-based activities were identified and six items from each of the home-based and school based parental involvement questionnaires were selected based upon various parental involvement variables described in Table 2 below. At the second step, two composite variables, namely home-based parental involvement and school-based parental involvement were created by combining the responses of underlying items in each of such composite variable. Finally, another composite variable is created by combining both home-based and school-based parental involvement.

Table 2-Parental Involvement Items and Variables

Type of parental involvement	Questionnaire	ECLS-K-2011 Variable Name
Home-based	1. How often do you tell stories to child?	P1TELLST
	2. How often do you help child to do arts and crafts?	P1HLPART
	3. How often do you play games with the child?	P1GAMES
	4. How often do you talk about the nature and do science projects?	P1NATURE P1NUMBERS
	5. How often do you practice reading, writing, or working with numbers with the child?	P1READBK
	6. How often do you read books to the child?	P1METCHR
School-based	1. Have you met child's teacher?	P2PARINT
	2. Have you contacted school for any reason?	P2ATTENP

Type of parental involvement	Questionnaire	ECLS-K-2011 Variable Name
	3. Have you attended parent-teacher organization?	P2PTCONF
	4. Have you gone to regularly scheduled parent teacher conference?	P2VOLSCH
	5. Have you served as volunteer in child's classroom or school?	P2SERVCO
	6. Have you served on school committee?	

The descriptive statistics of school-based parental involvement as shown in Table 3 below indicated that majority (96.5 percent) of the parents of kindergarten children met the teacher of the children. However, 69.9 and 40.4 percent of the parents contacted the school, and attended parent teacher organization respectively, while 31.1 and 59.6 percent of the parents did not contact the school and attended parent teacher organization respectively. A relatively good percentage of parents (80.7 percent) attended parent teacher conference. On the other hand, only 57.1 and 22.5 percent of the parents of kindergarten children had served as volunteer and in school committees respectively while 42.9 and 77.5 percent of the parents had not served as volunteer and in school committees respectively.

Table 3-Descriptive Statistics of School-based Parental Involvement

Items of Variable	%	Mean	SD	% Missing
Have you met child's teacher?				-----
Yes	96.5%	-----	-----	-----
No	3.5%	-----	-----	-----
Have you contacted school for any reason?				-----
Yes	69.9%	-----	-----	-----
No	31.1%	-----	-----	-----
Have you attended PTO?				-----

Items of Variable	%	Mean	SD	% Missing
Yes	40.4%	-----	-----	-----
No	59.6%	-----	-----	-----
Have you gone to parent teacher conference?				-----
Yes	80.7%	-----	-----	-----
No	19.3%	-----	-----	-----
Have you served as volunteer?				-----
Yes	57.1%	-----	-----	-----
No	42.9%	-----	-----	-----
Have you served on school committee?				-----
Yes	22.5%	-----	-----	-----
No	77.5%	-----	-----	-----

N=15,827

The descriptive analyses of home-based parental involvement as shown in Table-4 below indicated varied frequencies of involvement of parents in children's home-based activities. For example, 14.5 percent of the parents did not tell stories to their children at all while 35.6 percent of the parents told stories to their children every day. The remaining 25.7 and 24.2 percent of the parents told stories to the child once or twice a week and 3-6 times a week respectively. Likewise, 9.9, 2.8, and 23.9 percent of the parents did not help the children to do arts and crafts, play with them, and talk about their science projects at all. In the contrary, 23.3, 27.1, and 9.8 percent of the parents help their children to do arts and crafts, play with them, and talk about their science projects every day. The parents reading book to the child everyday comprised 39.5 percent while a relatively small (3.5) percentage of the parents never read a book to the child. On the other hand, 34.8 percent of the parents read books to the child 3-6 times a week and 22.2 percent of the parents read books to the child at least once or twice a week respectively. Furthermore, 9.2 percent of the parents did not practice reading and writing with the child

at all whereas 46.8, and 25.2 percent of the parents practiced reading and writing with the children every day and 3-6 times a week respectively. The remaining 18.9 percent of the kindergarten children's parents practiced reading and writing with the children at least once or twice a week.

Table 4-Descriptive Statistics of Home-based Parental Involvement

Items of Variable	%
How often do you tell stories to the child?	
Not at all	14.5%
Once or twice a week	25.7%
3-6 times a week	24.2%
Everyday	35.6%
How often do you help child to do arts and crafts?	
Not at all	9.9%
Once or twice a week	30.7%
3-6 times a week	36.0%
Everyday	23.3%
How often do you play with the child?	
Not at all	2.8%
Once or twice a week	32.2%
3-6 times a week	36.8%
Everyday	27.1%
How often do you talk about the nature and science projects with the child?	
Not at all	23.9%
Once or twice a week	38.8%
3-6 times a week	27.5%
Everyday	9.8%
How often do you practice reading and writing with the child?	
Not at all	9.2%
Once or twice a week	18.9%
3-6 times a week	25.2%
Everyday	46.8%
How often do you read books to the child?	
Not at all	3.5%
Once or twice a week	22.2%
3-6 times a week	34.8%
Everyday	39.5%

N=15,827

The 6 items from each of the above home-based and school-based parental involvement were then combined to create two composite scale variables. In order to do

so, the binary (yes/no) items were reverse coded in such a manner that a higher score represented higher degree of parental involvement. The composite school-based and home-based variables were finally combined to create one composite variable for parental involvement. The descriptive analyses of these three composite variables, namely home-based parental involvement, school-based parental involvement, and combined home and school-based parental involvement as described in Table-5 below indicated an average score of 16.85, 3.64, and 63.13 for home-based, school-based, and combined parental involvement respectively with standard deviations of 3.28, 1.21, and 26.18 respectively.

Table 5-Descriptive Statistics of Composite Parental Involvement Variables

Variable Name	Mean	SD
Parental Involvement-Home based	16.85	3.28
Parental Involvement-School Based	3.64	1.21
Parental Involvement-Combined	63.13	26.18

N=15,827

Weighting for Population Estimates

The complex multi-stage clustered sampling design of ECLS-K-2011 affected the precision of population parameter estimates. Accordingly, the sample of 18,174 children needed to be weighted to compensate for differential probabilities of selection at each stage of selection stage as well as to adjust for the effect non-response could have on the estimates. The use of weight was essential to produce estimates that were representative of the nation-wide kindergarten cohort of children in 2010-11. To adjust for weighting, namely, the differential probabilities of selection for the subgroups of population and the design effects such as clustering of schools and students within the sampled geographical areas, the appropriate weight, variance stratum identifier, and the primary sampling unit identifier were used for the purpose of analyzing data. When used in analysis, the

appropriate full sample weight helped to weight the sample size up to the population level and produced national-level estimates. The Taylor series method was used to adjust the standard errors by applying full sample weight (e.g. W1C0), the stratum variable (e.g. W1C0STR), and the PSU (e.g. W1COPSU) variable (Tourangeau et. al., 2015). This method involved a simplified procedure for estimating variance when analyzing data from large samples with complex sample design. A linear approximation of a statistic was used in this method (Taylor Series) to calculate the variance of a linear estimate appropriate for a sample design (Tourangeau et. al., 2015). Out of the total sample of 18,174 sample of kindergarten children in ECLS-K-2011 dataset, 15,827 had full sample weight (W1C0). Accordingly, the weighted descriptive and inferential analysis, wherever applicable, included a sample of 15,827 kindergarteners.

Data Analysis

To address research question 1, to assess if there was a significant difference in the literacy scores between children who lived with both biological parents and the children who either lived with single parent or with one biological parent cohabiting with another partner, a multiple regression analysis was conducted to examine if the types of parents present in the household of the kindergarten children (both biological parents, one biological parent cohabiting with another partner, single parent, and other guardians) predicted the direct assessment reading IRT scale scores. The R^2 or the coefficient of determination was computed by running regression analyses to find out how good the regression equation fits the data or how much the dependent variable was explained by the independent variable. In other words, this helped to assess what percent of the dependent variable (variance in the reading score) was explained by the independent

variable (types of parents present in the household). The children's SES was used as a covariate to see if the association between parental marital relationship and literacy outcome of kindergarten children was significant even when accounting for SES. In addition, children's age, race/ethnicity, gender, primary languages spoken at home, and location of schools were also used as covariates to prevent these variables being confounded with the independent variable. A simultaneous multiple regression was conducted where all the predictor variables including the independent variable (household types) and covariates (SES, age, gender, race/ethnicity, primary language, & locations of schools) were entered into the regression model at the same time.

While the multiple correlation coefficient (R) provided a measure of correlation between the predictor variable(s) and dependent variable, the "R squared value" or R^2 provided a percentage of variance explained (like r^2 in correlation and eta squared in ANOVA). The R^2 statistic provided the measure of effect size while the adjusted R^2 accounted for some of the errors associated with the predictor variables(s). The significance testing explained if the regression model was statistically significant. In other words, the significance testing helped to determine if the predictor variable(s) explained a statistically significant portion of variance of the dependent variable. The test for the significance of regression was carried out by using the F test at significance level ($p < 0.05$).

A Tukey's honest significance test or Tukey's honestly significant difference (HSD) post-hoc test was also conducted to find if the means of IRT reading scale scores of kindergarten children coming from different household types (two parents, single parents, one parent and a partner, and non-biological parent) were significantly different

from each other. This was done by first conducting a weighted between group ANOVA analysis to identify if the overall differences in mean reading scores of the groups of kindergarten children coming from different household types were statistically significant followed by a Tukey's post hoc test to examine how the children's mean reading scores from each specific household type differed from the children of other groups of household types and if such differences were statistically significant.

The research question 2 was formulated to determine if parental involvement mediated the association between parent marital status and kindergarten children's reading IRT scale scores. Two multiple regressions were conducted, one with marital status predicting parental involvement and the other with parental involvement predicting IRT-based literacy scores followed by a mediation analysis as detailed in the following paragraphs.

Firstly, a multiple regression analysis was conducted and coefficient of determination (R^2) was computed to ascertain what percent of the dependent variable, namely, the parental involvement was predicted by the types of parents present in the household (both biological parents, one biological parent cohabiting with another partner, single parent, and other guardian). The results of this test helped to explain if the parental marital status was related to the parental involvement. The children's SES, age, gender, race/ethnicity, primary language, & locations of schools were used as covariates in this regression model to assess if these variables influenced the relationship between the predictor variable (household types) and outcome variable (parental involvement). The significance test was carried out by computing the F value at significance level ($p < 0.05$).

Secondly, another regression analysis was conducted to assess if the parental involvement predicted the reading IRT scale scores of kindergarten children. The children's SES was used as a covariate in this regression model as well to assess if it influenced the relationship between the parental involvement and children's literacy scores. In addition, the children's age, race/ethnicity, gender, primary languages spoken at home, and locations of schools were also used in the regression analysis mentioned above. A simultaneous multiple regression was conducted where all the predictor variables including the independent variable (parental involvement) and covariates (SES, age, gender, race/ethnicity, primary language, & locations of schools) were entered into the regression model at the same time. The significance test was also carried out by computing the *F* value at significance level ($p < 0.05$).

Finally, a mediation analysis was also conducted by using Hayes process and including parental involvement as a mediator variable to see its indirect effect on the relationship between parental marital status and children's literacy scores (Hayes, 2018). There are many different ways to calculate effect size for mediation analysis (Preacher & Kelly, 2011). For the purpose of current study, a bootstrapping method was used with a confidence interval of 95% to measure the effect size and significance of mediation (Hayes, 2018). The principal advantage of using Hayes Process with bootstrapping was its robust computation power to perform the regression routines, explicit quantification of the indirect effect, and ability to conduct statistical tests that respects the nonnormality of the sampling distribution of the indirect effect (Hayes, 2012).

CHAPTER 4: RESULTS

The study primarily examined, by using ECLS-K-2011 data set, how various household types comprising of both biological parents, one biological parent cohabiting with his/her partner, single parent, or other guardians were related to the literacy achievement of kindergarten children. In addition, the study examined if such household types also had an influence on the parental involvement that in turn influenced the literacy achievement of children.

Demographics and Descriptive Statistics

The descriptive analyses after applying weight was conducted on various demographic characteristics of 15,827 kindergarteners who had appropriate weight in the ECLS-K-2011 data set. The descriptive information as shown in Table 6 below indicated that the children were almost evenly distributed between male and female with 51.5 percent male and 48.5 percent female with standard error of .4 percent for each categories of gender. However, over half of the sample of kindergarten children were White (51.3 percent) with a standard error of 2 percent. The proportion of Black, Hispanic, Asian and others were 13.6, 25.2, 4.4, and 5.6 percent respectively. The average age of the children at kindergarten entry was 66.10 months (SE=.10). The majority of the children (82.6 percent) had English as their primary language while the remaining 17.4 percent of the children had 'Non-English' as their primary home language with the standard error of 1.1 percent for each of English and Non-English-speaking children. The descriptive analyses also indicated that 32.6 percent of the children attended schools located in city while 33.6 percent of them attended the schools located in suburbs with standard errors of 2.9 and 2.5 respectively. The remaining 22.9 and 10.9 percent of the children attended

schools located in rural and town respectively with standard error of 1.6 and 1.4 respectively. The average reading Item Response Theory (IRT) scale scores for children was 68.50 (SE=.32). On the other hand, the average scores of the home-based and school-based parental involvements were 17.23 (SE=.06) and 3.65 (SE=.02) respectively. The average score of the combined home and school based parental involvement was 64.45 (SE=.5).

Table 6-Descriptive Statistics of Variables of Interests after Applying Weight

Variable Name	%	Mean	SD	SE
Reading IRT Scale Score	-----	68.50	14.36	.32
Age at kindergarten entry	-----	66.10	4.61	.10
SES continuous measure	-----	-.10	.81	.02
Child Composite Sex				
Female	48.5%	-----	-----	.4
Male	51.5%	-----	-----	.4
Child Race				
White	51.3%	-----	-----	2.0
Black	13.6%	-----	-----	1.4
Hispanic	25.2%	-----	-----	1.4
Asian	4.4%	-----	-----	0.7
Others	5.6%	-----	-----	0.6
Home Language of Child				
Non-English	17.4%	-----	-----	1.1
English	82.6%	-----	-----	1.1
Types of Parents in Household				
Two parents	67.5%	-----	-----	0.9
One parent one partner	6.9%	-----	-----	0.3
Single parent	21.8%	-----	-----	0.7
Other guardian	3.8%	-----	-----	0.1
Location Type of Schools				
City	32.6%	-----	-----	2.9
Suburb	33.6%	-----	-----	2.5
Town	10.9%	-----	-----	1.4

Variable Name	%	Mean	SD	SE
Rural	22.9%	-----	-----	1.6
Parental Involvement- Home based	-----	17.23	3.20	.06
Parental Involvement- School Based	-----	3.65	1.20	.02
Parental Involvement- Combined	-----	64.45	26.25	.50

N=15,827

Inferential Analyses to Address Research Questions

To address research question 1, on the relationship between parental marital status and kindergarten children's reading scores, weighted multiple regression analyses were conducted on the imputed datasets. The dependent variable was the spring kindergarten reading IRT scale score and the independent variable was the household types comprising of: (a) both biological parents, (b) one biological parent cohabiting with another partner, (c) single parent, and (d) other guardians. The children's socio-economic status was used as a covariate to ascertain whether the relationship between parental marital status and the reading scores of kindergarten children was significant even after accounting for SES. In addition, children's age at kindergarten entry, gender, race/ethnicity, primary language spoken at home, and location of the school (e.g. city, town, suburb, & rural) were used as covariates to assess if these variables influenced the reading scores of kindergarten children.

However, prior to the regression analyses, indicator variables were created to represent each attribute with two or more distinct attributes of categorical variables used as predictor variables in the regression equation. This was done by setting one of the attributes of a categorical variable as a reference point and creating indicator variables for other attributes. For example, in case of the race/ethnicity, White was set as reference

while Black, Hispanic, Asian, and others were created as separate indicator variables. Thus, to represent a categorical variable that can assume k different values, $(k-1)$ indicator variables were created. For example, the location of the school had four values, namely, city, urban, rural, and suburb. Accordingly, $(4-1)$ or 3 indicator variables were created for town, suburb, and rural while setting city as reference. These indicator variables were used as dichotomous variables to represent the subgroups of categorical data (e.g. male and female subgroup in gender variable) in the regression model.

The results of the weighted simultaneous multiple regression analysis indicated a statistically significant model for the relation between kindergarten children's reading IRT scale scores and household types when controlling for SES, age, gender, race, language, and location of school ($R=.404$, $R^2=.163$, $F=56,409.06$, $p=.000$). Thus, around 16 percent of the dependent variable, namely, the variance in kindergarten children's reading scores was explained by all of the independent variables. Furthermore, the results as shown in Table 7 below, indicated that the reading scores were significantly negatively correlated with household types comprising of 'single parent' ($Beta=-1.38$, $p<0.05$), and 'other guardians' ($Beta=-3.73$, $p<.05$) compared to household types where both biological parents were present after taking all the covariates into account. However, the children's reading scores were not significantly correlated with the household types comprising of 'one biological parent and partner'.

As far as the covariates were concerned, Non-English speaking was significantly negatively correlated with reading scores ($Beta=-1.96$, $p=.000$) compared to English speaking children. Among race and ethnicity, Black ($Beta=-0.9$, $p<.05$) and Hispanic ($Beta=-1.23$, $p<.05$) children had statistically significantly lower reading scores

compared to their white peers. On the other hand, Asian (Beta=4.46, $p=.000$) had statistically significantly higher reading scores compared to their white peers. Other races were not statistically significantly correlated. With respect to gender, males had statistically significantly lower scores (Beta=-1.98, $p=.000$) compared to females. The location of the schools in suburbs was significantly negatively correlated (Beta=-0.56, $p<.05$) with reading scores compared to schools located in the city. The other locations of the schools were not significantly related to reading scores. However, both age (Beta=.37, $p=.000$) and SES (Beta=5.46, $p=.000$) were significantly positively correlated. For one-unit change in the measurement of SES, there was an increase in the reading score of 5.5.

Table 7-Results from Regression Analysis Examining the Relationship between Parental Marital Status and Children’s Reading Scores after Applying Weight

Predictor	Coefficient	SE	p -value
One biological parent cohabiting with his/her partner	-1.70	0.61	0.051
Single parent	-1.38*	0.33	0.014
Other guardians	-3.73*	0.75	0.008
Language-Non-English	-1.96*	0.09	0.000
Race Black	-0.90*	0.17	0.005
Race Hispanic	-1.23*	0.13	0.001
Race Asian	4.46*	0.12	0.000
Race Others	0.06	0.13	0.659
Gender-Male	-1.98*	0.09	0.000
Location of School-Suburb	-0.56*	0.12	0.011
Location of School-Town	-.129	0.16	0.462
Location of School-Rural	.26	0.13	0.107
Children’s age at kindergarten	.37*	0.01	0.000
Children’s SES	5.46*	0.09	0.000
Constant	45.56*	0.64	0.000

* $p<.05$; N=15,827 $R^2=.163$

A weighted between group ANOVA analysis with Tukey HSD post-hoc test was also conducted to compare the children’s reading IRT scale scores for the four household

types comprising of (a) both biological parents, (b) one biological parent cohabiting with another partner, (c) single parent, and (d) other guardians. The descriptive statistics associated with the reading scores of children belonging to different household types as shown in Table-8 below indicated that the mean reading scores of children living with both biological parents (M=70.18) were higher than their peers living with one biological parent and his/her partner (M=65.24), peers living with single parent (M=65.29), and peers living with other guardians (M=62.59).

Table 8-Descriptive Statistics Associated with Reading Scores of Children from Different Household Types after Applying Weight

Household Types	Mean	SD	N
Both biological parents	70.18 ^{abc}	239.65	10,800
One biological parent and a partner	65.24 ^{ac}	201.53	1,035
Single parent	65.29 ^{bd}	196.08	3,410
Other guardians	62.59 ^{acd}	175.84	582

N=15,827; *Matching superscript letters indicate a statistically significant difference between groups at $p < .05$

Prior to conducting the ANOVA to examine if such differences in mean reading scores of children based on household types were statistically significant, the assumption of homogeneity was tested and found to be satisfied based upon Levene's test ($F(15, 823) = 42.21, p = .000$). There was a statistically significant difference in the kindergarten children's reading IRT scale scores for the four household types ($F(3, 15,823) = 163.489, p = .000$). Post-hoc comparisons using the Tukey HSD test indicated that the mean score of kindergarten children living with both biological parents (M=70.18, SD=239.65, CI=-6.08, -3.78) was statistically significantly higher than their peers living with one biological parent and his/her partner (M=65.24, SD=201.53, CI=3.78, 6.08), peers living with single parent (M=65.29, SD=196.08, CI=4.18, 5.60), and peers living with other guardians (M=62.59, SD=175.84, CI=6.06, 9.11). However, the mean score of

kindergarten children living with one biological parent and his/her partner (M=65.24 , SD=201.53, CI=3.78, 6.08) was not statistically significantly different from their peers living with single parent (M=65.29 , SD=196.08 CI=-1.30, 1.21), but statistically significantly higher than their peers living with other guardians (M=62.59 , SD=175.84, CI=.80, 4.50). Furthermore, mean score of kindergarten children living with single parent was significantly higher than their peers living with other guardians (M=62.59 , SD=175.84, CI=1.08, 4.30).

The research question 2 was formulated to determine whether parental involvement influence the relationship between parental marital status and kindergarten children's reading IRT scale scores. Two multiple regression models were formulated to address this research question, one to assess if parental marital status predicted parental involvement, and the other to assess if parental involvement predicted the kindergarten children's reading scores. A mediation analysis was also conducted by including parental involvement as a mediator variable to examine its indirect effect on the association between parental marital status and children's reading IRT scale scores.

In order to determine the association between parental marital status and parental involvement, a weighted simultaneous multiple regression analysis was conducted with the combined home and school based parental involvement as outcome variable and household types (both biological parents, one biological parent cohabiting with another partner, single parent, and other guardians) as the independent variable. The results indicated a statistically significant model for the relation between parental marital status and parental involvement ($R=.358$, $R^2=.128$, $F=42,653.78$, $p=.000$). Thus, around 13 percent of the dependent variable, namely, the variance in parental involvement was

explained by all the independent variables. Furthermore, the results as shown in Table-9 below indicated that parental involvement was significantly negatively correlated for household types comprising of one biological parent and a partner (Beta=-9.26, $p=.000$) and other guardians (Beta=-14.98, $p=.000$) compared to households where both biological parents were present. Interestingly, there was a significant positive correlation (Beta=0.20, $p=.000$) between parental involvement and single parent households after taking all covariates into account. This suggested that single parents assumed more responsibilities for children's home and school-based activities compared to two parents when the differential impact of some of the demographics like race, SES, and location of the schools were considered. In other words, if the environmental and varied socio-economic contexts including race/ethnicity, language, and SES did not create an impediment, the single parents devoted more time and efforts for children's learning experience and activities compared to two parent families.

As far as the covariates were concerned, Non-English speaking was significantly negatively correlated with parental involvement (Beta=-7.22, $p=.000$) compared to English speaking children. Among race and ethnicity, all of the Black (Beta=-0.73, $p=.000$), Hispanic (Beta=-5.35, $p=.000$), Asian (Beta=-4.14, $p=.000$), and others (Beta=-6.36, $p=.000$) had statistically significantly lower parental involvement compared to their White peers. With respect to gender, males had statistically significantly lower parental involvement (Beta=-4.03, $p=.000$) compared to females. The location of the schools in suburb (Beta=-1.40, $p=.000$), town (Beta=-0.20, $p=.000$), and rural (Beta=-3.80, $p=.000$) were also significantly negatively correlated with parental involvement compared to schools located in the city. However, age was significantly negatively correlated (Beta=-

0.02, $p=.000$) to parental involvement, meaning that parental involvement potentially decreased with the growing age of children. On the other hand, SES was significantly positively correlated (Beta=6.91, $p=.000$), meaning that parental involvement was more for children coming from families with high SES.

Table 9-Results from Regression Analysis Examining the Relationship between Parental Marital Status and Parental Involvement with All Covariates after Applying Weight

Predictor	Coefficient	SE	p -value
One biological parent cohabiting with his/her partner	-9.26*	0.05	0.000
Single parent	0.20*	0.03	0.000
Other guardians	-14.98*	0.06	0.000
Language-Non-English	-7.22*	0.04	0.000
Race Black	-0.73*	0.04	0.000
Race Hispanic	-5.35*	0.04	0.000
Race Asian	-4.14*	0.06	0.000
Race Others	-6.36*	0.05	0.000
Gender-Male	-4.03*	0.02	0.000
Location of School-Suburb	-1.40*	0.03	0.000
Location of School-Town	-0.20*	0.04	0.000
Location of School-Rural	-3.80*	0.03	0.000
Children's age at kindergarten	-.02*	0.01	0.000
Children's SES	6.91*	0.01	0.000
Constant	74.46*	0.18	0.000

* $p<.05$; $N=15,827$; $R^2=.128$

In order to determine if parental involvement mediates the association between parent marital status and kindergarten children's reading scores, firstly a weighted simultaneous multiple regression was conducted to identify the relationship between combined home and school based parental involvement and kindergarten children's reading IRT scale scores. The results indicated a statistically significant model for the relation between combined home and school based parental involvement and children's reading IRT scale score when controlling for SES, age, gender, race, language, and location of school ($R=.414$, $R^2=.171$, $F=69,798.54$, $p=.000$). Thus, around 17 percent of

the dependent variable, namely, the variance of kindergarten children's reading scores was explained by all the independent variables. Furthermore, the results as shown in Table-10 below, indicated that the children's reading IRT scale scores were significantly positively correlated with combined home and school based parental involvement (Beta=0.05, $p<.05$).

As far as the covariates were concerned, Non-English speaking was significantly negatively correlated with reading scores (Beta=-1.24, $p<.05$) compared to English speaking children. Among race and ethnicity, Asian had significantly higher reading scores (Beta=4.77, $p=.000$) compared to their White peers. But, Black (Beta=-1.18, $p=.000$), and Hispanic (Beta=-1.11, $p=.000$) had significantly lower reading scores compared to their White peers. Other races were not statistically significantly correlated. With respect to gender, males had statistically significantly lower scores (Beta=-1.89, $p=.000$) compared to females. The location of the schools in suburbs was significantly negatively correlated (Beta=-0.52, $p<.05$) compared to schools located in city but the schools located in town and rural were not statistically significantly correlated. However, age (Beta=0.37, $p=.000$) and SES (Beta=5.41, $p=.000$) of children were both significantly positively correlated. For one-unit change in the measurement of SES, there was an increase in the reading score of 5.4.

Table 10-Results from Regression Analysis Examining the Relationship between Parental Involvement and Reading Scores with All Covariates after Applying Weight

Predictor	Coefficient	SE	<i>p</i> -value
Parental Involvement-Combined	.05*	0.01	0.013
Language-Non-English	-1.24*	0.17	0.002
Race Black	-1.18*	0.12	0.000
Race Hispanic	-1.11*	0.08	0.000
Race Asian	4.77*	0.16	0.000

Predictor	Coefficient	SE	<i>p</i> -value
Race Others	0.02	0.17	0.902
Gender-Male	-1.89*	0.16	0.000
Location of School-Suburb	-0.52*	0.16	0.030
Location of School-Town	-0.15	0.23	0.543
Location of School-Rural	0.38	0.16	0.076
Children's age at kindergarten	0.37*	0.01	0.000
Children's SES	5.41*	0.14	0.000
Constant	42.72*	1.51	0.000

* $p < 0.05$; $N = 15,827$; $R^2 = .171$

Another weighted simultaneous multiple regression was conducted to determine the relationship between home-based and school-based parental involvement and kindergarten children's reading IRT scale scores. The results indicated a statistically significant model for the relation between home-based and school-based parental involvement and children's reading IRT scale score when controlling for SES, age, gender, race, language, and location of school ($R = .414$, $R^2 = .171$, $F = 64553.25$, $p = .000$). Thus, around 17 percent of the dependent variable, namely, the variance of kindergarten children's reading scores was explained by all the independent variables. Furthermore, the results as shown in Table-11 below, indicated that the children's reading IRT scale scores were significantly positively correlated with home-based parental involvement ($Beta = 0.29$, $p < .05$). However, the children's reading scores were not statistically significantly correlated with school-based parental involvement. This was indicative of relatively more importance of home-based parental involvement than school-based parental involvement to improve the educational attainment of children.

As far as the covariates were concerned, Non-English speaking was significantly negatively correlated with reading scores ($Beta = -1.07$, $p < .05$) compared to English speaking children. Among race and ethnicity, Asian had significantly higher reading scores ($Beta = 4.80$, $p = .000$) compared to their White peers. But, Black ($Beta = -1.14$,

$p < .05$), and Hispanic (Beta=-1.05, $p = .000$) had significantly lower reading scores compared to their White peers. Other races were not statistically significantly correlated. With respect to gender, males had statistically significantly lower scores (Beta=-1.86, $p = .000$) compared to females. The location of the schools in suburbs was significantly negatively correlated (Beta=-0.53, $p < .05$) compared to schools located in city but the schools located in town and rural were not statistically significantly correlated. However, age (Beta=0.38, $p = .000$) and SES (Beta=5.42, $p = .000$) of children were both significantly positively correlated. For one-unit change in the measurement of SES, there was an increase in the reading score of 5.4.

Table 11-Results from Regression Analysis Examining the Relationship between Home-based and School-based Parental Involvement and Reading Scores with All Covariates after Applying Weight

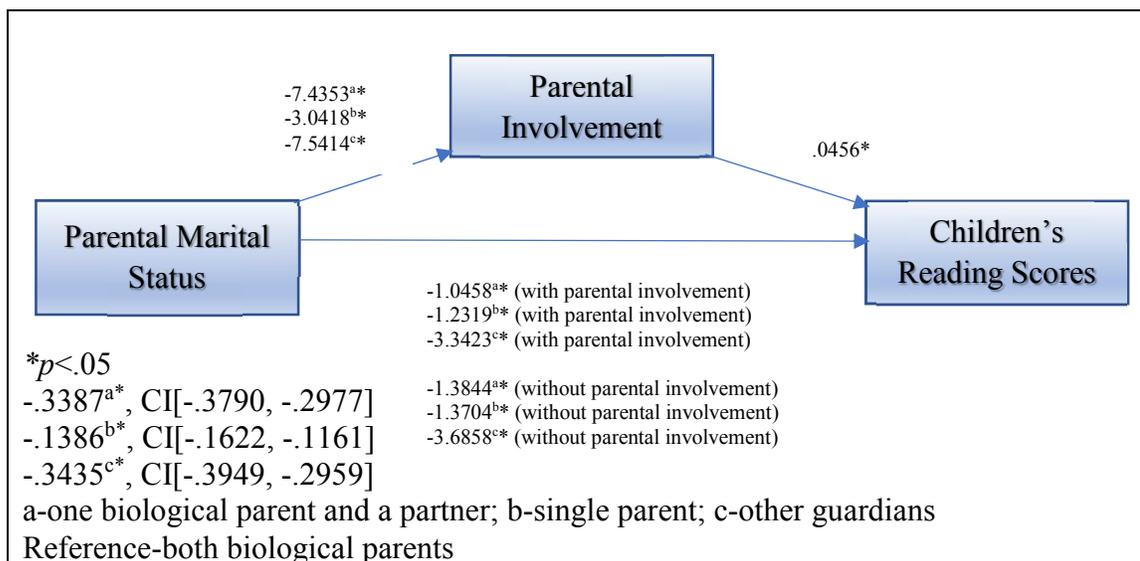
Predictor	Coefficient	SE	p -value
Parental Involvement-Home-based	0.29*	0.03	0.001
Parental Involvement-School-based	0.71	0.30	0.082
Language-Non-English	-1.07*	0.13	0.001
Race Black	-1.14*	0.13	0.001
Race Hispanic	-1.05*	0.07	0.000
Race Asian	4.81*	0.17	0.000
Race Others	-0.01	0.17	0.995
Gender-Male	-1.86*	0.14	0.000
Location of School-Suburb	-0.53*	0.16	0.026
Location of School-Town	-0.14	0.22	0.553
Location of School-Rural	0.37	0.16	0.078
Children's age at kindergarten	0.38*	0.01	0.000
Children's SES	5.42*	0.15	0.000
Constant	38.19*	1.55	0.000

* $p < 0.05$; $N = 15,827$; $R^2 = .171$

Mediation Analysis to Determine the Indirect Effect of Parental Involvement

At the final stage, a mediation analysis was conducted by using Hayes Process and including parental involvement as a mediator variable to determine the statistical significance of its indirect effect on the association between parental marital status and children's reading IRT scale scores (Hayes, 2018). A bootstrapping method was employed with a confidence interval of 95% to ascertain the mediating effect and its significance. The mediation analysis was conducted after using weight and taking all covariates including age, gender, language, SES, and location of schools into account. The results on the pathways of mediation where the combined home and school based parental involvement was added as a third variable to examine its mediating effect between the independent variable, namely, parental marital status and the outcome variable, namely, children's reading scores indicated a statistically significant mediating effect of parental involvement on the association between parental marital status and children's reading scores as shown in Figure 5 below.

Figure 5-Pathways of the Mediating Effect of Parental Involvement on the Association between Parent Marital Status and Children's Reading Scores



Similarly, the mediation analysis to examine the indirect effect of home-based parental involvement on the association between parental marital status and children’s reading scores after applying weight and taking all covariates (age, gender, race, language, and location of schools) into account indicated s statistically significant mediating effect with 95% confidence interval as shown in Table-12 below:

Table 12-Results from Mediation Analysis Examining the Indirect Effect of Parental Involvement on the Association between Parental Marital Status and Reading Scores with All Covariates

Home-based parental involvement mediating reading score	Effect size	SE	LLCI	ULCI
One biological parent and a partner	-.0336*	.0135	-.0603	-.0079
Single parent	-.0606*	.0094	-.0797	-.0429
Other guardians	-.1905*	.0213	-.2333	-.1500

* 95% CI which did not include zero; LLCI - Lower level of confidence interval; ULCI – Upper level of confidence interval

Thus, the mediation analysis indicated that parental involvement statistically significantly mediated the relationship between parental marital status and kindergarten children’s reading scores.

CHAPTER 5: DISCUSSIONS, CONCLUSIONS, AND FUTURE

IMPLICATIONS

There has been a paradigm shift in the family structure in different parts of the world including the United States in recent times and children are increasingly growing up in households with single parents and non-biological parents. The fragile families where biological parents do not live together with the child, affect parental involvement and educational attainment of children. (Waldfogel, Cragie, & Brooks-Gunn, 2010). The current study examined how parental marital status is related to the literacy achievement of kindergarten children by analyzing the ECLS-K-2011 data set that was developed by NCES, the primary federal entity for gathering and reporting data in the United States, and comprised of the largest and most reliable data set on child development, early learning, and school progress on nationally representative sample of children.

As mentioned in preceding chapters, the study aimed to mainly answer two research questions, one on the relationship between parental marital status and kindergarten children's reading scores and the other on the indirect effect of parental involvement on the association between parental marital status and kindergarten children's reading scores.

Furthermore, the study hypothesized that there was a statistically significant difference in the reading scores between children who live with both biological parents and the children who either live with single parent or with one biological parent cohabiting with another partner and/or non-biological parents. The study also hypothesized that there was a statistically significant difference in the parental involvement between children who live with both biological parents and the children who

either live with single parent or with one biological parent cohabiting with another partner and/or non-biological parents. The interplays of various demographic characteristics of the children in terms of age, gender, race (White, Black, Hispanic, Asian, and others), SES, location of the schools (city, suburb, town, and rural) on the association between parental marital status, parental involvement, and literacy achievement were also examined.

Simultaneous multiple regressions were conducted to answer the research questions and examine the hypotheses by including the outcome variables, predictor variables, and all covariates in the regression models at the same time. A mediation analysis was also conducted by using Hayes process with bootstrapped confidence intervals (CI=95%) to examine the indirect effect of parental involvement on the association between parental marital status and kindergarten children's reading scores. The advantage of using Hayes process with bootstrapping was that it was a computer intensive, robust analysis technique and any analysis for testing the significance of the indirect effect could be bootstrapped including non-normal data.

Association between Parental Marital Status and Reading Achievement

The results indicated a statistically significant association between parental marital status and kindergarten children's literacy scores after controlling for diverse demographics of the children including SES, age, gender, race, language and location of the schools. Around 16 percent of the variance of the kindergarten children's reading scores were explained by the independent variables. Furthermore, the study found that the children living with single parent (Beta=-1.38, $p<.05$), and non-biological parents (Beta=-3.73, $p<.05$) had lower reading scores compared to children living with both

biological parents. This suggested that children had better reading scores when they lived in intact households with both parents. The lowest reading scores were associated with the children coming from households where none of the biological parents lived with the children. This was consistent with the study hypothesis that there was a statistically significant difference in the literacy scores between children who lived with both biological parents and the children who either lived with single parent or with non-biological parents. This was also consistent with past researches which indicated that children in households with the presence of both biological parents fared better than their other counterparts who were devoid of staying together with both biological parents (McLanahan & Sandefur, 1994).

The demographic characteristics of the children also differentially affected the reading achievement of the children. For example, English speaking children fared better than Non-English-speaking children and the literary performance of female was better than their male counterparts. The children's race was also related to their reading achievement. The White children performed better than their Black and Hispanic peers. The schools located in suburbs were significantly negatively correlated (Beta=-0.56, $p<.05$) with reading scores compared to schools located in the city. Both age and SES were significantly positively correlated with the children's reading scores. For one month increase in the age of children, there was an increase in the reading IRT scale score by 0.4, and one-unit change in the measurement of SES was associated with an increase in the reading score of 5.6. The study results were consistent with past researches which identified that disadvantaged conditions of children including race/ethnicity (Lee &

Bowen, 2006) and low SES backgrounds affected the educational attainment of children (Delen & Bellibas, 2015).

While the main regression model indicated that the mean reading score of children living in intact families with two parents was statistically significantly higher than their peers living with single parent and non-biological parents, the Tukey post-hoc test suggested that the mean reading scores between children living with one biological parent cohabiting with a partner and single parent were not statistically different. However, the mean score of children living with non-biological parents was statistically significantly lower compared to their peers living with single parent, one biological parent and a partner and both biological parents. This also suggested that children's literary outcomes were most negatively affected when they lived in homes where none of the biological parents were present.

Association between Parental Marital Status and Parental Involvement

The results of the study indicated a statistically significant association between parental marital status and a combined home and school-based parental involvement after controlling the SES, age, gender, race, language and location of the schools. Around 13 percent of the variance in parental involvement was explained by the independent variables. The parental involvement was significantly negatively correlated for the household types comprising of one biological parent and partner and other guardians compared to households with the presence of both biological parents. The parental involvement was most negatively affected for households with the absence of both biological parents (Beta=-14.98, $p=.000$). In other words, the study results suggested that parental involvement for both home and school-based activities was more robust when

children lived together with both biological parents while it was worst when both of the biological parents were absent in the household where the child was living. This was in consistent with the study hypothesis that there was a statistically significant difference in the parental involvement between children who lived with both biological parents and the children who lived in households with the absence of both biological parents.

Interestingly, the study results indicated that there was a greater parental involvement in single parent households than the two parent households when all the covariates like, SES, age, gender, language, race/ethnicity, and location of the schools were considered. This suggested that the factors determining the association between parental marital status and parental involvement are complex and multifaceted. It cannot be simply construed that two parent families are better than single parent families in terms of parental involvement under all situational and environmental context. Rather, the study indicated that when the differential impact of some of the demographic characteristics like socio-economic status and race/ethnicity were taken into consideration, the contribution of single parents in children's learning experiences were better than two parents. The past studies also indicated that family characteristics like socio-economic status had effect on the family structure including parental involvement and children's educational outcome (Jeynes, 2010).

The diverse demographic characteristics of the children affected parental involvement. For example, the parental involvement was significantly lower in case of Non-English-speaking children (Beta=-7.22, $p=.000$)) than the English-speaking children. The parental involvement was statistically significantly negatively correlated for all races including Black, Hispanic, Asian, and others compared to White children.

However, the parental involvement was most effected for Hispanic (Beta=-5.35, $p=.000$), and children of other races (Beta=-6.36, $p=.000$). The parental involvement was significantly negatively correlated for schools located in suburbs and rural areas when compared to that of children in schools located in cities. The lower parental involvement for children in suburb and rural might result due to other associated environmental factors in these areas like low SES or low academic socialization in terms of fostering educational goals and preparing and motivating students for educational attainment. This was consistent with past studies that indicated academic socialization to be one of the important parental involvement measures and important predictor of the literacy achievement of children (Hill & Tyson, 2009). Moreover, SES was statistically significantly positively correlated (Beta=6.91, $p=.000$). This indicated that parental involvement was higher when children came from households with higher SES. Incidentally, the ecological system model referred to such interactions of the environmental context and indicated about the influence of socio-economic environment on parental involvement and academic attainment of children (Bronfenbrenner, 1999).

Association between Parental Involvement and Reading Achievement

The importance of parental involvement in the educational processes and experiences of the children is paramount. Although parental involvement is multifaceted in nature and subsumes a range of parenting behavior and practices (Taylor, Hinton, & Wilson, 1995), past studies have identified significant positive relationship between parental involvement and academic achievement of children (Jeynes, 2005; Wilder, 2014). The results of the current study were consistent with the past studies and indicated that there was a significant positive correlation between kindergarten children's reading

scores and home-based parental involvement (Beta=.29, $p<.05$) after controlling children's SES, age, gender, language, race/ethnicity, and location of schools. After combining the parental involvement in home and school-based activities to produce a composite parental involvement variable, the study results indicated a significant positive correlation between combined home and school-based parental involvement and kindergarten children's reading scores (Beta=.05, $p=.000$). These results indicated that enhanced combined parental involvement improved the kindergarten children's reading scores. However, between the home-based and school-based parental involvement, the school-based parental involvement was not statistically significantly correlated to children's reading scores, while the home-based parental involvement was significantly positively correlated to children's reading scores. This suggested that parents' participation in the home-based learning activities of the children were relatively more important for improved learning experiences and educational attainment than the participation of parents in school-based activities.

The results of the study also showed the differential effect of various demographic characteristics of the children on their reading scores. For example, English speaking children fared better than non-English speaking children (Beta=-1.07, $p<.05$) and female children fared better than their male counterparts (Beta=-1.86, $p=.000$) in terms of reading scores. The children's race also impacted the children's reading achievement. Asian children had significantly higher reading scores while Black and Hispanic had significantly lower reading scores compared to their White peers. The locations of the schools in suburbs were significantly negatively correlated but schools in towns and rural areas were not significantly correlated compared to schools located in the city. However,

both age and SES were significantly positively correlated with reading scores. For one-month increase in the age of children, there was an increase in the reading IRT scale score by .4, and the reading score was increased by 5.4 for one-unit change in the measurement of SES. This suggested that children belonging to higher SES fared better than their peers belonging to lower SES.

Indirect Effect of Parental Involvement on the Association between Parental Marital Status and Reading Achievement

The study also conducted a mediation analysis using Hayes Process to identify the indirect effect of parental involvement on the association between parent marital status and children's reading scores. The results indicated a statistically significant mediating effect of combined parental involvement on the association between parental marital status and children's reading scores (effect size=-.3188, CI[-.3570, -.2808] for one biological parent and a partner; effect size=-.1429, CI[-.1648, -.1217] for single parents; and effect size=-.3377, CI[-.3820, -.2878] for other guardians) after taking all the covariates (age, gender, language, race, SES, and location of schools) into account. This suggested that parental marital status had an influence on parental involvement that in turn affected the children's reading outcomes.

Conclusion

In conclusion, the current study identified that there was a statistically significant relationship between the parental marital status and reading scores of kindergarten children. The children living in intact families with two parents had better reading scores than their counterparts living with single parent and non-biological parents after controlling age, gender, language, race, SES, and locations of the schools. The demographic characteristics of children in terms of age, gender, language, race, and SES

had differential impact on the association between parent marital status and children's reading scores. For example, the children belonging to higher SES families performed better than their counterparts from lower SES family backgrounds. Overall, the higher performance of students in intact families with both biological parents irrespective of the demographics indicated the overarching role of family structure on children's academic outcomes.

The parental marital status also affected the parental involvement. The combined parental involvement in both home and school based activities for children who lived in households with one biological parent and a partner and other guardians were lower than their other counterparts who lived in intact families with the presence of both biological parents after controlling SES, age, gender, language, race/ethnicity, and location of schools. The parental involvement was most negatively impacted when children lived in households with the absence of both biological parents. However, there was a significant positive correlation between parental involvement and single parent household. This suggested that single parents assumed more responsibilities in children's literary activities if other family circumstances and disadvantageous conditions like race/ethnicity and socio-economic status including family income, parental education and occupation did not create impediments and/or pressure on parents' time and resources.

Furthermore, the study indicated a statistically significant positive correlation between home based and a combined home and school based parental involvement and kindergarten children's reading scores. This was consistent with past studies that identified the importance of parental involvement (Graves & Wright, 2011; Larocque,

Kleiman, & Darling, 2011) and the critical role parents play in children's learning (Ma, Shen, & Krenn, 2016).

However, the school-based parental involvement was not statistically significantly correlated to children's reading scores. This suggested that parent's participation in home-based learning activities was relatively more important to improve the literacy achievement of children than their participation in school-based activities. This was consistent with past studies that indicated the overarching importance of home-based parental involvement in improving the academic achievement of children (Epstein, 2001; Tam & Chan, 2009). Variations were also identified on children's reading outcomes according to age, gender, language, race, SES, and location of the schools. For example, the English-speaking students performed better than their non-English speaking peers and the Whites performed better than the Black and Hispanic children. The children outcomes were also affected by the SES of children. The children with higher SES fared better than their other counterparts with lower SES backgrounds.

In addition, parental involvement statistically significantly mediated the association between parental marital status and kindergarten children's reading scores. This suggested that differences in household types influenced the parental involvement which in turn affected the reading achievement of kindergarten children. The study outcome in terms of such interplays between parental marital status and parental involvement on the academic outcome of kindergarten children added value to the literature and existing bodies of research on related topics.

Limitations

The current study used the ECLS-K-2011 data file for analyses. The impasse of using secondary database often revolves around the question on how an archived data meet the needs of research questions and/or whether data limitations would require the research questions to be adjusted. Fortunately, the scope and coverage of ECLS-K-2011 data set was so broad that it provided all the data variables needed to address the research questions and there was no requirement to adjust the research questions in order to accommodate what can be determined by the database. For example, the family and household composite variables of ECLS-K-2011 data set helped to shape the study with measurable variables of interests on diverse demographics of children including parental marital status determined by household types. The ECLS-K-2011 data set had some missing values due to non-response or legitimate skips for questions not being pertinent to the respondent. However, ECLS-K-2011 data file used a standard scheme to identify missing data with missing value codes. The study identified such missing value codes for variables of interests and substituted the applicable missing values with valid values through multiple imputation.

The study was a non-experimental research by analyzing secondary database as mentioned above. Therefore, the control variables could not be manipulated and the causal inferences on children's reading achievements could not be drawn. For example, the causal effect of low reading scores of kindergarten children due to parental marital status or low parental involvement could not be concluded with certainty although the study indicated statistically significant association between parental marital status, parental involvement, and kindergarten children's reading scores. The experimental

studies in the future on related topics would allow establishing cause-and-effect relationship between the defined variables of interests, namely, the family structure or parental marital relations and parental involvement on children's education including the kindergarten children's reading achievement.

Furthermore, the pre-kindergarten education provides foundation for kindergarten education. The exposure to learning experiences and its quality during pre-kindergarten stage can have potential influence on the performance of children at kindergarten level. Considering the possible effect of pre-kindergarten education on the literacy outcomes of kindergarteners, the study did not use the first assessment reading scores of children at Fall, but used the Spring reading IRT scale scores as the gaps in early learning experiences among kindergarteners, if any, might have been reduced by that time.

In addition, the kindergarten teachers' educational experience has potential influence on the learning outcomes of students. More experienced teachers provide greater support for students' learning. In a complex multi-stage clustered sampling design of ECLS-K-2011 dataset, a wide variety of public and private schools from various primary sampling units were selected. The possibility of varied teachers' experiences in these schools cannot be ruled out. However, since the current study considered a number of categorical variables with multiple attributes as covariates, creation of composite and related indicator variables based on multiple levels of teachers' experience and using them in the models would have added complexity to the study design. The future studies may look into the association between teachers' educational experience and literacy outcomes of the students. Nevertheless, some aspects of combined teacher and parental

involvement in children's learning experiences were considered in the creation of composite variable for parental involvement in school-based activities and examining its association with the literacy outcomes of students.

Future Implication

The study contributed to the literature by looking together at the various dimensions of parental marital status and its relationship with parental involvement and kindergarten children's reading achievement and identifying the indirect effects of parental involvement on the association between parental marital status and reading achievement of children. Poyrazli and Kavanaugh (2006) pointed out that the issues of parents' marital status, ethnicity, and low SES on the academic performance of students have generally been investigated in isolation from one another. The current study addressed this gap by looking together at the complex interplays of diverse demographics of kindergarten children including age, gender, race, language, SES, and location of schools in conjunction with the main variables of interests, namely, parental marital status, parental involvement, and kindergarten children's reading scores.

The study indicated a statistically significant relationship between parental marital status and kindergarten children's reading achievement and that children living with both biological parents fared better than their other counterparts who lived with single parents and other guardians with the absence of both biological parents. The parental involvement also mediated the association between parental marital status and the reading achievement of children. The mediation effect explained that one of reasons for poor academic performance of children affected by fragile families might be due to the gaps in the parental involvement between children living in intact households with

both biological parents and children in other household types with absence of at least one or both biological parents. The differential effects of various dimensions of demographics including age, gender, language, race, SES, and location of the schools on parental involvement and the reading achievement of children suggested the overarching influence of demographic characteristics on the learning experience of children. These findings would help the policy makers and administrators to decide on suitable interventions to foster healthy marital relations, promote increased parental involvement in the learning activities of the children, enhance the learning environment of children in fragile families, and accommodate the needs of learners impacted by fragile family relations after taking the diverse demographics of students into account.

The study was consistent with past researches which identified that children raised by both biological parents had a better chance of academic success (McLanahan & Sandefur, 1994; Demuth & Brown, 2004). There has also been a general appreciation by existing research and policy on the importance of home environment (Carlson & Corcoran, 2001) and parental involvement in children's literacy outcomes (Wilder, 2014). However, an interesting finding of the study was the enhanced participation of single parents in children's combined home and school-based activities when the differential impact of demographics including race/ethnicity and SES was taken into account. This might encourage the future researchers to study more in related areas to identify whether the single parents undertake more responsibilities for their children's education and participate more in their academic activities, if the social and economic disadvantage of the family do not create an impediment. In other words, the current study would prompt the future researchers to investigate if the gaps in parental involvement

and children's academic outcomes are explained by demographic differences between one and two parent families.

Furthermore, the current study focused on the association between parental marital status, parental involvement, and reading achievement of only the kindergarten children. Future studies might examine the association between parental marital status and children's reading achievement on young and/or adolescent children of higher grades to see if the results report similar or different findings. The results on the relationships of parental marital status on outcomes of children of various grades would help to better generalize the correlations and allow the policy makers and administrators to address the underlying issues.

The globalization, widespread changes in economic and socio-political conditions, and unprecedented technological advancement have altered human lives. This has led to family instability and rise of single parent families with potential impact on children well-being and academic outcomes. Social scientists are increasingly being concerned with the development and well-being and underlying social determinants for children affected by fragile families and/or poor parental relations. The educators and policy makers are also concerned with the adequacy and quality of support and care for the education of children coming from fragile families. The study findings would add value to the existing body of knowledge on various dimensions of relationship between the parental marital status, parental involvement, and academic outcome of students. The current study would benefit the children coming from fragile families by helping the educators and policy makers to expand their understanding on the interlinkages between parental marital status, parental involvement, and academic outcome of students and

devise suitable academic programs that meet the needs of children impacted by fragile family relations. Equity in education has remained elusive in the education world. Some children are less privileged and put at risk precisely at the time of birth due to a multiplicity of factors including fragile marital relations, instability in family, and a plethora of demographic factors including low SES. Most importantly, the current study has posed a challenge to the common belief that two parent families are always better for children's development and academic outcomes. The enhanced parental involvement of single parents in children's learning activities when the demographics like race/ethnicity and SES were taken into account showed that the association between family structure and children's outcomes could not be considered in isolation from other demographic variables like race/ethnicity and/or SES that often inflicted disadvantageous family context and environmental conditions impeding the parental involvement and literacy outcomes of children. In addition, the importance of the current study lies in its contribution to inform the policy and practice on the nuances of fragile family relations and its complex interplays with demographics and children's academic outcomes that would help the educators to adopt appropriate pedagogical approaches and practices aimed at advancing educational equity and closing the achievement gap of children from diverse families.

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