RELATIONSHIP BETWEEN SCHOOL TYPE AND QUALITY OF NEIGHBORHOOD WITH CHILDREN'S SOCIAL VULNERABILITY

by

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Abstract

The purpose of this quantitative research was to explore the relationship between two potential risk factors, children's type of school (e.g., public, private, charter, or magnet) and quality of neighborhood, with social vulnerability. Data were collected through an online survey from January through March 2024. Hierarchical multiple linear regression conducted in SPSS demonstrated that four out of seven quality of neighborhood attributes were significant predictors of social vulnerability ($p < .05$); as the neighborhood conditions of vehicular traffic, teenagers present in the street, graffiti, and vandalism increased, levels of social vulnerability also increased. Factor analysis confirmed the strong reliability and internal structure of the instrument used to collect the data. No significance was found for children's type of school, but more studies are needed to determine if research on this variable can help inform decisions about school-choice policies. This study addressed the need for knowledge about contextual environmental factors and children's well-being. This is imperative, as social vulnerability is an emerging psychological construct in developmental research that is correlated with all aspects of social interactions, as it negatively interfere with the process of forming social bonds with others. Building alignment between the goals of schools, government agencies, and communities is essential, so that parents have access to the support and resources needed to promote healthy development in children. Thus, the empirical findings from this study will help promote awareness of social vulnerability and help children receive the empathy, dignity, and respect that they deserve.

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TABLE OF CONTENTS

List of Tables

List of Figures

CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

This research explored the relationship between the type of school, quality of neighborhood, and social vulnerability for children and adolescents. Following is a description of these variables, a statement of the problem that was addressed, the purpose of the study, the research questions, and details about the research methodology including the participants, procedures, instruments, and data analysis. Some of the anticipated limitations and challenges associated with the study and the significance of the study are also discussed.

Background

The primary variables of interest were social vulnerability for children, the type of school that a child attends (e.g., public, private, charter, or magnet), and the quality of a child's neighborhood. Each of the underlying constructs associated with these variables is presented in this chapter, along with a rationale for how they are related to the purpose of the study.

Social Vulnerability

Social vulnerability (SV) is a prominent construct in developmental psychology. It is generally defined as a mental state that increases the risk of exposure to danger during social episodes/experiences (Ferreira et al., 2021). It indicates an individual's level of difficulty in detecting and/or potentially avoiding harmful interpersonal interactions (Pinsker et al., 2006; Seward et al., 2018). Children and adolescents high in SV have a diminished capacity to interact effectively in social situations; thus, they are more likely to be victimized or exploited or to experience sustained patterns of negative interpersonal

interactions (Hodes & Vostanis, 2019; Seward et al., 2018).

Seminal research on SV proposed its underlying mechanisms as credulity. This is the tendency to believe in things even if they are highly questionable and not supported by evidence, and gullibility, which is a state of being vulnerable to tricks or manipulation (Greenspan et al., 2001). More recently, developmental psychologists have confirmed that SV is closely related to two core dimensions: (a) the degree of a person's social skillfulness versus unskillfulness and (b) the degree of behavioral flexibility versus inflexibility (Morioka et al., 2019). This helps explain why SV helps determine how an individual perceives a social episode/experience and how that experience is related to their subsequent behavior (Morioka et al., 2019). There is also growing evidence that the development of SV is not associated with factors like neurotypes, intelligence, age, or gender; however, there is a higher prevalence of SV in children with neurodevelopmental disorders who display atypical styles of social interaction (Ridley et al., 2020).

Type of School

Type of school was an important independent variable (IV) for this study because it is crucial to understand if different types of school settings are related to children's levels of SV. Prior studies on school type have mostly focused on the outcome variable of academic achievement, especially regarding differences based on school quality or socio-spatial relationships related to schools and neighborhoods (Wilson & Bridge, 2019). For example, research has been conducted to help explain the dynamics of gentrification (as middle-class parents have sought access to the schools that they believe are best for their children) or regarding urban development policies designed to promote social mixing within cities (Wilson & Bridge, 2019). These studies emerged from prior findings that

have consistently demonstrated that school type is significantly related to academic performance, where disadvantaged students are more likely to attend schools that perform poorly (Ruiz et al., 2018).

In recent years, more attention is now being given to factors like school competition and school choice, which is defined as open school enrollment or as programs that promote intra-district choice (Barseghyan et al., 2019). This issue is currently garnering substantial attention due to the ongoing national debate about educational policies and academic outcomes (Day & Dotterer, 2020; Fleming et al., 2021; Jabbar et al., 2022; Lee et al., 2022). Wang et al. (2019) have reported on data from the National Center for Education Statistics, which signifies that parental attitudes about school choice are evolving across the United States. Parents are currently demanding more school choice in terms of access to different education options beyond traditional public and private schools, including the options of homeschooling, charter schools, and magnet schools (Wang et al., 2019).

Proponents of school choice argue that when parents have multiple options for their children's education, schools are forced to compete, which raises school quality and leads to better academic outcomes for all students (Jabbar et al., 2022). There is also evidence that offering parents the choice of fluidity between schools and neighborhoods improves education overall (Cano-Hila & Sánchez-Martí, 2022). School choice may increase access to higher-quality schools for disadvantaged students in addition to incentivizing the competition for students (Barseghyan et al., 2019). Opponents of school choice argue that school choice may exacerbate economic and educational inequality since less-advantaged households may not be able to take advantage of non-

neighborhood options that increase travel costs (Barseghyan et al., 2019). As this debate continues, and school choice expands across the U.S., it is imperative to understand if there is a relationship between the type of school that children attend and their psychological well-being, in addition to their academic success. This provides the rationale for this study, which explores the association between type of school and children's SV.

Quality of Neighborhoods

Quality of neighborhood was the second predictor variable in this research. This is a type of contextual/environmental factor that is frequently studied in developmental psychology due to its relationship with children's well-being (Aris, 2022). Increasingly, the quality of neighborhoods is being recognized as having a relationship with health and well-being across the lifespan (Christian et al., 2015; Sellström & Bremberg, 2006). Like all aspects of a child's physical environment, the quality of the neighborhood can impact early development (Bell et al., 2020). Living in a challenging or adverse neighborhood is stressful for individuals and sometimes results in negative mental health outcomes (Wang et al., 2019). For example, it is well established that children who live in neighborhoods with more challenging or adverse conditions are more likely to experience stress and interference in the process of developing bonds with other people (Cutrona et al., 2006).

Fong et al. (2019) reviewed the established literature on the variable *neighborhood* in psychological research and used a large cross-sectional dataset to test the hypothesis that neighborhood quality is related to mental health. The results confirmed the strong link between these factors; however, neighborhood was mostly considered in terms of how living in cities with high population density and a lack of

greenspace are related to mental illness (Fong et al., 2019). There does not appear to be much current knowledge about the relationship between the quality of a neighborhood on children's SV. More research is needed to assess this relationship, especially by taking into account how quality of neighborhood is perceived by the inhabitants of dwellers across city and rural settings (Fong et al., 2019; Leventhal & Dupéré, 2019).

Problem Statement

Many factors increase children's and adolescents' vulnerability to developing psychopathology and ongoing research is needed to help inform the design of appropriate interventions for those who are struggling (Parritz & Troy, 2018). One form of psychopathology experienced by children and adolescents is social vulnerability (SV). This is an important emerging psychological construct in developmental research for all children, whether they are neurotypical or not, since it is related to all aspects of social interactions (Ridley et al., 2020; Seward et al., 2019). For this research, I explored the relationship between the variables of type of school, quality of neighborhood, and children's SV. School type is a vital area of research since information gained from studies on this topic may help inform decisions by state and local officials about school-choice policies (Jabbar et al., 2022). Thus, more studies are needed to confirm if the type of school that children attend is associated with their psychological well-being, not only their academic achievement.

The quality of neighborhood is another important variable due to its relationship with mental health. Rapid social and economic changes are continuing to occur in urban, suburban, and rural areas, which creates urgency for identifying this type of environmental factor (Cano-Hila, 2022; Miller et al., 2019; Oliveira et al., 2020).

Psychological science must focus on contextual factors like the quality of neighborhood because living in challenging and/or adverse conditions not only imposes stress on individuals within a family but may also "interfere with the formation of bonds between people" (Cutrona et al., 2006, p. 188).

I explored the quality of neighborhood alongside type of school because studies that address the mechanism of school choice must also consider how neighborhoods and a mix of different types of schools are related to children's development (Wilson & Bridge, 2019). This study builds on prior research that has demonstrated the necessity of investigating SV in relation to variables such as a family's life conditions (i.e., neighborhood factors) and school performance on mental health and well-being (de Souza et al., 2019). Therefore, this research may help provide a better understanding how neighborhood attributes are related to children's SV. This study was also needed because it may help promote awareness of SV in children and adolescents so that they can receive the empathy, dignity, and respect that they deserve (Parritz & Troy, 2018). It is imperative to provide empirical findings that help build alignment between the goals of schools, government agencies, and communities so that parents have access to the support and resources needed to promote healthy development in children.

Purpose of the Study

The purpose of this quantitative survey study was to examine the relationship between the variables of social vulnerability, type of school, and quality of neighborhood. This study also helped assess the internal structure and reliability of the CSVQ by Seward et al. (2018).

Research Questions and Hypotheses

Research Questions

RQ1: Is there a relationship between the type of school and the quality of the neighborhood on social vulnerability for children and adolescents?

RQ2: Is the single-factor solution of the Children's Social Vulnerability Questionnaire accurate?

Hypotheses

Hypothesis 1: There is a relationship between the type of school and the quality of the neighborhood on social vulnerability for children and adolescents.

Hypothesis 2: The single-factor solution of the Children's Social Vulnerability Questionnaire is accurate.

Assumptions and Limitations of the Study

The following are some of the assumptions and limitations associated with this study. Assumptions included the expectation that the minimum required sample size would be obtained from the target population so that it could be determined if there is a statistically significant relationship between the variables and to answer the research questions. It was further assumed that individuals from the target population would have the necessary technology to take the online survey and be able to understand and answer what was being asked.

Per the research design, regression analysis was used to test the hypothesis that type of school and quality of neighborhood are related to children's SV. This type of correlational study helps determine if there is a statistically significant association between the variables but cannot determine causation since there was no random

assignment of participants to any experimental condition and no control group (Martin & Brigdon, 2012; Trochim et al., 2016). If an alternative explanation for the findings exist, based on confounding or unincluded variables, estimates of the effect size may be biased (Kashner et al., 2020) or the study's internal validity may be limited (Rohrer, 2018).

Furthermore, a nonprobabilistic convenience sampling procedure was utilized. This increased the risk that a non-representative sample was obtained, which could limit the generalizability of the results and decrease external validity (Jackson, 2015). Also, statistical power could have been limited if an insufficient number of qualified participants was found to complete the online survey (Jackson, 2015). Finally, there was a potential for nonresponse bias due to self-selection for inclusion in the study and a reliance on self-reported data. This could have limited the study's internal validity since it is possible there are some unknown differences between individuals who chose to participate and those who did not (Trochim et al., 2016). Moreover, the use of self-reported data may have limited the measures' reliability or decreased internal validity if the participants did not answer the survey items accurately (Rohrer, 2018).

Theoretical Foundations of the Study

This section includes a brief description of the theoretical foundation for the study and the biblical foundation that helped guide it. All constructs focused on the well-being of children and the theoretical foundations were chosen with this in mind. Foundational principles from social ecological theory and Ephesians were also tied to the design of this study and its results.

Theoretical Foundation

According to social ecological theory, childhood development is closely related to

variables in a child's ecology such as parental factors and school environment (Parritz & Troy, 2018). Social ecologists examine how environmental factors like poverty, access to resources, neighborhood conditions, and social support networks are related to children's vulnerability to stressors and adverse outcomes. This theory is well-aligned with this study because social vulnerability theory also draws on social ecology by exploring the dynamic relationships between children and their environments, and how to create favorable conditions for healthy development (Karimov, 2021).

Biblical Foundation

The biblical perspective was derived from the book of Ephesians in the New Testament, which is based on a letter written by Paul, one's of Christ's twelve disciples, to the Christian community in the city of Ephesus. The Ephesians epistle is noted for the comprehensive guidance that Paul offers to parents on how to nurture and raise children in a Godly manner (Campbell, 2023), which is also well-aligned with the purpose of this study. Throughout Ephesians, Paul provides details about the Christian perspective on children, family relationships, and the roles and responsibilities of family members toward each other (Campbell, 2023).

Definition of Terms

The following is a list of definitions of terms that were used in this study.

Association: A broad term used to describe a relationship between variables, such as a pattern or trend that can be observed in the data, without implying causation (Martin & Brigdon, 2012).

Causation: A result of rigorous experimental research designs that incorporate experimental manipulation to provide evidence about the relationship between variables

that extends beyond correlation or association (Martin & Brigdon, 2012).

Charter School. A charter school is a learning institution that is privately operated yet publicly funded and is tuition-free for students (Gilraine et al., 2021).

Correlation: A term that refers to a statistical relationship between two or more variables and that measures the extent to which changes in one variable are associated with changes in another without implying causation (Martin & Brigdon, 2012).

Green Space. The amount of open space in a neighborhood, like parks (Bell et al., 2020).

Home School. A home school is a type of private, non-government-regulated education that is conceptualized as providing an education that is equivalent to that which would be offered by a public school (Carlson, 2020; McMullen, 2002).

Neighborhood. The environment within which children are born and raised; A key factor that provides context to help understand how children's mental health develops (Li et al., 2020).

Public School. In the United States, a public school is a learning institution that is funded by the government and offered to students at no cost (Collins English Dictionary, 2023).

Private School. In the U.S., a private school is defined as a school that is not primarily supported by public funding and that provides learning by at least one teacher for at least one grade, kindergarten through 12th (Broughman et al., 2021).

Social Ecological Theory. A model that conceptualizes health as related to "interrelated factors at the individual, interpersonal, organizational, environmental, and policy levels" (Aytur et al., 2022, p. 265).

Social Vulnerability. A psychosocial construct that describes children's difficulty in detecting when an interpersonal situation is potentially harmful (Seward et al., 2018).

Significance of the Study

This study is significant because the intention was to obtain evidence about the relationship between two potential risk factors (e.g., type of school and quality of neighborhood) with SV. This is an important topic of research in developmental psychology because children higher in SV have a greater tendency to be gullible and to believe in things that are highly questionable or not supported by evidence (Greenspan et al., 2001). This makes them more vulnerable to tricks, manipulation, and poorer mental health (Greenspan et al., 2001). High SV increases the risk that a child will be victimized or exploited (Hodes & Vostanis, 2019; Seward et al., 2018). This is a critical area of research because high SV in children is associated with a decreased ability to detect or avoid harmful interpersonal communications (Ferreira et al., 2021; Pinsker et al., 2006; Seward et al., 2018).

More research is needed to help understand if different types of life conditions, based on factors like schools and neighborhoods, are related to levels of SV. This study is an important contribution to the literature on SV because it helped determine if different types of schools and the quality of children's neighborhoods are related to SV. Researchers in developmental psychology must help provide knowledge about how to protect children, who are among the most vulnerable citizens in our society. A scripture that illustrates this is found in Psalms 109:31, "For he shall stand at the right hand of the poor, to save him from those that condemn his soul" (King James Bible, 1769/2019).

Summary

In summary, this study was designed to explore the relationship between two factors, school type and quality of neighborhood, with SV. This study was needed

because society has an obligation to protect children and adolescents from vulnerabilities that result from these types of embedded social structures (Lahiri, 2020). Currently, there is growing interest in the psychological construct of SV in developmental psychology due to its relationship with the risk of being victimized or being exploited in social situations (Ferreira et al., 2021; Hodes & Vostanis, 2019; Pinsker et al., 2006; Seward et al., 2018). For this study, data were collected from the parents of school-aged children in the U.S. through an online survey. The data were analyzed using IBM SPSS Statistics (version 28), to answer two research questions: if there is a relationship between the type of school and the quality of the neighborhood on social vulnerability for children and adolescents, and to determine if the single-factor solution of the Children's Social Vulnerability Questionnaire is accurate. This study further contributes to the existing literature on SV by building on Seward et al.'s (2018) prior study on Australian children by providing results regarding children in the U.S.

CHAPTER 2: LITERATURE REVIEW

Overview

Chapter 2 includes a comprehensive review of the current state of the literature on the constructs of interest for this study. The primary focus of the literature review was on children's SV, which was the dependent variable. Recent studies on the two IVs, the type of school that children attend and the quality of their neighborhood, are also discussed. Also presented are details regarding the search strategy that was used to find peer-reviewed academic studies published within the past five years on these variables and details about the search conducted for literature that supports the biblical foundation for the research. The biblical foundation is discussed in terms of the implications of approaching this scholarly research with a Christian worldview and how the Book of Ephesians from the New Testament helps inform the Christian perspective and provides biblical guidance on how parents can raise psychologically healthy children.

Description of Search Strategy

For this study, the following literature search strategy and databases were used to find recent research, in the form of scholarly peer-reviewed articles on the constructs of interest. Most queries were conducted through Liberty University's Jerry Falwell Library, an online resource that enables searching for specific terms in a wide variety of online databases. Google Scholar was also utilized to search for Open Access Articles. The specific delimitations imposed on the literature search within all databases were to search for academic, peer-reviewed, articles published no later than 2018. For the latest statistics on the state of education in the United States, data was obtained from the National Center for Education Statistics.

For the theoretical foundation and psychological constructs used in this study, articles were obtained by searching academic journals within the 36 Psychology databases that were available through the online Jerry Falwell Library. Those best aligned with this study were APA PsychNET, Child Development & Adolescent Studies, Family Studies Abstracts, PsychINFO, and the EBSCO Psychology & Behavioral Sciences Collection. For articles on the psychological constructs explored in this study, EBSCO was useful along with the SocINDEX, which provided full text articles from peer-reviewed journals in social psychology.

For the biblical foundation of this study, articles were obtained by searching within academic journals in the Religion databases. Thirty-two religion databases were available. One of the most useful due to its alignment with the purpose of this study was EBSCO since it allowed for a single search of many databases based on criteria such as peer-reviewed, academic, articles, and restrictions by year to identify appropriate and current publications. The EBSCO Religion and Philosophy Collection was searched, along with the ProQuest Religion Database and the database of Religious and Theoretical Abstracts. Databases that focused on sermons, lectures, history, archaeology, general philosophy, and Hebrew transcriptions were not consulted. The biblical research was found by using a variety of search terms and phrases, including Ephesians, parents, parenting, child, children, social vulnerability, type of school, public school, private school, home school, and quality of neighborhood.

Review of Literature

The following is a review of the literature obtained from the search strategies described above. This review begins with a discussion of the current state of research on

the dependent variable (SV) followed by recent studies on the independent variables, type of school and quality of neighborhood. Most articles reviewed on these constructs were published within the past five years, or in some instances older if they were highly relevant to demonstrating the trajectory of the research in each area.

Social Ecological Theory

The theoretical foundation was social-ecological theory, a model that postulates how children's mental health is related to by a wide variety of interrelated individual, interpersonal, and environmental variables (Aytur et al., 2020). Bronfenbrenner (1977, 1979, 1994), an early proponent of the socioecological model, posited that children's development must be considered within the context of their social environment and factors like the type of care they receive and their education. Bronfenbrenner (1994) further proposed that ecological factors may be classified as distal (e.g., social policies and neighborhood features) or proximal (e.g., parental attributes and family size). Proximal factors tend to be strongest, but there are opportunities to promote healthy development distally, such as by improving children's neighborhood environment (Bell et al., 2020). This is essential since optimal development occurs when ecological factors are mutually reinforcing (Bell et al., 2020). It is important to understand how these factors are interconnected since the amount of resources that are available to a family in support of a child's development are impacted by the decisions of policy makers and practitioners (Villanueva, 2016).

Variations in a family's cultural values and beliefs, and parental practices, also play a significant role (Eanes, 2023). This was demonstrated by a recent study, which found that individual factors, such as a child's home life, school, peer relationships, and

quality of neighborhood are strong predictors of subjective measures of their "life satisfaction, mental health, and self-image" (Lawler et al., 2017, p. 1). Ongoing research, like this study, is needed to help understand the relationship between social and ecological variables and children's mental health, and how this knowledge can be used to help inform practice and policy about the well-being of children (Aytur et al., 2020). It is essential to understand factors related to the well-being of children and adolescents because mental health disorders are pervasive; once they begin, they often carry over into adulthood and may decrease social status (Aneshensel & Sucoff, 1996).

Social-ecological theory is well aligned with the purpose of this study because it situates the individual at the center of a series of bi-directional relationships that exist between a child and four ecological domains: the microsystem, mesosystem, exosystem, and macrosystem (Bronfenbrenner, 1994). Closest to the child is the microsystem. This includes direct contact points with the immediate environment, such as their family, friends, peers, and school. Next is the mesosystem, which is connected to elements in the microsystem (i.e., the relationship between parents and the school). Third is the exosystem, which is comprised of individual elements. Finally, the macrosystem consists of broad social/societal influences like culture, religion, or politics (Bronfenbrenner, 1994).

The crux of the social ecological theory is that these systems are not only interdependent but are also highly related to children's development as they are continually undergoing the process of restructuring (Smith et al., 2003). Furthermore, the objective of the social-ecological model is to encourage a holistic and integrated approach to family psychology, which helps promote a better understanding of how

children's development is associated with environmental factors and their familial context (Ferguson & Evans, 2019).

Social Vulnerability

Known criteria for defining SV, in both research and practice, include the broad explanation of SV as a condition and/or experience that is based on society, institutions, culture, economics, and politics, which together are related to an individual's ability to recover from hazards (Spielman et al., 2020). SV may be rooted in physical or mental health due to factors like poverty, isolation, social exclusion, culture/ethnicity, disease, and disability or to a specific developmental phase (Morese et al., 2019). More specifically, SV is a condition in which children have difficulty detecting when an interpersonal situation may be potentially harmful (Seward et al., 2018). Children who are neurologically atypical, such as those with Asperger's syndrome, may be more at risk for developing SV but typically developing children may also be vulnerable to deception in social situations, especially during critical phases of cognitive development (Anderson et al., 2001; Seward et al., 2018). For this study, SV was defined as an individual quality or state of being as it is related to one's exposure or risk to possible physical or emotional harm or their ability to either anticipate or manage such harm (Morese et al., 2019).

Research shows that the prevalence of children's SV may be increasing due to various factors. This includes the near-constant usage of internet-connected devices as a replacement for social communication for children who are coming of age in the digital era (Scott et al., 2021). Friendship quality (i.e., loneliness and the frequency of friends), in both online and offline contexts, is also significantly related to social anxiety and social vulnerability (Scott et al., 2021). Socially vulnerable children are more prone to

becoming targets of victimization due to perceived lower social status (Prabaharan & Spadafora, 2020; Veenstra et al. 2007).

The two underlying constructs of SV are credulity, which is the propensity to believe in things that are questionable, and gullibility, which is a tendency to be misled and/or manipulated (Seward et al., 2018). Thus, children high in SV are less likely to successfully navigate social situations and to experience negative interpersonal interactions that can lead to exploitation and victimization (Seward et al., 2018). However, it is important to recognize that SV is not simply a lack of social skills, such as demonstrating altruistic or prosocial behaviors, empathy toward others, or being kind (Seward et al., 2018). SV is also not necessarily tied exclusively to social problems, like aggressiveness or bullying. Rather, it is a complex psychosocial construct that predicts young children's risk of exploitation (Seward et al., 2018). In other words, the etiology of SV rests in exposure to macro- and micro-economic and situational factors, in addition to one's sensitivity to vulnerable circumstances and the ability to cope with them adaptively (Adger, 2006). In general, a child's ability to trust others is viewed as an adaptive trait, but healthy childhood development also depends on the ability to distinguish between trustworthy circumstances and those that may involve deception (Seward et al., 2018).

Furthermore, the topic of children's SV is significant because of its association with family violence (Carlos et al., 2020) and with disruptions to family functioning in households both with and without children (Chavez et al., 2021). Peixoto et al. (2021) found that SV is also related to adolescents' demand for health services. De Sousa et al. (2019) analyzed SV in relation to family life conditions, well-being, mental health, and school attendance, and school performance. The conclusion was that more research is

needed on SV in children and adolescents to help inform public policy and to maximize the effectiveness of social development programs.

Although SV is a significant predictor of psychosocial and interpersonal struggles in clinical samples of children and has many deleterious effects, such as increasing the propensity of becoming a victim of bullying, more research is needed on this construct (Chester, 2020; Strindberg et al., 2020). Currently, little is known about the "developmental mechanisms" underlying SV, which has led to the call for more research to isolate and assess them (Ridley et al., 2020, p. 14). For example, the relationship between children's type of school, quality of neighborhood, and SV has not been investigated. Christian scholars in psychology have an obligation to help provide evidence that may be used to develop policies that protect children, who are one of the most vulnerable groups in society (de Souza et al., 2019).

To help facilitate research on SV, Seward et al. (2018) developed a brief valid and reliable instrument, the Children's Social Vulnerability Questionnaire (CSVQ), that may be used to assess SV in children. Recommended uses of the CSVQ by its authors include exploring the association between SV and psychosocial functioning, investigating age-related differences in SV, or to determine levels of SV for children with clinical needs (Seward et al., 2018). For this study, choosing an instrument to quantitively assess children's SV is critical since it is a latent variable that cannot be directly observed (Spielman et al., 2020). The measure must have strong validity and reliability to increase confidence in the results of the statistical tests that will be conducted to test the hypotheses (Jackson, 2015).

The following criteria established by Spielman et al. (2020) were used to select the best measure of SV for this study. First, SV measures were assessed for theoretical consistency, defined as a clear connection between the purported conceptual framework and the quantifiable inputs (Spielman et al., 2020). Next, available statistics for internal consistency were considered along with the practicality of each measure (i.e., if it relies on information that will be readily available to the researcher) and its transparency (i.e., readily available details regarding its construction and psychometric properties). Can the data that results from the measure be clearly interpreted and is it relevant to the aims of the study? Finally, is there evidence of external consistency (i.e., alignment with similar instruments)? It is important to assess the best instrument for this study using these criteria because this will account for the measure's conceptualization in addition to its technical aspects (Spielman et al., 2020).

Several instruments that currently exist to assess SV were evaluated utilizing these criteria. One widely used measure is the Social Vulnerability Index (SoVI) by Cutter et al. (2003). It is based on Wisner et al.'s (2004) theory of SV as an individual characteristic that determines one's capability of anticipating, responding to, and coping with environmental hazards (Chavez et al., 2021). The premise is that the interaction between who a person is and where they live profoundly impacts their experience of, and their recovery from, shocking and/or extreme socioeconomic or geographical events, such as unemployment or natural disasters (Spielman et al., 2020). The SoVI was developed using principal components analysis and can be used to obtain a single quantitative score to assess the SV for a place (Spielman et al., 2020). However, this instrument is designed to assess communities and/or households, not individuals. For this

reason, it was ruled out. Similarly, the Social Vulnerability Index (SVI) by Flanagan et al. (2011) was also excluded since it was developed to assess the impact of environmental disaster management (Spielman et al., 2020).

Type of School

U.S. Education System

In the United States, the education system is complex. It is decentralized and governed by a diverse set of federal, state, and local laws in addition to a wide variety of policies, regulations, and legal decisions that affect individual schools, institutions, and educational associations (USNEI, n.d.). The U.S. government is responsible for enforcing education initiatives such as the Every Student Succeeds Act and the Individuals with Disabilities Education Act. This helps ensure that all children have access to a high-quality education (Bouchrika, 2023). Yet the role of the federal government is largely confined to support and leadership for recommended policies (i.e., for curricula, standards, and assessments) or to publishing statistics and information on national education research activities (USDE, n.d.; USNEI, n.d.).

Most direct oversight of primary and secondary education in the U.S., especially for administrative and fiscal functions, is conducted by state, local, and territorial governments who elect or appoint members to governing boards for fixed terms (USDE, n.d.). Smaller communities may provide combined schools (K-12) but the U.S. education system is mostly comprised of primary schools, which is kindergarten through 6th grade and secondary schools, which is 7th through 12th grade (Bouchrika, 2023). Private and non-governmental organizations, like citizens' groups and professional/technical

associations also have a functional role in representing various constituencies and stakeholders (USNEI, n.d.).

Across all 50 U.S. states, the largest single budget item is education spending to fund personnel, special needs programs for students with disabilities, and oversight for public and private schoolteacher licensing, including charter and home schools (USDE, n.d.). Nationally, the total expenditure is approximately $680 billion (Bouchrika, 2023; Snyder et al., 2019). Daily operations are managed by state school superintendents and chief school executives, but guidance on issues like curricula-related policies or help investigating problems is available from organizations such as the National Association of State Boards of Education (USDE, n.d.).

One aim of this study was to assess the relationship between the type of school that a child attends and levels of SV. On a broad level, U.S. schools are categorized as either public (i.e., traditional, government funded) or private. As of 2019, 90% of school-aged children (almost 51 million) were enrolled in public schools with an average of 526 students per school and 24 students per class (Bouchrika, 2023). Most public schools utilize a hierarchical structure between educators and parents. In private schools, the relationship between parents and teachers is more often organized as a team and communication between these groups is encouraged (Chizyuka & Harrison, 2021). In some instances, private schools have more access to resources, such as computer and science labs and higher quality physical buildings (Chizyuka & Harrison, 2021). Most educational institutions in the United States serve students enrolled in kindergarten through 12th grade and are state-funded (Bouchrika, 2023). Primary educational

institutions in the U.S. are further categorized as public, private, charter, or magnet. Differences and similarities of these school types are discussed in the following sections.

Public Schools

Public schools were established to help ensure that all children have access to education, regardless of their family's financial circumstances (Bouchrika, 2023). Yet some public schools face challenges or vulnerabilities based on zoning decisions made by third parties who are not stakeholders in students' success (Wells et al., 2019). This includes real estate professionals (e.g., agents, housing developers) who are often instrumental in drawing school zone boundaries in addition to school district officials (Wells et al., 2019). This creates a system whereby zip codes are the determining factor in educational opportunities and for school funding, which is typically based on property taxes (Wells et al., 2019). Therefore, children's access to quality education is not necessarily equal.

For example, some studies have shown that urban public schools are more likely to have a high concentration of minority students who live in poverty and consequently are less likely to promote a culture that encourages students to progress to higher education (Nienhusser & Ives, 2020). The difference in post-high school graduation college enrollment rates between high-minority/low-income schools (55%) and low-minority/high income schools (77%) is striking (Nienhusser & Ives, 2020). Other criticisms of public schools are that they are underfunded and that a large degree of racial segregation still exists along with disproportionately lower educational opportunities for students from lower-income families (George & Darling-Hammond, 2021).

Charter Schools

In the U.S., a charter school is defined as an independently run public school (Bouchrika, 2023) that is privately operated and receives funding through taxation based on a charter (i.e., contract) with a public entity (Tong et al., 2023). Charter schools operate independently of the traditional public school system yet are categorized as public since they receive public funding, are open to all students, and cannot charge tuition (Wells et al., 2019). They are typically run by private nonprofit or for-profit organizations/companies whereby the term "charter" refers to a contract or agreement with an authorizing entity (such as a school district or state education agency) that outlines the school's mission, goals, curriculum, and accountability measures (Ford & Ihrke, 2019). Charter schools have more autonomy than traditional public schools in curriculum, staffing, and operations, but are accountable for meeting academic and financial performance goals, as outlined in their charter (Ford & Ihrke, 2019).

The major distinguishing factors between public and private schools are their organizational structure and governance, funding, and level of autonomy. Charter schools were created to provide families with higher-quality public education alternatives (Bouchrika, 2023). Supporters contend that because they are managed independently, they have more freedom to adopt creative or flexible approaches to education and therefore can better adapt to students' needs (Ryan, 2023). They are publicly accountable to state governing bodies but are usually less regulated and have more autonomy regarding their operation and curriculum as compared to traditional public schools (Tong et al., 2023). Because they are funded through public taxes, charter schools are tuition-free, like traditional public schools. They are also overseen by school districts, including

elected school board members and appointed superintendents who hold them accountable financially and regarding standards for student achievement (Tong et al., 2023). A key difference is that student enrollment is not restricted by geographic boundaries (Tong et al., 2023).

The first U.S. charter school was established in 1992 in the state of Minnesota (Bouchrika, 2023). Charter schools now represent a sizable portion of the educational system (Ryan, 2033). They exist in 44 states and account for approximately 7% of all U.S. public schools; they serve more than 3 million elementary and high school students (Snyder et al, 2019). They are more prevalent in urban settings, with approximately 56.5% located in cities (Snyder et al., 2019) and they are the fastest growing type of public education in the U.S. (Geheb & Owens, 2019). Some are designed to attract at-risk students or other specific groups (Potter & Quick, 2018). More disadvantaged students, including minorities and low-income students, are enrolled in charter schools as compared to traditional public schools (Xu, 2022). Awareness of charter schools is sometimes left to the free-market, whereby knowledge of them is obtained through social media and/or word-of-mouth marketing (Potter & Quick, 2018).

Charter schools are more dependent on marketing than public schools to attract and recruit new students (Wells et al., 2019). A key benefit is that they are not restricted by zoning regulations and arbitrary zip code boundaries, which helps even the playing field for students with a variety of backgrounds, cultures, and social classes (Wells et al., 2019). Thus, charter schools have the freedom to increase educational opportunity by accepting students with the relatively highest test scores (as compared to nearby peers) even if they are still well below national norms (Wells et al., 2019).

Magnet Schools

Magnet schools are another alternative type of public elementary or secondary school that differ from charter schools due to their origin and purpose. They also receive government funding, are open to all students in the district or designated attendance area, and do not charge tuition (Goldring & Swain, 2020). As part of the public education system in the U.S., magnet schools remain subject to the same regulations and requirements as other public schools in their district or jurisdiction. Mostly, magnet schools are distinguished from public schools due to their specific focus or theme. The objective is to attract a diverse student population through specialized academic programs/curricula to help foster talents in domains like science, technology, engineering, or the arts (Goldring & Swain, 2020).

Magnet schools were the first formal school choice option in the U.S. They were launched in the 1960s resulting, in part, from sustained efforts to promote racial diversity (George & Darling-Hammond, 2021). The objective was to desegregate public elementary and secondary schools by offering specialized and innovative academic programming designed to boost preparedness for entry into postsecondary education and to appeal to a wide variety of families (Austin & Roegman, 2021). The basis for this policy was that desegregation could be achieved through voluntary parental choice as opposed to student assignment (George & Darling-Hammond, 2021). Some research suggests that this helps achieve the decades long objectives of achieving less segregation at both the school and community level (Wells et al., 2019).

These schools are frequently situated within urban settings (George & Darling-Hammond, 2021). This aligns with their original intent, which was to meet the need for

more opportunities for higher education, especially for students who are limited by inequities associated with residing in urban socio-economically segregated areas with fewer resources (Nienhusser & Ives, 2020). An example of this is Advanced Placement courses which are offered in some urban schools for students who intend to go to college since they can raise their likelihood of admittance (Nienhusser & Ives, 2020). However, some magnet schools operate regionally, which helps address desegregation across districts (George & Darling-Hammond, 2021).

Since their inception, magnet schools have had a reputation as being socio-economically and culturally diverse and effective academically (George & Darling-Hammond, 2021). Students who graduate from magnet schools often demonstrate higher achievement in pivotal educational areas like math, science, and language. They are more likely to be admitted into higher education and to successfully obtain a college degree (George & Darling-Hammond, 2021). As a result, students who matriculate from magnet schools also tend to achieve higher incomes as adults (George & Darling-Hammond, 2021). An added benefit is that magnet schools often attract and keep highly qualified teachers (George & Darling-Hammond, 2021). However, there is significant variation in pedagogy and admission policies. The most successful in terms of student achievement appear to share a set of common features including openness to admitting students from diverse backgrounds, ongoing efforts to maintain an inclusive environment, and outreach/ engagement to students and families (George & Darling-Hammond, 2021). A criticism is that some magnet schools offer school choice in theory but not necessarily practically if they only attract students and parents who are already highly motivated and have the necessary skills to navigate the complex application process (Nienhusser & Ives, 2020).

Private Schools

Private schools first appeared in the U.S. in 1660; they are usually oriented by religion, either Roman Catholic or other Christian denominations, and are slightly more numerous in suburban rather than urban areas (Bouchrika, 2023). As of 2019, 9% were Montessori (Snyder et al., 2019). More than a third (34%) of all U.S. private schools are in the southern U.S. and are smaller than public schools, with an average of 151 students per school and 19 students per class (Snyder et al., 2019). Private schools are often highly regarded by parents, possibly because they tend to report fewer problems with physical conflict, student possession of weapons, or racial tensions (Shakeel & DeAngelis, 2018). Public elementary schools are tuition-free, although students may have to pay extra fees for activities or field trips (Bouchrika, 2023).

As of 2019, the average cost to attend a private elementary school was $9,946 per year, ranging from $2,895 in Nebraska to $20,047 in the District of Columbia (Snyder et al., 2019). Private schools generally have the autonomy to develop their own recruitment strategies. Some may attempt to obtain a diverse student population by utilizing weighted admissions policies, ensuring that schools are strategically located, or by increasing the funding that is available for transportation (Monarrez et al., 2022).

Home Schools

According to Greenwalt (2019), it is challenging to find a widely accepted definition of homeschooling since it is often shrouded in disputed political agendas. Consequently, homeschooling is often presented simply as a type of educative practice that occurs within a family (Greenwalt, 2019). This had led to difficulties in obtaining accurate data on the rate of homeschooling, problems with assessing learning outcomes,

and a general lack of understanding about why families choose to homeschool (Greenwalt, 2019). The two most common elements of homeschooling are that parents have more control over educational activities and that teaching occurs outside of traditional school settings (Jolly & Matthews, 2020). The Department of Education estimates that most homeschooled children (approximately 70%) are in K-8 while the remaining 30% are of high school age (Jolly & Matthews, 2020).

There is also evidence that the rate of homeschooling in the U.S. has steadily increased since the early 1990s (Greenwalt, 2019). Over time, education reforms and standards regarding school curriculum and assessment have been implemented to help increase the legitimacy and acceptance of homeschooling (Jolly & Matthews, 2020). Another major factor that has expanded homeschooling is greater access to the Internet. This allows an increasingly diverse range of parents to access traditional school curricula (Mann, 2021) and well-established pedagogical resources (Jolly & Matthews, 2020). Therefore, more families with students in kindergarten through 12th grade are currently opting for homeschooling (Jolly & Matthews, 2020).

Motivations for homeschooling vary and have also changed over time. Some parents, especially those with learned disabled or gifted children, have reported that the impetus to homeschool was pragmatic and only occurred after sustained yet unsuccessful efforts to collaborate with teachers and school administrators (Jolly & Matthews, 2020). This challenges the stereotype that the population of homeschooled children is homogeneous in terms of culture, race, or economic necessity or that the primary motivation to homeschool is to provide children with religious/moral education (Jolly & Matthews, 2020; Mazama & Lundy, 2013). An additional trend in homeschooling is

hybridization. This refers to the tendency for families to seek out like-minded parents, and to collaborate so that their joint expertise can be leveraged (Jolly & Matthews, 2020). Parents may also access online resources that allow them to take on a supporting role in their child's education rather than acting as the sole instructor (Mann, 2021). In some instances, children may be enrolled in cyber-based charter schools, which are unique since they are publicly funded and thus overseen by local and/or national authorities (Mann, 2021).

School Choice

The phrase *school choice* is commonly used to describe policies related to a family's ability to choose the school that a child attends regardless of factors like geography (Ryan, 2023). In recent years, school choice in the United States has rapidly expanded, to the extent that public education is currently being restructured (Blatt & Votruba-Drzal, 2021). There is considerable state-wide variation regarding education policies and school choice (Wilson & Bridge, 2019). School choice may vary based on its origin, its purpose and design, or its viability (Gottau, 2020). The outcomes of school-choice mechanisms vary based on geographical locations, admissions policies, institutional culture, and incentives for families, schools, or local governments (Wilson & Bridge, 2019). Controversies regarding school choice include concerns about charter schools that tout religious values or that are deliberately ethnocentric by catering to specific groups like Native Hawaiian, Latino, or Jewish (Ryan, 2023). Because of opposition to school choice, their expansion has been limited in some regions of the U.S. (DiPerna et al., 2019).

School choice is often driven by a child's area of residence. Parents of school-aged children may elect to live in neighborhoods to gain access to high performing schools (Wilson & Bridge, 2019). This results in a type of sorting process based on self-selection, whereby geographic location manifests as the mechanism of school choice (Burgess, 2015). Higher income families have the economic means to intentionally choose a neighborhood with a school that aligns with their values and priorities. However, it is well established through quantitative research that most allocation processes are predicated on students' proximity to a school (Burgess et al., 2015).

Much of the prior research on school choice has been qualitative and derived from interviews with parents regarding their choices and rationales for choosing (Wilson & Bridge, 2019). Research on school choice is urban areas often utilizes Bourdieu's sociological framework about economic, social, and cultural capital (Wilson & Bridge, 2019). In the U.S., school choice is more likely to be driven by an "opt out" mechanism as opposed to most other countries that utilize open enrollment policies (Wilson & Bridge, 2019, p. 19). A noted constraint to school choice is limited capacity, in which case proximity may again become the determination of enrollment. This geographical component may again reinforce the socio-economic reality of the consequences of housing affordability by limiting what is available to a family, along with the accessible transportation options (Wilson & Bridge, 2019).

The rationale for the charter school movement is that the quality of public education increases due to market forces like competition and accountability (Castillo, 2020). In countries that have decentralized their educational system, the power transfers from centralized governments to local governments (Wilson & Bridge, 2019). In case of

open enrollment, there may be complete freedom for school choice. This includes the chance for parents to use vouchers to choose between subsidized (i.e., private) or public school and for schools to select students from an applicant pool (Wilson & Bridge, 2019). Some research has indicated that this system includes more socially segregated schools, which supersedes geographic mechanisms (Wilson & Bridge, 2019). This has implications for this research because it suggests that school choice is related to children's socialization processes.

Open enrollment options around the world may operate at the national, regional, or local level (Wilson & Bridge, 2019). In the U.S., options to opt out are more commonly found in charter or magnet schools (Wilson & Bridge, 2019). In July 2022, Arizona passed the first state-level legislation for universal school-choice. This provides all students with the right to establish a universal education savings account (ESA) under the Empowerment Scholarship Account Program (Ryan, 2023). As a result of ESAs, Arizona students have the option to use their savings account to attend any type of school that is currently offered whether that is a traditional public, charter, magnet, secular private, or religious private school (Ryan, 2023).

The popularity of magnet and charter schools is rapidly growing, as evidenced by a 2018 report from the National Center for Education Statistics, which found that the rate of student enrollment in a magnet or charter school tripled between 2001 and 2017 (Blatt & Votruba-Drzal, 2021). In this report, it was also estimated that as of 2017, approximately 11% of students in the U.S. were enrolled in a magnet school (2.5 million) or a charter school (3 million) (Blatt & Votruba-Drzal, 2021). Enrollment policies are

mostly based on either lottery systems, registration sequence (i.e., first come first serve), or students' test scores (Blatt & Votruba-Drzal, 2021; Goldring & Swain, 2019).

Another emerging trend in relation to school choice is the newer category of "diverse-by-design charter schools," also known as intentionally diverse (Monarrez et al., 2022, p. 41). Opponents of school choice believe that education policies that allow parents to make market-based preferences damage children by decreasing racial and ethnic integration (Wells et al., 2019) and reinforcing socio-economic and school segregation (Jähnen & Helbig, 2023). Socio-economic segregation is defined as the uneven distribution of households based on income, education, or occupation (Jähnen & Helbig, 2023). Therefore, those who oppose school choice believe that increasing access to private schools in urban settings diminishes the traditional link between a child's neighborhood and their school and that it is unfair that affluent families are permitted to avoid local public schools (Jähnen & Helbig, 2023).

Proponents of school choice, for example for charter schools, contend that students benefit from education that incorporates religious or moral values and that they are well-suited to serve families with the financial means to enroll their children in private schools (Ryan, 2023). Prior research has demonstrated that a school's culture and climate is related to students' academic success (Austin & Roegman, 2021); however, less is known about the association between different types of school and SV. Gulosino and Liebert (2020) have called for more studies on students' academic performance in relation to differences between suburban and urban charter schools and traditional public schools. This research is needed to help determine the broad implications of neighborhood factors and school choice policies (Gulosino & Liebert, 2020).

Quality of Neighborhood

Prior research has shown that neighborhood variables are related to childhood experiences and child development in terms of well-being, education, and behavior (Maguire-Jack et al., 2022; Ports et al., 2020). Being born in a disadvantaged community reduces physical health (Clarke et al., 2013) along with social and economic progress (Alvarado, 2018). Physical neighborhood qualities include traffic and population density, land use and infrastructure, ease of access to transportation, proximity to nature and open green spaces, cleanliness, building and street maintenance, noise, and air quality (Rollings et al., 2015). These neighborhood attributes are associated with a higher risk of morbidity due to chronic physical health conditions like obesity, diabetes, and hypertension (Rollings et al., 2015) and with aspects of mental health, such as levels of anxiety and depression along with social well-being outcomes, such as levels of social interaction, cohesion, and capital (Rollings et al., 2020).

The quality of a child's neighborhood is also among the primary contextual factors used to explain the developmental trajectory of children's mental health (Li et al., 2020). Decades of research have further demonstrated that neighborhood disparities are negatively related to communities and individuals because they increase social vulnerability in children (Buck et al., 2022). All children are naturally exposed to some stress and adversity, but frequent and prolonged exposure may produce high levels of toxic stress that interferes with cognitive and psychosocial development (Maguire-Jack et al., 2021; Ports et al., 2020; Shonkoff, 2016). For school-aged children (≤ 15 years of age), economic hardship at the individual level is associated with a greater number (four or more) of adverse childhood experiences (ACEs). However, this risk is exacerbated by

living in a neighborhood that is either high in poverty, defined as 20% to 40% of residents living at the time of birth below the federal poverty level, or concentrated in poverty, which is more than 40% (Maguire-Jack et al., 2021). ACEs are defined as individual exposure to family dysfunction in the form of violence or other types of maltreatment (Maguire-Jack et al., 2021). Quality of neighborhood, including physical neighborhood attributes, is a central variable because it encompasses an aspect of understanding about childhood development in addition to the typical sociodemographic factors that are studied, such as socioeconomic status (Rollings et al., 2015).

Assessing Neighborhood Quality

Research on neighborhood conditions utilizes a variety of objective and subjective measures. Objective measures include census and other administrative data used to designate a neighborhood's crime rate, socio-economic status, or level of environmental hazards (Li et al., 2020). However, a major limitation in using this type of data is that individual perceptions will vary (Li et al., 2020). The following are specific variables used in previously published measures to assess the physical features of a neighborhood (Bell et al., 2020). Outdoor home environment is defined as the amount of space in a child's yard based on the percentage of land without any residential building (Bell et al., 2020). Another outdoor variable, residential walkability, is defined as a neighborhood's street connectivity. This includes the ratio of intersections within its boundaries, its density (i.e., the ratio of dwellings to land), the number of cul-de-sacs, the level of exposure to traffic, and access to transportation (i.e., stops for school and/or public buses and trains), and access to healthy food (Bell et al., 2020). Green spaces (i.e., parks and other types of recreational assets) are often evaluated as the proportion of space within a

neighborhood and through objective measures such as counting desirable attributes like the number of trees or other amenities like sporting facilities, fixed and portable play equipment, water or other natural features, or lighting (Bell et al., 2020).

Children's physical development (i.e., less physical vulnerability) is consistently related to higher levels of residential density, possibly due to greater access to essential services like transportation, schools, shopping, and opportunities for play groups (Bell et al., 2020). There does not appear to be any relationship between physical development, low traffic exposure, and high street connectivity for younger children, possibly because they are less likely to be allowed by their parents to navigate their outdoor environment independently (Bell et al., 2020). The odds of developing social and emotional vulnerability are lessened by physical features of a neighborhood, such as walkability and the presence of attractive parks or high-quality green spaces, but only in the absence of heavy exposure to traffic (Bell et al., 2020). One possible explanation for this finding is that children with access to parks in areas with less residential traffic have more play and social interaction opportunities, which helps facilitate the development of social competence (Bell et al., 2020). Other positive neighborhood assets are sidewalks, recreation centers, and libraries while negative traits include the presence of rundown houses, garbage in the streets, and violence (Li et al., 2020).

Currently, there is a lack of research on proximal child development factors, like school attributes (Bell et al., 2020). Additional research, like this study, is needed to explore subjective measures of neighborhood quality to help inform stakeholders, such as policy makers and urban planners, about their relationship with relatively long-term neighborhood features on children's development (Bell et al., 2020). This design is

therefore designed to address some of the gaps in prior research, including the use of aggregate data rather than data obtained at the individua level. Bell et al. (2020) posited that studies are strengthened using standardized measures of early child development because they help eliminate bias (Bell et al., 2020).

The Relationship Between Neighborhood Quality and Mental Health

Mental health decreases for children who lack social capital, which is defined as low levels of community involvement (Jackson, et al., 2019). Prior research has demonstrated that certain features are related to children's development, either positively or negatively, based on whether they support or constrain opportunities like "physical activity, social interaction, and cognitive and emotional development" (Bell et al., 2020, p. 321). However, most studies have been conducted at the neighborhood level and more research is needed to better understand the relationship of neighborhood features at the individual level (Bell et al., 2020).

In one study, with a large (N = 15,438) nationally representative sample of young children in the U.S. (aged 6 through 7 years), Li et al. (2020) found that perceived neighborhood conditions regarding physical environment, social capital, and levels of violence were significantly related to depression, anxiety, conduct problems and attention deficit hyperactivity disorder. Li et al. (2020) specified three subtypes of neighborhood conditions: ideal, insufficient assets, or broken and unsafe. The last category was related to greater odds for all types of psychiatric disorders as compared to neighborhoods that were deemed ideal or with insufficient assets. Again, this points to the necessity for studies that assess conditions in children's neighborhoods (Li et al., 2020). High traffic may increase exposure to pollution and road accidents while also limiting children's

independence and opportunities for spontaneous play and socialization (Bell et al., 2020). Residential crowding and urban sprawl are negative predictors of child development while the proportion of home-yard space is inversely related to emotional and SV because these neighborhoods tend to have fewer main roads (Bell et al., 2020).

These findings demonstrate how interest in the relationship between neighborhood and health has increased in the past two decades, which is a positive change for a topic that has been understudied (Arcaya et al., 2016). After conducting a substantive systematic review of 256 articles (i.e., meta-analyses, commentaries, and health papers) published between 1995 and 2014 on populations across the U.S., Arcaya et al. (2016) found that rapid growth in research on this topic began in the mid-2000s. Most studies used observational cross-sectional research designs with simple socioeconomic indicators and "single-level, census-based neighborhood definitions" (Arcaya et al., 2016, p. 16). Furthermore, most research focused on health outcomes, such as body mass, rather than mental health (Arcaya et al., 2016). This further supports the need for more studies on the relationship between quality of neighborhood and children's mental health.

In summary, the convergence of three factors have contributed to the growth of homeschooling in the U.S. All 50 states have adopted legislation to help regulate it, the Internet now provides parents with access to curricula, and it is increasingly being framed as a legitimate school choice option that may help improve access to higher quality education (Jolly & Matthews, 2020). Physical features of a child's neighborhood are also significantly related to positive long-term development and mental health (Bell et al., 2020). Research consistently shows that children who grow up in disadvantaged

neighborhoods experience poorer “social, emotional, and behavioral outcomes” (Leventhal & Dupéré, 2019, p. 149). Other critical “macro forces” include a neighborhood’s social processes and level of available resources, along with its physical features and spatial dynamics (Leventhal & Dupéré, 2019, p. 149). Children with families that live in an area with a high rate of poverty and low environmental quality are also more likely to experience neurodevelopmental delays (Costa et al., 2023).

Biblical Foundations of the Study

This section includes a review of the implications of a Christian Worldview on scholars, and the theoretical foundation and design of this study. Biblical instruction on parental responsibility toward children and its relationship with children’s healthy development is also discussed. Christian parents can turn to Biblical text, like Paul’s letter to the Ephesians, for faith-based guidance on parenting. Scripture from Ephesians, especially Chapter 6:1-4, provides advice for building a solid foundation to help shape a child's character, behavior, and worldview. Each of these elements is closely related to social vulnerability in children since children are less likely to suffer developmentally when parents focus on providing Christian values in a loving and nurturing environment. As stated in Proverbs 22:6, “Train up a child in the way he should go: and when he is old, he will not depart from it” (King James Bible, 1769/2019).

Implications of a Christian Worldview

Certain foundational beliefs and perceptions of science are shared by scholars with a Christian worldview (Bufford & Sisemore, 2014). The Christian perspective is that science should not be considered all-inclusive. Rather, it is a tool used by scholars in service of our God-given stewardship over creation (Bufford & Sisemore, 2014). These

beliefs are also associated with the attitudes of clinical practitioners regarding their work, their conceptualization of clients, and what they consider to be appropriate and acceptable types of goals and interventions (Bufford & Sisemore, 2014). For example, Christian practitioners often subscribe to the belief that human emotions are best interpreted "in sacred terms," as depicted in the Bible, because they can help reinforce shared beliefs and aspects of well-being like pro-sociality (Van Cappellen, 2017, p. 261).

Christian scholars also face challenges in terms of referencing God in research, or pointing to God's active involvement in the world, since this deviates from standard practices in the natural sciences (Torrance, 2017). Scientists are encouraged to focus only on directly observable phenomena. There is little consensus among scientists that God exists or has an active hand in the laws of nature. In fact, drawing conclusions about God's role in scientific investigations goes "against the grain" of the prevailing scientific worldview (Torrance, 2017, p. 692). This results in "methodological atheism," where all possible references to God are avoided so that the universe can be explained through empiricism without acknowledging our creator (Torrance, 2017, p. 692).

On the contrary, Christian scholars believe that the cosmos is directed by the divine and that human beings reflect the image of God, and that is what allows science to be intelligible (Torrance, 2017). Scientific progress is not undermined by references to God and Christians scholars should not feel compelled to deny His existence. Rather, it is possible to acknowledge objective truths while simultaneously arguing that God has a hand in the structure and behavior of the natural world (Torrance, 2017). For Christian scholars, this represents the ultimate truth and therefore theological explanations of worldly phenomena can and should be integrated into science. Thus, three specific

problems may be avoided. These are (a) to not develop theories that are incompatible with Christianity, (b) to not promote tension between science and Christianity, and (c) to not disregard the reality of God or to diminish His role in intellectual discourse (Torrance, 2017). As a Christian scholar, it is possible to affirm God's existence by including the divine in our examination of earthly things. This is how scientific inquiry can be legitimately perceived as a Christian vocation (Torrance, 2017).

Christian Perspective on Raising Children

Christians understand that faith is powerful; it extends beyond merely believing that God exists (Oliver & Oliver, 2022). The basis of the Christian worldview is agreement with Jesus's statement that His kingdom is not of this world. In other words, Christian values are not derived from the physical world and do not conform with worldly values. This guides child development because it demands a consideration of how the uniqueness of all children can be nurtured, so they mature into competent, confident, and pious adults even as they are inevitably challenged by conflicting worldviews (Oliver & Oliver, 2022). This study was therefore designed to address children's social vulnerability and the obligation to raise children who are not defenseless or incapable of successfully confronting challenges to their mental health.

Part of the rationale for the study was to provide support for parents (and all primary caregivers), clinicians, and child advocates who wish to use biblical resources and Christian theology to promote dignity and responsibility in children (Bunge, 2008). One important facet of this is social vulnerability, which is closely related to parenting. This is because children's life experiences, along with socio-demographic and economic factors, can weaken not only their emotional competency but also their developmental

trajectory (Gomes & Martinho, 2021). One specific way that parents can help raise emotionally healthy children is by teaching them good communication skills, so they understand how to interact with others with respect and empathy in accordance with Biblical principles and ethics (Tubagus & Sarono, 2021; Yacub et al., 2022).

Communication plays an essential role in human life, and in the development of social vulnerability, because society demands that social interactions occur both within and outside of the family unit (Yacub et al., 2022). When family members are unskilled in communication, they are more likely to experience conflict that results in divorce, financial problems, domestic violence, and lower quality education (Yacub et al., 2022). Therefore, the need to establish effective communication skills begins within the home. To help avoid raising children with social vulnerability, parents should maintain clear and consistent messaging and be mindful of their choice of language, how they convey their expectations, and their affect (Yacub et al., 2022). This is consistent with Genesis 11:6, “And the LORD said, Behold, the people is one, and they have all one language; and this they begin to do: and now nothing will be restrained from them, which they have imagined to do” (King James Bible, 1769/2019). Scholarly research from a Christian worldview is needed to help care for those in our society who are the most vulnerable, including children, as Bible instructs.

Biblical Guidance From Ephesians

> “Fathers, do not exasperate your children; instead, bring them up in the training and instruction of the Lord."

This study intentionally incorporated a Christian perspective on parenting and how parents may find guidance by consulting principles of the faith found in the Bible.

Specifically, this study drew upon the Christian doctrine of faith and families, as depicted in Paul's letter to the Ephesians, a book in the New Testament. This letter is one of the epistles that Paul, an apostle of Jesus, wrote to early Christian communities to provide them with a source of spiritual guidance and insight on how to lead a Christian life. In Ephesians 6:1-4, Paul addresses the relationship between children and parents and emphasizes not only the importance of children obeying their parents but also parents' responsibility to nurture and instruct their children in the ways of the Lord.

Ephesians 6:1-4 perfectly "encapsulate God's mission of salvation" and his desire for reconciliation with us (Crouse, 2023, p. 66). It also illustrates the importance of maintaining healthy relationships with our children but even more importantly helping raise our children, so they are capable of forming healthy relationships with God and others. For this reason, parents should help prevent social vulnerability in their children. Ephesians is also unique in terms of its "theological depth and clarity" (Crouse, 2023, p. 52). Its overall purpose has been described as a directive to reconcile "all things affected by sin" because it include Paul's discussion about sin and disobedience causing alienation from Christ (Crouse, 2023, p. 52).

Ephesians 6:1-4 provides clear edicts for parenting "in the discipline and instruction of the Lord" (Sear, 2017, p. 490). The first passage 4:1 begins with an admonition to children, to honor and obey their parents. This command is seen as a covenant not only because it is a wise and loving thing to do, but also because it honors "God himself" (Sear, 2017, p. 53). Parents' responsibility toward their children is also discussed. Parents must teach their children how to behave but also remember their duty to model righteous behavior by demonstrating how to love God. This helps ensure that

they develop into healthy adults who will continue God's plan for his people to live in stable and holy homes (Sear, 2017). Parents who embrace their role as an authority within the family are more likely to help promote healthy family relationships and produce emotionally stable children. Sear (2017) has traced the origins of this perspective to the Old Testament, which describes how children are a gift bestowed by God and for whom all bear responsibility. Even as humans succumbed to the fall, the opportunity to receive God's grace continues and families serve as "a center-point for God's plans of redemption" (Sear, 2017, p. 51).

The Bible provides many illustrations of parental righteousness and leadership, and obedience to God's laws. Ephesians 6:1-4 is God's instructions about Christian family relationships (Sear, 2017). In this epistle, Paul was instructing the Christian community about rules for family households. Well-ordered households result in a well-ordered society, and this represents God's standards for a new society. Sear clarifies that to provoke a child to anger means that they are promoting attitudes that will not be consistent with a "Christian way of life" (Sear, 2017, p. 62). Anger is an emotion associated with self-centeredness and sin. Parents are obligated to exert authority over their children such that they are promoting constructive and loving behavior. There is an obligation to not only provide instructions, but also to pass on Godly beliefs and conduct.

Summary

This study addressed the need for more research about physical neighborhood qualities on children's mental health outcomes (Rollings et al., 2015). Parents who are committed to promoting healthy childhood development should strive to create a God-centered home with an environment that is spiritually nurturing (Sear, 2017). The book of

Ephesians was chosen as the biblical foundation because it provides instruction on establishing the ideal Christian family household. Parents have a unique and significant responsibility for all aspects of children who are under their care. No matter which type of school a child attends or the quality of the neighborhood in which they live, the home always serves as the foundation of Christian life (Sear, 2017).

Parental authority should encompass a child's safety and help nurture their personality. Just as Jesus could bask in the delight of his father, our children should be nurtured with care. Scholars and clinical practitioners in psychology with a Christian worldview must embrace the role of acting as supporters for primary caregivers to help strengthen their children's faith formation (Bunge, 2008). Parents are responsible for helping promote dignity in their children, which can be accomplished by promoting a theological perspective which is part of ministry, education, and child advocacy (Bunge, 2008).

CHAPTER 3: RESEARCH METHOD

Overview

Chapter 3 includes a comprehensive description of the procedures that were used for this quantitative correlational study. The primary variables of interest were the type of school that a child attends, the perceived quality of the child's neighborhood, and levels of social vulnerability. Also included in this chapter is information regarding the target population, how the desired participants were recruited, and the data collection procedure. The results of a G*Power analysis are reported, which helped inform the minimum required sample size for the procedure. All data were collected from parents of school-aged children in the United States. Finally, details about the instruments are provided. This includes background on the reliability and validity of the instruments, how participants' responses were scored according to the authors' instructions, and the procedures that were utilized in the data analysis.

Research Questions and Hypotheses

Research Questions

RQ1: Is there a relationship between the type of school and the quality of the neighborhood with social vulnerability for children and adolescents?

RQ2: Is the single-factor solution of the Children's Social Vulnerability Questionnaire accurate?

Hypotheses

Hypothesis 1: There is a relationship between the type of school and the quality of the neighborhood on social vulnerability for children and adolescents.

Hypothesis 2: The single-factor solution of the Children's Social Vulnerability Questionnaire is accurate.

Research Design

This research utilized a quasi-experimental design that was aligned with the purpose of the study. In choosing the design for research question one, the following issues were considered, as recommended by Martin and Brigdon (2012). First, the choice of research design was based on the intent to explore the multivariate relationships between two primary variables of interest, type of school and quality of neighborhood, and to determine if they are statistically significant predictors of the dependent variable, which is children's social vulnerability (SV). Next, the number and type of independent and dependent variables were considered along with the scale of measurement for each. The third consideration was if participants' data across groups is related or unrelated. Details regarding these issues are discussed in the following sections, along with the rationale for the chosen methods of sampling, data collection, and statistical analyses.

For research question one, there were two independent variables that served as predictors for one dependent variable. The first predictor was the type of school that a child attends. This variable was categorical and used a nominal scale of measurement. Participants (i.e., parents) were asked to indicate what type of school their child attends (e.g., public, private, charter, magnet, or home-school). These categories align with current research on the topic of childhood education in the United States (Taie & Goldring, 2020). The other predictor variable, quality of neighborhood, was numeric and used an ordinal scale of measurement with five options. Parents were asked to rate their neighborhood on seven attributes using a 5-point Likert scale from 1 (*never happens*) to 5

(*very common*). An average of the responses were calculated for each participant and the resulting numeric score served as the second independent variable.

There was one dependent variable, children's SV. This was also a numeric variable with an ordinal scale of measurement. Parents were asked to rate the extent to which they agree with eight statements regarding their child's behavior for the prior 6 months, using a 5-point Likert scale that ranges from 0 (*never*) to 4 (*very often or always*). Again, scores were obtained by calculating the responses for each participant. The data was considered unrelated because there was no association or dependency between the observations. In other words, the research used a between-groups design since none of the variables were dependent on each other with no repeated measures and no values of any variable dependent on the values of another (Martin & Brigdon, 2012).

The conclusion was that the correct statistical design for research question one was hierarchical multiple linear regression (HMLR). This provided an opportunity to test the association between multiple independent variables and a single dependent variable while minimizing potential error variance (Laerd Statistics, 2015a). This statistical test also allowed the researcher to avoid potential extraneous variance by including sociodemographic control variables (Martin & Brigdon, 2012).

Hierarchical multiple regression, which is also known as sequential multiple regression, was the best statistical test to answer this research question since it allowed me to enter control variables into the first block of the analysis (Laerd Statistics, 2015a). This test differs from standard multiple regression because it permits entering variables into the regression equation at multiple points (Laerd Statistics, 2015a). This was relevant because of the distinct advantages of this test. By entering the control variables into the

first block of the regression analysis and the primary variables of interest into the second block, I was able to determine how much of the variation in SV was explained as the independent variables were added (Laerd Statistics, 2015a). I likely obtained a more accurate interpretation of the results of the regression analysis because the influence of the independent variables was assessed after controlling for the covariates (Laerd Statistics, 2015a).

For the second research question, I conducted a confirmatory factor analysis (CFA) in IBM SPSS Statistics to obtain reliability estimates and to determine if Seward et al.'s (2018) single factor structure for the Children's Social Vulnerability Questionnaire (CSVQ) was accurate. The CSVQ is the most recent measure of children's SV. Testing it psychometrically helped me determine if its internal structure was confirmed or refuted and to determine if the pattern of loadings found by Seward et al. (2018) was consistent (Bandalos, 2018). Furthermore, Seward et al. (2018) developed the CSVQ using data from children in Australia This had important implications for this study because CFA results may vary when different populations are used to obtain the data. There is no assurance that the results will be transferrable to other populations, such as children in the U.S. (Bandalos, 2018).

Participants

The participants were parents of school-aged children in the United States, who were asked to complete an anonymous online survey. G*Power 3.1 (Faul et al., 2007) was used to calculate the minimum recommended sample size with the parameters for an *F* test for multiple linear regression with a medium effect size = 0.15, α error probability of .05, power (1 – β error probability) = 0.95, and a total of six predictor variables (e.g.,

five categories for the type of school and average Quality of Neighborhood scores). The option of R^2 deviation from zero was chosen. This indicated that, according to the alternative hypothesis, if $R^2 > 0$, then some of the variance in CSVQ scores was explained by the predictor variableless (Faul et al., 2009). The result was that a minimum sample size of $n = 146$ was required to reach actual power of 0.9508, with a critical $F = 2.1644$.

Study Procedures

After obtaining approval to conduct the study from Liberty University's Institutional Review Board (IRB), I used a non-probabilistic snowball sampling method to recruit participants through social media and email. I posted the invitation to participate on my personal social media accounts and on group sites with members of my target audience (i.e., parents of school-aged children in the U.S.). I embedded a URL/hyperlink in the invitation that led directly to the online survey, along with a brief description of who was qualified, and a request for recipients to forward it to other potential respondents. Embedding a forwarding request in recruiting materials (i.e., using snowball sampling) can increase recruiting momentum and may help facilitate the process of achieving the required sample size (Parker et al., 2019; Trochim et al., 2016).

Potential participants were directed to the survey that was hosted on the online platform Survey Monkey. After clicking on the link to the survey, they were presented with the statement of informed consent and given the choice to agree or disagree. Those who agreed were then directed to the qualification questions (e.g., if they are currently at least 18 years old, living in the United States, and the parent of at least one school-aged child or adolescent). Those who qualified proceeded to the main survey. Those who did not agree to the statement of informed consent and/or did not qualify were thanked for

their time. The survey remained open until the minimum required sample size was exceeded. After verification that enough complete responses were obtained, the survey was closed, and the data were downloaded for processing in IBM SPSS Statistics.

Instrumentation and Measurement

This section presents the questionnaire and each measure that were used in the study, including their content and purpose. Relevant aspects about the reliability and the validity of the scales are also discussed. Each instrument used for the study is included as an Appendix (See Appendix D and Appendix E). All data were self-reported through the online survey.

Children's Social Vulnerability Questionnaire

For the dependent variable, I collected data with Seward et al.'s (2018) 8-item Children's Social Vulnerability Questionnaire (CSVQ). This scale has strong internal consistency, based on Cronbach's $\alpha = .86$, and strong test re-test reliability of $r(73) = .74$, indicating that there is relative stability of CSVQ scores over time. Seward et al. (2018) also assessed concurrent and discriminant validity of the CSVQ and reported a moderate positive correlation between SV and both internalizing symptoms ($p < .001$) and externalizing symptoms ($p < .001$), and a weak negative relationship with prosocial behavior ($p = .008$). Finally, Seward et al. (2018) reported that interrater reliability was assessed and determined to be strong since there was a strong significant relationship between the rating of teachers and parents ($p = .004$).

Using this well-validated instrument provided me with the opportunity to report mean rates of SV for the sample, to confirm or refute findings from Seward et al.'s (2018) prior study that utilized the CSVQ, and to conduct a CFA to confirm or refute the

proposed single factor structure. Ciobanu (2021) reviewed the CSVQ, to assess its adequacy in measuring children's SV along with its advantages and disadvantages. The purpose was to help ensure there is a valid instrument for assessing SV to facilitate the development of adequate support and resources for this population.

Quality of Neighborhood Instrument

For the second IV, I utilized the 7-item Quality of Neighborhood scale (LaGrange et al., 1992). Data were collected on participants' perceptions of the quality of various types of environmental features of their neighborhoods. Fong et al. (2019) confirmed that this instrument is an appropriate proxy to measure socioeconomic conditions within a neighborhood. Other strengths of this measure are that ratings of neighborhood quality reflect the inhabitants' perspective instead of being imposed artificially by outsiders and a clear definition of the construct of the quality of the neighborhood is provided (Fong et al., 2019). By using this instrument, I was able to build on several decades of prior research in developmental psychology that has shown a strong association between neighborhood and children's development (Leventhal & Dupere, 2019). Although no reliability statistics for this scale were found in the literature, I report a measure of its internal consistency as part of the results of this study.

Operationalization of Variables

Type of School

The first IV, type of school, had five categories: public, private, charter, magnet, or home-school with a nominal scale of measurement (Taie & Goldring, 2020). Dummy variables were created per the general rule of one less than the total number of categories (Laerd Statistics, 2022). Public school served as the reference category and four dummy

variables were created for the options of private, charter, magnet, or home-school.

Quality of Neighborhood

The second IV, quality of the neighborhood, was categorical, with five options. Participants were asked to rate their neighborhood on the following seven attributes using a scale from 1 (*never happens*) to 5 (*very common*): (a) rubbish/litter lying around, (b) homes and gardens in bad condition, (c) vehicular traffic, (d) noise, (e) the presence of teenagers in the street, (f) graffiti, and (g) vandalism (see Appendix E). The average of these responses was calculated for each participant. The resulting scores ranged from 1 to 5, where higher scores indicated higher quality of the neighborhood (LaGrange et al., 1992). These scores were used as the second predictor variable, along with the type of school, in the HMLR analysis.

Social Vulnerability

The third IV, social vulnerability, was continuous. Parents were asked to rate the extent to which they agreed with each of the eight CSVQ statements regarding their child's behavior for the prior 6 months, using a 5-point Likert scale that ranges from 0 (*never*) to 4 (*very often or always*). Scores were obtained by calculating total CSVQ, where higher scores indicated more risk of SV (see Appendix D).

Control Variables

I also collected data for the following set of control variables, which helped describe the obtained sample and were entered into the HMLR. Entering control variables, such as demographic factors, in a correlational study is often recommended since it can help rule out alternative explanations for the results (Becker et al., 2014). The response sets for these variables align with the prior study by Seward et al. (2018) that

was used to validate the CSVQ.

1. Child's age (exact number in years).
2. Child's gender (male or female)
3. Number of children in the household (exact number).
4. Marital status (based on four categories: married, divorced/separated, single, or widowed).
5. Family average annual income (based on five categories: $0 to $75,000, $75,000 to $150,000, $150,000+).

Data Analysis

In this section, the data analysis strategy is described including the statistical tests and the justification for the analysis strategy. The analysis was conducted in three stages. First, a preliminary analysis was performed on the raw data that was extracted from the online surveys to ensure that only complete and accurate data were used in the primary analyses. HMLR was then performed in IBM SPSS Statistics to answer the first research question, which was to determine if there is a relationship between children's type of school, the quality of their neighborhood, and SV. The third phase consisted of the CFA, which was conducted to test the underlying factor structure of the CSVQ for the seoncd research question. Details for each phase of the data analysis are discussed below.

Preliminary Analysis

After uploading the survey responses into IBM SPSS Statistics, I conducted a series of diagnostic assessments to ensure the data used to test the hypotheses was accurate and complete. The survey was set up so that all responses were required before the survey could continue or be submitted. This helped ensure that participants completed

each scale item; however, the data were also inspected to confirm there were no missing values. Participants who did not complete all scale items were eliminated. This prevented the need to reconstruct or estimate missing data points (Creswell & Creswell, 2020).

For all numeric data, descriptive statistics (e.g., the mean, variance, and range) and standardized variables (i.e., *z*-scores) were computed. The obtained *z*-scores were compared to the criterion of ±3.29 (Tabachnick & Fidell, 2007). Positive or negative values more extreme than this criterion were deemed as univariate outliers (Martin & Brigdon, 2012). I also calculated Cronbach's α to assess the reliability of each instrument. This measure is frequently utilized to assess internal consistency (i.e., reliability) for multiple-item scales with Likert questions (Laerd Statistics, 2023). Values of Cronbach's α ranges from 0 to 1 but should exceed 0.70 (Bandalos, 2018) since the higher the level of α, the greater the internal consistency for the scale (Laerd Statistics, 2023).

Primary Analysis

For the research question one, I conducted HMLR to determine if there was a relationship between the type of school, quality of neighborhood, and SV. The research model was expressed symbolically where Y(SV) was a function of X_1 (type of school) and X_2 (quality of neighborhood), with the equation $Y' = A + (B_1)(X_1) + (B_2)(X_2)$ where Y' was the predicted value of SV, A was the intercept of the regression line when each X-value is at zero, B represented the unstandardized regression coefficient for each X value, and each X was a measure of the two independent variables (Martin & Brigdon, 2012). This model also helped determine the direction of the relationships (i.e., positive or negative). Regression models that result in a positive unstandardized regression coefficient (B) describe a relationship whereby, as values of the predictor variable increase, values of the

dependent variable also increase (Field, 2018). When a negative *B* is obtained, the model describes a negative relationship.

For the variable of Type of School, the scale of measurement was nominal. This required the creation of dummy variables using the general rule of creating one less dummy variable than the number of categories (Laerd Statistics, 2022). The option of public school served as the reference category and four dummy variables were created for the options of private, charter, magnet, or home-school.

A confirmatory factor analysis was conducted for research question two. The purpose was to measure the latent (i.e., unobservable) variables in the CSVQ that are designed to measure SV (Field, 2018). This investigation of the CSVQ helped confirm if Seward et al.'s (2018) proposed single-factor structure was valid and if the instrument explains the maximum amount of common variance using the fewest amount of latent variables, also known as the explanatory constructs (Field, 2018). Data obtained from the CSVQ items on the online survey were entered into SPSS to evaluate the amount of common and unique variance found between them. The helped the researcher specify if the variance was reliably related to a single measure of SV (Field, 2018). This statistical analysis also helped determine the amount of random (i.e., error) variance. The process of extraction helped determine if the single-factor structure found using data from Australian children was consistent with the data obtained from American children.

A scree plot was created to perform a visual inspection of the results. This graphical representation of the data helped confirm the CSVQ's factor structure, as it indicated the relative importance of each of the underlying factors based on eigenvalues (Field, 2018). The point of inflection on the graph demonstrated the slope of the model

and helped determine the appropriate cut-off values for how many factors should be retained (Field, 2018). Kaiser's criterion was also used to determine how many factors should be retained, based on eigenvalues > 1 (Field, 2018). Null hypotheses were rejected for *p*-values < .05. Martin and Bridgmon (2012) recommend using this level of significance for quantitative studies because it provides a reasonable balance between the risk of Type I (α) error (i.e., incorrectly rejecting a true null hypothesis) and the risk of Type II (β) error (i.e., failing to reject a false null hypothesis).

Delimitations, Assumptions, and Limitations

Specific delimitations related to the design of this study included the selection of the target population, the sampling procedure, and the analysis. Limitations included unavoidable issues related to its design and procedure, that may have compromised the validity of the results. This study also included several assumptions, which were factors that this researcher assumed would be true regarding the data collection and other expectations that were relevant to the outcomes of the research. The delimitations, assumptions, and limitations associated with this research are discussed in detail below.

Delimitations

Delimitations included intentional boundaries or limitations set by this researcher to help ensure that the scope and focus of the study were clear and that the procedures were both feasible and manageable in the allotted time constraints and with the available resources (Creswell & Creswell, 2020). For example, there was the delimitation of the geographic area of the study. All data were collected from participants in the United States. This helped obtain permission to conduct the study from Liberty University's IRB and helped increase the external validity of the research, which is defined as the degree to

which the results may be generalized beyond the obtained sample (American Psychological Association, n.d.). An attempt was made to collect data from parents from all regions of the United States to increase the ability to generalize the findings beyond a single geographic area.

Another delimitation was that all data were conducted with parents of school-aged children. The online survey was restricted to a target population of only mothers or fathers, so that the findings apply to parents. There was another delimitation regarding the amount of time that data were collected based on the IRB approval. The number of instruments and variables in the study were additional delimitations, defined as practical constraints like budget and access to the required number of qualified participants. There are several known challenges related to the study of neighborhood factors that are seldom recognized. This supports the need for more studies in this area to help move the research in this area forward (Arcaya et al., 2016). Finally, the scope of inquiry was restricted to the specific research questions and hypotheses. Including these delimitations helped ensure that the study remained focused on its primary objectives and helped make the data collection process more manageable.

Assumptions

It was assumed that all participants had the requisite knowledge to answer the questionnaire items and that they answered all questions honestly. The quality of data could have been reduced if participants altered their responses due to factors like social desirability. Social desirability is a function of impression management, which is the extent to which participants choose responses about traits or attributes that they believe are admirable or socially valuable (American Psychological Association, n.d.). Social

desirability occurs when individuals demonstrate a bias or tendency to present themselves, so they are viewed favorably in accordance with societal norms and/or what they perceive to be the desire of the researcher as opposed to their genuine view (American Psychological Association, n.d.). Finally, it was assumed that the variables under investigation were independent of each other, the relationships were linear, the distributions were normal, and there was homoscedasticity (i.e., constant variance across levels of the entire range of the variables) with no extreme outliers or highly disproportionate data points (Laerd Statistics, 2015a). Although a type of convenience sampling method will be used, it was assumed that the sample was unbiased and representative of the target population (Creswell & Creswell, 2020).

Limitations

A major limitation of this study was related to the methodological weaknesses of the research design. The quantitative method chosen to test the first hypothesis was regression analysis. This allowed the researcher to use the data to generate a regression equation that predicts missing values. However, a limitation of this method is the potential for error variance, which decreases the accuracy of the predictors (Martin & Brigdon, 2012). Moreover, there was no random assignment of participants to any experimental conditions and no control group.

Even if a statistically significant finding was obtained, it was not possible to determine causation or direct effects of the IVs on the DV, as depicted by an A (cause) to B (outcome). There could have been extraneous variables not included in my study, or an alternative explanation for the findings (Martin & Brigdon, 2012; Trochim et al., 2016). Confounding or unincluded variables can result in biased estimates of effect sizes

(Kashner et al., 2020) and limit a study's internal validity (Rohrer, 2018).

Another possible challenge was reaching enough qualified participants. Statistical power could have been limited if an insufficient number of participants was obtained, according to the recommended minimum sample size of $n = 146$ (Jackson, 2015). Furthermore, the sampling procedure was non-probabilistic. This increased the risk that the sample was not truly representative of the population, which can limit generalizability of the results and decrease external validity (Jackson, 2015). I also acknowledged that there could have been nonresponse bias, a concern related to participants self-selecting for inclusion in the study. This can threaten internal validity if there was some unknown difference between those who chose to participate and those who did not (Trochim et al., 2016). Self-reported data can limit a measure's reliability or decrease internal validity if the participants did not answer the survey items accurately (Rohrer, 2018).

Internal Validity

Internal validity was a crucial aspect of this research design because it helped determine if it is reasonable to draw conclusions about the relationships between the variables, as indicated by the findings of the study. For this reason, an attempt was made to maximize internal validity by developing a research design without known flaws, so the findings could be interpreted as a true representation of the phenomenon (American Psychological Association, n.d.). Specific threats to internal validity include the risk that there were differences between participants' true characteristics and their scores on the dependent measure, a lack of clarity by respondents about the survey questions, or that there was alternate explanations for the findings that were not considered by the researcher (Martin & Brigdon, 2012).

External Validity

It was essential to further identify potential threats to external validity, which is the degree of confidence that the results of the study can be generalized beyond the people and situation included in the research (Altermatt, 2009). Carefully considering issues related to external validity helps decrease the occurrence of incorrect inferences that may be made on the broader population based on the sample data (Creswell & Creswell, 2020). The following potential threats to external validity were considered. It is possible that the results obtained from participants from this study are not shared with characteristics beyond members of the target population, from different settings, or from different time periods (Altermatt, 2009; Creswell & Creswell, 2020). Accordingly, the findings are limited to parents with school-aged children in the United States.

Summary

In summary, this study utilized a quasi-experimental correlational research design. For the first hypothesis, the objective was to explore the multivariate relationships between children's type of school, quality of neighborhood, and levels of SV, as reported by parents in the U.S., using HMLR. Although the results cannot be used to imply causation, the knowledge gained is crucial for helping to draw meaningful conclusions about the relationships between the variables. For the second hypothesis, CFA was used to assess the accuracy of the CSVQ's factor structure (Seward et al.).

CHAPTER 4: RESULTS

Overview

The purpose of this quantitative study was to examine the relationship between social vulnerability (SV) and the independent variables of type school and quality of neighborhood. Data collection began on January 22, 2024, after approval was granted by Liberty University's IRB. Data were collected through an online survey hosted on Survey Monkey. Data collection concluded on March 3, 2024, after the obtained sample size exceeded the minimum requirement (n = 146) according to the a priori G*Power analysis (Faul et al., 2007; 2009). The statistical tests were conducted in IBM SPSS Statistics (version 28). For the first research question, HMLR was performed using SV averages obtained through Seward et al.'s (2018) Children's Social Vulnerability Questionnaire (CSVQ). For the second research question, a CFA was conducted to assess the internal structure of the CSVQ.

The specific research questions and hypotheses were:

RQ1: Is there a relationship between the type of school and the quality of the neighborhood on social vulnerability for children and adolescents?

RQ2: Is the single-factor solution of the Children's Social Vulnerability Questionnaire accurate?

Hypothesis 1: There is a relationship between the type of school and the quality of the neighborhood on social vulnerability for children and adolescents.

Hypothesis 2: The single-factor solution of the Children's Social Vulnerability Questionnaire is accurate.

Study Findings

Preliminary Analysis

The analytic process began by extracting the individual data from Survey Monkey into an Excel spreadsheet. The survey was set up so parents could enter data for $1 \leq 6$ children. The obtained sample was $n = 185$ parents, who provided usable data for $n = 315$ children. Most parents provided data for 2 children and reported that this was the total number of children living in their household at least 50% of the time (see Table 1).

Table 1

Total Children and Number of Children in Household

Position	Min	Max	*M*	Median	Mode	*SD*
Total number of children	1	6	2.24	2.00	2	1.35
Number of children in household	1	8	2.15	2.00	2	1.04

The data were next screened for univariate outliers by creating *z*-scores for both instruments and assessing them against the criterion of ± 3.29 (Martin & Brigdon, 2012; Tabachnick & Fidell, 2007). For the CSVQ, *z*-scores ranged from $-2.71 < z < 2.61$. For the QoN, *z*-scores ranged from $-2.32 < z < 1.95$. No extreme outliers were detected or removed from the dataset. Next, Cronbach's α was calculated for these two multiple-item instruments. Internal reliability for both measures was high, based on Nunally's (1978) standard of $\alpha \leq .70$. Alpha values close to 1, such as those for the CSVQ ($\alpha = .947$) and the QoN ($\alpha = .944$) are considered very strong (Bandalos, 2018). Additional results and descriptive statistics for each scale and for all scale items are presented in Table 2.

Table 2

Scale Statistics

Scale/Subscale	*M*	*SD*
CSVQ (α = .947)	16.32	6.02
1. Can be persuaded	1.86	0.71
2. Falls for a trick	1.98	0.82
3. Believes things/unbelievable	2.08	0.94
4. Unaware when kids are mean	2.07	0.95
5. Can be tricked	2.07	0.90
6. Does things/gullible	2.07	0.91
7. Believes someone/lied	2.17	0.93
8. Is easily fooled	2.03	0.87
Quality of Neighborhood (α = .944)	15.23	6.56
1. Rubbish/litter laying around	2.00	1.02
2. Homes and gardens in bad condition	2.13	1.11
3. Vehicular traffic	2.34	1.12
4. Noise	2.27	0.97
5. Teenagers present in street	2.27	1.07
6. Graffiti	2.20	1.17
7. Vandalism	2.02	1.10

Descriptive Results

Most of the 315 children in this study were 14 years old (*M* = 13.59, *SD* = 3.53). The youngest child was 4 years old and the oldest was 18. A majority (*n* = 188, 59.7%) were male, 122 were female (38.7%), 4 (1.3%) were reported as "other," and 1 parent (0.3%) chose not to answer the question. The most frequent household income level was $0-$75,000 (*n* = 134, 42.4%), followed by $75,000-$150,000 (*n* = 109, 34.5%) and $150,000 or greater (*n* = 61, 19.3%). Only 4 parents (3.8%) preferred not to answer. Most parents were married (*n* = 187, 59.2%). Eighty-four (26.6%) were divorced or separated, 27 (8.5%) were single, 13 (4.1%) were widowed, and 5 (1.6%) preferred not to answer.

Primary Analysis

Research Question One

The first research question was, Is there a relationship between type of school and quality of neighborhood on social vulnerability for children and adolescents? The control variables of child's gender, household income, parents' marital status, child's age, and number of children in the household were entered into the first block of the HMLR. The dummy variables for school types and total QoN scores were entered in the second block. See Table 3 for descriptive statistics for all predictor variables in the regression analysis.

Table 3

Descriptive Statistics

	M	*SD*
CSVQ Total Score	2.09	0.68
Gender=1.0 (boy)	0.60	0.49
Gender=2.0 (girl)	0.38	0.49
Income=1.0 ($0-$75,000)	0.45	0.50
Income=2.0 ($75,000-$150,000)	0.33	0.47
Income=3.0 (≥ $150,000)	0.18	0.39
Marital=1.0 (married)	0.57	0.50
Marital=2.0 (divorced/separated)	0.28	0.45
Marital=3.0 (single)	0.09	0.28
Marital=4.0 (widowed)	0.04	0.21
Child's Age	13.98	3.16
Number of children in the household	2.15	1.05
School=1.0 (public)	0.58	0.49
School=2.0 (private)	0.21	0.41
School=3.0 (charter)	0.11	0.32
School=4.0 (magnet)	0.06	0.25
School=5.0 (home)	0.03	0.18
Quality of Neighborhood Total Scores	2.28	0.87

The null hypothesis was rejected. The full model (the primary variables of interest and control variables) was statistically significant, $F(16, 277) = 30.391$, $p < .001$; adj. $R^2 = .616$. See Table 4 for details on each regression model.

Table 4

Regression Models for Research Question One

Model		Sum of Squares	df	Mean Square	F	Sig.
1 [a]	Regression	50.596	11	4.600	15.520	<.001[b]
	Residual	83.574	282	.296		
	Total	134.169	293			
2 [a]	Regression	85.476	16	5.342	30.391	<.001[c]
	Residual	48.693	277	.176		
	Total	134.169	293			

a. Dependent Variable: CSVQ scores

b. Predictors: (Constant), Number of children in the household, Income=2.0, Child's Age, Marital=4.0, Gender=2.0, Marital=3.0, Marital=2, Income=3.0, Income=1.0, Gender=1.0, Marital=1.0

c. Predictors: (Constant), Number of children in the household, Income=2.0, Child's Age, Marital=4.0, Gender=2.0, Marital=3.0, Marital=2, Income=3.0, Income=1.0, Gender=1.0, Marital=1.0, School=4.0, School=3.0, School=5.0, School=2.0, Quality of Neighborhood Total Scores

The addition of type of school and QoN scores (Model 2) led to an increase in R^2 over Model 1 (control variables) of .263. This indicates that approximately 26.3% more of the total variance in CSVQ scores was explained by the primary variables of interest, over the control variables alone, as seen in Table 5.

Table 5

Model Summary for RQ1

Model	R	R^2	Adj.R^2	Std. Error	R^2 change	F-change	df1	df2	Durbin-Watson
1	.614[a]	.377	.353	.544	.377	15.520	11	282	
2	.798[b]	.637	.616	.419	.260	39.685	5	277	1.563

a. Predictors: (Constant), Number of children in the household, Income=2.0, Child's Age, Marital=4.0, Gender=2.0, Marital=3.0, Marital=2.0, Income=3.0, Income=1.0, Gender=1.0, Marital=1.0

b. Predictors: (Constant), Number of children in the household, Income=2.0, Child's Age, Marital=4.0, Gender=2.0, Marital=3.0, Marital=2.0, Income=3.0, Income=1.0, Gender=1.0, Marital=1.0, School=4.0, School=3.0, School=5.0, School=2.0, Quality of Neighborhood Total Scores

c. Dependent Variable: CSVQ Total Score

Quality of Neighborhood was a significant predictor of CSVQ ($p < .001$). For every 1-unit increase in QoN, the expected increase in CSVQ is .542, which represents approximately a one-half point increase in SV (on a scale of 1-8). However, the type of school was not a significant predictor of CSVQ for any condition with significance levels ranging from $p = .439$ (for private schools) to $p = .670$ (for charter schools), which exceeded the criterion of $\alpha = .05$. The statistically significant control variables were income, marital status, and child's age. Increases in all income levels were associated with increases in CSVQ scores ($p < .001$). For household income of $0-75,000, the expected increase was 1.718, while for the middle-income bracket ($75-150,00) the expected increase was 1.473. For households with the highest incomes (≥ $150,000), the expected increase was 1.238. Thus, while the coefficients for all income brackets were positive, the coefficient values decreased slightly as income levels rose.

For the control variable of marital status, each coefficient was negative. The smallest coefficient was for widowed parents (-.939, $p = .008$), followed by divorced or separated parents (-1.166 $p < .001$) and single parents (-1.210 $p < .001$). The largest coefficient was for married parents, with an expected decrease in SV of -1.248 ($p < .001$). For every 1-year increase in a child's age, SV is expected to increase by .072 ($p < .001$). The coefficients for gender and number of children in the household were not significant ($p > .05$), as seen in Table 6.

Table 6

Coefficients for RQ1

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.810	.382		2.122	.035		
	Gender=1.0	-.064	.258	-.046	-.248	.804	.063	15.857
	Gender=2.0	-.021	.257	-.015	-.082	.935	.065	15.500
	Income=1.0	1.719	.203	1.265	8.455	<.001	.099	10.127
	Income=2.0	1.473	.206	1.028	7.147	<.001	.107	9.360
	Income=3.0	1.238	.213	.710	5.821	<.001	.149	6.732
	Marital=1.0	-1.248	.324	-.913	-3.857	<.001	.039	25.379
	Marital=2.0	-1.166	.326	-.771	-3.582	<.001	.048	20.996
	Marital=3.0	-1.210	.344	-.508	-3.512	<.001	.105	9.487
	Marital=4.0	-.939	.353	-.286	-2.660	.008	.191	5.224
	Child's Age	.072	.011	.335	6.782	<.001	.905	1.105
	Number of children in the household	.012	.035	.019	.355	.723	.771	1.298
2	(Constant)	.787	.298		2.638	.009		
	Gender=1.0	-.125	.200	-.090	-.624	.533	.063	15.992
	Gender=2.0	-.114	.201	-.082	-.566	.572	.063	15.934
	Income=1.0	.531	.180	.391	2.957	.003	.075	13.321
	Income=2.0	.531	.177	.370	2.999	.003	.086	11.644
	Income=3.0	.621	.175	.356	3.552	<.001	.131	7.651
	Marital=1.0	-.713	.256	-.522	-2.780	.006	.037	26.865
	Marital=2.0	-.717	.256	-.474	-2.800	.005	.046	21.912
	Marital=3.0	-.758	.271	-.318	-2.792	.006	.101	9.928
	Marital=4.0	-.590	.276	-.179	-2.136	.034	.186	5.387
	Child's Age	.026	.009	.123	2.847	.005	.697	1.435
	Number of children in the household	-.002	.027	-.002	-.057	.955	.751	1.332
	School=2.0	-.060	.078	-.037	-.776	.439	.591	1.692
	School=3.0	.037	.087	.017	.426	.670	.791	1.264
	School=4.0	.095	.110	.035	.864	.388	.814	1.229
	School=5.0	-.075	.152	-.020	-.493	.622	.792	1.262
	Quality of Neighborhood Total Scores	.542	.040	.694	13.439	<.001	.491	2.035

a. Dependent Variable: CSVQ Total Score

To further explore the relationship between QoN and SV, an additional regression was conducted in SPSS by entering the average for each of the 7 neighborhood attributes as predictors of total CSVQ. Again, the regression model was significant, $F(7, 311) = 49.201$, $p < .001$, $R^2 = .525$. Approximately 52.5% of the total variance in CSVQ scores was explained by the seven predictors alone; however, examining individual coefficient values revealed only significant four predictors: vehicular traffic ($p = .020$), teenagers present in the street ($p = .019$), graffiti ($p = .010$), and vandalism ($p = .005$).

Interestingly, each of the significant predictors were positive, indicating that higher frequencies of these attributes are associated with higher SV. The other three QoN items were not significant, based on rubbish/litter laying around (p = .435), homes and gardens in bad condition (p = .592), and noise (p = .828). Although some correlation was observed between the seven neighborhood factors, the collinearity statistics (i.e., tolerance and VIF values) were within acceptable levels (see in Table 7).

Table 7

Individual Quality of Neighborhood Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.836	.081		10.343	<.001					
	QoN-1 Rubbish/litter laying around	.044	.056	.059	.782	.435	.618	.044	.031	.264	3.785
	QoN-2 Homes and gardens in bad condition	.028	.053	.042	.536	.592	.622	.030	.021	.251	3.981
	QoN-3 Velicular traffic	.093	.039	.138	2.345	.020	.562	.132	.092	.438	2.283
	QoN-4 Noise	-.012	.055	-.015	-.218	.828	.591	-.012	-.008	.311	3.219
	QoN-5 Teenagers present in street	.104	.044	.149	2.352	.019	.597	.132	.092	.379	2.641
	QoN-6 Graffitti	.142	.055	.220	2.589	.010	.680	.145	.101	.211	4.730
	QoN-7 Vandalism	.157	.056	.230	2.820	.005	.674	.158	.110	.229	4.360

a. Dependent Variable: CSVQ Total Score

Research Question Two

For the second research question, reject the null hypothesis. The CFA confirmed that Seward et al.'s (2018) single-factor solution for the 8-item CSVQ was accurate. The Kaiser-Meyer-Olkin measure of sampling adequacy was .942 and closely approximated Seward et al.'s (2018) original finding of .93. Bartlett's test of sphericity was significant, $X^2(28) = 2205.456$, $p < .001$. Again, this closely approximates the original finding of $X^2(55) = 1827.78$, $p < .001$ (Seward et al., 2018). According to the correlation matrix, all variables had ≥ 1 correlation coefficient that was > 0.3, as seen in Table 8.

Table 8

Correlation Matrix for RQ2

	CSVQ-1 Can be persuaded into things	CSVQ-2 Falls for a trick when previously tricked	CSVQ-3 Believes things that are unbelieveable	CSVQ-4 Unaware when kids are mean	CSVQ-5 Can be tricked - others laugh	CSVQ-6 Does things described as "guillible"	CSVQ-7 Believes someone that has lied	CSVQ-8 Is easily fooled
CSVQ-1 Can be persuaded into things	1.000	.676	.602	.523	.623	.547	.582	.587
CSVQ-2 Falls for a trick when previously tricked	.676	1.000	.700	.623	.735	.700	.693	.743
CSVQ-3 Believes things that are unbelieveable	.602	.700	1.000	.709	.704	.675	.693	.686
CSVQ-4 Unaware when kids are mean	.523	.623	.709	1.000	.748	.726	.687	.690
CSVQ-5 Can be tricked - others laugh	.623	.735	.704	.748	1.000	.801	.737	.765
CSVQ-6 Does things described as "guillible"	.547	.700	.675	.726	.801	1.000	.762	.813
CSVQ-7 Believes someone that has lied	.582	.693	.693	.687	.737	.762	1.000	.767
CSVQ-8 Is easily fooled	.587	.743	.686	.690	.765	.813	.767	1.000

The eigenvalue-one criterion (Kaiser, 1960) was used to determine how many components of the CSVQ should be retained, which is the default in SPSS (Laerd Statistics, 2015b). Eigenvalues < 1 represent components that should not be retained due to low variance. The next eigenvalue (as seen in Table 9) was .574, well below the cutoff.

Table 9

Total Variance Explained for RQ2

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.840	73.002	73.002	5.840	73.002	73.002
2	.574	7.170	80.172			
3	.393	4.918	85.089			
4	.313	3.915	89.004			
5	.282	3.519	92.523			
6	.221	2.768	95.291			
7	.210	2.628	97.919			
8	.166	2.081	100.000			

Extraction Method: Principal Component Analysis.

The communalities are presented in Table 10. The values represent the proportion of variance in the CSVQ that is accounted for by each variable in the analysis. Only one factor was extracted, which confirms Seward et al.'s (2018) one-factor solution.

Table 10

Communalities for RQ2

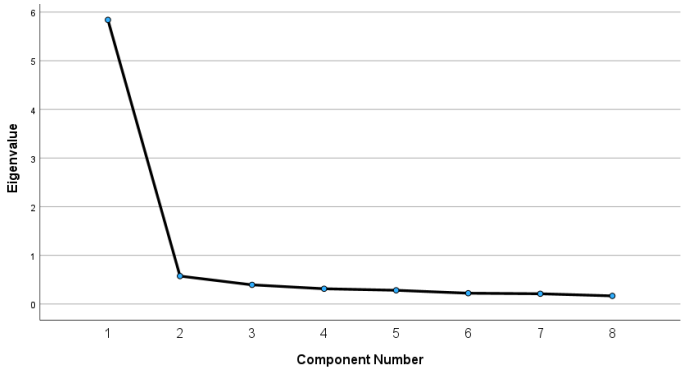
	Initial	Extraction
CSVQ-1 Can be persuaded into things	1.000	.553
CSVQ-2 Falls for a trick when previously tricked	1.000	.738
CSVQ-3 Believes things that are unbelieveable	1.000	.712
CSVQ-4 Unaware when kids are mean	1.000	.699
CSVQ-5 Can be tricked - others laugh	1.000	.806
CSVQ-6 Does things described as "guillible"	1.000	.785
CSVQ-7 Believes someone that has lied	1.000	.755
CSVQ-8 Is easily fooled	1.000	.791

Extraction Method: Principal Component Analysis.

The scree plot further confirmed the one-factor solution, as observed through the inflection point after 1.0 (Field, 2018).

Figure 1

Scree Plot for RQ2



Summary

For research question one, the null hypothesis was rejected due to a significant relationship found between Quality of Neighborhood scores and CSVQ scores. Four of the seven neighborhood attributes were predictive of SV (e.g., vehicular traffic, teenagers present in the street, graffiti, and vandalism) while three were not (e.g., rubbish/litter laying around, homes and gardens in bad condition, and noise). Children's type of school was not significantly correlated with SV. Adding the primary variables of interest (Model 2) to the control variables (Model 1) increased R^2 by 26.3% such that the full model explained approximately 64% of the total variance in CSVQ. Of the control variables, only household income, parents' marital status, and child's age were significant. The variables of child's gender and the number of children living in the household were not.

For research question two, Seward et al.'s (2018) single-factor solution for the 8-item CSVQ was confirmed as accurate. Only one factor was extracted. The Kaiser-Meyer-Olkin measure of sampling adequacy was high and approximated Seward et al.'s (2018) earlier findings. Also, Bartlett's test of sphericity was significant. This indicates that the variables were suitable for the factor analysis and appear to be highly correlated based on the values observed in the correlation matrix (Laerd Statistics, 2015b). The results of these analyses should be considered valid. According to the values of Cronbach's index, the CSVQ and the Quality of Neighborhood Index demonstrate strong internal consistency. The implications of these findings are discussed in the next chapter.

CHAPTER 5: DISCUSSION

Overview

The purpose of this quantitative study was to explore the relationship between children's and adolescents' social vulnerability (SV), type of school, and quality of neighborhood and to use confirmatory factor analysis to assess the internal structure and reliability of Seward et al.'s (2018) CSVQ. The first research question was, Is there a relationship between the type of school and the quality of the neighborhood on SV for children and adolescents? It was hypothesized that there is a relationship between these factors. The second research question was, Is the single-factor solution of the CSVQ accurate? It was hypothesized that the single-factor solution was accurate. This chapter includes a discussion of the results in relation to these research questions. The findings are further discussed in relation to the extant literature presented in Chapter 2, along with the implications of the findings, and the strengths and limitations of the study. This chapter concludes with recommendations for further research to build on the findings.

Summary of Findings

Data for this research were collected through an online survey hosted on Survey Monkey for approximately six weeks (from January 22 through March 3, 2024). As part of the invitation to participate, parents were notified they could enter data for up to 6 children if they were living in the household for at least 50% of the time. Most parents provided data for 2 children and reported that a total of 2 children live in their household.

The correct statistical test for research question one was HMLR. The first regression model which was comprised of the control variables (e.g., child's gender and age, number of children in the household, parents' marital status, and household income)

as predictors of CSVQ scores was significant. Approximately 38% of the total variance in CSVQ scores was explained ($p < .001$, $R^2 = .377$). However, of these variables, the only positive predictor was children's age. Total household income and parents' marital statuses (all levels of each variable) were significant negative predictors of SV.

For the second regression model, the five categories for type of school and total QoN scores were added. This model was also significant ($p < .001$, $R^2 = .637$), with an increase in R^2 of .263. Thus, approximately 26.3% more of the total variance in CSVQ scores was explained by adding the primary variables of interest, as compared to the control variables alone. The total amount of variance explained by Model 2 was 64%. QoN significantly predicted CSVQ ($p < .001$) such that for every 1-unit increase in total QoN, CSVQ scores are expected to increase by .542. No school type predicted CSVQ based on significance levels ranging from $p = .439$ (private schools) to $p = .670$ (charter schools). To add detail to the analysis, the regression was conducted again to explore the influence of each individual neighborhood characteristic. Four of the seven were significant and positive. For example, as levels of vehicular traffic, teenagers present in the street, graffiti, and vandalism increase, CSVQ scores are also expected to increase. The three non-significant attributes were rubbish/litter laying around, homes and gardens in bad condition, and noise ($p > .05$).

For the second research question, the correct test was CFA and again the null hypothesis was rejected. Seward et al.'s (2018) single-factor solution for the 8-item CSVQ was confirmed based on a Kaiser-Meyer-Olkin measure of sampling adequacy of .942, which was nearly identical to Seward et al.'s (2018) finding of .93. Also, Bartlett's test of sphericity was significant ($p < .001$) which again approximated Seward et al.'s

(2018) findings and within the correlation matrix, all variables had ≥ 1 correlation coefficient > 0.3. Finally, the eigenvalue-one criterion, scree plot, and proportion of variance in the communalities table verified that only one component should be retained.

Discussion of Findings

The problem addressed by this study was children's and adolescents' SV. It was hypothesized that type of school and quality of neighborhood were related to SV. This construct has emerged as a critical factor in developmental psychology since it increases children's susceptibility for various types of psychopathologies, including anxiety and depression or other negative outcomes such as poverty, abuse, neglect, homelessness, or living in environments with limited access to resources and support later in adulthood (Turner et al., 2010). Efficacious prevention strategies and/or interventions are therefore needed to mitigate against it (Parritz & Troy, 2018).

A strength of this study was the large sample size (n = 315), which exceeded the minimum (n = 146) that was recommended by the a priori G*Power analysis (Faul et al., 2007; 2009). The regression model for research question one was significant ($p < .001$) and Seward et al.'s (2018) one-factor solution for the CSVQ was validated. Therefore, both null hypotheses were rejected. No type of school had a significance level < .05, but the findings did confirm that for each 1-unit increase in overall QoN scores, the expected increase in CSVQ was .542. This amount is not trivial, given that the range of possible CSVQ scores is 1 through 8. An increase of .542 therefore signifies that for each 1-point increase in QoN, CSVQ increases by nearly 7%.

Further analysis revealed that four of the seven neighborhood attributes were significant positive predictors of CSVQ. Parents who reported greater vehicular traffic,

teenagers present in the street, graffiti, and vandalism had children with higher CSVQ scores. In contrast, rubbish/litter laying around, homes and gardens in bad condition, and noise did not appear to be related to SV. This implies that some, but not all, aspects of neighborhood quality have a negative relationship with SV. A possible theme that distinguishes these two groups of attributes is direct danger versus environmental nuisance. It is notable that all four of the significant predictors of SV (e.g., traffic, roaming teenagers, graffiti, and vandalism) are likely more menacing, and possibly more threatening, than characteristics that could be considered as less threatening (e.g., sloppy exteriors and excess noise).

The results of this study further confirm prior research which has consistently demonstrated how environmental factors like attributes of one's neighborhood are correlated with mental health (Cano-Hila, 2022; Miller et al., 2019; Oliveira et al., 2020; Rollings et al., 2015). Thus, a strength of this study was contributing to psychological science with knowledge about how some life conditions, such as adverse neighborhood conditions, are related to children's mental health. Negative community features impose stress on both families and individuals, at least partly because they hinder the formation of social bonds (Cutrona et al., 2006; de Souza et al., 2019).

In contrast, none of the five types of school (e.g., pubic, private, magnet, charter, or home school) was a significant predictor of CSVQ. No comparable study on these variables (as related to SV) was found in the extant literature, but the lack of evidence about this relationship (if one exists) could be due to unaccounted for variables such as family characteristics or dynamics, parental involvement, access to services, or other community factors. Individual characteristics of the children could have also played a

role in these findings along with measurement challenges. Psychological constructs like SV are complex and somewhat subjective. Thus, true relationships can be obscured even when using a well-validated instrument (Bandalos, 2018).

Five control variables were entered into the first model of the regression analysis. Of these, two were significant positive predictors of CSVQ (e.g., total household income and child's age). One was a negative predictor (parents' marital status). Notably, the regression coefficients for all levels of income were positive while all levels of marital status were negative. Gender and the total number of children in the household were not significant predictors of SV. Some possible explanations for these findings are as follows.

First, even though households with higher incomes are likely to have greater access to resources, this does not necessarily translate to better psychological outcomes for children. It is possible that some parents have available resources but do not allocate them effectively. This could be due to prioritizing personal or material possessions over investments in their children's well-being such as education, healthcare, or emotional support (Turbeville et al., 2019). It is also possible that parents with higher incomes face higher costs of living and/or experience stress associated with trying to maintain their socioeconomic status. This type of stress could inadvertently reduce the quality of parenting and family relationships and contribute to higher SV. Yet, this is contrary to most research that greater household income decreases parental stress (Cheung & Wong, 2020) and is a "protective factor for children's emotional health" (Herrmann et al., 2018). Children's SV may also be related to other psychosocial factors that were not included as variables in this study, such as family dynamics, parental mental health, or community support systems.

The positive relationship that was detected in this study between CSVQ scores and children's age could be explained in relation to developmental transitions. The average age for children was approximately 14 years old; therefore, most were adolescents. As children transition to adolescence, they become more autonomous and independent, as they learn how to navigate new challenges and experience changes with peer relationships, identity formation, and increased conflict with parental figures. Yet, they still require adequate guidance and supervision (Delgado et al., 2022; Yacub et al., 2022). Older children also tend to spend less time at home, which leads to more novel outside social interactions and greater pressures from external environments, including academic stress, bullying and/or social exclusion, delinquency, or exposure to substance abuse. This can add to feelings of vulnerability especially for children who lack supportive relationships or coping strategies (Walsh, 2021).

Significant negative relationships were observed between CSVQ and all levels of parents' marital status (e.g., married, divorced/separated, single, or widowed), but the range of the regression coefficients across categories was small (-.939 to 1.248). This may illustrate a case of statistical significance without practical significance. All marital statuses were negative predictors of SV, but no useful knowledge was gained about the impact of potential differences between them. This differs from decades of research, which has shown that children from intact families experience more stable and supportive family environments and have greater psychological health (Pribesh et al., 2020).

The reasons for this finding are not clear, but one possibility is that the parents who self-selected for this survey share the trait of high interest in their child's well-being despite their marital status. This group of parents could be more inclined to provide their

children with emotional security, consistent caregiving, and a sense of belonging, which can buffer against social vulnerability (Bunge, 2008; Oliver & Oliver, 2022). They may also act as more positive role models of healthy relationships and conflict resolution skills or make greater use of supportive social networks and resources. This would indicate the presence of non-response or selection bias in this study, which was noted as a potential limitation. Self-selection bias can create difficulty in isolating or differentiating between the relationships among variables or in detecting pre-existing individual or family differences (Jackson, 2015).

Theoretical and Biblical Foundations of the Study

Bronfenbrenner's bioecological theory provided a conceptual framework for the psychological constructs that were explored in this study. However, this theory can also be used to explain spiritual development across the lifespan due to its emphasis on a "process-person-context-time model" (Gale et al., 2023, p. 362). The most prominent and applicable factors from Bronfenbrenner's theory that apply to this study were process (as in family functioning), person (as in individual characteristics such as age, gender, and experience), and context (as in community and environment). Each of these factors is known to help shape relational outcomes (Gale et al., 2023).

An assumption of this study was that incorporating a Christian worldview would strengthen it utility. Psychological research is more effective when biblical principles are incorporated into the theoretical framework and how the findings are interpreted. Most scholars with a Christian worldview share a core set of foundational beliefs and perceptions about science (Bufford & Sisemore, 2014). Using Scripture to reinforce biblical principles throughout this study should help promote its aim of increasing the

well-being of children by reducing social vulnerability and encouraging pro-social values (Van Cappellen, 2017).

The biblical perspective was based on the book of Ephesians from the New Testament, which is a letter by Paul, a disciple of Christ. Ephesians is unique for its "theological depth and clarity" (Crouse, 2023, p. 52). This is seen in Ephesians 6:1-4, which provides parenting edicts on the importance of modelling righteous behavior and love (Sear, 2017). Parents must embrace their role as authority figures in the home. They are bestowed with the power to raise emotionally healthy children (Sear, 2017). Building a well-ordered household contributes to a well-ordered society consistent with a Christian worldview (Sear, 2017).

In Ephesians 6:4, Paul specifically informs parents how to nurture children using Christian values. He advises them to utilize discipline and to rely on instruction from the Lord in cultivating an environment of love, kindness, and honesty. Children who receive spiritual guidance, by parents who accept their biblical obligation to serve as positive role models, are less likely to be socially vulnerable. Children learn by example and parents must exhibit qualities like patience, humility, integrity, and compassion. This is aligned with the teachings of Jesus Christ and the Bible (Campbell, 2023). Paul also encourages parents to recognize that each child has unique needs and challenges (Ephesians 6:4). In order to grow into healthy adults, children require discipline and appropriate boundaries (Ephesians 6:4).

Using a Christian worldview to guide this study also acknowledges that God is actively involved everywhere, in everything in the world whether it is observable or not, which is clearly a deviation from most psychological research (Torrance, 2017). Thus,

references to God have not been avoided; rather, the intention was to design a study that could deliver intelligible empirical results while acknowledging ultimate truths about the natural world without "methodological atheism" (Torrance, 2017, p. 692). Incorporating a biblical perspective into the design helped avoid the problem of using a theory that is incompatible with Christianity. This adds tension to the relationship between Christianity and science because it disregards God's role in intellectual discourse (Torrance, 2017).

Implications

This study adds the socio-demographic factor of quality of neighborhood to the list of variables that is related to children's emotional competency and developmental trajectory (Bunge, 2008; Gomes & Martinho, 2021; Meadows et al., 2021; Oliver & Oliver, 2022). Communication has a central role in all aspects of human life and social interaction skills are an inherent part of building bonds with others (Yacub et al., 2022). Emotionally healthy children are more likely to understand effective and respectful ways of interacting, in accordance with Biblical principles (Tubagus & Sarono, 2021).

The results from this study also carry implications for clinical practitioners, including during the diagnostic process, to provide a better understanding of how neighborhood attributes are correlated with SV. Prior research has demonstrated that there is a strong relationship between SV, victimization, and mental health problems in childhood (Turner et al., 2010). Children with SV are at greater risk of developing depression and anxiety or post-traumatic stress disorder (PTSD) due to the concurrence of chronic stress or trauma that accompany poverty, neglect, extreme maltreatment (e.g., violence or abuse) and insufficient social support (Crouch et al., 2021).

Children high in SV may also demonstrate externalized behavioral disorders,

including rule-breaking, defiance, aggression, conduct disorder, or oppositional defiant disorder at home, at school, or within the community. This explains how familial factors may intersect with children's mental and behavioral outcomes (Bush et al., 2022). Experiences like inconsistent caregiving, neglect, and social isolation not only contribute to attachment disorders in children but are also often associated with SV (Brown et al., 2020). This applies to all children, whether they are neurotypical or not since SV is related to all facets of social interactions (Ridley et al., 2020; Seward et al., 2019).

Research shows that socially vulnerable children may also have a higher risk of developing an eating or substance use disorder or to exhibit suicidal ideation or self-harm behaviors due to a combination of environmental stressors and/or overly strong negative peer influences coupled with dysfunctional coping mechanisms that lead to hopelessness or helplessness (Hysing et al., 2022; Van Ryzin & Dishion, 2022). The findings from this study confirm that to fully understand the phenomenon of children’s SV requires an assessment of environmental factors like neighborhood (Van Ryzin & Dishion, 2022).

Limitations

The results of this study are limited to school-aged children in the U.S. This geographic boundary was set to minimize the scope and focus of the study, to make it more feasible within the available resources and allotted time constraints, and to potentially boost external validity (American Psychological Association, n.d.; Creswell & Creswell, 2020). Although a non-probability sampling procedure was used, I attempted to recruit from all regions of the U.S. to broadly reach the target population. Finally, the scope of inquiry was restricted to the specific research questions and hypotheses. Including these delimitations helped ensure that the study remained focused on its

primary objectives and helped make the data collection process more manageable.

There was a limitation due to a methodological weakness of the research design. Regression analysis allowed me to generate an equation to predict missing values but there is a potential for error variance which could decrease the equation's accuracy (Kashner et al., 2020; Martin & Brigdon, 2012) or limit internal validity (Rohrer, 2018). Significant findings were observed but no causal determination is possible. Extraneous variables could have had an unknown impact (Martin & Brigdon, 2012; Trochim et al., 2016). The non-probabilistic sampling method could have resulted in a non-representative sample (Jackson, 2015).

This researcher assumed that all participants had the requisite knowledge to answer the questionnaire items and that they answered all questions honestly. The quality of data may be reduced when participants alter their responses due to factors like social desirability, which is a function of impression management. Participants' responses to survey questions can change for questions about traits or attributes they believe are admirable or consider to be socially valuable (Rohrer, 2018; Trochim et al., 2016). This can lead to a bias or tendency to present themselves, so they are viewed favorably, in accordance with either societal norms and/or what they perceive to be the desire of the researcher as opposed to their genuine view (American Psychological Association, n.d.).

Other assumptions common to correlational research include that statistically significant relationships that are detected between IVs and a DV are accurate and that changes in the DV are related to changes in the IVs. It was assumed that the variables under investigation were independent of each other, the relationships were linear and proportional, the distributions were normal, and there was constant variance across levels

of the entire range of the variables, with no extreme outliers or highly influential data points (Laerd Statistics, 2015a). Although a type of convenience sampling method was used, it was assumed that the sample was unbiased and representative of the target population (Creswell & Creswell, 2020).

The age range used to determine eligibility for the children included in this research was 4-18 years old, and data were obtained for children across this range. However, as seen in Table 11, the average age was 13.59 years old, and the median was 14 years old. Moreover, the values for skewness (-.820) and kurtosis (-.037) deviated from 0 and approached -1. This indicates that the shape of the distribution was not symmetrical (see Figure 2). Given that moderate levels of negative skewness and kurtosis were observed, this distribution was somewhat platykurtic, with a lighter left tail and somewhat flat peak (Martin & Brigdon, 2012). In large sample sizes, this can reduce the generalizability of the results to other populations, settings, or times (Johnson & Silverman, 2017).

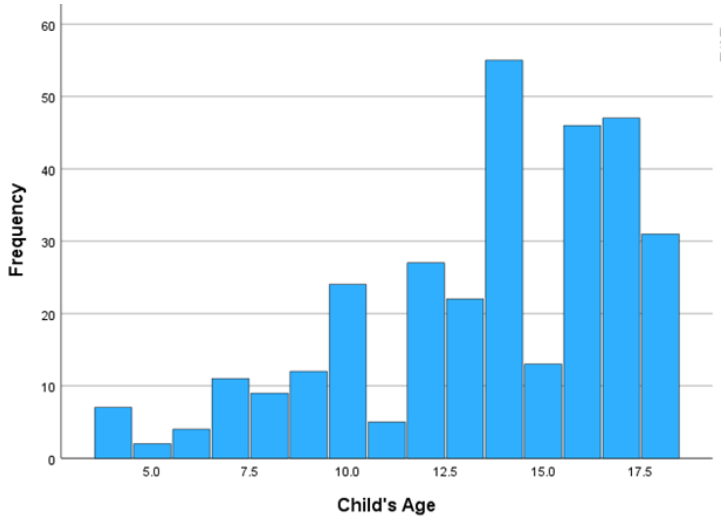
Table 11

Descriptive Statistics for Children's Age

Age	Statistic
Mean	13.59
Median	14.00
Mode	14
Std. Deviation	3.526
Skewness	-.820
Std. Error of Skewness	.137
Kurtosis	-.037
Std. Error of Kurtosis	.274
Minimum	4
Maximum	18

Figure 2

Distribution of Children's Age



Other factors that could potentially limit the validity of this study's findings are related to the demographic variables including gender, household income, and parents' marital status. Approximately 60% of the children in this study were male, while 39% were female, and 1% was reported as "other." Again, when the distribution of a variable is skewed, such as age or gender in this study, the accuracy of the findings may be reduced. This can impose limits on external validity and generalizability of the findings to the broader population (Johnson & Silverman, 2017). Most families in this study had a total household income of ≤ $75,000 (*n* = 134, 42.4%) or $75,000-$150,000 (*n* = 109, 34.5%). Only 19% (*n* = 61) had an income of ≥ $150,000.

Recommendations for Future Research

This study was novel. More research is needed to confirm or refute its findings. SV is a burgeoning construct of interest and should be studied in relation to many types of psychosocial variables. It could be interesting to examine parents' marital status and income levels in greater detail, to better understand their relationship, if any, with SV. In

addition, more studies are needed to confirm if the type of school that children attend is associated with their psychological well-being, not only their academic achievement. Neither gender nor the total number of children in the household were significant predictors of CSVQ scores, but more studies could be conducted in the future to verify or refute these results.

It is imperative to provide empirical findings that help build alignment between the goals of schools, government agencies, and communities so that parents have access to the support and resources needed to promote healthy development in children. The absence of a relationship between school type and SV suggests that while schools play a role in shaping children's experiences, other individual, family, and community factors may be involved. For example, it is well known that factors such as food insecurity are associated with both SV and children's mental health outcomes, including depression symptoms, since they are representative of chronic stressors like poverty and inadequate access to mental health (Crouch et al., 2021). This should be investigated more fully. The relationship between age and SV is complex and based on a combination of individual, family, and environmental factors. More empirical research is needed to investigate these dynamics, and to better understand the mechanisms of school choice (Wilson & Bridge, 2019), so that targeted interventions and preventative strategies to mitigate against children’s SV can be developed.

Summary

This study adds crucial knowledge about the relationship between quality of neighborhood and children’s SV and, by extension, how this relationship may contribute to children’s mental health. Thus, the findings may promote empathy, dignity, and

respect for children (Parritz & Troy, 2018). By following the principles set forth in Ephesians, parents can play a vital role in nurturing their children's mental health, faith, and character development, to help them grow into Godly individuals who contribute positively to the world around them. This includes promoting healthy socialization, and specifically religious socialization, which is an essential aspect of parenting because it encompasses not only spiritual practices but also religious values and how to nurture children in a Godly manner (Miller et al., 2020).

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APPENDIX A: IRB APPROVAL MEMO

LIBERTY UNIVERSITY
INSTITUTIONAL REVIEW BOARD

January 22, 2024

Maryam Majd
Gilbert Franco

Re: IRB Exemption - IRB-FY23-24-1141 Effects of School Type and Neighborhood on Children's Social Vulnerability

Dear Maryam Majd, Gilbert Franco,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

For a PDF of your exemption letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study details page. Finally, click Initial under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. Your information sheet and final versions of your study documents can also be found on the same page under the Attachments tab.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,
G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office

APPENDIX B: INFORMATION SHEET

Information Sheet

Title of the Project: Effects of School Type and Neighborhood on Children's Social Vulnerability

Principal Investigator: Maryam Majd, Doctoral Candidate, Psychology Department, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be a parent, 18 years of age or older, with at least one school-aged child (elementary, middle, or high school) who lives with you at least 50% of the time and is currently enrolled in a public, private, charter, magnet, or home school in the U.S. If you have more than one school-aged child (who attends elementary, middle, or high school), you will be given the option to repeat the survey questions, so that you can provide separate responses for each child (up to 6 children).

Taking part in this research project is voluntary. Please take time to read this entire form and (if necessary) ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of this research study is to examine factors that may influence children's social interactions.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to participate in an anonymous on-line survey that will take approximately 5 minutes to complete.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study. However, there may be some benefits to society from the information that is collected. The information from this study may help provide general benefits to parents and school-aged children because it may contribute knowledge about factors that influence children's social interactions.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

Participant responses to the online survey will be anonymous. No personally identifying information will be collected, including name or IP address. No one, including the researcher, will be able to link your survey responses to you. All records of this study will be kept private. All data will be stored securely on a password-locked computer, and only the researcher will have access to the records. After three years, all electronic records will be deleted.

How will you be compensated for being part of the study?

Please note that there is no compensation or reward for participation. Your input is very valuable, and I appreciate your time and feedback.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or to withdraw at any time prior to submitting the survey.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Maryam Majd. If you have questions, **you are encouraged** to contact Maryam at [redacted] or [redacted]@liberty.edu. You may also contact the researcher's faculty sponsor, Dr. Gilbert Franco, at [redacted]@liberty.edu.

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

APPENDIX C: RECRUITMENT FLYER

Research Participants Needed

The Effects of School Type and Neighborhood on Children's Social Vulnerability

- **Are you 18 years of age or older?**
- **Are you the parent of at least one school-aged child (elementary, middle, or high school)?**
- **Is your child living with you at least 50% of the time and currently enrolled in a public, private, charter, magnet, or home school in the U.S.?**

If you answered **Yes** to each of the questions listed above, you may be eligible to participate in this research study. The purpose of this study is to examine factors that may influence children's social interactions.

Participants will be asked to answer a brief anonymous online survey, with multiple-choice questions, that should take about 5 minutes to complete.

Participants will not be required to give any personally identifying information to be included in the study and no computer IP addresses will be collected.

Participants should not expect any direct benefit from taking part in this study. However, the information from this research may help provide general benefits to parents and school-aged children by contributing knowledge about factors that may influence children's social interactions.

An information sheet is provided as the first page of the survey.

If you would like to participate, please click here https://www.surveymonkey.com/r/LW862S3 and complete the survey.

Maryam Majd, a doctoral candidate in the psychology department at Liberty University, is conducting this study.

Please contact Maryam at (571) 598-2882 or momajdzadeh@liberty.edu for more information.

Liberty University IRB – 1971 University Blvd., Green Hall 2845, Lynchburg, VA 24515

APPENDIX D: CSVQ

Social vulnerability was measured with the 8-item Children's Social Vulnerability Questionnaire by Seward et al. (2018). Participants were asked to rate how much they agreed with the following statements about their child's behavior over the past 6 months on a scale from 0 (*never*) to 4 (*very often or always*):

1. Can be persuaded into doing things that he/she doesn't want to do, or things. that will get them into trouble.
2. Falls for a trick, even when previously tricked by the same person.
3. Believes things that are clearly unbelievable.
4. Is unaware when other kids are being mean to him/her.
5. Can be tricked into doing things that others laugh at.
6. Does things that can be described as "gullible."
7. Believes someone even though they have lied to them in the past.
8. Is easily fooled.

APPENDIX E: QUALITY OF NEIGHBORHOOD

Participants' quality of neighborhood was measured with the 7-item Quality of Neighborhood Questionnaire instrument by LaGrange et al. (1992). All items on this measure have categorical responses with five options. Participants were asked to rate their neighborhood on the following seven attributes using a scale from 1 (*never happens*) to 5 (*very common*), where higher scores indicate higher quality of the neighborhood (LaGrange et al., 1992).

1. Rubbish/litter lying around
2. Homes and gardens in bad condition
3. Vehicular traffic
4. Noise
5. Teenagers present in the street
6. Graffiti
7. Vandalism