

ABSTRACT

BLACKWELL, DARA HAYES. School Locale and Teachers' Perceptions of School Leadership as a Working Condition. (Under the direction of Dr. Tamara Young.)

To improve teacher retention, many scholars have set out to identify which teacher working conditions influence teachers' decisions to remain in the profession or stay in a particular school or district. School leadership has been identified as one of the most important working conditions affecting teachers' decisions to remain in a school. Therefore, with a hope of expanding our understanding of teachers' perceptions of working conditions and subsequently our efforts to reduce teacher turnover associated with school leadership as a working condition, this study examined teachers' perceptions of school leadership as a working condition. More specifically, this study sought to determine if a school's urban-centric locale has a relationship with teachers' perceptions of school leadership as a working condition. There is currently little research available regarding this relationship.

Using data collected by the 2012 North Carolina Teacher Working Conditions Survey and school demographics for the 2011-2012 school year (i.e., urban-centric locale, percent of student body eligible to receive free or reduced-price lunch, percent of student body that is minority, and average daily membership), hierarchical linear modeling was conducted to examine the relationship between teacher demographics and school demographics and teachers' perceptions of school leadership as a working condition. In addition, this study sought to understand to what extent does the relationship between school contextual factors and teachers' perceptions of school leadership as a working condition vary according to a school's locale.

The results indicated that a statistically significant relationship does not exist between teachers' perceptions of school leadership and urban-centric locale and that the relationship

between school contextual factors often considered predictive of working conditions (percent minority, percent eligible to receive free or reduced-price lunch, and average daily membership) and teachers' perceptions of school leadership is statistically significant, although the magnitude is negligible. Seventy-one percent of the variance in teachers' perceptions of school leadership was explained by differences within teachers in a school. This means that teachers' perceptions of their working conditions explain their perceptions of their school leadership more than characteristics of the student population. In brief, teachers are not penalizing school administrators for working in schools with substantial populations of low-income and minority students. The two teacher demographic variables considered, years experience in education and years at current school, each had a statistically significant relationship to perceptions of school leadership, however, the magnitude of each of those relationships was essentially negligible. Teacher leadership, managing student conduct, professional development, and instructional practices and support were the strongest predictors of perceptions of school leadership.

This study reaffirms the need for school administrators to focus on improving working conditions, with greater attention to those more strongly related to teachers' perceptions of school leadership. Since these perceptions appear to be quite individualized, this study also points to the difficulty in using policy measures to impact teachers' perceptions of school leadership. Future research is needed to help clarify the nature of the relationship between urban-centric locale and teachers' perceptions of school leadership. Further research is also needed to determine what factors account for the variance in teachers' perceptions of school leadership between schools.

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School Locale and Teachers' Perceptions of School Leadership as a Working Condition

by
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DEDICATION

To my husband who was the first to encourage me to pursue this degree. I don't think he realized what he was signing up for when he encouraged me to do so, and I'm sure he never expected we would be married before I finished. Nevertheless, he stood by me through it all, quietly supporting and challenging me. He was extraordinarily patient as I put my studies on hold for the birth of our beautiful children, and he supported me when I finally resumed work. He is my inspiration. I am so thankful God joined us together.

To each of my four children, who teach me more than pursuing any graduate degree could ever teach me. Although they were very young while I completed this degree, they had to make sacrifices, too. I am humbled by their ability to love unconditionally. Each is a precious treasure entrusted to me by God. I cannot imagine my life without them.

BIOGRAPHY

Dara Hayes Blackwell grew up in rural Harnett County, North Carolina. As a North Carolina Teaching Fellow at the University of North Carolina at Chapel Hill, she earned a Bachelor's degree in Science Teaching. Dara began her career in public schools teaching at Southern High School in Durham, North Carolina. During her five years there, she mentored three student teachers in the Duke University Master of Arts in Teaching degree program.

During her last two years of teaching, Dara was enrolled in an off-campus cohort of public school colleagues in a Masters in School Administration degree program through UNC-CH. Upon completion of this degree, Dara served as an assistant principal at Durham School of the Arts in Durham, N.C. While there, she joined another off-campus cohort of colleagues to pursue a Doctor of Education degree in Educational Administration and Supervision at North Carolina State University.

In 2006, Dara returned to Harnett County where she served as an assistant principal in various elementary, middle, and high schools. She is currently treasuring the privilege of working full-time with her four young children.

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I could not have completed this degree without the abundant grace, mercy, and blessings given to me by my Lord and Savior, Jesus Christ. I give Him the glory.

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My mother-in-law has cared for my children as only a grandmother can while I worked and has kept my family very well fed (and my children very well dressed and entertained) over the past several years. In addition, she raised a wonderful son who is an equally wonderful husband and father. I could not imagine a better mother-in-law, and I am so thankful for her loving generosity and support of my family and of me.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Statement of the Problem

Research has consistently identified teachers as being the most critical school-specific factor influencing student achievement (Chingos, Whitehurst, & Lindquist, 2014; Hanushek, 2010; Rivkin, Hanushek, & Kain, 2005; Wright, Horn, & Sanders, 1997). Furthermore, the effect of quality of instruction on student learning is even greater for low-income students than their peers from middle class backgrounds (Gordon, Kane, & Staiger, 2006; Rivkin et al., 2005). Indeed, achievement gaps across socioeconomic groups could be significantly narrowed by providing high-quality instruction to low-income students (Gordon et al., 2006; Rivkin et al., 2005).

Unfortunately, schools' efforts to improve teacher effectiveness, and thereby improve student achievement, are significantly hindered by high rates of teacher turnover, with the largest rates often being in rural and urban schools serving a higher percent of low-income students than their suburban peers (Ladd, 2011; National Commission on Teaching and America's Future, 2003). Teachers have also been highlighted as having a strong relationship to non-cognitive outcomes, such as students' absences (Jackson, 2013), on-time graduation (Jackson, 2013; Reeves, n.d.), and future earnings (Chetty, Friedman, & Rockoff, 2012; Hanushek, 2010). As such, a plethora of education studies focus on teachers, especially a) teacher quality, evaluated by a wide range of measures (e.g., experience, education, licensure, instructional strategies), and b) teacher retention. This study focuses on the latter.

Although some degree of turnover is healthy, especially if the teachers leaving are of low quality, continual high rates of turnover undermine school improvement efforts

(Charlotte Advocates for Education, 2004; Johnson, 2006). Given that teacher effectiveness is considered to be more critical in affecting student achievement than other school factors (Hanushek, 2010; Rivkin et al., 2005; Wright et al., 1997), the adverse impact on student achievement is the ultimate and most consequential repercussion of high teacher turnover (NCTAF, 2010). Not to be overlooked in examining the effects of high teacher turnover is the fact that teacher turnover comes at a financial cost to schools and school districts across the United States. Reducing teacher turnover could be a means to decreasing the financial strain on schools and school districts and, more importantly, to decreasing the negative impact on student achievement.

At the core of this study is improving teacher retention by improving our understanding of teacher working conditions. The literature indicates improving teacher working conditions can improve teacher retention (Borman & Dowling, 2008; Certo & Fox, 2002; Hirsch & Church, 2009; Johnson, 2006; Ladd 2011; Loeb, Darling-Hammond, & Luczak, 2005; National Commission on Teaching and America's Future, 2002; Tomon, 2009). Certainly teacher working conditions impact other outcomes, for example, teacher satisfaction (Boyd, Grossman, Ing, Lankford, Loeb, & Wyckoff, 2011; Johnson, 2006; Turner, 2003), teacher quality (Johnson, 2006), and student learning conditions (Hirsch & Church, 2009). However, this study focuses on one outcome—teacher retention.

Improvements in teacher retention, teacher quality, and student achievement are all linked to a collection of working conditions that facilitate progress in these areas (Johnson, 2006; Ladd, 2009). Although sustained improvement in student achievement will depend on teacher performance, it will also depend on teacher working conditions (Johnson, 2006). A

greater retention of high-performing teachers is most likely to exist in schools where the administration provides working conditions of support, trust, mutual respect, and high expectations for instructional quality (TNTP, 2012).

Teacher working conditions are critical factors in teachers' decisions to leave or stay at their current schools (Borman & Dowling, 2008; Charlotte Advocates for Education, 2004; Darling-Hammond, 2003; Hirsch & Church, 2009; Johnson, 2006; Johnson, Berg, & Donaldson, 2005; Ladd, 2011; Loeb, Darling-Hammond, & Luczak, 2005; Tomon, 2009). Further, school leadership is one of the most important, if not the most important, working conditions affecting teachers' decisions to remain in a school (Boyd, Grossman, Ing, Lankford, Loeb, & Wyckoff, 2011; Ladd, 2011; NCES, 2007; NCES, 2010; North Carolina Teacher Working Conditions Survey Research Brief, 2010). By addressing working conditions, and particularly school leadership, school administrators have the potential to minimize unwanted teacher turnover, thereby providing more favorable conditions for supporting improvements in teacher effectiveness and school reform efforts (Borman & Dowling, 2008; Boyd et al., 2011; Ladd, 2011). Consequently, improvements in school leadership as a working condition can ultimately result in improvements in student achievement. A visual representation of this summary is presented in Figure 1.

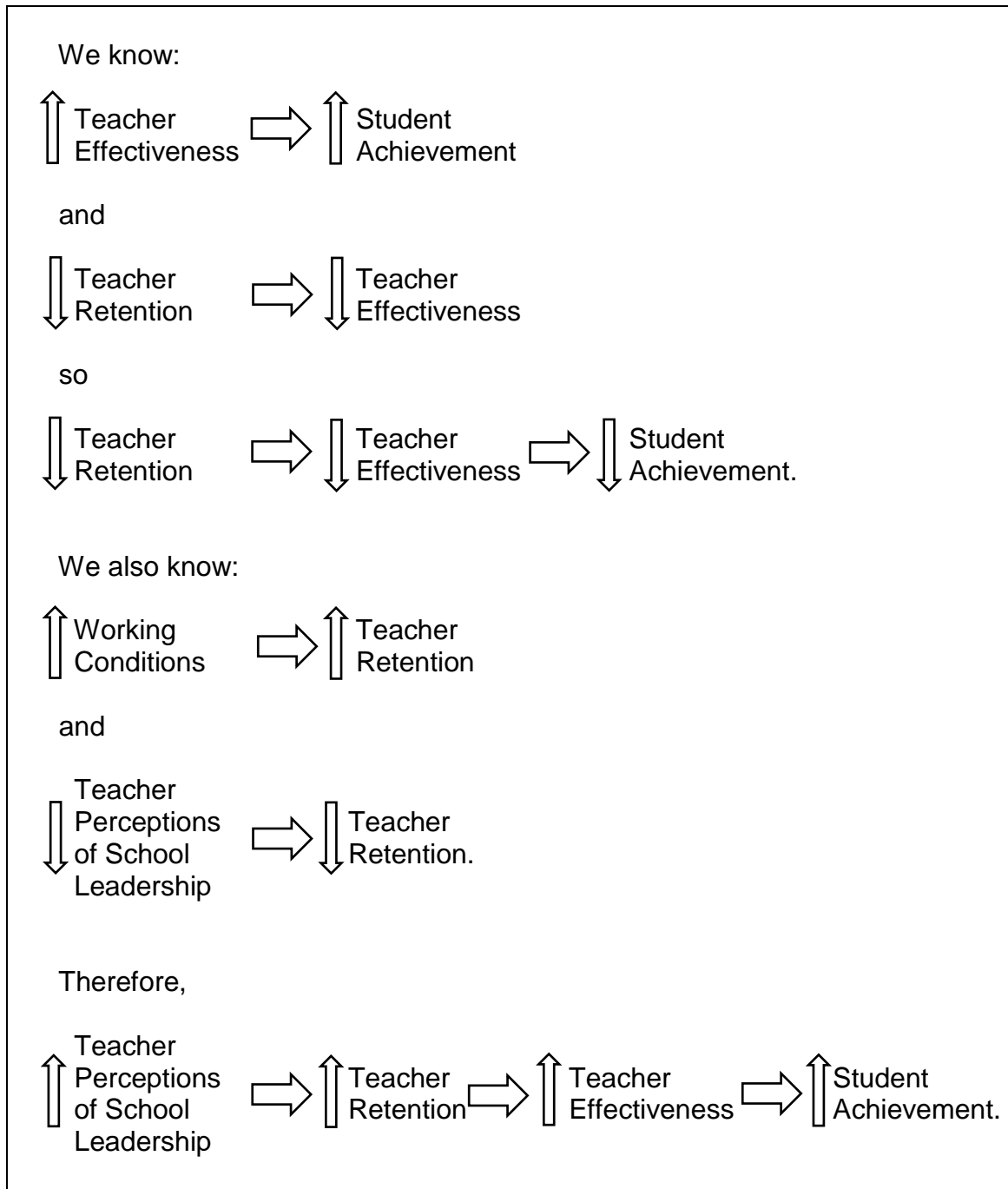


Figure 1. Visual representation summarizing the statement of the problem. This chart represents the research-supported relationships forming the basis of the problem addressed by this study. Arrows pointing up indicate improvement in the construct, and downward arrows indicate a decrease in the construct. Horizontal arrows represent yields.

Purpose of the Study and Research Questions

The purpose of this study is to examine teacher retention by taking a closer look at working conditions which have been linked to teacher retention (Borman & Dowling, 2008; Charlotte Advocates for Education, 2004; Darling-Hammond, 2003; Hirsch & Church, 2009; Johnson, 2006; Johnson et al., 2005; Ladd, 2011). Specifically, I examine one aspect of working conditions, school leadership, which has been strongly linked to teacher retention (Boyd et al., 2011; Ladd, 2011; NCES, 2007; NCES, 2010; North Carolina Teacher Working Conditions Survey Research Brief, 2010). Data collected by the North Carolina Teacher Working Conditions (NC TWC) Survey have pointed to school leadership as the strongest predictor of teachers' stated intentions to remain at their current school (Ladd, 2009; NC TWC Survey Research Brief, 2010). In fact, when comparing retention rates of teachers with comparable characteristics between schools with strong school leadership and schools with lower quality school leadership, teachers in the schools with strong school leadership were more likely to stay than their counterparts (Ladd, 2011). Analysis of these data has also demonstrated school leadership as "the most consistently relevant measure of working conditions" (Ladd, 2009, p. 29).

My analysis rests on the premise that it is important to understand what factors predict teachers' perceptions of school leadership. While I consider a range of teacher and school factors, I pay close attention to the role of locality because rural schools and urban schools, particularly those in low-income, high-minority areas, traditionally have greater difficulty retaining teachers as compared to suburban and town locales (NCTAF, 2003).

Some evidence indicates urban-centric locale matters to teacher retention (Borman & Dowling, 2008; Guarino, Santibañez, & Daley, 2006; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001; Ladd, 2011; NCTAF, 2003), working conditions (Abel & Sewell, 1999; Hanushek & Rivkin, 2007; Monk, 2007; Provasnik, KewalRamani, Coleman, Gilbertson, Herring, & Xie, 2007), and perceptions of school leadership (Hanushek & Rivkin, 2007; Turner, 2008). Though there is research that demonstrates that urban-centric locale matters to working conditions, in general, and to school leadership, in particular, the mechanisms for why it matters remain unclear.

It could be that urban-centric locale serves as a proxy measure for teacher salary (Monk, 2007), teacher labor market conditions, such as greater competition in suburban locales, (Jacob, 2007; Ladd, 2011; Monk, 2007), or contextual factors, such as school size, class size, home and neighborhood environments (Jacob, 2007; Monk, 2007), or characteristics of the student populations. For example, regarding contextual factors, urban schools are more likely to have a context of higher rates of crime, unemployment, and poverty than other urban-centric locales, and are less likely to have the social scaffolding within neighborhoods that provide for collaborative efforts in nurturing children (Jacob, 2007). Rural areas often have characteristics that result from a dependence on agricultural commerce. Student populations in rural areas are likely to have “relatively large shares of students with special needs and with limited English skills and lower shares of students attending college” and “highly mobile children of low-income migrant farm workers” (Monk, 2007, p. 155). This is particularly relevant to North Carolina since it ranks sixth in the nation in the number of migrant farm workers (North Carolina Farmworker Institute,

n.d.). While it is not yet understood why urban-centric locale seems to have a relationship to teachers' perceptions of working conditions in general, this study provides insight into understanding if there is a relationship between a school's urban-centric locale and teachers' perceptions of school leadership in particular. This study ultimately expands our understanding of working conditions and subsequently our efforts to reduce teacher turnover associated with school leadership as a working condition.

Researchers have sought to explain why teachers move to other schools and districts or leave the teaching profession altogether. Predictors of teacher retention include teacher age, with the younger and older (closer to retirement) teachers being more likely to leave (Guarino, Santibañez, & Daley, 2006; Ingersoll, 2001); years of teaching experience, with those having less than five years being the most likely to leave (NCTAF, 2010); mentor support in the first years of teaching, with those not having a mentor being more likely to leave (Borman & Dowling, 2008; Smith & Ingersoll, 2004); teacher preparation, with those obtaining licenses through non-traditional means more likely to leave (Boyd, Lankford, Loeb, & Wyckoff, 2005); teacher qualifications, with those with stronger qualifications, such as higher test scores on teacher licensing exams, being more likely to leave (Borman & Dowling, 2008; Boyd et al., 2005; Guarino et al., 2006); teaching field, with those in the fields of math, science, and special education being more likely to leave (NCTAF, 2002); salary, with those receiving lower salaries being more likely to leave (Certo & Fox, 2002; NCTAF, 2002); and school demographics, with teachers in schools having higher percentages of low-income, non-White, and low-performing students being more likely to

leave (Borman & Dowling, 2008; Guarino et al., 2006; Hanushek, Kain, & Rivkin, 2004; NCTAF, 2003).

Research has also identified *working conditions* as having a significant impact on teacher retention (Borman & Dowling, 2008; Charlotte Advocates for Education, 2004; Darling-Hammond, 2003; Hirsch & Church, 2009; Johnson, 2006; Johnson et al., 2005; Ladd 2011; Loeb et al., 2005; Tomon, 2009). Working conditions can include a variety of factors including teacher influence (in the classroom and school), student behavior, facility condition, school safety, administrative support, staff relations, resource availability and quality, professional development, teaching assignments, class size, curriculum and accountability policies, and career growth opportunities (Johnson, 2006).

Given that research has demonstrated school leadership as a working condition as having possibly the strongest association with teacher retention as compared to other aspects of working conditions (Boyd et al., 2011; Ladd, 2011; NCES, 2007; NCES, 2010, NCTWCS Research Brief, 2010), it behooves us to better understand school leadership as a working condition. One possible factor affecting teachers' perceptions of school leadership as a working condition is the urban-centric locale of the school. Research has shown urban-centric locale to be related to both teacher retention (Borman & Dowling, 2008; Guarino, Santibañez, & Daley, 2006; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001; Ladd, 2011; NCTAF, 2003) and working conditions (Abel & Sewell, 1999; Hanushek & Rivkin, 2007; Monk, 2007; Provasnik, KewalRamani, Coleman, Gilbertson, Herring, & Xie, 2007). However, there is little research on whether a relationship exists between urban-centric locale and teachers' perceptions of school leadership as a working condition (Hanushek & Rivkin,

2007; Turner, 2008). Herein lies the gap in the literature addressed by this study. Figure 2 provides a visual representation of these relationships.

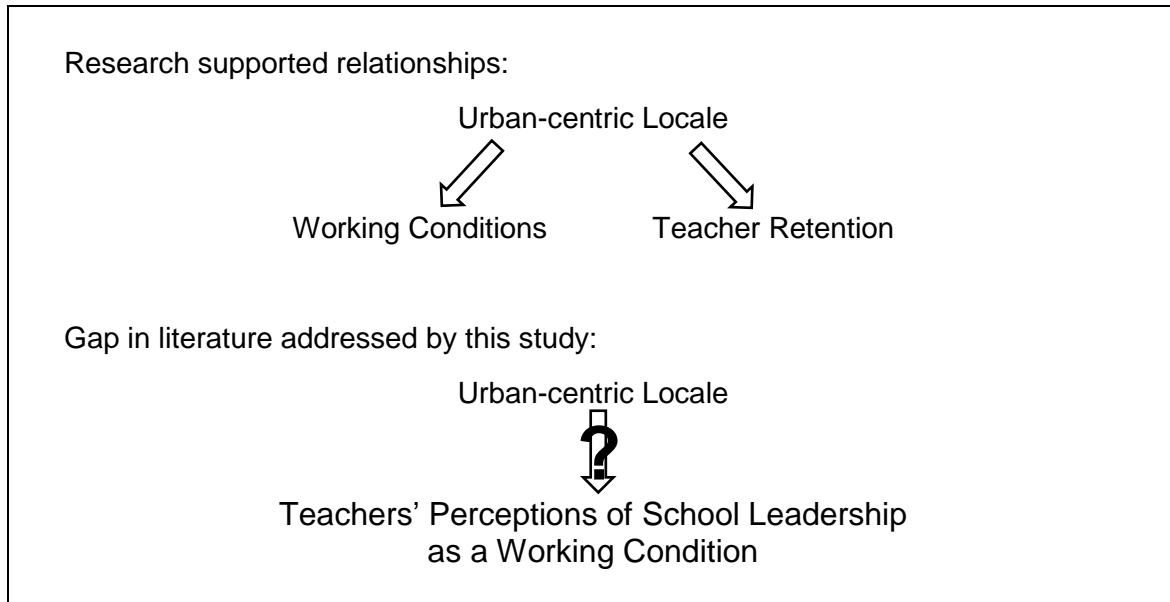


Figure 2. Visual representation of urban-centric locale relationships. The chart represents the relationships, either supported by research or needing additional research, urban-centric locale has with the given constructs. Arrows indicate a relationship between the constructs. The question mark indicates the relationship needs clarification.

This study focuses on teachers' perceptions of school leadership as a working condition to expand our understanding of what factors predict teachers' perceptions of school leadership as a working condition. Specifically, the research questions guiding this study are:

RQ1: What are teachers' perceptions of school leadership as a working condition?

RQ2: What is the relationship between teacher demographics and teachers'

perceptions of school leadership as a working condition?

RQ3: Controlling for teacher demographics, what is the relationship between school contextual factors and teachers' perceptions of school leadership as a working condition?

RQ4: To what extent does the relationship between school contextual factors and teachers' perceptions of school leadership as a working condition vary according to a school's locale?

Research Design

To answer the research questions, I drew on data from the 2012 administration of the North Carolina Teacher Working Conditions Survey and the most current data available from the National Center for Education Statistics on the urban-centric locale category of individual schools. To answer RQ1, I will compute basic descriptive statistics for the outcome variable—teachers' perceptions of school leadership as a working condition—including measures of centrality and dispersion. All of these descriptive statistics will be computed in aggregate and disaggregated by the primary outcome variable—urban-centric locale. Hierarchical linear regression analysis will be conducted to answer RQ2, RQ3, and RQ4. The outcome variable will be teachers' perceptions of school leadership as a working condition. The primary outcome variable will be urban-centric locale. Control variables representing both teacher and school characteristics will also be included as predictors.

Limitations

This study is limited by the fact that teachers' perceptions of school leadership is a complex issue, and the only aspects of school leadership considered in this study are the ones identified by the NC TWC Survey. As such, other valid measures or aspects of school

leadership or possible predictors are not taken into account. The design of this study, for example, does not take into account all the contextual circumstances surrounding a school's leadership. For example, the number of years a school administrator has been serving in the school could be an important nuance to consider. Whether the school's leadership was in flux during the 2011-2012 school year could affect the teachers' perceptions of school leadership. In addition, the school's academic performance is also not taken into account, another factor that could impact teachers' perceptions of school leadership.

Another limitation of this study is the exclusion of salary as a factor in the model. North Carolina has a state-wide salary schedule that ranked 49th in the nation during the 2011-2012 school year (National Education Association, 2013). Prior to that, teachers' base salary in North Carolina had been stagnant since 2008 (Sawchuck, 2014). In North Carolina, local districts are allowed to supplement that base salary as they so choose. During the 2011-2012 school year, this local supplement ranged from \$0 to \$6,072 across the state, with an average of \$3,433 (North Carolina Department of Public Instruction, n.d.). These facts, along with a trend in the literature to include salary as a working condition, likely make salary an important factor to consider when exploring teachers' perceptions of working conditions in North Carolina. This working condition, however, is excluded from the NC TWC Survey and from this study.

This study also encounters the potential limitations inherent in relying on survey data. A positive correlation between teacher job satisfaction and perceptions of working conditions has been observed (Boyd et al., 2011), however, teacher responses on working conditions surveys are affected by both their perceptions of their working conditions and their overall

outlook, whether positive or negative (Boyd et al., 2011). Situational factors can also affect teachers' responses. For example, an experience of a significant student behavior matter or of a negative interaction with school administration occurring in close proximity to the completion of the survey can have a magnified effect on the teacher's perceptions of working conditions. These limitations should be mitigated by the substantially large size of the data set (Boyd et al., 2011).

Significance of the Study

With working conditions acting as a strong predictor of teachers' expressed intentions of leaving (Hirsch & Church, 2009; Johnson, 2006; Ladd, 2009), improving working conditions can be a valuable and cost-effective strategy for improving teacher retention. Many studies focus on working conditions, but they tend to highlight factors associated with the demographics of the student population. A school's demographics can be difficult to change (as evident by the persistent inequities in resources and school resegregation). The effectiveness of a school's leadership, however, is a working condition that can be more easily addressed (Jacob, 2007). This study examines school leadership as a specific aspect of teacher working conditions. More specifically, it examines teachers' perceptions of school leadership as a working condition and seeks to determine if a school's urban-centric locale has a relationship to these perceptions.

Research has shown school leadership to be one of the strongest, if not the strongest, working conditions affecting teachers' decisions to remain in a school (Boyd et al., 2011; Ladd, 2011; NCES, 2007; NCES, 2010; North Carolina Teacher Working Conditions Survey Research Brief, 2010). "On the North Carolina Teacher Working Conditions Survey, more

than one-third (37 percent) of teachers indicate that School Leadership is the most important working condition influencing their decision about where to work,” (Hirsch & Church, 2009, p. 1). National data show that for the 2007-2008 school year 25.1% of teachers who left the profession and 34.7% of teachers who changed schools indicated dissatisfaction with school administration as a very important or extremely important factor in their decision to leave their school (NCES, 2010). The same was true for 37.2% of teachers who moved to a new school after the 2003-2004 school year (no data with respect to this factor were provided for teachers who left the profession that year) (NCES, 2007).

Some research addresses the relationship between working conditions and a school’s urban-centric locale. However, most of the research focusing on variances in urban and rural locales examines differences in salary and school demographics. Although salary seems to be an important factor in teachers’ decisions to work in an urban school, working conditions appear to be an even more important factor (Jacob, 2007). A 1999 analysis found a “significantly higher level of stress for urban versus rural school teachers from poor working conditions..., and poor staff relations” (p. 290, Abel & Sewell, 1999). To put it differently, teachers in rural areas are generally more likely to indicate satisfaction with their working conditions than teachers in other locales (Monk, 2007; Provasnik, KewalRamani, Coleman, Gilbertson, Herring, & Xie, 2007).

Although “poor staff relations” in the aforementioned 1999 study included a perception of insufficient support from the school’s administration (Abel & Sewell, 1999), there is little knowledge about differences in urban and rural schools with regard to school leadership as a working condition. To the extent that teachers’ perceptions of school

leadership vary according to locale, the findings of this current study will be significant in providing clarity on whether a school's urban-centric locale is a predictor of teachers' perceptions of school leadership as a working condition. If school leaders are able to make predictions about how their teachers will perceive school leadership based on the school's urban-centric locale, school leaders can take proactive efforts to improve teachers' perceptions of this working condition, thereby potentially improving teacher retention.

Retaining teachers is vital to improving our educational system (Charlotte Advocates for Education, 2004; Johnson, 2006; Ladd, 2004; Loeb et al., 2005; NCTAF, 2002; NCTAF, 2003). The costs of teacher attrition for students and schools, including academic achievement and financial losses, are detrimental in both the short and the long term (NCTAF, 2002; NCTAF, 2010). The strategy of proactively addressing working conditions has the potential to improve teacher retention, consequently improving student achievement. Research supports this strategy, pointing to the favorable impacts on teachers, as well as students, and the speed with which improvements in working conditions can occur (Hirsch, Sioberg, Robertson & Church, 2010). Additionally, research points to strategies and policies designed to improve school leadership as having the potential to reduce teacher turnover (Borman & Dowling, 2008; Boyd et al., 2011; Ladd, 2011).

The results of this study will contribute to the field of knowledge regarding the relationship between urban-centric locale and teachers' perceptions of working conditions and may provide an additional strategy for efforts to improve teacher retention. For example, if rural teachers tend to view certain school leadership constructs more harshly than do teachers in city schools, then principals in rural schools can choose to focus on improving the

perceptions of those specific school leadership constructs as a means to improve teacher retention in their respective schools. Additionally, knowledge of the existence, or lack, of differences in perceptions of school leadership across urban-centric locales could better inform superintendents of school districts comprised of a variety of locales as they seek to provide feedback and support to school-based administrators.

Definition of Terms

The following terms are central concepts used throughout this study:

Teacher retention: keeping an individual employed as a teacher in the same school for consecutive school years (Reichardt, Snow, Schlang, & Hupfeld, 2008).

Working conditions: the conditions of a teacher's workplace that have the potential to affect the individual's willingness to enter and remain in the teaching profession, the individual's job satisfaction, and/or the effectiveness of the individual's performance (Johnson, 2006); an overarching term that often includes physical factors (e.g., condition of school facilities, condition of and access to equipment, instructional supplies, and other resources), organizational structures (e.g., teaching assignment, workload, "autonomy", "lines of authority"), sociological features (e.g., school demographics, roles), political features (e.g., role in decision-making), cultural features (e.g., the school's values, norms), psychological features (e.g., personal and career growth opportunities, "meaningfulness of what they do"), and educational features (e.g., testing and curriculum policies and support) (p. 2).

School leadership: as a working condition, denotes the effectiveness of a school's leaders in negotiating the various aspects of the school environment that contribute to

conditions conducive to effective instruction and job satisfaction (Boyd et al., 2011; North Carolina Teacher Working Conditions Survey, 2012). These aspects include effectively supporting teachers and addressing their concerns, providing resources needed for instruction, holding and fairly assessing progress toward meeting high professional standards, creating an atmosphere of trust and mutual respect, and creating and holding a shared vision (NC TWC Survey, 2012).

The terms *city*, *suburb*, *town* and *rural* will be used to identify specific urban-centric locales examined in the data analysis of this study. Although not used throughout the study, several other terms are defined here in order to provide clarity to the definitions given for the urban-centric locales. Unless otherwise noted, the definitions are taken from the National Center for Education Statistics (NCES) website on identification of rural locales (National Center for Education Statistics, n.d.).

Urban-centric locale: one of four school locale types (urban, suburban, town, and rural) as defined in 2006 by the NCES working in conjunction with the U. S. Census Bureau. The 2006 definitions rely more heavily on proximity of an address to an urbanized area than previous definitions (which relied on population size and county boundaries).

City: an urban-centric locale including territories inside an urbanized area and inside a principal city.

Suburb: an urban-centric locale including territories outside a principal city but inside an urbanized area.

Town: an urban-centric locale including territories outside an urbanized area but inside an urban cluster.

Rural area: an urban-centric locale including territories that are outside urban clusters and urbanized areas.

Metropolitan statistical area (MSA): “one or more contiguous counties that have a core area with a large population nucleus and adjacent communities that are highly integrated (by economics or socially) with the core”.

Principal city: “the primary population and economic center of an MSA”.

Urbanized area: “a densely settled core” (with a population of at least 50,000) “of census blocks with adjacent densely settled surrounding areas”.

Urban cluster: “a densely settled core” (with a population of between 25,000 and 50,000) “of census blocks with adjacent densely settled surrounding areas”.

Organization of the Study

This chapter explained why research on teachers’ perceptions of school leadership as a working condition is important and how a school’s urban-centric locale may explain variance in those perceptions. Chapter 2 will describe the literature on working conditions, especially school leadership as a working condition, that are associated with teachers’ expressed intentions to leave a school. It will also provide an overview of the literature that compares teachers’ perceptions in urban schools to those in rural settings. Chapter 3 will outline in detail the methodology used for this quantitative study, including a description of the sample, data instrumentation, and analysis procedures. Chapter 4 will present the findings associated with the research questions and will be followed by a discussion of key findings, implications, and directions for future research, which will be specified in Chapter 5.

CHAPTER 2: LITERATURE REVIEW

Introduction

This chapter summarizes relevant extant literature in five areas: teacher quality and student achievement, teacher retention, the relationship between working conditions and teacher retention, school leadership as a working condition, and the role of school locale on the perceptions of working conditions. A large and robust body of research exists on the first four areas. However, this is not the case for the fifth area addressed in this review. Although research shows that a school's urban-centric locale is related to teacher retention, we know very little about the extent to which a school's locale is related to teachers' perceptions of working conditions and, more specifically, school leadership as a working condition. This review will demonstrate that a) given the importance of teacher quality to student achievement, the retention of quality teachers is essential to student success; b) teacher retention can be increased by improving teacher working conditions, with a particular focus on improving school leadership; and c) teachers' perceptions of school leadership can perhaps be better understood within the context of urban-centric locale.

Teachers Matter

Research has consistently identified teachers as being the most critical school factor influencing student achievement (Chingos, Whitehurst, & Lindquist, 2014; Hanushek, 2010; Rivkin, Hanushek, & Kain, 2005; Wright, Horn, & Sanders, 1997). Although it has been impossible thus far to identify specific attributes of teachers that reliably predict instructional effectiveness, one finding consistently evident in research is that “no other attribute of schools comes close” to having as much influence on student achievement as teacher

effectiveness (Hanushek, 2010, p.3). Using econometrics, Hanushek (2010) demonstrated that teacher quality improves student achievement which, in turn, leads to higher individual earnings. Hanushek (2010) noted that the effects of other factors, such as class size, attainment of a master's degree, years of experience, and pathway to entering the teaching profession (e.g., traditional teaching degree, alternate teaching certification programs), have been studied with respect to student achievement. However, none of these seem to have a significant effect on student achievement (Hanushek, 2010; Hanushek & Rivkin, 2010). That is, "observed teacher characteristics do not represent teacher quality" (Hanushek & Rivkin, 2010, p. 267). One exception to note is in regards to the number of years of experience, given that the most dramatic improvement in instructional effectiveness generally occurs during the first three years of a teacher's career (Hanushek, 2010; Hanushek & Rivkin, 2010; Rivkin et al., 2005).

Wright, Horn, and Sanders (1997) used the Tennessee Value-Added Assessment System (TVAAS) database to measure the relative magnitude of teacher effects on student achievement. In their analyses, they examined the effects of class size, student achievement level, and intraclassroom heterogeneity on academic gains. Wright et al. (1997) found the teacher effect was "highly significant in every analysis" (p. 61) and had "a larger effect size than any other factor in twenty of the thirty analyses" (p. 61). Additionally, "effective teachers appear to be effective with students of all achievement levels, regardless of the level of heterogeneity in their classrooms" (p. 63). These results suggest homogeneous grouping does not result in a higher rate of academic gains, as is often claimed, but rather teacher

effectiveness is the more significant factor. The results of these analyses clearly identify the teacher as the prevailing factor affecting students' academic gains.

According to Hanushek and Rivkin (2010), studies across a variety of school settings in the United States regarding within-school variation of value-added measures of teacher quality “produce fairly similar estimates of the variance in teacher value added: the average standard deviation for reading is 0.11 and for math is 0.15, and the distributions for both are fairly tight” (p. 267). These results indicate that, over the course of one school year, a teacher in the seventy-fifth percentile of the teacher quality distribution could potentially move a student in the fiftieth percentile in math achievement to the fifty-eighth percentile. This is a difference in learning gains of approximately 0.2 standard deviations, an amount comparable to the 0.1-0.3 standard deviations evident in measuring the effects of class reduction by 10 students (Hanushek & Rivkin, 2010).

After reviewing the existing body of research on value-added measures of teacher quality, Hanushek and Rivkin (2010) concluded that “the finding of substantial variation in teacher quality appears to be robust” (p. 269) to classroom sorting on factors affecting school choice and classroom assignment. Hanushek and Rivkin (2010) point out, however, that there are methodological concerns about value-added measures. These include the relevance of the test instrument, the consistency of the measurement of teacher quality, and the possible existence of excluded variables, such as student differences affecting school choice and nonrandom classroom assignment.

Addressing these criticisms, Rivkin, Hanushek, and Kain (2005) conducted a set of analyses that removed the often-cited confounding variables of individual student, family,

school, and neighborhood factors. Employing a complex equation involving student achievement gains, family background, teacher and school characteristics, inherent student abilities, and a random error calculation of time-varying factors, they used data from Texas elementary schools to determine if schools matter with respect to student achievement, the degree of influence of teacher quality on student outcomes, and the size of the effects, if any, of observable characteristics of schools and teachers on teacher quality. Rivkin et al. (2005) concluded that the

semiparametric lower bound estimates of the variance in teacher quality based entirely on within-school heterogeneity indicate that teachers have powerful effects on reading and mathematics achievement, though little of the variation in teacher quality is explained by observable characteristics such as education or experience. (p. 417)

Student achievement gains related to observable teacher and school characteristics were generally small and were most intense in the early elementary years. Their research suggests that “the effects of a costly ten student reduction in class size are smaller than the benefit of moving one standard deviation up the teacher quality distribution” (p. 417). Additionally, Rivkin et al. (2005) concluded that achievement gaps across socioeconomic status groups could be narrowed by providing low income students with consecutive years of strong teachers in the early elementary years.

Gordon, Kane, and Staiger (2006) make a similar claim based on their study of a sample of beginning teachers, which was aimed at determining how well a district could predict future effectiveness using the performance quality of the first two years in the

classroom. They calculated estimates of each individual teacher's effectiveness, as determined by data collected during their first three years in the classroom using observations and measurements of the yearly performance of their students, controlling for students' demographics and previous test scores. These estimates allowed Gordon et al. (2006) to rank the teachers into quartiles on a distribution of teacher effectiveness. The results of their study demonstrated a wide range in teacher effectiveness and indicated that an average difference of 10 percentile points in student achievement exists between being taught by a top-quartile teacher and by a bottom-quartile teacher. Gordon et al. (2006) concluded that the effects of being taught by a "top-quartile" teacher for four consecutive years could be enough to close the black-white achievement gap, assuming the effects were to accrue (p. 8). Taken together, these results demonstrate that teacher quality matters.

Teacher Retention

Given the evidence of the significant impact teacher effectiveness has on student achievement, retaining teachers of high quality is imperative. Unfortunately, schools' efforts to improve teacher effectiveness, and thereby improve student achievement, are significantly hindered by high rates of teacher turnover, with the largest rates often being in rural and urban schools serving a higher percent of low-income students than their suburban peers (Ladd, 2011; National Commission on Teaching and America's Future, 2003).

The average teacher turnover rate at the national level was 16% for the 2011-2012 school year, and as evident by the rates in 2000, 15.1%, in 2004, 16.5%, and in 2008, 15.5%, this rate has not varied much for more than a decade (Goldring, Taie, & Riddles, 2014). The turnover rate for beginning teachers is even higher with current data indicating approximately

30% of teachers leave within five years of teaching (National Commission on Teaching and America's Future, 2010), and appears to be worsening. During the period between the 1988-1989 school year and the 2004-2005 school year, the turnover rate for first year teachers increased from 8.1% to 11.5%, an increase of over 40%.

Although some degree of turnover is healthy, especially if the teachers leaving are of low quality, continual high rates of turnover undermine school improvement efforts (Charlotte Advocates for Education, 2004; Johnson, 2006). Teacher turnover diminishes the school's "collective knowledge" . . . , and overall expertise in the school may be inadequate to support educational decision making or collegial learning" (Loeb et al., 2005, p. 49). Strong learning communities within schools are crucial to successful implementation of school reform efforts, and high rates of teacher turnover impede the development and sustainability of such communities (NCTAF, 2003). When teachers leave before the changes are successfully institutionalized the sustainability of reform efforts is hindered (National Commission on Teaching and America's Future, 2002).

Teacher performance improvements are also necessary for successful school reform efforts. Teacher effectiveness tends to increase with experience, professional development, and growth in self-efficacy beliefs. As such, "the traditional practice of continually hiring new teachers . . . undermines our efforts to improve teaching effectiveness," (NCTAF, 2010, p. 9). Given that teacher effectiveness is considered to be more critical in affecting student achievement than other school factors (Hanushek, 2010; Rivkin et al., 2005; Wright et al., 1997), the adverse impact on student achievement is the ultimate and most consequential repercussion of high teacher turnover (NCTAF, 2010).

When a teacher leaves a school, the teacher takes valuable “accumulated knowledge about the students, their families, the curriculum, and the school’s practices” (Johnson, 2006, p. 3). If a school must frequently find replacements for teachers and often fill positions with new, inexperienced individuals, it follows then that student achievement is likely to be negatively impacted by high rates of teacher turnover. A more poignant depiction of this problem is observed in efforts to fill the vacancy created when a high-performing teacher leaves a low-performing school. Research has shown it can take up to 11 hires to fill the vacancy with a teacher of similar caliber (TNTP, 2012).

Not to be overlooked in examining the effects of high teacher turnover is the fact that teacher turnover comes at a financial cost to schools and school districts across the United States. Teacher turnover costs school districts nationally at least \$7.2 billion each year (NCTAF, 2010). This price tag includes costs for substitute teachers, new training, termination and hiring procedures, and loss of learning curve (NCTAF, 2002). In these times of increasing budget constraints, cutting costs is an important goal of school districts and state departments of education. Therefore, it stands to reason that reducing teacher turnover could be a means to decreasing financial strain on schools and school districts.

For many years researchers have sought to explain why teachers move to other schools and districts or leave the teaching profession altogether. One factor linked to teacher turnover is the number of years a teacher has been in the classroom (Guarino et al., 2006; Ingersoll, 2001). Guarino et al. (2006) conducted a critical literature review of current research in teacher recruitment and retention, with the purposes of compiling the research and discussing the quality and significance of the studies included in their review. They

indicated that the U-shaped pattern, with respect to number of years in the classroom, in teacher turnover is a well-established finding in the existing research. This U-shaped pattern is caused by the highest rates of turnover existing during the first years of teaching and the years of teaching closest to retirement age.

Ingersoll (2001) highlighted this U-shaped pattern in his review of the existing empirical research on teacher turnover used to establish the background and importance of his study on teacher turnover and shortages. In his study, he analyzed data collected by the 1990-1991 School's and Staffing Survey (SASS) and the 1991-1992 Teacher Follow-up Survey (TFS), both conducted by NCES. The relationship between age and turnover emerging from his analyses were consistent with the U-shaped trend previously identified in the existing research. In fact, the most salient predictor of teacher turnover revealed in Ingersoll's (2001) analyses was the teacher's age.

Another factor identified as having an impact on teacher retention is input into school decision-making (Berry, Smylie, & Fuller, 2008; Ingersoll, 2001; Ladd, 2011; Liu, 2007; Tomon, 2009). Multiple surveys of teachers' perceptions of working conditions in Arizona, Kansas, Mississippi, Nevada, North Carolina, Ohio, and South Carolina have demonstrated a greater likelihood of poor perceptions of teacher empowerment among teachers who intend to leave their schools and the profession (Berry et al., 2008). An analysis of middle school teachers' perceptions of working conditions in North Carolina also revealed teacher empowerment is an important factor in teacher retention (Tomon, 2009). In this same vein, expanded roles for teachers emerged as a predictor of individual teacher's stated intentions to

remain in their current school for high school teachers in an analysis of NC TWC Survey data (Ladd, 2011).

Hierarchical linear modeling (HLM) analyses of data collected via the 1999-2000 SASS and the 2000-2001 TFS showed that the tendency of first-year teachers to leave their school was diminished by strong teacher influence on school policy (Liu, 2007). “The predicted probability of first-year teacher attrition can decrease from 19% to 4% as teacher influence at school changes from no influence to a great deal of influence” (p. 13). Liu (2007) considered this finding to be accurate and generalizable, given the rigorous statistical methods used and the nationally representative data, however, the study was limited by the exclusion of school characteristics, such as student demographics, preventing the identification of a causal relationship. That is, it is possible certain school characteristics are related to higher levels of teacher influence on school policy and that these characteristics might be affecting the turnover rate. It should also be noted that teachers who remained at their school were combined with teachers who remained in the teaching profession but moved to another school, allowing for comparisons between two groups—“non-leavers” and “leavers”.

Overall, Liu’s (2007) study showed that having influence on school policy has a positive effect on a teacher’s experience. “A school culture characterized by strong teacher influence may well nurture a bond between first-year teachers and their schools because first-year teachers can foresee increased professional opportunities for playing leadership roles in their organizations” (p. 13).

Another factor found to affect teacher retention is increased accountability policies. Research on school accountability systems in North Carolina demonstrated that such systems increase teacher turnover in low-performing schools (Clotfelter, Ladd, Vigdor, & Diaz, 2004). Clotfelter et al. (2004) compared two cohorts of teachers in low-performing elementary schools in North Carolina—a 1994-1995 cohort, and a 1996-1997 cohort. Since the North Carolina accountability model was implemented in 1996-1997, these two cohorts allowed a comparison of groups of teachers before and after implementation. The study provided “compelling evidence that North Carolina’s school accountability system increased the problems that low-performing schools face in retaining teachers” (p. 269).

Similarly, in a survey of teachers who had been in the classroom between six and ten years in California, increased accountability was found to be one of the top factors affecting teacher retention (Tye & O’Brien, 2002). Tye and O’Brien (2002) set out to investigate the possibility that increased accountability policies were contributing to experienced teachers in California becoming increasingly dissatisfied with teaching and leaving the profession more frequently than before implementation of such policies. They reached out to graduates of Chapman University, the college producing the most credentialed teachers annually in California, and garnered 114 participants. When asked to rank-order a list of seven reasons why they either had left or would consider leaving teaching (accountability, increased paperwork, low status of the profession, no parent support, salary considerations, student attitudes, and unresponsive administration), the teachers included in the survey who had already left the profession cited accountability as the top reason for leaving, while it was the

third most frequently cited reason for the teachers surveyed who would consider leaving the profession.

School demographics have also been identified as factors in teacher retention (Borman & Dowling, 2008; Darling-Hammond, 2003; Guarino et al., 2006; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001; Ladd, 2011; Loeb, Darling-Hammond, & Luczak, 2005). Teacher retention seems to be negatively impacted in schools with a higher percentage of minority students (Borman & Dowling, 2008; Guarino et al., 2006; Hanushek et al., 2004; Ladd, 2011; Loeb et al., 2005), a higher percentage of low-income students (Borman & Dowling, 2008; Darling-Hammond, 2003; Guarino et al., 2006; Ingersoll, 2001; Johnson, 2006; Ladd, 2011; Loeb et al., 2005), and a higher percentage of low-achieving students (Borman & Dowling, 2008; Guarino et al., 2006; Hanushek et al., 2004). In addition, schools in urban areas tend to have lower teacher retention rates than do schools in rural areas (Borman & Dowling, 2008; Guarino et al., 2006; Ingersoll, 2001). Interestingly, retention rates in suburban schools seem to be similar to retention rates in urban schools (Ingersoll, 2001). School size also seems to play a role in teacher retention, with small schools having lower retention rates than larger schools (Borman & Dowling, 2008).

Other factors having a negative effect on teacher retention are higher rates of student discipline problems (Ingersoll, 2001), inadequate facilities and resources (Darling-Hammond, 2003; Horng, 2009; Ladd, 2011; Tomon, 2009), an abundance of paperwork (Tye & O'Brien, 2002), and insufficient time for planning and collaboration (Ladd, 2011; Tomon, 2009). Insufficient time for planning and collaboration appeared to be particularly important to elementary and middle school teachers in an analysis of the North Carolina Teacher

Working Conditions (NC TWC) Survey (Ladd, 2011). In addition, the distance a teacher lived from the school prior to starting the job seemed to affect teacher retention in a study of teachers in New York City (Boyd, Lankford, Loeb, & Wyckoff, 2005). Those who lived farther away from their school were more likely to leave.

Other predictors of teacher retention include having mentor support in the first years of teaching, with those not having a strong mentor being more likely to leave (Borman & Dowling, 2008; Johnson, Berg, & Donaldson, 2005; Smith & Ingersoll, 2004); teacher preparation, with those obtaining licenses through non-traditional means more likely to leave (Boyd et al., 2005; Johnson et al., 2005); and salary, with those receiving lower salaries being more likely to leave (Certo & Fox, 2002; Darling-Hammond, 2003; Guarino et al., 2006; Ingersoll, 2001; Loeb et al., 2005; NCTAF, 2002).

There are a few factors where the research findings are mixed concerning their relationship to teacher retention. Some studies suggest that teachers in the fields of special education, mathematics, and science have lower retention rates than teachers in other fields (Guarino et al., 2006; NCTAF, 2002), however, this effect is not evident across all studies (Ingersoll, 2001). Some research has shown teachers with stronger qualifications were at greater risk for leaving their school, especially if they were teaching in a low-achieving school (Boyd et al., 2005; Guarino et al., 2006); however, there is conflicting evidence (Borman & Dowling, 2008).

Working Conditions

Many of the aforementioned factors affecting teacher retention can be categorized under the larger umbrella of “working conditions.” Working conditions can include a variety

of factors: teacher influence (in the classroom and in the school), student behavior, facility condition, school safety, administrative support, staff relations, resource availability and quality, professional development, teaching assignments, class size, curriculum and accountability policies, and career growth opportunities (Johnson, 2006).

This section of the literature review focuses solely on the relationship between working conditions and teacher retention. However, because the most important goal of teacher retention is to improve student achievement by improving teacher effectiveness, it is important to note that recent research has also shown a relationship between working conditions and teacher effectiveness. The results of a study by Kraft and Papay (2014) have shown that improvements in teacher effectiveness are “strongly related to the opportunities and supports provided by the professional context in which they work” (p. 494). Kraft and Papay state that teachers who, during the first 10 years of their career, work in supportive, professional environments tend to improve at much greater rates than teachers who are not working in such environments. This research supports the idea that improving working conditions can ultimately result in improvements in student achievement, in addition to improving teacher retention.

A large body of research has identified the category of “working conditions” as having a significant impact on teacher retention (Borman & Dowling, 2008; Certo & Fox, 2002; Charlotte Advocates for Education, 2004; Darling-Hammond, 2003; Hirsch & Church, 2009; Johnson, 2006; Johnson et al., 2005; Ladd, 2011; Loeb et al., 2005; Tomon, 2009). According to Hirsch and Church (2009), data collected from several iterations of the NC TWC Survey consistently demonstrate that positive perceptions of working conditions are

linked to an increase in teachers' desire to remain at their current school. Overall, "the conditions teachers face in schools and classrooms are critical to teacher retention" (p.1).

Johnson (2006) claims that substantial evidence supports the idea that providing a variety of supports in schools results in nurtured and effective teachers who are more likely to remain in teaching. She identified 11 supportive working conditions for teachers: appropriate and fair teaching assignments, collaborative work with colleagues, extra support for new teachers, supports for working with students, curricular support, sufficient resources and materials, assessments for accountability, ongoing professional development, professional influence and career growth, and safe, well-equipped facilities. Johnson (2006) did not include pay and benefits in her list, stating that "these economic conditions are generally considered distinct from working conditions" (p. 2). She asserted that "consistent, long-term improvement in U.S. public schools will depend not only on the attitudes and efforts of teachers but also on the conditions in which they work" (p. 17) and suggested that improvements in working conditions will assist in meeting goals of improved teacher retention, as well as improved teacher quality and effectiveness.

In a meta-analytic review of the quantitative research on teacher retention, Borman and Dowling (2008) concluded that a large number of the characteristics of teacher working conditions were predictive of teacher attrition. In fact, they suggested that the research they reviewed indicated that teacher attrition is "more strongly moderated by characteristics of teachers' work conditions than previously noted in the literature" (p. 367). Their analysis indicated that working conditions included organizational features of schools, instructional resources available to teachers, salaries, and student demographics.

Boyd et al. (2011) conducted a study to “explore the relationship between school contextual factors and teacher retention decisions in New York City” (p. 303). They surveyed former teachers who left after the first year of teaching and second-year teachers who indicated they considered leaving their current schools the previous year. Boyd et al. controlled for teacher background characteristics and school characteristics that might affect teacher retention by combining their survey data with administrative data on teacher demographics (i.e., gender, ethnicity, age, initial pathway into teaching and certification exam scores) and student demographics. They used multinomial logistic regression to examine the predictive power of six working conditions (teacher influence, administration, staff relations, student behavior, facilities, and safety) on teacher retention. They identified several key relationships between school characteristics, working conditions, and teacher retention decisions. With few exceptions, teachers in schools with a lower rate of students eligible for free or reduced-price lunch reported higher ratings of the six working conditions being studied. Similarly, teachers in schools with lower percentages of minority students had higher average ratings of the working conditions. For each of the six working conditions, “the more positively the teachers perceive these school contextual factors, the less likely they are to transfer to another school or to leave teaching altogether” (p. 323).

Boyd et al. (2011) concluded that, for the year following measurement of working conditions perceptions, an individual teacher’s perceptions of working conditions are not only predictive of that teacher’s retention decision, but also predictive of the retention decisions of other teachers in the school. After controlling for other school and teacher characteristics, they also found that administration was the only working condition of the six

considered in the study found to be significantly predictive of teacher retention decisions, including both decisions to transfer and decisions to leave the profession.

These conclusions are supported by Ladd's (2011) analysis of data collected through the 2006 iteration of the NC TWC Survey. Her analysis demonstrated that working conditions were better predictors of teacher retention than were the school's characteristics. Ladd combined the survey responses with detailed administrative data regarding student characteristics in each school (percentage of minority students, percentage of students eligible for subsidized lunch or with limited English proficiency, and percentage of students whose parents did not have a college degree), qualifications of all teachers in each school (percentage with graduate degrees, percentage with zero to three years of experience or with over 10 years of experience, and average teacher licensure test score), each school's age, size, and district size, and whether or not each school met adequate yearly progress and expected growth as defined by the No Child Left Behind Act (variables intended to represent potential stress placed on teachers to improve test scores). Ladd (2011)

used exploratory factor analysis to sort teachers' responses to questions relating to the broad range of working conditions included in the North Carolina teacher survey into separate factors, allowing the factors to differ by level of school...then use[d] the factors to determine whether working conditions, taken as a group, are predictive of teachers' mobility intentions and actual 1-year departure decisions and to determine the relative predictive power of the individual factors. (p.239)

At the elementary, middle, and high school levels, Ladd (2011) found a negative relationship between teacher retention and perceived quality of school leadership. School

leadership had large and statistically significant coefficients at all three levels, even when taking into account a broad array of control variables. At the high school level, expanded roles for teachers had a larger coefficient than the leadership factor. At the middle school level, a positive relationship between teacher retention and more time for planning and collaboration emerged from the data analysis. A negative relationship between teacher retention and percentage of Black students and, at the middle school level, percentage of Hispanic students was also evident. Interestingly, a higher percentage of Black students was associated with a greater risk ratio of leaving, not transferring within, the district, or, for high school teachers, leaving the teaching profession.

Ladd (2011) concluded that “teachers’ perceptions of working conditions at the school level are highly predictive of an individual teacher’s intentions to leave a school” (p. 251). Although not as predictive as that of individual teacher’s stated intentions to leave, working conditions were found to be predictive of teachers actually leaving at the end of the school year. It is important to note that working conditions were more powerful in Ladd’s model of predicting teachers’ intentions to leave their current school than were the school’s characteristics. This is not to dismiss school characteristics, such as student demographics, as important factors with regard to teacher retention, but rather to say that “working conditions matter” (p. 255).

Recent research has begun to show further support for considering working conditions in understanding and addressing teacher turnover. It has also attempted to clarify assertions that teacher turnover could be linked to school demographics, such as the percentage of low-income, minority, and low-performing students. Schools with high teacher

turnover are disproportionately characterized by having a high percentage of low-income, minority, and low-performing students (Horng, 2009).

Loeb, Darling-Hammond, and Luczak (2005) analyzed several sets of data from California to examine possible relationships between teacher turnover and teacher, student, and organizational factors. The data sets included survey data from over 1,000 teachers regarding working conditions, teacher turnover, hiring in their respective schools, school-level student demographics, and teacher salary scales. Regression analyses were conducted to determine the relationship between school characteristics and teacher turnover. Their study revealed that working conditions, as well as salaries, are substantially strong predictors of teacher turnover, and “when these conditions are taken into account, the influence of student characteristics on turnover is substantially reduced” (Loeb et al., 2005, p. 45). Teachers’ ratings of school conditions emerged as “the strongest predictor of turnover problems” (p. 62), and Loeb et al. (2005) concluded that student demographics could no longer be viewed as a key factor in predicting teacher turnover. They suggest that in schools with high teacher turnover, “improvements in both salaries and working conditions...have the potential to overcome differences in schools’ abilities to hire and retain teachers that have been associated with their students’ characteristics” (p. 67).

Upon conducting a study to further clarify teacher preferences for workplace characteristics, Horng (2009) concluded that, “Teacher attrition patterns are clearly correlated with student characteristics; however, there is growing evidence that teachers may be avoiding hard-to-staff schools because of working conditions that vary with student-body characteristics, not solely because of the students themselves” (p. 692). She proposed that

teachers are actually making choices about where to work based on working conditions preferences rather than avoiding the types of students most frequently associated with hard-to-staff schools.

In her study, Horng (2009) asked teachers to indicate their preferences for 10 workplace characteristics: student socioeconomic status, student ethnicity, student performance, salary, class size, administrative support, school facilities, commute time, input on school-wide decisions, and resources for students. Respondents were asked to choose between sets of options based on the 10 workplace characteristics. Horng used conjoint analysis methodology to make inferences “about respondents’ value systems” (p. 694) based on the trade-offs made in their selections. The results of her study indicate:

Due to the confluence of negative conditions at schools serving low-income, minority, and low-achieving students, variation in teacher attrition across schools at least in part reflects teachers’ preferences for working conditions and not solely students. Furthermore, this study suggests that some working conditions are significantly more important to teachers than student demographics and salary when they choose a school in which to work. (p. 691)

Based on the findings, Horng (2009) surmised that student characteristics appear to serve as proxies for working conditions in teachers’ decisions about where to work.

Berry, Smylie, and Fuller (2008) noted several trends that emerged in their study of data collected via working conditions surveys in several states. They report that the differences in teacher background characteristics do not appear to affect perceptions of their working conditions. With a few exceptions, particularly noting that new teachers were not as

concerned as other teachers about empowerment, teachers responded quite similarly. Berry et al. (2008) also note that there may be more variance in working conditions perceptions within schools than between schools. Most notably, with respect to the focus on school leadership in this current study, Berry et al. (2008) concluded that “teachers and administrators view teaching and learning conditions differently—and often quite dramatically so” (p. 3).

Hence, if teachers’ perceptions of working conditions are available for an individual school, it is important for the school administrators to examine the similarities and differences evidenced by the data. Considering these similarities and differences could give them insight into how to improve teachers’ perceptions of their working conditions. Several researchers have, in fact, recommended improving working conditions as an effective as well as cost-efficient means to improving teacher retention (Borman & Dowling, 2008; Certo & Fox, 2002; Johnson, 2006; NCTAF, 2002).

Some researchers have questioned the reliability of teachers’ perceptions of working conditions. They have argued that such perceptions can be influenced by job performance, a few specific incidents rather than general conditions, degree of exposure to a variety in quality of working conditions, and varying expectations of working conditions (Hanushek & Rivkin, 2007; Johnson et al., 2005; Ladd, 2011). In addition, Ladd (2011) suggested the responses may reflect the perceptions of a biased sample of the teachers in a school. In spite of these potential factors, Ladd suggested it could be useful to use survey-generated measures of perceptions of working conditions as predictors.

School Leadership as a Working Condition

Research has frequently identified school leadership as a working condition as one of the most important factors contributing to teacher retention (Boyd et al., 2011; Certo & Fox, 2002; Ladd, 2011; Reichardt, Snow, Schlang, & Hupfeld, 2008; Tomon, 2009; Turner, 2003; Turner, 2008). In fact, in several studies, school leadership has emerged as the most significant factor affecting teacher retention (Boyd et al., 2011; Ladd, 2011; Turner, 2003). Based on their review of literature on teacher retention, Johnson, Berg, and Donaldson (2005), reported that “researchers have found that principals’ leadership—or lack of leadership—often determines whether teachers are satisfied with their work and workplace” (p. 71).

According to the Teacher Follow-up Survey to the Schools and Staffing Survey for the base year 2008-09, of teachers who moved to another school (“movers”), 17.4 percent indicated dissatisfaction with the lack of support from administration as an either very or extremely important factor in their decision to leave (NCES, 2010). Dissatisfaction with the school administration was an either very or extremely important factor in the decision to leave for 17.3 percent of the movers. Of the teachers who decided to leave teaching (“leavers”) in 2008-09, 12.8 percent identified dissatisfaction with the administration as an either very or extremely important factor in their decision to leave. Of the leavers, 12.3 percent indicated dissatisfaction with the lack of support received from administration as an either very or extremely important factor in their decision to leave.

Turner (2003) analyzed data collected from a job satisfaction survey administered to a non-random sample of teachers in North Carolina in an effort to examine the relationship

between several independent variables and teacher satisfaction. Of the independent variables considered—discipline, administrative duties, administrative support, parental support, salary, compensation, level taught, student’s socio-economic standing, class size, age, and teaching experience—school leadership emerged as the most salient predictor in the model. A positive relationship between teacher satisfaction and school leadership was evident. Given these results, Turner (2003) recommended a focus on increasing administrative support as the most effective strategy to increase teacher satisfaction among the study sample.

Certo and Fox (2002) examined teacher attrition and retention in Virginia by interviewing teachers who stayed in their school divisions (urban, suburban, and rural localities) and teachers who migrated to another school division or left teaching altogether. Second only to salary considerations, a lack of administrative support at both the district and school levels emerged as a prominent reason for teacher attrition. Administrative support at the school level was defined as “policies or practices present that supported teacher work and created an environment that treated teachers as professionals” (p. 61). Of the teachers who did not remain in their school divisions, lack of administrative support was the top reason identified for leaving.

Reichardt, Snow, Schlang, and Hupfeld (2008) conducted a study of teachers in Connecticut in order to provide information about factors affecting teacher retention and how those factors are relevant to policy and practice. They paired similar elementary schools for the purpose of comparison: one school in each pair having a high rate of teacher retention and the other having a low rate. Through interviews of former and current teachers, instructional coaches, school administrators, district personnel responsible for instructional

improvement, human resources directors, and superintendents or designees, Reichardt et al. (2008) identified two themes regarding teacher retention.

First, retention and attrition trends are often simply reflections of how difficult it is to work in a given place. The things that ease teachers' burdens increase retention, and those that add to teachers' burdens increase attrition.... A second theme is the importance of school leadership in easing or adding to the burdens that teachers feel. (p. 5)

After pinpointing four key factors contributing to the level of difficulty of a teacher's job—effective school leadership and management, supportive relationships, feeling successful, and opportunities to grow—they conclude that “while none of these factors is completely under a principal's control, he/she has a significant role to play regarding each one” (p. 8).

Ladd's (2011) analysis of the 2006 iteration of the NC TWC Survey, previously described, revealed a negative correlation between the probability a teacher will leave his or her school and the perceived quality of school leadership. This correlation was evident at elementary, middle, and high school levels. After adding a wide range of control variables into her model, Ladd (2011) indicated that school leadership continued to be a strong and statistically significant factor in predicting teacher departures at all three levels of schooling. She concludes that “school leadership emerges as the most consistently relevant measure of working conditions” (p. 251). Ladd (2011) noted, however, that at the elementary and middle school levels, high quality school leadership decreased the probability a teacher will transfer to another school, but it did not protect against leaving the teaching profession.

Tomon (2009) analyzed the same data set with a specific focus on middle school teachers. Her analysis demonstrated that middle school teachers in North Carolina were more likely to stay at their current school if they had positive perceptions of their working conditions, particularly in the domain of school leadership. Tomon (2009) designed her study to determine, with respect to school leadership, if there was a difference between beginning and career teachers in what they valued as important to teacher retention and in their perceptions of the working condition that most affects teacher retention. She examined responses of 9,351 middle school teachers who, when completing the NC TWC Survey in 2006, indicated they planned to continue teaching at their current school and who taught in a school where at least 40% of the teachers completed the survey.

Tomon (2009) analyzed the responses to the 22 questions under the category of School Leadership and performed statistical analyses to examine differences in responses between beginning and career teachers. She found that both beginning and career teachers valued an atmosphere of trust and mutual respect within the school, effective leadership from the school improvement team, a shared vision, adherence to high professional standards for delivering instruction, feedback that helped improve instruction, effective school leadership, and sustained efforts by school administration to address teacher concerns about facilities and resources, use of time, professional development, empowering teachers, and leadership issues. All of these preferences were categorized as school leadership practices.

Boyd et al. (2011) found that variations in working conditions explain the wide range of attrition rates in New York City. They surveyed former teachers who left after the first year of teaching and second-year teachers who indicated they considered leaving their

current schools the previous year. When asked to identify the most important factor influencing their decision to leave or consider leaving, “well over 40% of both groups identified dissatisfaction with the administration as the most important factor” (p. 327). Of the six working conditions examined in the study (teacher influence, administration, staff relations, student behavior, facilities, and safety), “the administration factor is the only one that significantly predicts teacher retention decisions after controlling for other school and teacher characteristics” (p. 323). Overall, the research indicates that school leadership is the most important predictor of teacher retention.

School Leadership, Working Conditions, and School Locale

Given that urban schools typically serve higher percentages of minority, low-wealth, and low-achieving students than do schools in other urban-centric locales, and given the potential that these student demographics may serve as proxies for school working conditions (Hanushek, Kain, & Rivkin, 2004; Hanushek & Rivkin, 2007; Horng, 2009; Loeb et al., 2005), it is reasonable to consider the possibility of a relationship between a school’s urban-centric locale and teachers’ perceptions of working conditions and of school leadership as a working condition. Hanushek and Rivkin (2007) analyzed data from the 1999-2000 Schools and Staffing Survey and surmised that teachers in urban districts across the nation were more likely to indicate poorer working conditions, including administrator support, than teachers in suburban or rural communities. They also reported teachers in urban districts were more likely to indicate job dissatisfaction than teachers in other districts.

Similarly, a study conducted by Abel and Sewell (1999) demonstrated that, among the 98 participating secondary school teachers in Georgia and North Carolina, the urban

teachers self-reported greater stress resulting from poor working conditions and poor staff relations than did the rural teachers. Abel and Sewell (1999) administered two instruments, both of which were previously used and had an established internal reliability—a survey on sources of stress and an inventory to measure burnout. They “used multivariate analysis of variance (MANOVA) to examine the differences between rural and urban school teachers on the four sources of stress” (p. 290). The four sources of stress examined by Abel and Sewell (1999) were pupil misbehavior—“pupils who continually misbehave and are impolite, maintaining class discipline, and difficult classes”; poor working conditions—“inadequate salary and poor promotion prospects, lack of recognition for good teaching, and lack of or inadequate equipment and resources for teaching”; poor staff relations—“lack of friendly atmosphere among staff and lack of support among colleagues and from the administration-principal”; and time pressures—“too much paperwork, lack of time to spend with individual pupils, and demands on after-school time” (p. 292).

Abel and Sewell (1999) found that teachers in urban schools self-reported greater stress resulting from poor working conditions and poor staff relations than did the teachers in rural schools. There was no significant difference between teachers in rural and urban schools in stress resulting from pupil misbehavior and from time pressures, with both localities indicating a greater amount of stress from pupil misbehavior and time pressures than from poor working conditions or from poor staff relations. There was also a difference with regard to predictors of burnout. Burnout in teachers in rural schools was best predicted by time pressures and poor working conditions, while pupil misbehavior and poor working conditions better predicted burnout in urban school teachers. Abel and Sewell (1999)

encouraged caution in interpreting these results, however, due to the small sample size and limited geographic area included in their study.

Turner (2008) conducted a web-based survey of 169 teachers in six public high schools in Virginia to investigate teachers' perceptions of their principals' leadership. Using data from the Virginia Department of Education and the National Center for Education Statistics Common Core of Data combined with the survey data, Turner (2008) performed a causal-comparative analysis of these perceptions with school-level variables (school location, school socio-economic standing, school academic performance, and school minority percentages). Turner (2008) examined five domains of principal behaviors and practices: "(1) Vision, Mission, and Culture; (2) Curriculum and Classroom Instruction; (3) Collaboration and Shared Leadership; (4) Family and Community Involvement; and (5) Effective Management" (p. 46). Analysis of variance (ANOVA) and post hoc tests (Tukey-Kramer) were performed on the data collected and showed a significant difference in how teachers in rural schools versus teachers in urban schools perceived principal leadership in domains 1, 2, 3, and 5. Although Turner (2008) did not elaborate on these differences, he did indicate the existence of a correlation between teachers in rural schools and reported positive perceptions of principal leadership.

For the sake of the discussion of the following literature, it is necessary to consider the proposal that the student demographics of schools, such as percentages of minority students, low-wealth students, and low-performing students, serve as proxies for working conditions (Hanushek et al., 2004; Hanushek & Rivkin, 2007; Horng, 2009; Loeb et al., 2005). "Teacher turnover is high in schools that serve large shares of poor or nonwhite

students because the work is difficult, and the teachers who undertake it are often the least equipped to succeed” (Murnane & Steele, 2007, p. 15). An enduring trend of disproportionately assigning poor, minority students to teachers with the least preparation and the weakest academic background, coupled with the trend of schools serving a larger proportion of poor, minority students having poorer working conditions than do schools with a lower proportion of poor, minority students, leads to a seemingly self-perpetuating cycle of high teacher turnover and poor working conditions (Murnane & Steele, 2007).

Hanushek, Kain, and Rivkin (2004) found evidence of the impact of student demographics when they conducted an investigation into the factors that have an impact on teacher turnover in public schools. They analyzed a rich set of data compiled by the Texas Education Agency and the University of Texas at Dallas’s Texas Schools Project. These “matched panel data sets” (p. 333) on teachers and students in Texas elementary schools for the years 1993 through 1996 included demographic information on students and teachers, as well as students’ performance on the Texas Assessment of Academic Skills (TAAS) and the years of experience, education and salary levels, grades and subjects taught, and size of classes of the teachers.

Hanushek et al.’s (2004) analysis indicated that teachers’ decisions to leave a school are impacted more by differences in student characteristics than by salary differences between schools. Assuming that higher proportions of minority, low-wealth, and low-achieving students are reflections of working conditions in schools serving such populations, as inner-city schools typically do, Hanushek et al. (2004) suggest that it is more sensible from a policy perspective to improve working conditions in these schools than it would be to

provide financial incentives for teaching in them, given the substantially large salary increases necessary to reduce teacher attrition in such schools.

Again using the data set from Texas public schools, Hanushek and Rivkin (2007) find evidence of working conditions being a significant factor in teacher job satisfaction, with urban school teachers being “less likely to report general satisfaction” (p. 72). They state “working conditions in urban and suburban districts differ substantially, with urban teachers reporting far less administrator and parental support, worse materials, and greater student problems” (p. 69).

Little research was found on whether a school’s urban-centric locale is related to teachers’ perceptions. The small amount of research available seems to indicate the existence of some differences in how teachers in urban schools perceive working conditions as compared to teachers in rural schools (Hanushek & Rivkin, 2007) and in perceptions of school leadership (Turner, 2008). Urban teachers tend to have lower perceptions of working conditions, including perceptions of less support from school leadership, than do rural teachers (Hanushek & Rivkin, 2007). This current study seeks to expand this body of research.

Summary

In Chapter 2 an overview of the literature relevant to the impact of teachers on student achievement and teacher turnover trends was presented. In addition, a summary was provided of the literature on teachers’ perceptions of working conditions, specifically of school leadership as a working condition. The chapter concluded with a review of the

literature regarding how a school's urban-centric locale may be related to teachers' perceptions of working conditions.

Chapter 3 will provide a detailed description of the methodology entailed in this quantitative study, including a description of the sample, data instrumentation, and analysis procedures. Chapter 4 will present the findings to the research questions, and will be followed by a discussion of key findings, implications, and directions for future research, which will be specified in Chapter 5.

CHAPTER 3: METHODOLOGY

Introduction

Working conditions have a significant impact on teachers' decisions to remain at or leave their school (Borman & Dowling, 2008; Certo & Fox, 2002; Charlotte Advocates for Education, 2004; Darling-Hammond, 2003; Hirsch & Church, 2009; Johnson, 2006; Johnson, Berg, & Donaldson, 2005; Ladd, 2011; Loeb, Darling-Hammond, & Luczak, 2005; Tomon, 2009). School leadership is a working condition that has demonstrated a very strong, if not the strongest, relationship with teachers' decisions to leave or remain at a school or in the profession (Boyd, Grossman, Ing, Lankford, Loeb, & Wyckoff, 2011; Ladd, 2011; National Center for Educational Statistics, 2007; National Center for Educational Statistics, 2010; New Teacher Center, 2010). Because teachers' perceptions of working conditions can differ between school locales (Abel & Sewell, 1999; Hanushek & Rivkin, 2007; Turner, 2008), this study seeks to understand to what extent a school's locale is associated with teachers' perceptions of school leadership as a working condition, a distinction for which there is currently little research available. Specifically, the research questions guiding this study are:

RQ1: What are teachers' perceptions of school leadership as a working condition?

RQ2: What is the relationship between teacher demographics and teachers' perceptions of school leadership as a working condition?

RQ3: Controlling for teacher demographics, what is the relationship between school contextual factors and teachers' perceptions of school leadership as a working condition?

RQ4: To what extent does the relationship between school contextual factors and teachers' perceptions of school leadership as a working condition vary according to a school's locale?

This chapter describes in detail the methodology used to answer these research questions. Data from the 2012 administration of the North Carolina Teacher Working Conditions (NC TWC) Survey will be analyzed to investigate if there are differences in how teachers in each of the four main urban-centric locales (city, suburb, town, rural area) view school leadership as a working condition. Potential confounding variables, such as teacher demographics and school contextual factors (e.g., percentages of minority and low-wealth students served by the school and school size) are included in the statistical models. This chapter describes the sample, data source, survey instrument, variables, and statistical methods used to analyze the data.

Data Sources

2012 North Carolina Teacher Working Conditions Survey

The NC TWC Survey was chosen for this study because of its relevance to the researcher, a life-long resident of North Carolina who is a parent and a former teacher and administrator, and who plans to pursue roles impacting North Carolina teacher working conditions. In addition, the reliability and validity of this survey have been established through the six iterations of the survey since 2002. Describing both the North Carolina and South Carolina teacher working conditions surveys, Leithwood (2006) wrote, "The methodological rigor of these studies, impressive size of the sample, and remarkable response rate, along with the consistency of results and especially their examination of

relationships among teacher working conditions, student achievement, and student retention make them exceptionally useful” (p. 49). Given these attributes of the survey’s design and sample, it is certainly well-suited to provide robust conclusions related to the research questions. The 2012 iteration of the survey was selected because it included the most current data available from North Carolina educators at the time of the study. In addition, the data could be aligned with the most up-to-date designations of schools’ urban-centric locale—designations that were based on the U.S. Census Bureau’s 2010 Census data.

The NC TWC Survey has been administered to teachers, administrators, and all other licensed educators in North Carolina’s public schools biennially since 2002 when Governor Mike Easley and the North Carolina Professional Teaching Standards Commission (NCPTSC) initiated the endeavor (“Teaching & Learning Conditions Survey,” n.d). The New Teacher Center (NTC) has assisted North Carolina with the administration and analysis of the NC TWC Survey since its inception. Due to its successful track record of administering what it generically calls a Teaching and Learning Conditions Survey, the NTC has worked with 12 states across the nation over the past 10 years to develop and implement surveys similar to the NC TWC Survey but tailored to the needs of the state or district. The survey design is based on a validated set of questions the NTC has used in several states.

The most recent iteration of the NC TWC Survey for which data are available for analysis was administered in the spring of 2012. The survey was also administered in March of 2014, however, the data from this iteration were not available for use at the time of this study. All educators employed in NC public schools were eligible to participate in the 2012 survey, and 100,042 educators (1,790 principals, 1,992 assistant principals, and 87,562

teachers) chose to respond, giving an 86.22% participation rate across the state (Hirsch & Maddock, 2012). This participation rate is slightly lower than the rate for the 2010 administration of the NC TWC Survey, which had the highest participation rate to date (89 percent) (NTC, 2010). For this study, only the responses from the those participants indicating their position was that of a teacher, which, as described on the survey, could include instructional coaches, department heads, vocational teachers, literacy teachers, specialists, and others, will be included in analyses. Given that the focus of this study is on teachers' perceptions, responses from those indicating their position as principal, assistant principal, or other educational professional (e.g., school counselor, school psychologist, social worker, etc.) were omitted, leaving a total of 85,306 respondents in the final data set.

Response rates. Since the first administration of the NC TWC Survey, the response rate has improved, with the 2010 iteration having highest participation rate to date (89 percent) (NTC, 2010), suggesting that the survey results are quite representative of educators across the state. The 2012 NC TWC Survey had an 86.22% participation rate (Hirsch & Maddock, 2012). The responses to the 2012 survey were sufficient to provide data for each district in North Carolina. Of the 2,501 schools included in the data set, 1,203 schools had a participation rate of at least 95% (Hirsch & Maddock, 2012). All charter schools and “special schools” (such as the North Carolina School for the Deaf at Morganton) were excluded from the data set because there was not sufficient information regarding school contextual factors for these schools. In summary, 2,405 schools with a total of 85,306 respondents were included in the final data set.

Survey instrument. The 2012 NC TWC Survey collected data related to eight working conditions: time (19 questions), facilities and resources (9 questions), community support and involvement (8 questions), managing student conduct (7 questions), teacher leadership (17 questions), school leadership (20 questions), professional development (37 questions), and instructional practices and support (11 questions) (NC TWC Initiative, 2012). Additional questions were asked of participants who identified themselves as principals or novice teachers. Participants also responded to three basic demographic questions (i.e., role in school, years of experience in education, and years in current school). In addition to the eight main areas of focus, five “Overall” questions were asked: immediate professional plans, aspect of teaching conditions most affecting willingness to remain at current school, aspect of teaching conditions most important in promoting student learning, degree of agreement that current school is a good place to work and learn, and degree of agreement that current school utilizes the results of the 2010 NC TWC Survey.

Survey validity and reliability. “Analyses of the psychometric soundness of this and previous iterations of the TWC Survey indicate that it is a reliable and valid measure of the presence of teaching conditions in participating schools” (NTC, 2012b, p. 1). The validity of a survey refers to the extent to which the survey actually measures what it is intended to measure. In the case of the 2012 NC TWC Survey, the survey is intended to measure “teaching, leading and learning conditions” (p. 1) as reflected by the eight theoretical constructs of Time, Managing Student Conduct, School Leadership, Professional Development, Teacher Leadership, Facilities and Resources, Community Support and Involvement, and Instructional Practices and Support. The validity of this iteration of this

survey is based on the validity previously established for the other five iterations of the survey administered since 2002. The validity of the prior iterations has been established by following several steps.

The development of the initial survey created in 2001 was based on a review of the literature regarding “the role of working conditions on teacher dissatisfaction and which of those conditions contributed to teacher mobility” (NTC, 2012b, p. 1) and included analyses of data from the National Center for Educational Statistics’ (NCES) School and Staffing Survey (SASS). This work led to the development of 30 state working standards, divided into five domains (Time, Empowerment, Leadership, Professional Development, and Facilities and Resources), which formed the basis of the 2002 iteration of the survey. Many of the questions on the survey were based on items included in the NCES SASS.

The 2004 instrument was evaluated by a sampling of educators who were asked to rank the relevance and importance of each question (NTC, 2012b).

Those questions were then compared to the factor analyses to verify the importance of a set of critical conditions in each area of the survey. The questions rated as most important also had the highest factor loads and most make up the battery of core questions still used in 2010 in multiple states and districts (p. 2).

Additionally, correlations were run between the survey’s perceptual questions and the survey items deemed “reality” questions. For example, “there were statistically significant and meaningful correlations between teachers’ perception of time and how much planning time they received and how many hours outside of the school day they worked” (p. 2).

Over the years, feedback regarding the wording of the questions as well as suggestions for other areas of assessment has been informally collected from educators in North Carolina and across the United States (NTC, 2012b). In addition, American Institutes for Research conducted a third party independent examination of the survey prior to the 2010 iteration. The feedback from educators and the results of this examination have been used to revise and improve the survey.

Several changes were made to the 2010 iteration. To provide “a more detailed and nuanced lens to examining school working conditions” three survey constructs were added to address conditions related to Managing Student Conduct, Community Support and Involvement, and Instructional Practices and Support (NTC, 2012b, p. 1). To clarify, some existing survey questions previously categorized under Facilities and Resources, Teacher Empowerment, and School Leadership were redistributed and categorized under Managing Student Conduct. In addition, response options changed from a 1-to-6 scale to a 4-point scale with a “don’t know” option. The 2012 survey iteration was identical to the 2010 survey.

The validity of the eight theoretical constructs of the 2012 survey was assessed by confirmatory and exploratory factor analyses on the data set conducted by the New Teacher Center (2012b). In the confirmatory factor analysis, eight areas were identified. These included five of the original theoretical constructs (Time, Managing Student Conduct, Professional Development, Facilities and Resources, Community Support and Involvement). Teacher Leadership and School Leadership combined as one area. This result is not surprising given that previous analyses of similar surveys of teaching conditions have demonstrated a strong overlap between these two areas. This analysis also showed a division

of the original construct of Instructional Practices and Support into two separate constructs. “These results indicate that the survey sections are well suited in North Carolina to reflect the focus area of each major concept generated through the factor analyses” (p. 3). The original eight constructs were used for reporting purposes.

The reliability of a survey instrument refers to the degree to which the instrument results in consistent measurement. Analyses were conducted by the NTC to determine the reliability of the 2012 iteration of the NC TWC Survey. “In order to test the internal consistency of the eight major constructs (Time, Managing Student Conduct, School Leadership, Professional Development, Teacher Leadership, Facilities and Resources, Community Support and Involvement and Instructional Practices and Support), Cronbach’s alphas were calculated (NTC, 2012b). An alpha coefficient ranges from 0 to 1 with higher coefficients indicating higher levels of instrument consistency. “All eight constructs are reliable with alphas above 0.863” (p. 3).

Administration of survey instrument. Each school’s North Carolina Association of Educators (NCAE) representative was asked to hold a faculty meeting and disseminate a letter from Governor Beverly Perdue to each participant in the school (Strickland, 2012). Each copy of the letter explained the purpose of the survey and included a unique anonymous code, usable only once, to enter into the 2012 NC TWC Survey website. The code, although anonymous, did link each individual participant to his or her respective school because an individual school needed at least five participants and a participation rate of at least 40% in order to have sufficient data for analysis. Participants were informed of these requirements prior to taking the survey and could, at any time during the survey window, view their

school's current participation rate. The NCAE representative was asked to present to the participants facts about the 2012 NC TWC Survey, using the "Frequently Asked Questions" link on the survey website, and to encourage participants within the same school to trade codes before accessing the survey, if they so chose, to help ease concerns over anonymity.

Participants could complete the survey from any internet connection and at any time during the window in which the survey was open. A Help Desk resource was accessible via email and a toll-free phone line (Perdue, 2012). A Frequently Asked Questions link on the survey website indicated completion of the survey would take approximately 30 minutes and must be done in one session (NTC, 2012a). This document also gave detailed explanations regarding ensured anonymity. For example, it stated that although the survey included some demographic questions, responses to these questions were reported only at the regional level.

A preview of the survey was made available on the NC TWC Survey website allowing individuals to review the questions prior to participating. The first page of the study reiterated the anonymity of the given code and encouraged honest responses to increase the survey's effectiveness in collecting useful data (NC TWC Initiative, 2012).

For each survey question, participants indicated their answer using a radio button (NC TWC Initiative, 2012). Only one answer was allowed for each question. A Likert scale (strongly disagree, disagree, agree, strongly agree, don't know) was provided for response options for the significant majority of the survey questions. Several questions on the survey did not use this same Likert scale response format, using choices relevant to the question, such as "no role at all, small role, moderate role, large role, don't know". These variations can be seen in Tables 4 and 9.

Variables

Outcome variable. This section describes the variables in the study. The outcome variable is teachers' perceptions of school leadership. The frequency distribution of teachers' perceptions of school leadership are presented in Table 1.

Table 1

Teachers' Perceptions of School Leadership

Label	Variable	Frequency Distribution
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about school leadership in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
ldl21sharedvis	The faculty and leadership have a shared vision.	1 = 3.7% 2 = 13.5% 3 = 58.9% 4 = 20.7% 5 = 2.9% NR = 0.3%
eml21trustresp	There is an atmosphere of trust and mutual respect in this school.	1 = 7.5% 2 = 21.0% 3 = 49.1% 4 = 20.5% 5 = 1.1% NR = 0.7%
ldl21raiseconc	Teachers feel comfortable raising issues and concerns that are important to them.	1 = 8.7% 2 = 21.8% 3 = 46.9% 4 = 20.7% 5 = 1.6% NR = 0.4%
ldl21tchrsupp	The school leadership consistently supports teachers.	1 = 5.6% 2 = 16.8% 3 = 51.3% 4 = 23.2% 5 = 2.6% NR = 0.6%

Table 1 continued

ldl21profstds	Teachers are held to high professional standards for delivering instruction.	1 = 1.5% 2 = 4.7% 3 = 52.1% 4 = 40.8% 5 = 0.6% NR = 0.3%
ldl21usedata	The school leadership facilitates using data to improve student learning.	1 = 1.2% 2 = 4.5% 3 = 53.4% 4 = 38.3% 5 = 2.3% NR = 0.4%
ldl21tchrperf	Teacher performance is assessed objectively.	1 = 3.4% 2 = 9.7% 3 = 56.7% 4 = 26.0% 5 = 3.8% NR = 0.3%
ldl21fdbkimpr	Teachers receive feedback that can help them improve teaching.	1 = 3.1% 2 = 11.9% 3 = 57.0% 4 = 25.6% 5 = 2.2% NR = 0.3%
ldl21evalconsis	The procedures for teacher evaluation are consistent.	1 = 3.9% 2 = 11.1% 3 = 54.2% 4 = 25.8% 5 = 4.6% NR = 0.3%
ldl21sipeffect	The school improvement team provides effective leadership at this school.	1 = 3.2% 2 = 13.1% 3 = 55.1% 4 = 21.1% 5 = 7.0% NR = 0.4%
ldl21recogaccom	The faculty are recognized for accomplishments.	1 = 4.2% 2 = 12.1% 3 = 54.0% 4 = 27.7% 5 = 1.6% NR = 0.4%

Table 1 continued

	Top-level Question: The school leadership makes a sustained effort to address teacher concerns about:	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
ldl21effortld	Leadership issues	1 = 5.0% 2 = 14.4% 3 = 58.2% 4 = 13.8% 5 = 8.2% NR = 0.5%
ldl21effortfr	Facilities and resources	1 = 3.2% 2 = 10.2% 3 = 64.1% 4 = 16.9% 5 = 4.9% NR = 0.7%
ldl21efforttm	The use of time in my school	1 = 4.7% 2 = 17.1% 3 = 57.7% 4 = 14.7% 5 = 5.1% NR = 0.6%
ldl21effortpd	Professional development	1 = 3.7% 2 = 13.8% 3 = 60.8% 4 = 15.9% 5 = 5.2% NR = 0.6%
ldl21efforttl	Teacher leadership	1 = 3.2% 2 = 11.2% 3 = 63.2% 4 = 15.7% 5 = 6.2% NR = 0.6%
ldl21effortcs	Community support and involvement	1 = 2.7% 2 = 9.4% 3 = 64.1% 4 = 16.5% 5 = 6.7% NR = 0.6%

Table 1 continued

ldl21effortsc	Managing student conduct	1 = 6.2% 2 = 15.7% 3 = 57.0% 4 = 16.6% 5 = 3.9% NR = 0.5%
ldl21effortip	Instructional practices and support	1 = 2.9% 2 = 9.2% 3 = 64.8% 4 = 18.3% 5 = 4.3% NR = 0.6%
ldl21effortmn	New teacher support	1 = 4.3% 2 = 12.0% 3 = 55.4% 4 = 16.5% 5 = 11.1% NR = 0.7%

Note. Source: NC TWC Survey, 2012. NR = No response.

In the 2012 NC TWC Survey there are 20 items that measure teachers' perceptions of their respective school leader. Each questionnaire item was measured on a Likert scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree. Respondents could also select 5 = Don't Know. "Don't Know" responses were recoded as "system missing". Confirmatory factor analysis (CFA) was conducted on each item associated with the top-level question to determine if there were any underlying latent factors. Conducting CFA served to reduce the number of factors considered in the research model and created outcome variables comprised of different items (i.e., a summative scale).

Eigenvalues, scree plots, and rotated component matrices resulting from the CFA were considered in determining the number of factors to create to represent the outcome

variable. In general, there is a preference for selecting factors with an eigenvalue greater than one, however, at times this may inaccurately include or exclude factors (Rahn, n.d.).

Therefore, the location of the point at which the slope of the curve created by the eigenvalues begins leveling off in the scree plot and the factor loadings shown in the rotated component matrices created by the selection of two or more factors were considered as well. In the rotated component matrices (using varimax rotation), if a factor did not have at least three variables with their highest loadings on that factor, it was strongly considered for exclusion. Additionally, the researcher reviewed the results to determine whether or not the variables that load highly on the same factor were a logical grouping of variables (i.e., they have a common concept, such as items related to instructional time spent on assessments and items related to instructional time spent on instruction).

Then, item reliability analysis was conducted to determine if any items needed to be excluded (Gliem & Gliem, 2003). For each top-level question, the Chronbach's alpha coefficient, ranging from 0 to 1, was calculated to determine the level of internal consistency of the items in the scale. As an indication of strong internal consistency, a Chronbach's alpha coefficient of greater than 0.7 was preferred, although not strictly adhered to since there is no lower limit for this value. The results from the factor analysis and item reliability analysis informed the creation of composite variables—variables constructed from multiple items—to represent teachers' perceptions of school leadership as a working condition.

Table 2 indicates the new composite variables regarding teachers' perceptions of school leadership as a working condition that were constructed using the results of CFA and IRA, with the exception of school leadership NTC. The composite variable school leadership

NTC was constructed by the New Teacher Center (NTC) in their CFA and IRA of the 2012 NC TWC Survey data. It is composed of nine of the 11 variables that are included in the composite variable school leadership, a combination that was not evident in this current study's CFA and IRA. It is being included in this current study for comparison purposes. The composite variables school climate and teacher evaluation are subsets of the larger composite variable school leadership. The results of the CFA and IRA did not strongly indicate the selection of only one composite variable, so the two smaller composite variables were included for comparison purposes as well. The remaining composite variable, addressing teacher concerns, is composed of all the variables included in the second top-level question of the "School Leadership" section of the NC TWC Survey, which addresses school leadership as it relates to addressing teacher concerns. Because the composite variable school leadership gives the broadest coverage to the concept of school leadership as a working condition, it served as the primary focus for the outcome variable.

Table 2

New Composite Variables to be used as Outcome Variables

New Composite Variable	Chronbach's alpha	N of Items	Original Variables Included	Variable Description	Response Options
School leadership	.946	11		Please rate how strongly you agree or disagree with the following statements about school leadership in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			ldl21sharedvis	The faculty and staff have a shared vision.	
			eml21trustresp	There is an atmosphere of trust and mutual respect in this school.	
			ldl21raiseconc	Teachers feel comfortable raising issues and concerns that are important to them.	
			ldl21tchrspup	The school leadership consistently supports teachers.	
			ldl21sipeffect	The school improvement team provides effective leadership at this school.	
			ldl21recogaccom	The faculty are recognized for accomplishments.	
			ldl21profstds	Teachers are held to high professional standards for delivering instruction.	
			ldl21usedata	The school leadership facilitates using data to improve student learning.	
			ldl21tchrperf	Teacher performance is assessed objectively.	
			ldl21fdbkimpr	Teachers receive feedback that can help them improve teaching.	
ldl21evalconsis	The procedures for teacher evaluation are consistent.				

Table 2 continued

School leadership NTC	.936 ^a	9		Please rate how strongly you agree or disagree with the following statements about school leadership in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			ldl21sharedvis	The faculty and staff have a shared vision.	
			ldl21raiseconc	Teachers feel comfortable raising issues and concerns that are important to them.	
			ldl21tchrsupp	The school leadership consistently supports teachers.	
			ldl21sipeffect	The school improvement team provides effective leadership at this school.	
			ldl21recogaccom	The faculty are recognized for accomplishments.	
			ldl21profstds	Teachers are held to high professional standards for delivering instruction.	
			ldl21tchrperf	Teacher performance is assessed objectively.	
			ldl21fdbkimpr	Teachers receive feedback that can help them improve teaching.	
			ldl21evalconsis	The procedures for teacher evaluation are consistent.	
School climate	.925	6		Please rate how strongly you agree or disagree with the following statements about school leadership in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			ldl21sharedvis	The faculty and staff have a shared vision.	
			eml21trustresp	There is an atmosphere of trust and mutual respect in this school.	
			ldl21raiseconc	Teachers feel comfortable raising issues and concerns that are important to them.	
			ldl21tchrsupp	The school leadership consistently supports teachers.	
			ldl21sipeffect	The school improvement team provides effective leadership at this school.	
			ldl21recogaccom	The faculty are recognized for accomplishments.	

Table 2 continued

Teacher evaluation	.891	5		Please rate how strongly you agree or disagree with the following statements about school leadership in your school.	1 = Strongly Disagree
			ldl21profstds	Teachers are held to high professional standards for delivering instruction.	2 = Disagree
			ldl21usedata	The school leadership facilitates using data to improve student learning.	3 = Agree
			ldl21tchrperf	Teacher performance is assessed objectively.	4 = Strongly Agree
			ldl21fdbkimpr	Teachers receive feedback that can help them improve teaching.	5 = Don't Know
			ldl21evalconsis	The procedures for teacher evaluation are consistent.	
Addressing teacher concerns	.957	9		The school leadership makes a sustained effort to address teacher concerns about:	1 = Strongly Disagree
			ldl21effortld	Leadership issues	2 = Disagree
			ldl21effortfr	Facilities and resources	3 = Agree
			ldl21efforttm	The use of time in my school	4 = Strongly Agree
			ldl21effortpd	Professional development	5 = Don't Know
			ldl21efforttl	Teacher leadership	
			ldl21effortcs	Community support and involvement	
			ldl21effortsc	Managing student conduct	
			ldl21effortip	Instructional practices and support	
ldl21effortmn	New teacher support				

^aThe Chronbach's alpha calculated by NTC for this composite variable was $\alpha = .938$. The difference in α may reflect the reduction in respondents included in the current study, resulting from the deletion of non-teacher respondents and schools with insufficient data for Level 2 variables.

Explanatory variable. The primary explanatory variable of interest in this study (not presuming causality) is termed here as the urban-centric locale classification of each school as designated by the NCES based on the U.S. Census Bureau's 2010 Census. The school urban-centric locale classifications were gathered from the 2011-2012 school year data via the NCES Elementary/Secondary Information System (EISi) table generating tool. There are four main categories of urban-centric locale: city, suburb, town, and rural area. Although not used throughout the study, several other terms are defined here in order to provide clarity to the definitions given for the urban-centric locales. Unless otherwise noted, the definitions are taken from the National Center for Education Statistics (NCES) website on identification of rural locales (National Center for Education Statistics, n.d.).

Urban-centric locale is one of four school locale types (urban, suburban, town, and rural) as defined in 2006 by the National Center for Education Statistics working in conjunction with the U.S. Census Bureau. The 2006 definitions rely more heavily on proximity of an address to an urbanized area than previous definitions (which relied on population size and county boundaries).

A *city* is an urban-centric locale including territories inside an urbanized area and inside a principal city.

A *suburb* is an urban-centric locale including territories outside a principal city but inside an urbanized area.

A *town* is an urban-centric locale including territories outside an urbanized area but inside an urban cluster.

A *rural area* is an urban-centric locale including territories that are outside urban clusters and urbanized areas.

A *metropolitan statistical area (MSA)* is “one or more contiguous counties that have a core area with a large population nucleus and adjacent communities that are highly integrated (by economics or socially) with the core”.

A *principal city* is “the primary population and economic center of an MSA”.

An *urbanized area* is “a densely settled core” (with a population of at least 50,000) “of census blocks with adjacent densely settled surrounding areas”.

An *urban cluster* is “a densely settled core” (with a population of between 25,000 and 50,000) “of census blocks with adjacent densely settled surrounding areas”.

Given that much research regarding teacher working conditions discusses conditions of urban schools in comparison to conditions of suburban schools, the urban-centric locale “suburb” will be the referent group for this study. The single variable of school locale will be reclassified into four dichotomous variables (either Yes = 1 or No = 0, with respect to the urban-centric locale). Table 3 describes the urban-centric locale distribution for school in North Carolina. Half of the public schools in North Carolina are classified as rural areas, a quarter are located in cities, and a quarter in suburbs or towns.

Table 3

2011-2012 Urban-centric Locale of North Carolina Schools

Label	Variable	Measurement	Frequency Distribution
schoollocale	What is the school's urban-centric locale?	1 = City 2 = Suburb 3 = Town 4 = Rural Area	1 = 25% 2 = 12% 3 = 13% 4 = 50%
citylocale	Is the school's urban-centric locale City?	0 = No 1 = Yes	0 = 75% 1 = 25%
suburblocale	Is the school's urban-centric locale Suburb?	0 = No 1 = Yes	0 = 88% 1 = 12%
townlocale	Is the school's urban-centric locale Town?	0 = No 1 = Yes	0 = 87% 1 = 13%
rurallocale	Is the school's urban-centric locale Rural area?	0 = No 1 = Yes	0 = 50% 1 = 50%

Source: NCES (<http://nces.ed.gov/ccd/elsi>).

Control variables. In addition to the response and outcome variables, four sets of control variables are included in the model. One set of control variables includes two variables about teachers' experience: number of years of experience in education and number of years employed in their current school. The second set of control variables represents school characteristics including: school size, percent of student body receiving free or reduced-priced lunch, and percent of the student body that is minority. Table 4 provides information about the teacher-level and school-level control variables.

Table 4

Teacher Level & School Level Control Variables

Variable	Measurement (min, max)	Frequency Distribution
Teacher-level		
How many total years have you been employed as an educator? ^a	1 = First year	1 = 5.9%
	2 = 2-3 years	2 = 8.6%
	3 = 4-6 years	3 = 15.2%
	4 = 7-10 years	4 = 18.1%
	5 = 11-20 years	5 = 31.1%
	6 = 20+ years	6 = 20.9%
		NR = 0.1%
How many total years have you been employed in the school in which you are currently working? ^a	1 = First year	1 = 15.2%
	2 = 2-3 years	2 = 17.4%
	3 = 4-6 years	3 = 23.9%
	4 = 7-10 years	4 = 17.3%
	5 = 11-20 years	5 = 17.0%
	6 = 20+ years	6 = 5.7%
		NR = 3.3%
School-level		
How many students are enrolled in the school based on the first month average daily membership (ADM)? ^b	Continuous (1, 2736)	Mean: 583.00 Median: 521.00 Mode: 537.00 SD: 370.10
What percentage of the school's student body receives free or reduced price lunch? ^c	Continuous (0, 100)	Mean: 60.27 Median: 61.28 SD: 0.25
What percentage of the school's student body is minority? ^d	Continuous (0, 100)	Mean: 47.86 Median: 45.07 SD: 0.27

Note. Source: ^aNC TWC Survey, 2012. ^bNorth Carolina Department of Public Instruction (2012a). ^cNCDPI (2012b). ^dNCDPI (2012c). NR = No response.

The fourth set of control variables represent other items on the 2012 NC TWC Survey that measure teachers' perceptions of other working conditions which are often associated with perceptions of school leaders' effectiveness. Tables 5 through 12 describe items that capture teachers' perceptions of working conditions (excluding those regarding school leadership): time, facilities and resources, community support and involvement, managing

student conduct, teacher leadership, professional development, and instructional practices and support.

Confirmatory factor analysis (CFA) was conducted on each top-level question to determine the level of association of the corresponding variables with any underlying variable(s), or factor(s). This served to reduce the number of factors considered in the research model. Eigenvalues, scree plots, and rotated component matrices resulting from the CFA were considered in determining the number of factors to create to represent the control variables. Therefore, the location of the point at which the slope of the curve created by the eigenvalues begins leveling off in the scree plot and the factor loadings shown in the rotated component matrices created by the selection of two or more factors were considered as well. In the rotated component matrices (using varimax rotation), if a factor did not have at least three variables with their highest loadings on that factor, it was considered for exclusion. Additionally, the researcher reviewed the results to determine whether or not the variables that load highly on the same factor were a logical grouping of variables (i.e., they have a common concept, such as items related to instructional time spent on assessments and items related to instructional time spent on instruction).

Then item reliability analysis was conducted on these variables for the purpose of determining if any items need to be excluded (Gliem & Gliem, 2003). For each top-level question, the Chronbach's alpha coefficient, ranging from 0 to 1, was calculated to determine the level of internal consistency of the items in the scale. As an indication of strong internal consistency, a Chronbach's alpha coefficient of greater than 0.7 was preferred, although not strictly adhered to since there is no lower limit for this value. The results from the factor

analysis and item reliability analysis informed the creation of composite variables—variables constructed from multiple items—to represent teachers’ perceptions of working conditions measured by the 2012 NC TWC Survey.

Table 5

Teachers’ Perceptions of Time

Label	Variable	Frequency Distribution
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about the use of time in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
tml21clsize	Class sizes are reasonable such that teachers have the time available to meet the needs of all students.	1 = 9.9% 2 = 29.1% 3 = 43.8% 4 = 16.5% 5 = 0.4% NR = 0.4%
tml21collab	Teachers have time available to collaborate with colleagues.	1 = 6.8% 2 = 22.9% 3 = 50.9% 4 = 17.8% 5 = 0.3% NR = 1.4%
tml21focus	Teachers are allowed to focus on educating students with minimal interruptions.	1 = 7.3% 2 = 24.3% 3 = 50.6% 4 = 16.1% 5 = 0.3% NR = 1.5%
tml21noninstime	The non-instructional time provided for teachers in my school is sufficient.	1 = 11.9% 2 = 30.4% 3 = 44.6% 4 = 11.4% 5 = 0.6% NR = 1.0%

Table 5 continued

tml21paperwork	Efforts are made to minimize the amount of routine paperwork teachers are required to do.	1 = 15.3% 2 = 31.0% 3 = 41.4% 4 = 9.9% 5 = 1.6% NR = 0.8%
tml21meetneeds	Teachers have sufficient instructional time to meet the needs of all students.	1 = 5.8% 2 = 24.9% 3 = 53.9% 4 = 14.0% 5 = 0.5% NR = 1.0%
tml21role	Teachers are protected from duties that interfere with their essential role of educating students.	1 = 8.5% 2 = 22.6% 3 = 52.8% 4 = 14.9% 5 = 0.9% NR = 0.4%
	Top-level Question: In an AVERAGE WEEK, how much time do you devote to the following activities during the school day (i.e., time for which you are under contract to be at the school)?	1 = None 2 = ≤ 1 hr 3 = $1 \text{ hr} \leq 3 \text{ hrs}$ 4 = $3 \text{ hrs} \leq 5 \text{ hrs}$ 5 = $5 \text{ hrs} \leq 10 \text{ hrs}$ 6 = $> 10 \text{ hours}$
tmt46indpln	Individual planning time	1 = 2.6% 2 = 20.2% 3 = 34.9% 4 = 23.6% 5 = 14.8% 6 = 2.5% NR = 1.3%
tmt46collabpln	Collaborative planning time	1 = 10.3% 2 = 42.9% 3 = 34.5% 4 = 7.9% 5 = 1.9% 6 = 0.3% NR = 2.3%

Note. Source: NC TWC Survey, 2012. NR = No response.

Table 6

Teachers' Perceptions of Facilities & Resources

Label	Variable	Frequency Distribution
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about your school facilities and resources.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
frl21appmaterial	Teachers have sufficient access to appropriate instructional materials.	1 = 5.2% 2 = 17.6% 3 = 54.8% 4 = 21.9% 5 = 0.3% NR = 0.3%
frl21instrtech	Teachers have sufficient access to instructional technology, including computers, printers, software and internet access.	1 = 5.9% 2 = 16.9% 3 = 47.7% 4 = 28.7% 5 = 0.1% NR = 0.5%
frl21comm	Teachers have access to reliable communication technology, including phones, faxes and email.	1 = 2.6% 2 = 8.0% 3 = 55.8% 4 = 32.8% 5 = 0.2% NR = 0.6%
frl21oequip	Teachers have sufficient access to office equipment and supplies such as copy machines, paper, pens, etc.	1 = 4.7% 2 = 15.3% 3 = 52.8% 4 = 26.6% 5 = 0.2% NR = 0.5%
frl21properson	Teachers have sufficient access to a broad range of professional support personnel.	1 = 3.3% 2 = 14.2% 3 = 58.4% 4 = 23.0% 5 = 0.7% NR = 0.4%
frl21clean	The school environment is clean and well maintained.	1 = 3.9% 2 = 12.0% 3 = 48.6% 4 = 34.3% 5 = 0.4% NR = 0.8%

Table 6 continued

frl21space	Teachers have adequate space to work productively.	1 = 2.3% 2 = 9.3% 3 = 57.1% 4 = 30.4% 5 = 0.4% NR = 0.5%
frl21environ	The physical environment of classrooms in this school supports teaching and learning.	1 = 2.3% 2 = 9.1% 3 = 56.5% 4 = 31.2% 5 = 0.4% NR = 0.4%
frl21relineternet	The reliability and speed of Internet connections in this school are sufficient to support instructional practices.	1 = 6.2% 2 = 16.5% 3 = 52.8% 4 = 23.9% 5 = 0.3% NR = 0.2%

Note. Source: NC TWC Survey, 2012. NR = No response.

Table 7

Teachers' Perceptions of Community Support & Involvement

Label	Variable	Frequency Distribution
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about community support and involvement in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
csl21influence	Parents/guardians are influential decision makers in this school.	1 = 4.9% 2 = 21.0% 3 = 52.4% 4 = 16.2% 5 = 5.1% NR = 0.4%
csl21communic	This school maintains clear, two-way communication with the community.	1 = 1.8% 2 = 8.6% 3 = 63.3% 4 = 23.6% 5 = 2.1% NR = 0.6%

Table 7 continued

csl21encinvolve	This school does a good job of encouraging parent/guardian involvement.	1 = 1.6% 2 = 8.5% 3 = 55.8% 4 = 32.3% 5 = 1.3% NR = 0.5%
csl21infolearn	Teachers provide parents/guardians with useful information about student learning.	1 = 0.4% 2 = 3.1% 3 = 59.6% 4 = 35.3% 5 = 1.1% NR = 0.5%
csl21know	Parents/guardians know what is going on in this school.	1 = 1.7% 2 = 11.8% 3 = 56.4% 4 = 27.0% 5 = 2.6% NR = 0.5%
csl21stusuccess	Parents/guardians support teachers, contributing to their success with students.	1 = 4.8% 2 = 21.9% 3 = 56.8% 4 = 14.2% 5 = 1.7% NR = 0.6%
csl21commsuccess	Community members support teachers, contributing to their success with students.	1 = 2.8% 2 = 13.7% 3 = 61.9% 4 = 16.7% 5 = 4.5% NR = 0.4%
csl21support	The community we serve is supportive of this school.	1 = 2.7% 2 = 12.4% 3 = 58.9% 4 = 21.8% 5 = 3.8% NR = 0.5%

Note. Source: NC TWC Survey, 2012. NR = No response.

Table 8

Teachers' Perceptions of Managing Student Conduct

Label	Variable	Frequency Distribution
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about managing student conduct in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
scl21expconduct	Students at this school understand expectations for their conduct.	1 = 4.0% 2 = 11.7% 3 = 56.3% 4 = 26.0% 5 = 0.3% NR = 1.6%
scl21stufollow	Students at this school follow rules of conduct.	1 = 7.0% 2 = 23.4% 3 = 55.9% 4 = 11.5% 5 = 0.3% NR = 1.9%
scl21policyproc	Policies and procedures about student conduct are clearly understood by the faculty.	1 = 3.1% 2 = 13.1% 3 = 56.1% 4 = 25.4% 5 = 0.4% NR = 1.9%
scl21ldrconsist	School administrators consistently enforce rules for student conduct.	1 = 9.1% 2 = 21.6% 3 = 46.1% 4 = 20.3% 5 = 1.0% NR = 1.9%
scl21efforts	School administrators support teachers' efforts to maintain discipline in the classroom.	1 = 6.3% 2 = 15.0% 3 = 50.7% 4 = 25.4% 5 = 0.9% NR = 1.7%
scl21tchconsist	Teachers consistently enforce rules for student conduct.	1 = 2.8% 2 = 17.3% 3 = 55.1% 4 = 22.3% 5 = 0.9% NR = 1.8%

Table 8 continued

scl21safe	The faculty work in a school environment that is safe.	1 = 1.6% 2 = 5.7% 3 = 57.0% 4 = 33.4% 5 = 0.6% NR = 1.8%
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Note. Source: NC TWC Survey, 2012. NR = No response.

Table 9

Teachers' Perceptions of Teacher Leadership (Items with Sublevel Questions)

Label	Variable	Frequency Distribution
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about teacher leadership in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
eml21experts	Teachers are recognized as educational experts.	1 = 3.9% 2 = 14.2% 3 = 57.6% 4 = 22.3% 5 = 0.9% NR = 1.0%
eml21trustsound	Teachers are trusted to make sound professional decisions about instruction.	1 = 3.7% 2 = 13.3% 3 = 55.8% 4 = 25.6% 5 = 0.6% NR = 1.2%
eml21decmake	Teachers are relied upon to make decisions about educational issues.	1 = 3.6% 2 = 14.8% 3 = 56.6% 4 = 22.8% 5 = 1.1% NR = 1.2%
eml21tchleader	Teachers are encouraged to participate in school leadership roles.	1 = 1.9% 2 = 6.5% 3 = 56.3% 4 = 33.2% 5 = 0.9% NR = 1.2%

Table 9 continued

eml21process	The faculty has an effective process for making group decisions to solve problems.	1 = 4.6% 2 = 18.8% 3 = 53.1% 4 = 19.7% 5 = 2.6% NR = 1.1%
eml21solve	In this school we take steps to solve problems.	1 = 3.4% 2 = 14.7% 3 = 57.3% 4 = 21.5% 5 = 2.0% NR = 1.1%
eml21effleader	Teachers are effective leaders in this school.	1 = 2.2% 2 = 10.6% 3 = 58.1% 4 = 26.7% 5 = 1.2% NR = 1.1%
	Top-level Question: Please indicate the role teachers have at your school in each of the following areas.	1 = No role at all 2 = Small role 3 = Moderate role 4 = Large role 5 = Don't Know
eml49instmat	Selecting instructional materials and resources.	1 = 2.6% 2 = 20.2% 3 = 34.9% 4 = 23.6% 5 = 14.8% NR = 1.3%
eml49techniq	Devising teaching techniques	1 = 2.1% 2 = 11.2% 3 = 32.7% 4 = 50.3% 5 = 2.2% NR = 1.6%
eml49assess	Setting grading and student assessment practices	1 = 4.7% 2 = 16.4% 3 = 35.5% 4 = 39.2% 5 = 2.7% NR = 1.5%

Table 9 continued

eml49inserve	Determining the content of in-service professional development programs.	1 = 14.5% 2 = 30.4% 3 = 34.8% 4 = 14.4% 5 = 4.5% NR = 1.5%
eml49studiscip	Establishing student discipline procedures	1 = 9.7% 2 = 24.8% 3 = 37.9% 4 = 23.8% 5 = 2.4% NR = 1.3%
eml49schbudget	Providing input on how the school budget will be spent	1 = 24.6% 2 = 32.8% 3 = 25.6% 4 = 9.1% 5 = 6.6% NR = 1.3%
eml49newtch	The selection of teachers new to this school	1 = 28.2% 2 = 30.3% 3 = 22.7% 4 = 9.6% 5 = 8.1% NR = 1.1%
eml49siplan	School improvement planning	1 = 3.6% 2 = 17.9% 3 = 38.5% 4 = 36.1% 5 = 2.8% NR = 1.2%

Note. Source: NC TWC Survey, 2012. NR = No response.

Table 10

Teachers' Perceptions of Teacher Leadership (Items with No Sublevel Questions)

Label	Variable	Measurement	Frequency Distribution
eml21schinflu	Teachers have an appropriate level of influence on decision making in this school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know	1 = 9.3% 2 = 21.9% 3 = 53.7% 4 = 11.1% 5 = 3.7% NR = 0.3%

Note. Source: NC TWC Survey, 2012. NR = No response.

Table 11

Teachers' Perceptions of Professional Development

Label	Variable	Frequency Distribution
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about professional development in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
pd121suffres	Sufficient resources are available for professional development in my school.	1 = 3.8% 2 = 15.9% 3 = 60.9% 4 = 16.3% 5 = 2.8% NR = 0.4%
pd121time	An appropriate amount of time is provided for professional development.	1 = 3.7% 2 = 17.0% 3 = 61.3% 4 = 16.0% 5 = 1.4% NR = 0.6%
pd121datadriven	Professional development offerings are data driven.	1 = 2.4% 2 = 12.0% 3 = 57.5% 4 = 16.2% 5 = 11.2% NR = 0.8%

Table 11 continued

pd121alignsip	Professional learning opportunities are aligned with the school's improvement plan.	1 = 1.6% 2 = 6.7% 3 = 62.6% 4 = 18.4% 5 = 9.7% NR = 1.0%
pd121different	Professional development is differentiated to meet the needs of individual teachers.	1 = 8.8% 2 = 28.3% 3 = 46.3% 4 = 11.3% 5 = 4.9% NR = 0.5%
pd121deepeffect	Professional development deepens teachers' content knowledge.	1 = 5.4% 2 = 18.4% 3 = 58.2% 4 = 15.2% 5 = 2.2% NR = 0.7%
pd121sufftrain	Teachers have sufficient training to fully utilize instructional technology.	1 = 4.8% 2 = 22.3% 3 = 55.8% 4 = 15.1% 5 = 1.6% NR = 0.4%
pd121reflect	Teachers are encouraged to reflect on their own practice.	1 = 1.4% 2 = 6.0% 3 = 66.9% 4 = 23.5% 5 = 1.4% NR = 0.8%
pd121followup	In this school, follow up is provided from professional development.	1 = 3.4% 2 = 21.2% 3 = 57.3% 4 = 13.3% 5 = 4.3% NR = 0.5%
pd121colleague	Professional development provides ongoing opportunities for teaches to work with colleagues to refine teaching practices.	1 = 3.7% 2 = 18.0% 3 = 60.7% 4 = 14.8% 5 = 2.3% NR = 0.5%

Table 11 continued

pd121eval	Professional development is evaluated and results are communicated to teachers.	1 = 5.6% 2 = 28.3% 3 = 48.0% 4 = 11.1% 5 = 6.4% NR = 0.6%
pd121implement	Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs.	1 = 3.4% 2 = 12.9% 3 = 65.2% 4 = 15.8% 5 = 2.2% NR = 0.5%
pd121enhance	Professional development enhances teachers' abilities to improve student learning.	1 = 3.0% 2 = 10.4% 3 = 66.6% 4 = 17.5% 5 = 1.9% NR = 0.6%

Note. Source: NC TWC Survey, 2012. NR = No response.

Table 12

Teachers' Perceptions of Instructional Practices & Support

Label	Variable	Frequency Distribution
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about instructional practices and support in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
ipl21statedata	State assessment data are available in time to impact instructional practices.	1 = 5.8% 2 = 17.2% 3 = 53.2% 4 = 11.5% 5 = 12.3% NR = 0.4%
ipl21localdata	Local assessment data are available in time to impact instructional practices.	1 = 2.9% 2 = 10.0% 3 = 61.1% 4 = 15.5% 5 = 9.7% NR = 0.7%

Table 12 continued

ipl21datainform	Teachers use assessment data to inform their instruction.	1 = 0.8% 2 = 4.9% 3 = 64.1% 4 = 24.7% 5 = 4.1% NR = 1.4%
ipl21ccsalgn	The curriculum taught in this school is aligned with Common Core standards.	1 = 1.5% 2 = 11.0% 3 = 59.3% 4 = 21.6% 5 = 5.4% NR = 1.2%
ipl21plcinstr	Teachers work in professional learning communities to develop and align instructional practices.	1 = 1.9% 2 = 8.5% 3 = 59.9% 4 = 26.9% 5 = 2.2% NR = 0.6%
ipl21supports	Provided supports (i.e., instructional coaching, professional learning communities, etc.) translate to improvements in instructional practices by teachers.	1 = 2.2% 2 = 11.0% 3 = 62.9% 4 = 18.4% 5 = 4.9% NR = 0.6%
ipl21trynew	Teachers are encouraged to try new things to improve instruction.	1 = 1.5% 2 = 5.6% 3 = 62.5% 4 = 28.1% 5 = 1.7% NR = 0.6%
ipl21maxsuccess	Teachers are assigned classes that maximize their likelihood of success with students.	1 = 6.6% 2 = 22.2% 3 = 48.3% 4 = 12.6% 5 = 9.6% NR = 0.6%
ipl21autonomy	Teachers have autonomy to make decisions about instructional delivery (i.e., pacing, materials and pedagogy).	1 = 4.6% 2 = 15.7% 3 = 57.8% 4 = 18.5% 5 = 2.9% NR = 0.5%

Table 12 continued

ipl21improve	State assessments provide schools with data that can help improve teaching.	1 = 6.6% 2 = 19.3% 3 = 55.9% 4 = 10.6% 5 = 7.1% NR = 0.6%
ipl21gauge	State assessments accurately gauge students' understanding of standards.	1 = 12.2% 2 = 29.8% 3 = 42.6% 4 = 6.9% 5 = 8.0% NR = 0.6%

Note. Source: NC TWC Survey, 2012. NR = No response.

Table 13 displays the new composite variables regarding teachers' perceptions of working conditions other than school leadership that were constructed using the results of CFA and IRA. Also included in Table 13 are composite variables used by the NTC in their CFA and IRA of the 2012 NC TWC Survey data. These composite variables are differentiated by the addition of "NTC" in the variable name. Three of these NTC composite variables aligned directly with the composite variables that emerged from the current study's CFA and IRA. These "matching" composite variables are school use of time NTC, student conduct NTC, and professional development NTC. The other NTC composite variables were included in a separate analysis for comparison purposes. In the separate analysis, the NTC composite variables were used in place of the current study's composite variables (e.g., the composite variable facilities/resources NTC was used instead of the composite variable facilities and the composite variable resources).

Table 13

New Composite Variables Reflecting Teachers' Perception of Working Conditions other than School Leadership

New Composite Variable	Chronbach's alpha	N of Items	Original Variables Included	Variable Description	Response Options
School use of time NTC	.854 ^{a,h}	7		Please rate how strongly you agree or disagree with the following statements about the use of time in your school.	1 = Strongly Disagree 2 = Disagree
			tml21clsiz	Class sizes are reasonable such that teachers have the time available to meet the needs of all students.	3 = Agree 4 = Strongly Agree
			tml21collab	Teachers have time available to collaborate with colleagues.	5 = Don't Know
			tml21focus	Teachers are allowed to focus on educating students with minimal interruptions.	
			tml21noninstime	The non-instructional time provided for teachers in my school is sufficient.	
			tml21paperwork	Efforts are made to minimize the amount of routine paperwork teachers are required to do.	
			tml21meetneeds	Teachers have sufficient instructional time to meet the needs of all students.	
		tml21role	Teachers are protected from duties that interfere with their essential role of educating students.		
Time on planning	.474	2		In an AVERAGE WEEK, how much time do you devote to the following activities during the school day (i.e., time for which you are under contract to be at the school)?	1 = None 2 = < 1 hr 3 = 1 hr < 3 hrs 4 = 3 hrs < 5 hrs 5 = 5 hrs < 10 hrs 6 = > 10 hrs
			tmt46indpln	Individual planning time	
			tmt46collabpln	Collaborative planning time	

Table 13 continued

Time on non-instructional responsibilities	.692	6		In an AVERAGE WEEK, how much time do you devote to the following activities during the school day (i.e., time for which you are under contract to be at the school)?	1 = None 2 = < 1 hr 3 = 1 hr < 3 hrs 4 = 3 hrs < 5 hrs 5 = 5 hrs < 10 hrs 6 = > 10 hrs
			tmt46supduty	Supervisory duties	
			tmt46reqdcomm	Required committee and/or staff meetings	
			tmt46pprwk	Completing required administrative paperwork	
			tmt46commpar	Communicating with parents/guardians and/or the community	
			tmt46studisc	Addressing student discipline issues	
			tmt46reqdpd	Professional development	
Time on assessments	.765	3		In an AVERAGE WEEK, how much time do you devote to the following activities during the school day (i.e., time for which you are under contract to be at the school)?	1 = None 2 = < 1 hr 3 = 1 hr < 3 hrs 4 = 3 hrs < 5 hrs 5 = 5 hrs < 10 hrs 6 = > 10 hrs
			tmt46preptest	Preparation for required federal, state, and local assessments	
			tmt46delassmt	Delivery of assessments	
			tmt46results	Utilizing results of assessments	
Facilities/ resources NTC	.874 ^{b,h}	9		Please rate how strongly you agree or disagree with the following statements about your school facilities & resources	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			frl21appmaterial	Teachers have sufficient access to appropriate instructional materials.	
			frl21instrtech	Teachers have sufficient access to instructional technology, including computers, printers, software and internet access.	
			frl21comm	Teachers have access to reliable communication technology, including phones, faxes and email.	

Table 13 continued

			frl21oequip	Teachers have sufficient access to office equipment and supplies such as copy machines, paper, pens, etc.	
			frl21properson	Teachers have sufficient access to a broad range of professional support personnel.	
			frl21relinternet	The reliability and speed of Internet connections in this school are sufficient to support instructional practices.	
			frl21clean	The school environment is clean and well maintained.	
			frl21space	Teachers have adequate space to work productively.	
			frl21environ	The physical environment of classrooms in this school supports teaching and learning.	
resource	.842	6		Please rate how strongly you agree or disagree with the following statements about your school facilities and resources.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			frl21appmaterial	Teachers have sufficient access to appropriate instructional materials.	
			frl21instrtech	Teachers have sufficient access to instructional technology, including computers, printers, software and internet access.	
			frl21comm	Teachers have access to reliable communication technology, including phones, faxes and email.	
			frl21oequip	Teachers have sufficient access to office equipment and supplies such as copy machines, paper, pens, etc.	
			frl21properson	Teachers have sufficient access to a broad range of professional support personnel.	
			frl21relinternet	The reliability and speed of Internet connections in this school are sufficient to support instructional practices.	

Table 13 continued

facility	.801	3	Please rate how strongly you agree or disagree with the following statements about your school facilities and resources.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			frl21clean The school environment is clean and well maintained.	
			frl21space Teachers have adequate space to work productively.	
			frl21environ The physical environment of classrooms in this school supports teaching and learning.	
Community support/ involvement NTC	.891 ^{c,h}	8	Please rate how strongly you agree or disagree with the following statements about community support and involvement in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			csl21influence Parents/guardians are influential decision makers in this school.	
			csl21communic This school maintains clear, two-way communication with the community.	
			csl21encinvolve This school does a good job of encouraging parent/guardian involvement.	
			csl21infolearn Teachers provide parents/guardians with useful information about student learning.	
			csl21know Parents/guardians know what is going on in this school.	
			csl21stusuccess Parents/guardians support teachers, contributing to their success with students.	
			csl21commsuccess Community members support teachers, contributing to their success with students.	
			csl21support The community we serve is supportive of this school.	

Table 13 continued

Community/ parent involvement	.843	5		Please rate how strongly you agree or disagree with the following statements about community support and involvement in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			csl21influence	Parents/guardians are influential decision makers in this school.	
			csl21communic	This school maintains clear, two-way communication with the community.	
			csl21encinvolve	This school does a good job of encouraging parent/guardian involvement.	
			csl21infolearn	Teachers provide parents/guardians with useful information about student learning.	
			csl21know	Parents/guardians know what is going on in this school.	
Community/ parent support	.870	3		Please rate how strongly you agree or disagree with the following statements about community support and involvement in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			csl21stusuccess	Parents/guardians support teachers, contributing to their success with students.	
			csl21commsuccess	Community members support teachers, contributing to their success with students.	
			csl21support	The community we serve is supportive of this school.	
Student conduct NTC	.900 ^{d,h}	7		Please rate how strongly you agree or disagree with the following statements about managing student conduct in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			sc121expreconduct	Students at this school understand expectations for their conduct.	
			sc121stufollow	Students at this school follow rules of conduct.	
			sc121policyproc	Policies and procedures about student conduct are clearly understood by the faculty.	
			sc121ldrconsist	School administrators consistently enforce rules for student conduct.	
			sc121efforts	School administrators support teachers' efforts to maintain discipline in the classroom.	

Table 13 continued

			sc121tchconsist	Teachers consistently enforce rules for student conduct.	
			sc121safe	The faculty work in a school environment that is safe.	
Teacher leadership NTC	.900 ^{e,h}	9		Please rate how strongly you agree or disagree with the following statements about teacher leadership in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			eml21experts	Teachers are recognized as educational experts.	
			eml21trustsound	Teachers are trusted to make sound professional decisions about instruction.	
			eml21decmake	Teachers are relied upon to make decisions about educational issues.	
			eml21tchleader	Teachers are encouraged to participate in school leadership roles.	
			eml21process	The faculty has an effective process for making group decisions to solve problems.	
			eml21solve	In this school we take steps to solve problems.	
			eml21effleader	Teachers are effective leaders in this school.	
			eml21schinflu	Teachers have an appropriate level of influence on decision making in this school.	
				Please rate how strongly you agree or disagree with the following statements about school leadership in your school.	
			eml21trustresp	There is an atmosphere of trust and mutual respect in this school.	

Table 13 continued

Teacher leadership	.930	8		Please rate how strongly you agree or disagree with the following statements about teacher leadership in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			eml21experts	Teachers are recognized as educational experts.	
			eml21trustsound	Teachers are trusted to make sound professional decisions about instruction.	
			eml21decmake	Teachers are relied upon to make decisions about educational issues.	
			eml21tchleader	Teachers are encouraged to participate in school leadership roles.	
			eml21process	The faculty has an effective process for making group decisions to solve problems.	
			eml21solve	In this school we take steps to solve problems.	
			eml21effleader	Teachers are effective leaders in this school.	
eml21schinflu	Teachers have an appropriate level of influence on decision making in this school.				
Teacher role: classroom decisions	.761	3		Please indicate the role teachers have at your school in each of the following areas.	1 = No role at all 2 = Small role 3 = Moderate role 4 = Large role 5 = Don't Know
			eml49instmat	Selecting instructional materials and resources	
			eml49techniq	Devising teaching techniques	
eml49assess	Setting grading and student assessment practices				
Teacher role: school decisions	.828	5		Please indicate the role teachers have at your school in each of the following areas.	1 = No role at all 2 = Small role 3 = Moderate role 4 = Large role 5 = Don't Know
			eml49inserte	Determining the content of in-service professional development programs	
			eml49studiscip	Establishing student discipline procedures	
eml49schbudget	Providing input on how the school budget will be spent				

Table 13 continued

			eml49newtch	The selection of teachers new to this school	
			eml49siplan	School improvement planning	
Professional development	.949 ^{fh}	13		Please rate how strongly you agree or disagree with statements about professional development in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			pdl21suffres	Sufficient resources are available for professional development in my school.	
			pdl21time	An appropriate amount of time is provided for professional development.	
			pdl21datadriven	Professional development offerings are data driven.	
			pdl21alignsip	Professional learning opportunities are aligned with the school's improvement plan.	
			pdl21different	Professional development is differentiated to meet the individual needs of teachers.	
			pdl21deepeffect	Professional development deepens teachers' content knowledge.	
			pdl21sufftrain	Teachers have sufficient training to fully utilize instructional technology.	
			pdl21reflect	Teachers are encouraged to reflect on their own practice.	
			pdl21followup	In this school, follow up is provided from professional development.	
			pdl21colleague	Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.	
			pdl21eval	Professional development is evaluated and results are communicated to teachers.	
			pdl21implement	Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs.	
			pdl21enchance	Professional development enhances teachers' abilities to improve student learning.	

Table 13 continued

Instructional practices/ support NTC	.859 ^{g,h}	10	Please rate how strongly you agree or disagree with the following statements about instructional practices and support in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			ipl21statedata State assessment data are available in time to impact instructional practices.	
			ipl21localdata Local assessment data are available in time to impact instructional practices.	
			ipl21improve State assessments provide schools with data that can help improve teaching.	
			ipl21gauge State assessments accurately gauge students' understanding of standards.	
			ipl21datainform Teachers use assessment data to inform their instruction.	
			ipl21ccsalign The curriculum taught in this school is aligned with Common Core Standards.	
			ipl21plcinstr Teachers work in professional learning communities to develop and align instructional practices.	
			ipl21supports Provided supports (i.e. instructional coaching, professional learning communities, etc.) translate to improvements in instructional practices by teachers.	
			ipl21trynew Teachers are encouraged to try new things to improve instruction.	
			ldl21usedata Please rate how strongly you agree or disagree with the following statements about school leadership in your school. The school leadership facilitates using data to improve student learning.	
Usefulness of data	.803	4	Please rate how strongly you agree or disagree with the following statements about instructional practices and support in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			ipl21statedata State assessment data are available in time to impact instructional practices.	

Table 13 continued

			ipl21localdata	Local assessment data are available in time to impact instructional practices.	
			ipl21improve	State assessments provide schools with data that can help improve teaching.	
			ipl21gauge	State assessments accurately gauge students' understanding of standards.	
Instructional practices	.839	7		Please rate how strongly you agree or disagree with the following statements about instructional practices and support in your school.	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree 5 = Don't Know
			ipl21datainform	Teachers use assessment data to inform their instruction.	
			ipl21ccsalign	The curriculum taught in this school is aligned with Common Core Standards.	
			ipl21plcinstr	Teachers work in professional learning communities to develop and align instructional practices.	
			ipl21supports	Provided supports (i.e. instructional coaching, professional learning communities, etc.) translate to improvements in instructional practices by teachers.	
			ipl21trynew	Teachers are encouraged to try new things to improve instruction.	
			ipl21maxsuccess	Teachers are assigned classes that maximize their likelihood of success with students.	
			ipl21autonomy	Teachers have autonomy to make decisions about instructional delivery (i.e. pacing, materials and pedagogy).	

^aThe Chronbach's alpha calculated by NTC for this composite variable was $\alpha = .863$.

^bThe Chronbach's alpha calculated by NTC for this composite variable was $\alpha = .879$.

^cThe Chronbach's alpha calculated by NTC for this composite variable was $\alpha = .893$.

^dThe Chronbach's alpha calculated by NTC for this composite variable was $\alpha = .903$.

^eThe Chronbach's alpha calculated by NTC for this composite variable was $\alpha = .935$.

^fThe Chronbach's alpha calculated by NTC for this composite variable was $\alpha = .950$.

^gThe Chronbach's alpha calculated by NTC for this composite variable was $\alpha = .865$.

^hThe difference in α may reflect the reduction in respondents included in the current study, resulting from the deletion of non-teacher respondents and schools with insufficient data for Level 2 variables.

Data Analysis

Missing Value Analysis

It is important to note that data are missing from the 2012 NC TWC Survey results. Across all questions on the survey, an average of 1.6% of the data is missing. When examining each individual question, the lowest percentage of missing data was 0.1% and the highest percentage was 8.1%, with the median at 0.8% and the mode at 0.37%. Given that 100,042 educators (1,790 principals, 1,992 assistant principals, and 87,562 teachers) chose to respond to the survey, giving an 86.22% participation rate across the state (Hirsch & Maddock, 2012), even with the missing data, the study size is sufficiently large enough to allow for significant and generalizable conclusions.

It is interesting to note that the largest percentages of missing data are found in the survey questions categorized as “Professional Development.” In this subsection of the survey, there were three top-level questions, two of which had higher than the average percentages of missing data. Missing data for the two top-level questions asking teachers to respond either yes or no to questions about specific areas for which they either needed or had received professional development ranged from 1.7% to 8.1%. These yes/no questions were not included in the current study because, within the context of the NC TWC, these questions seemed to serve a purpose other than teachers’ perceptions of working conditions; they appeared to only serve to collect data about the content of professional development either needed or received. These responses did not seem to add meaning to this study’s models.

Data that are not missing at random can impact data analysis and lead to misleading results. The missing data was analyzed using SPSS version 21 (IBM Corporation, 2012), and

less than five percent of data were missing for all variables. In fact, the significant majority of the variables were missing less than 0.5% of data. The variables with greater than 3% of missing data were years at current school (3.3% missing) and usefulness of data (3.2%). Because there was minimal missing data (less than 5%) in this data set, multiple imputation was not necessary for this study (Fichman & Cummings, 2003).

Statistical Model: Hierarchical Linear Model

This study is interested in whether a school's urban-centric locale has an association with teachers' perceptions of school leadership as a working condition. The potential association of teacher-level characteristics (i.e., years of experience in education and at a particular school and perceptions of working conditions other than school leadership) with teachers' perceptions of school leadership as a working condition will be considered in the model. However, teachers' perceptions of school leadership as a working condition are not simply the result of teacher-level characteristics. These perceptions are nested within the context of the school, and school characteristics (i.e., urban-centric locale, average daily membership, percent of student body receiving free or reduced-price lunch, and percent of the student body that is minority) should not be overlooked. Hierarchical linear modeling (HLM) is a complex regression model that allows for simultaneous analysis of relationships within and between variables nested within other variables (Woltman, Feldstain, MacKay, & Rocchi, 2012,). Therefore, HLM was used in this study to take into account the possibility of relationships within and between teachers' perceptions of school leadership as a working condition and teacher characteristics as well as the school characteristics in which these teachers' perceptions are nested, which include, but are not limited to, the school's urban-

centric locale. HLM allowed for analysis of within-school and between-school variance in teachers' perceptions of school leadership.

The following is a description of the model for this study. The two-level model allowed for an examination of the extent to which a school's urban-centric locale is related to teachers' perceptions of school leadership as a working condition, while controlling for the relative contributions of other factors on the variability in teachers' perceptions of school leadership as a working condition. A preliminary analysis of the data, called the null model, was evaluated to determine if there was sufficient variability between the groups of predictor and control variables to conduct further analysis (Wech & Heck, 2004). This model was fully unconditional and did not include outcome variables. The following equation represents the null model (Model 1):

$$\text{Level 1 Model: } \textit{school leadership}_{ij} = \beta_{0j} + r_{ij}$$

$$\text{Level 2 Model: } \beta_{0j} = \gamma_{00} + u_{0j}$$

The intercept, β_0 , is the expected value of the school leadership variable when no outcome variables are taken into account. The grand mean (average across schools) of school leadership is represented by γ_{00} . The within-school variability is represented by r_{ij} , and the between-school variability is represented by u_{0j} . The i represents the teacher, and the j represents the school.

The Level 1 model (Model 2) measured within-school variance in perceptions of school leadership as a working condition based upon the individual teacher level characteristics (number of years of experience the teacher has as an educator, the number of years the teacher has taught in the current school, and teacher's perceptions of working

conditions other than school leadership). Variables in italics were indicated they were group centered.

$$\begin{aligned}
 \text{Level 1: } \textit{school leadership}_{ij} = & \beta_{0j} + \beta_{1j}^*(\textit{years in education}) + \\
 & \beta_{2j}^*(\textit{years at current school}) + \\
 & \beta_{3j}^*(\textit{school use of time NTC}_{ij}) + \\
 & \beta_{4j}^*(\textit{time on planning}_{ij}) + \\
 & \beta_{5j}^*(\textit{time on non-instructional responsibilities}_{ij}) + \\
 & \beta_{6j}^*(\textit{time on assessments}_{ij}) + \\
 & \beta_{7j}^*(\textit{time outside workday: none}_{ij}) + \\
 & \beta_{8j}^*(\textit{time outside workday: < 1 hr}_{ij}) + \\
 & \beta_{9j}^*(\textit{time outside workday: 1 < 3 hrs}_{ij}) + \\
 & \beta_{10j}^*(\textit{time outside workday: 3 < 5 hrs}_{ij}) + \\
 & \beta_{11j}^*(\textit{time outside workday: > 10 hrs}_{ij}) + \\
 & \beta_{12j}^*(\textit{resources}_{ij}) + \\
 & \beta_{13j}^*(\textit{facilities}_{ij}) + \\
 & \beta_{14j}^*(\textit{community/parent involvement}_{ij}) + \\
 & \beta_{15j}^*(\textit{community/parent support}_{ij}) + \\
 & \beta_{16j}^*(\textit{managing student conduct NTC}_{ij}) + \\
 & \beta_{17j}^*(\textit{teacher leadership}_{ij}) + \\
 & \beta_{18j}^*(\textit{teacher role: class decisions}_{ij}) + \\
 & \beta_{19j}^*(\textit{teacher role: school decisions}_{ij}) + \\
 & \beta_{20j}^*(\textit{professional development NTC}_{ij}) + \\
 & \beta_{21j}^*(\textit{usefulness of data}_{ij}) + \\
 & \beta_{22j}^*(\textit{instructional practices}_{ij}) + r_{ij}
 \end{aligned}$$

The Level 2 model measured between-school variance in teachers' perceptions of school leadership as a working condition and will include school level characteristics (urban-centric locale, average daily membership, percent of student body receiving free or reduced-price lunch, and percent of the student body that is minority). The model tested between-school variance to determine if there was sufficient variability in teachers' perceptions of school leadership across schools. Centering of continuous variables was conducted in order to aid in interpretation of the parameter estimates (Grace-Martin, n.d.).

The following equation represents the full (Level 1 + Level 2) model (Model 3):

$$\begin{aligned}
\text{Level 1: } \textit{school leadership}_{ij} = & \beta_{0j} + \beta_{1j} * (\textit{years in education}) + \\
& \beta_{2j} * (\textit{years at current school}) + \\
& \beta_{3j} * (\textit{school use of time NTC}_{ij}) + \\
& \beta_{4j} * (\textit{time on planning}_{ij}) + \\
& \beta_{5j} * (\textit{time on non-instructional responsibilities}_{ij}) + \\
& \beta_{6j} * (\textit{time on assessments}_{ij}) + \\
& \beta_{7j} * (\textit{time outside workday: none}_{ij}) + \\
& \beta_{8j} * (\textit{time outside workday: } < 1 \text{ hr}_{ij}) + \\
& \beta_{9j} * (\textit{time outside workday: } 1 < 3 \text{ hrs}_{ij}) + \\
& \beta_{10j} * (\textit{time outside workday: } 3 < 5 \text{ hrs}_{ij}) + \\
& \beta_{11j} * (\textit{time outside workday: } > 10 \text{ hrs}_{ij}) + \\
& \beta_{12j} * (\textit{resources}_{ij}) + \\
& \beta_{13j} * (\textit{facilities}_{ij}) + \\
& \beta_{14j} * (\textit{community/parent involvement}_{ij}) + \\
& \beta_{15j} * (\textit{community/parent support}_{ij}) + \\
& \beta_{16j} * (\textit{managing student conduct NTC}_{ij}) + \\
& \beta_{17j} * (\textit{teacher leadership}_{ij}) + \\
& \beta_{18j} * (\textit{teacher role: class decisions}_{ij}) + \\
& \beta_{19j} * (\textit{teacher role: school decisions}_{ij}) + \\
& \beta_{20j} * (\textit{professional development NTC}_{ij}) + \\
& \beta_{21j} * (\textit{usefulness of data}_{ij}) + \\
& \beta_{22j} * (\textit{instructional practices}_{ij}) + r_{ij}
\end{aligned}$$

$$\begin{aligned}
\text{Level 2: } \beta_{0j} = & \gamma_{00} + \gamma_{01} * (\textit{percent minority}_j) + \\
& \gamma_{02} * (\textit{percent free/reduced lunch}_j) + \\
& \gamma_{03} * (\textit{average daily membership}_j) + \\
& \gamma_{04} * (\textit{locale: city}_j) + \\
& \gamma_{05} * (\textit{locale: town}_j) + \\
& \gamma_{06} * (\textit{locale: rural area}_j) + u_{0j}
\end{aligned}$$

In this model, γ_{00} is the grand mean of teachers' perceptions of school leadership when all predictors equal zero, at school j and teacher i ; r_{ij} represents the residual within-school variance in teachers' perceptions of school leadership; and u_{0j} represents the between-school variability in teachers' perceptions of school leadership. The full model includes additional γ_{06} components, which represent the between-school differences in teachers' perceptions of school leadership as a function of the respective Level 2 predictor, after accounting for the other Level 2 variables.

Interaction effects. To create Model 4, interaction terms were added to Level 2 to examine if perceptions in school leadership vary by urban-centric locale. These terms are boldface.

$$\begin{aligned} \text{Level 1: } \textit{school leadership}_{ij} = & \beta_{0j} + \beta_{1j}*(\textit{years in education}) + \\ & \beta_{2j}*(\textit{years at current school}) + \\ & \beta_{3j}*(\textit{school use of time NTC}_{ij}) + \\ & \beta_{4j}*(\textit{time on planning}_{ij}) + \\ & \beta_{5j}*(\textit{time on non-instructional responsibilities}_{ij}) + \\ & \beta_{6j}*(\textit{time on assessments}_{ij}) + \\ & \beta_{7j}*(\textit{time outside workday: none}_{ij}) + \\ & \beta_{8j}*(\textit{time outside workday: < 1 hr}_{ij}) + \\ & \beta_{9j}*(\textit{time outside workday: 1 < 3 hrs}_{ij}) + \\ & \beta_{10j}*(\textit{time outside workday: 3 < 5 hrs}_{ij}) + \\ & \beta_{11j}*(\textit{time outside workday: > 10 hrs}_{ij}) + \\ & \beta_{12j}*(\textit{resources}_{ij}) + \\ & \beta_{13j}*(\textit{facilities}_j) + \\ & \beta_{14j}*(\textit{community/parent involvement}_{ij}) + \\ & \beta_{15j}*(\textit{community/parent support}_{ij}) + \\ & \beta_{16j}*(\textit{managing student conduct NTC}_{ij}) + \\ & \beta_{17j}*(\textit{teacher leadership}_{ij}) + \\ & \beta_{18j}*(\textit{teacher role: class decisions}_{ij}) + \\ & \beta_{19j}*(\textit{teacher role: school decisions}_{ij}) + \\ & \beta_{20j}*(\textit{professional development NTC}_{ij}) + \\ & \beta_{21j}*(\textit{usefulness of data}_{ij}) + \\ & \beta_{22j}*(\textit{instructional practices}_{ij}) + r_{ij} \end{aligned}$$

$$\begin{aligned} \text{Level 2: } \beta_{0j} = & \gamma_{00} + \gamma_{01}*(\textit{percent minority}_j) + \\ & \gamma_{02}*(\textit{percent free/reduced lunch}_j) + \\ & \gamma_{03}*(\textit{average daily membership}_j) + \\ & \gamma_{04}*(\textit{locale: city}_j) + \\ & \gamma_{05}*(\textit{locale: town}_j) + \\ & \gamma_{06}*(\textit{locale: rural area}_j) + \\ & \gamma_{07}*(\textbf{percent minority X suburb}_j) + \\ & \gamma_{08}*(\textbf{percent free/reduced lunch X suburb}_j) + \\ & \gamma_{09}*(\textbf{average daily membership X suburb}_j) + u_{0j} \end{aligned}$$

Multicollinearity Diagnostics

The data set was examined for multicollinearity (collinearity), which occurs when an outcome variable is highly correlated with another variable (Lüchters & Chakrabarty, 2006). Collinearity diagnostics were performed using SPSS version 21 in which tolerance was measured ($1 - R^2$), and the Variance Inflation Factor (VIF) was calculated ($1/1-R^2$) for each variable. The VIF indicates how much of the standard error of the estimation of the variable's effect is inflated by being highly correlated with another variable. For this study, a tolerance value under 0.20 accompanied by a VIF greater than four will generally be considered as an indication of collinearity (Garson, 2012). This is a conservative cutoff point for the VIF. The tolerance value was above 0.20 and the VIF below four for all variables. Therefore, there are no indications of multicollinearity in this study.

Because multicollinearity diagnostics can be biased downward for binary variables, bivariate statistics were run for the binary variables in the model, notably Chi-square statistics using cross-tabs. For nominal variables, Phi and Cramer's V values were examined. For ordinal variables, Tau-b values were examined. If the correlation was statistically significant, the following decision rule was used to determine if multicollinearity was a concern (White & Korotayev, 2004).

|1.0| = determinate
> |0.7| = very strong
|0.5| - |0.7| = strong
|0.3| - |0.5| = medium
|0.2| - |0.3| = weak
|0.1| - |0.2| = very weak
< |0.1| = extremely weak

In the analysis all variables were identified as extremely weak, confirming the multicollinearity diagnostics VIF run.

Summary

This chapter provided detailed descriptions of the data sources used for this study, variables of interest, and the methods used in the statistical analyses of the data. Hierarchical linear modeling will take into consideration the nature of teacher data nested within school data. Findings of this study are presented in Chapter 4 and are followed by a discussion in Chapter 5 of the implications of those findings and directions for future research.

CHAPTER 4: RESULTS

Introduction

School leadership has been identified as one of the strongest, if not the strongest, working conditions affecting teachers' decisions to remain in a school (Boyd et al., 2011; Ladd, 2011; Turner, 2003). Therefore, with a desire to expand our understanding of teachers' perceptions of working conditions and subsequently our efforts to reduce teacher turnover associated with school leadership as a working condition, this study examines teachers' perceptions of school leadership as a working condition. More specifically, this study seeks to determine if a school's urban-centric locale has any relationship to these perceptions, a distinction for which there is currently little research available.

Using data collected from the 2012 administration of the North Carolina Teacher Working Conditions Survey and school demographics for the 2011-2012 school year (urban-centric locale, percent of student body eligible to receive free and reduced price lunch, percent of student body that is minority, and school size as determined by average daily membership), hierarchical linear modeling was conducted to examine the relationship between teacher demographics and school demographics and teachers' perceptions of school leadership as a working condition.

Research Questions

The research questions guiding this study were:

RQ1: What are teachers' perceptions of school leadership as a working condition?

RQ2: What is the relationship between teacher demographics and teachers' perceptions of school leadership as a working condition?

RQ3: Controlling for teacher demographics, what is the relationship between school contextual factors and teachers’ perceptions of school leadership as a working condition?

RQ4: To what extent does the relationship between school contextual factors and teachers’ perceptions of school leadership as a working condition vary according to a school’s locale?

Descriptive Statistics

Descriptive statistics of the teacher-level binary variables are presented in Table 14.

Results for the maximum and minimum values, means, and standard deviations are provided.

Table 14

Descriptive Statistics of Binary Variables

Variable Description	N	Min	Max	Mean	SD
Time outside workday ^a : none	85222	0.00	1.00	0.01	0.10
Time outside workday: < 1 hr	85222	0.00	1.00	0.06	0.23
Time outside workday: 1 < 3 hrs	85222	0.00	1.00	0.18	0.39
Time outside workday: 3 < 5 hrs	85222	0.00	1.00	0.23	0.42
Time outside workday: 5 < 10 hrs	85222	0.00	1.00	0.27	0.44
Time outside workday: > 10 hrs	85222	0.00	1.00	0.25	0.43

Note. Mean for a binary variable is the percent of respondents indicating that construct is present.

^aTime outside workday: average weekly amount of time spent on school activities

Table 15 presents the descriptive statistics, including results for the maximum and minimum values, means, and standard deviations, for the composite variables.

Table 15

Descriptive Statistics of Continuous and Composite Variables

Variable Name	N	Min	Max	Mean	SD
Years experience in education	85216	1.00	6.00	4.23	1.46
Years at current school	82485	1.00	6.00	3.22	1.48
School use of time NTC	85249	1.00	4.00	2.68	0.60
Time on planning	85194	1.00	6.00	2.92	0.83
Time on non-instruction responsib.	85240	1.00	6.00	2.62	0.56
Time on assessments	85170	1.00	6.00	2.79	0.87
Facilities/resources NTC	85240	1.00	4.00	3.07	0.53
Resources	85237	1.00	4.00	3.02	0.57
Facilities	85123	1.00	4.00	3.16	0.61
Community support/involvement NTC	84997	1.00	4.00	3.05	0.50
Community/parent involvement	84962	1.00	4.00	3.12	0.51
Community/parent support	84491	1.00	4.00	2.93	0.62
Managing student conduct NTC	83984	1.00	4.00	2.98	0.60
Teacher leadership NTC	85241	1.00	4.00	2.98	0.60
Teacher leadership	85203	1.00	4.00	3.00	0.59
Teacher role: class decisions	83431	1.00	4.00	3.19	0.69
Teacher role: school decisions	83904	1.00	4.00	2.58	0.72
Professional development NTC	84942	1.00	4.00	2.90	0.53
Instructional practices/support NTC	85119	1.00	4.00	3.01	0.44
Usefulness of assessment data	82564	1.00	4.00	2.75	0.60
Instructional practices	84790	1.00	4.00	3.05	0.47
School leadership NTC	85136	1.00	4.00	3.04	0.59
School leadership	85142	1.00	4.00	3.05	0.59
School climate	85122	1.00	4.00	2.94	0.66
Teacher evaluation	85072	1.00	4.00	3.18	0.57
Address teacher concerns	83213	1.00	4.00	2.94	0.58

Note. NTC: composite variables used by New Teacher Center in their analysis

Descriptive statistics for school-level variables are presented in Table 16. Results for the maximum and minimum values, means, and standard deviations are provided.

Table 16

Descriptive Statistics of School-level Variables

Variable Label	Variable	N	Min	Max	Mean	SD
minoperc	% minority	85298	0.00	1.00	0.48	0.26
frlunper	% eligible for free/reduced lunch	85298	0.00	1.00	0.58	0.23
adm	Average daily membership	85298	1.00	2736.00	756.61	442.14
loccity	City	85306	0.00	1.00	0.25	0.43
locsub	Suburb	85306	0.00	1.00	0.14	0.35
loctown	Town	85306	0.00	1.00	0.13	0.34
locrural	Rural Area	85306	0.00	1.00	0.47	0.50

Teacher-level variables were entered into the model at Level 1 in order to predict the school leadership outcome variable. These variables contribute to our understanding of variance in teachers' perceptions of school leadership within schools, which reflects differences among individual teachers within the same school. School-level variables were entered into the model at Level 2 in order to predict the school leadership outcome variable, which contributes to our understanding of variance between schools, while accounting for (individual) teacher-level factors.

Results

Research Question 1

What are teachers' perceptions of school leadership as a working condition?

Basic descriptive statistics were computed to answer Research Question 1. Table 17 presents the frequency distribution of all school leadership items used to create the composite variables. Strongly disagree was consistently the least frequently selected response, making up no greater than 9% of responses for each of the school leadership variables. The response choice agree made up at least 50% of the responses for each of the school leadership

variables, with the exception of “Teachers feel comfortable raising issues and concerns that are important to them,” for which agree made up 47.97%. While the range varied widely for both the disagree and strongly agree response choices, with the exception of four variables, the response choice strongly agree was selected more frequently than disagree for each school leadership variable. The variables in which disagree was selected more frequently than strongly agree were, “There is an atmosphere of trust and mutual respect in this school,” “Teachers feel comfortable raising issues and concerns that are important to them,” “The school leadership makes a sustained effort to address teacher concerns about leadership issues,” and “The school leadership makes a sustained effort to address teacher concerns about the use of time in my school.” In general, the combined percentages for response choices agree and strongly agree accounted for at least 69% of the total responses for each of the school leadership items.

Table 17

Frequency Distribution of all School Leadership Variables (percent)

Variable	Variable Description	1	2	3	4
	Top-level Question: Please rate how strongly you agree or disagree with the following statements about school leadership in your school.	Strongly Disagree	Disagree	Agree	Strongly Agree
1. ldl21sharedvis	The faculty and staff have a shared vision.	3.82	14.00	60.92	21.26
2. eml21trustresp	There is an atmosphere of trust and mutual respect in this school.	7.71	21.48	50.10	20.71
3. ldl21raiseconc	Teachers feel comfortable raising issues and concerns that are important to them.	8.84	22.25	47.97	20.94
4. ldl21tchr supp	The school leadership consistently supports teachers.	5.74	17.40	53.03	23.83
5. ldl21sipeffect	The school improvement team provides effective leadership at this school.	3.42	14.13	59.64	22.81
6. ldl21recogaccom	The faculty are recognized for accomplishments.	4.18	12.35	55.17	28.29
7. ldl21profstds	Teachers are held to high professional standards for delivering instruction.	1.50	4.75	52.76	40.98
8. ldl21usedata	The school leadership facilitates using data to improve student learning.	1.19	4.53	54.91	39.38
9. ldl21tchrperf	Teacher performance is assessed objectively.	3.56	10.13	59.28	27.04
10. ldl21fdbkimpr	Teachers receive feedback that can help them improve teaching.	3.13	12.16	58.57	26.14
11. ldl21evalconsis	The procedures for teacher evaluation are consistent.	4.09	11.70	57.19	27.03
	Top-level Question: The school leadership makes a sustained effort to address teacher concerns about:				
12. ldl21effortld	Leadership issues	5.38	15.70	63.88	15.04
13. ldl21effortfr	Facilities and resources	3.42	10.80	67.97	17.81
14. ldl21efforttm	The use of time in my school	5.04	18.18	61.24	15.54
15. ldl11effortpd	Professional development	3.91	14.71	64.67	16.71
16. ldl21efforttl	Teacher leadership	3.39	11.95	67.97	16.70
17. ldl21effortcs	Community support and involvement	2.90	10.10	69.34	17.66
18. ldl21effortsc	Managing student conduct	6.53	16.53	59.68	17.26
19. ldl21effortip	Instructional practices and support	3.05	9.65	68.21	19.09
20. ldl21effortmn	New teacher support	4.90	13.51	62.93	18.66

Table 18 presents the descriptive statistics for the composite variables representing the different outcome measures of school leadership. The variables were a Likert scale, where the minimum is 1.00 (Strongly Disagree) and the maximum is 4.00 (Strongly Agree) for all outcome variables. The mean for school leadership NTC was 3.04 (SD = 0.59). The mean for school leadership was 3.05 (SD = 0.59). The mean for school climate was 2.94 (SD = 0.66). The mean for teacher evaluation was 3.18 (SD = 0.57). The mean for addressing teacher concerns was 2.94 (SD = 0.58). These means indicate a mean response which closely approximates to agree for all five measures of school leadership.

Table 18

Descriptive Statistics of School Leadership Composite Variables

Variable	N of items	# of Teachers	Min	Max	Mean	SD
School leadership (variables 1-11 from Table 17)	11	85142	1.00	4.00	3.05	0.59
School leadership NTC (variables 1, 3-7, 9-11 from Table 17)	9	85136	1.00	4.00	3.04	0.59
School climate (variables 1-6 from Table 17)	6	85122	1.00	4.00	2.94	0.66
Teacher evaluation (variables 7-11 from Table 17)	5	85072	1.00	4.00	3.18	0.57
Addressing teacher concerns (variables 12-20 from Table 17)	9	83213	1.00	4.00	2.94	0.58

Table 19 presents a comparison of the means of each of the outcome variables disaggregated by urban-centric locale. There was no difference greater than 0.11 between the highest and lowest means for any of the outcome measures of school leadership. For each

outcome measure of school leadership city had the lowest mean, and rural area had the highest mean. The difference between the means of suburb and town was 0.01 for all of the outcome measures of school leadership except school leadership NTC, for which the means were equal.

Table 19

Means of Outcome Variables Disaggregated by Urban-centric Locale

Variable	Locale	Min.	Max.	Mean	SD
School leadership (variables 1-11 from Table 17)	City	1.00	4.00	2.99	0.61
	Suburb	1.00	4.00	3.06	0.58
	Town	1.00	4.00	3.05	0.58
	Rural Area	1.00	4.00	3.07	0.58
School leadership NTC (variables 1, 3-7, 9-11 from Table 17)	City	1.00	4.00	2.98	0.62
	Suburb	1.00	4.00	3.05	0.59
	Town	1.00	4.00	3.05	0.59
	Rural Area	1.00	4.00	3.07	0.58
School climate (variables 1-6 from Table 17)	City	1.00	4.00	2.86	0.69
	Suburb	1.00	4.00	2.95	0.66
	Town	1.00	4.00	2.94	0.66
	Rural Area	1.00	4.00	2.97	0.65
Teacher evaluation (variables 7-11 from Table 17)	City	1.00	4.00	3.13	0.59
	Suburb	1.00	4.00	3.18	0.56
	Town	1.00	4.00	3.19	0.56
	Rural Area	1.00	4.00	3.20	0.56
Address. teacher concerns (variables 12-20 from Table 17)	City	1.00	4.00	2.89	0.61
	Suburb	1.00	4.00	2.95	0.57
	Town	1.00	4.00	2.94	0.59
	Rural Area	1.00	4.00	2.97	0.57

Research Question 2

What is the relationship between teacher demographics and teachers' perceptions of school leadership as a working condition?

HLM was conducted to answer Research Questions 2 through 4. The results for the outcome variable school leadership are detailed in Table 20. Model 1 is the Null Model and does not include any variables. Model 2 is the Level 1 Model and includes the teacher-level variables. Model 3 is the Level 1+2 Model, which includes both teacher-level and school-level variables. Model 4 is the Level 1+2 Model which includes both teacher-level and school-level variables with the inclusion of suburban interaction terms.

Although models for all five school leadership outcome variables were analyzed, the school leadership outcome variable school leadership will be the main focus of the description of the results. These results are presented in Table 20. The school leadership outcome variable school leadership captures a broader picture of school leadership than the other school leadership outcome variables since it is made up of two smaller school leadership outcome variables, school climate and teacher evaluation. These smaller school leadership outcome variables address school leadership as it relates to school climate and to teacher evaluation practices, respectively. The school leadership outcome variable addressing teacher concerns addresses only school leadership as it relates to addressing teachers' concerns. The school leadership outcome variable school leadership NTC is composed of nine of the 11 variables included in the school leadership variable. The combination of these nine variables were used by the New Teacher Center (NTC) in their analysis of the 2012 NC TWC Survey data, however, this combination did not emerge from this study's confirmatory

factor analysis and item reliability analysis. The results of the HLM analysis of the school leadership outcome variables school leadership NTC, school climate, teacher evaluation, and addressing teacher concerns are presented in Tables A1, A2, A3, and A4 in Appendix A, and a comparison of the differences are explained later in this chapter.

Table 20

Outcome Variable: School Leadership Composite Variable

Variable	Model 1		Model 2		Model 3		Model 4 ^a	
	β	SE	β	SE	β	SE	β	SE
Intercept	3.07***	0.01	3.07***	0.01	3.08***	0.02	3.09***	0.05
Years experience in education			0.00**	0.00	0.00**	0.00	0.00**	0.00
Years at current school			-0.01***	0.00	-0.01***	0.00	-0.01***	0.00
School use of time NTC			0.02***	0.00	0.02***	0.00	0.02***	0.00
Time on planning			0.00	0.00	0.00	0.00	0.00	0.00
Time on non-instruction responsib.			-0.02***	0.00	-0.02***	0.00	-0.02***	0.00
Time on assessments			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: none			0.00	0.01	0.00	0.01	0.00	0.01
Time outside workday: < 1 hr			-0.01**	0.00	-0.01**	0.00	-0.01**	0.00
Time outside workday: 1 < 3 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: 3 < 5 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: > 10 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Resources			0.00	0.00	0.00	0.00	0.00	0.00
Facilities			0.03***	0.00	0.03***	0.00	0.03***	0.00
Community/parent involvement			0.08***	0.00	0.08***	0.00	0.08***	0.00
Community/parent support			-0.01***	0.00	-0.01***	0.00	-0.01***	0.00
Managing student conduct NTC			0.19***	0.00	0.19***	0.00	0.19***	0.00
Teacher leadership			0.39***	0.00	0.39***	0.00	0.39***	0.00
Teacher role: class decisions			0.00	0.00	0.00	0.00	0.00	0.00
Teacher role: school decisions			0.06***	0.00	0.06***	0.00	0.06***	0.00
Professional development NTC			0.16***	0.00	0.16***	0.00	0.16***	0.00
Usefulness of assessment data			-0.02***	0.00	-0.02***	0.00	-0.02***	0.00
Instructional practices			0.15***	0.00	0.15***	0.00	0.15***	0.00

Table 20 continued

Percent minority			0.00***	0.00	0.00***	0.00
Percent free/reduced lunch			0.00**	0.00	0.00**	0.00
Average daily membership (ADM)			0.00***	0.00	0.00***	0.00
Locale: City			-0.02	0.02	-0.04	0.05
Locale: Town			0.01	0.02	-0.01	0.05
Locale: Rural area			0.01	0.02	-0.01	0.05
% minority X suburb					0.00	0.00
% free/reduced lunch X suburb					0.00	0.00
ADM X suburb					0.00	0.00
Variance (Int)	0.07	0.08		0.07		0.07
Level-1, <i>r</i>	0.28	0.08		0.08		0.08
ICC	0.20	0.50		0.47		0.47
Variance between schools	-	-0.14		0.00		0.00
Variance within schools	-	0.72		0.72		0.72
X ² (df)***	21654.59***(2402)	69566.00***(2402)		63494.94***(2396)		63290.35***(2393)
Deviance	138742.87	33396.16		33216.32		33254.85

^aModel 4 was also run with interaction terms for city and rural area locales. As was true of the interaction terms for suburb locale, these interaction terms were not statistically significant. They were not displayed in the table for simplicity of presentation.

To address Research Question 2, there were two teacher demographic variables available to analyze the extent to which teacher demographics are related to perceptions of school leadership as a working condition. As demonstrated in Model 2, while a teacher's years of experience in education had a statistically significant ($p \leq 0.01$) relationship to perceptions of school leadership as a working condition, the magnitude of the relationship is negligible ($\beta = 0.00$, $SE = 0.00$). The number of years the teacher has been working in the current school was also a statistically significant ($p \leq 0.001$) relationship, and the magnitude was $\beta = -0.01$ ($SE = 0.00$). The deviance for Model 2 showed a 76% decrease from the deviance of Model 1. The variance (intercept) component for Model 2 was statistically significant ($p \leq 0.001$), indicating that school leadership was significantly related to the predictors.

Model 2 explained 72% of the variance in perceptions of school leadership as a working condition. That is, teacher demographics and the Level 1 control variables accounted for 72% of the variance within schools of teachers' perceptions of school leadership as a working condition.

As for the Level 1 control variables, of the variables indicating the average amount of time a teacher spent each week on school-related activities outside the work day, the only variable that was statistically significant was less than 1 hour ($\beta = -0.01$, $SE = 0.00$, $p \leq 0.01$).

The composite variables with a statistically significant and positive relationship to school leadership were: school use of time ($\beta = 0.02$, $SE = 0.00$, $p \leq 0.001$), facilities ($\beta = 0.03$, $SE = 0.00$, $p \leq 0.001$), community/parent involvement ($\beta = 0.08$, $SE = 0.00$, $p \leq 0.001$),

managing student conduct NTC ($\beta = 0.19$, $SE = 0.00$, $p \leq 0.001$), teacher leadership ($\beta = 0.39$, $SE = 0.00$, $p \leq 0.001$), teacher role: school decisions ($\beta = 0.06$, $SE = 0.00$, $p \leq 0.001$), professional development NTC ($\beta = 0.16$, $SE = 0.00$, $p \leq 0.001$), and instructional practices ($\beta = 0.15$, $SE = 0.00$, $p \leq 0.001$).

The composite variables with a statistically significant and negative relationship to school leadership were: time on non-instructional responsibilities ($\beta = -0.02$, $SE = 0.00$, $p \leq 0.001$), community/parent support ($\beta = -0.01$, $SE = 0.00$, $p \leq 0.001$), and usefulness of assessment data ($\beta = -0.02$, $SE = 0.00$, $p \leq 0.001$).

The composite variables that did not have a statistically significant relationship with school leadership were time on planning, time on assessments, resources, and teacher role: class decisions.

Research Question 3

Controlling for teacher demographics, what is the relationship between school contextual factors and teachers' perceptions of school leadership as a working condition?

Six school contextual variables were added to Model 2 to create Model 3 (Level 1 + 2). The variables percent minority, percent free/reduced lunch, and average daily membership were all statistically significant ($p \leq 0.01$), but their magnitudes were negligible ($\beta = 0.00$, $SE = 0.00$). The three variables related to urban-centric locale (city, town, and rural area) were not statistically significant. The direction and magnitude of the control variables remained the same after the addition of the school contextual variables. The model was statistically significant ($p \leq 0.001$), and the deviance decreased to 33216.32 (from 33396.16 for Model 2). Model 3 did not explain any of the variance between schools of

teachers' perceptions of school leadership; however it did account for 72% of the variance in teachers' perceptions of school leadership within schools.

Considering the fact that some research has shown student demographics act as proxies for working conditions (Hanushek, Kain, & Rivkin, 2004; Hanushek & Rivkin, 2007; Horng, 2009; Loeb et al., 2005), it seemed prudent to further explore the relationships of school contextual factors and school locale with teachers' perceptions of school leadership. To do so, the school-level variables were removed from the model, and Model 3 was analyzed again. These results (not presented) revealed a statistically significant relationship between city locale and teachers' perceptions of school, indicating that urban-centric locale seems to serve as a proxy for the school contextual factors.

Research Question 4

To what extent does the relationship between school contextual factors and teachers' perceptions of school leadership as a working condition vary according to a school's locale?

Interaction terms for urban-centric locale were added at Level 2 to Model 3 to create Model 4. None of these interaction terms were statistically significant. When an interaction term is not statistically significant, it indicates that no interaction effect between the two variables exists. In other words, for example, the slope of the regression of average daily membership on teachers' perceptions of school leadership does not change when the locale changes. To put it simply, the relationship between average daily membership and teachers' perceptions of school leadership does not vary by school locale. Model 4 was statistically significant ($p \leq 0.001$), and the deviance decreased slightly to 33254.85 (from 33396.16 for

Model 2). The ICC was 0.47, and, like Models 2 and 3, Model 4 accounted for 72% of the variance within schools while failing to account for any of the between-school variance.

Comparison of Results across Different Measures of School Leadership

While the description of the results has focused primarily on the outcome variable school leadership, HLM was conducted with the same predictor variables but using different outcome variables, each representing a different measure of school leadership. The two smaller school leadership outcome variables, school climate and teacher evaluation, that comprised the larger school leadership outcome variable school leadership, address school leadership as it relates to school climate and to teacher evaluation practices, respectively. The school leadership outcome variable addressing teacher concerns focuses on school leadership as it relates to addressing teachers' concerns. The school leadership outcome variable school leadership NTC is composed of nine of the 11 variables included in the school leadership outcome variable school leadership. The combination of these nine variables were used by the New Teacher Center (NTC) in their analysis of the 2012 NC TWC Survey data, however, this combination did not emerge from this study's CFA and IRA results. The results of the HLM analysis of school climate, teacher evaluation, and addressing teacher concerns, and school leadership NTC are presented in Appendix A. Side-by-side comparisons of each model's results for the five school leadership outcome variables are presented in Tables 21 through 24.

Table 21

Comparison of Model 1 for All School Leadership Outcome Variables

Variable	schldr ^a		schldNTC ^b		schclim ^c		tchreval ^d		addtconcr ^e	
	β	SE	β	SE	β	SE	β	SE	β	SE
Intercept	3.07***	0.01	3.06***	0.01	2.96***	0.01	3.20***	0.00	2.96***	0.01
Variance (Int)		0.07		0.07		0.10		0.04		0.05
Level-1, <i>r</i>		0.28		0.29		0.35		0.28		0.29
ICC		0.20		0.19		0.22		0.13		0.15
Variance between schools		-		-		-		-		-
Variance within schools		-		-		-		-		-
X ² (df)***		21654.59***(2402)		20784.25***(2402)		23996.32***(2402)		15496.38***(2402)		16093.08***(2402)
Deviance		138742.87		141442.42		158291.38		137490.76		138723.94

^aschldr: school leadership outcome variable

^bschldNTC: school leadership NTC outcome variable

^cschclim: school climate outcome variable

^dtchreval: teacher evaluation outcome variable

^eaddtconcr: addressing teacher concerns outcome variable

Table 22

Comparison of Model 2 for All School Leadership Outcome Variables

Variable	schldrs ^a		schldNTC ^b		schclim ^c		tchreval ^d		addtconcr ^e	
	β	SE	β	SE	β	SE	β	SE	β	SE
Intercept	3.07***	0.01	3.07***	0.01	2.96***	0.01	3.21***	0.01	2.96***	0.01
Years experience in education	0.00**	0.00	0.00**	0.00	0.00***	0.00	0.00*	0.00	0.00**	0.00
Years at current school	-0.01***	0.00	-0.01***	0.00	-0.01***	0.00	-0.01	0.00	0.00	0.00
School use of time NTC	0.02***	0.00	0.02***	0.00	0.04***	0.00	-0.01*	0.00	0.05***	0.00
Time on planning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01***	0.00
Time on non-instruction responsib.	-0.02***	0.00	-0.02***	0.00	-0.02***	0.00	-0.01***	0.00	-0.03***	0.00
Time on assessments	0.00	0.00	0.00	0.00	-0.01***	0.00	0.00**	0.00	0.00	0.00
Time outside workday: none	0.00	0.01	0.00	0.01	0.01	0.01	-0.02	0.01	0.03	0.02
Time outside workday: < 1 hr	-0.01**	0.00	-0.01**	0.00	0.00	0.01	-0.03***	0.01	0.00	0.01
Time outside workday: 1 < 3 hrs	0.00	0.00	0.00	0.00	0.01*	0.00	-0.02***	0.00	0.00	0.00
Time outside workday: 3 < 5 hrs	0.00	0.00	0.00	0.00	0.01**	0.00	-0.01**	0.00	0.00	0.00
Time outside workday: > 10 hrs	0.00	0.00	0.00	0.00	0.00	0.00	0.01*	0.00	0.00	0.00
Resources	0.00	0.00	0.00	0.00	0.00	0.00	0.01***	0.00	0.00	0.00
Facilities	0.03***	0.00	0.03***	0.00	0.02***	0.00	0.04***	0.00	0.01***	0.00
Community/parent involvement	0.08***	0.00	0.07***	0.00	0.04***	0.00	0.12***	0.00	0.04***	0.00
Community/parent support	-0.01***	0.00	-0.01**	0.00	0.01***	0.00	-0.04***	0.00	0.02***	0.00
Managing student conduct NTC	0.19***	0.00	0.19***	0.00	0.21***	0.00	0.16***	0.00	0.13***	0.00
Teacher leadership	0.39***	0.00	0.40***	0.00	0.48***	0.01	0.28***	0.01	0.29***	0.00
Teacher role: class decisions	0.00	0.00	0.00	0.00	-0.01*	0.00	0.01***	0.00	0.00	0.00
Teacher role: school decisions	0.06***	0.00	0.07***	0.00	0.11***	0.00	0.01**	0.00	0.10***	0.00
Professional development NTC	0.16***	0.00	0.17***	0.00	0.14***	0.00	0.18***	0.01	0.26***	0.01
Usefulness of assessment data	-0.02***	0.00	-0.02***	0.00	-0.02***	0.00	-0.01***	0.00	0.00	0.00
Instructional practices	0.15***	0.00	0.15***	0.00	0.11***	0.00	0.21***	0.01	0.10***	0.01
Variance (Int)		0.08		0.08		0.11		0.05		0.06
Level-1, <i>r</i>		0.08		0.09		0.11		0.13		0.11

Table 22 continued

ICC	0.50	0.47	0.50	0.28	0.35
Variance between schools	-0.14	-0.14	-0.10	-0.25	-0.20
Variance within schools	0.72	0.69	0.69	0.54	0.62
X ² (df)***	69566.00***(2402)	65344.39***(2402)	73494.46***(2402)	32133.51***(2402)	41386.88***(2402)
Deviance	33396.16	37646.09	54209.95	64988.96	51794.79

^aschldr: school leadership outcome variable

^bschldNTC: school leadership NTC outcome variable

^cschlim: school climate outcome variable

^dtchreval: teacher evaluation outcome variable

^eaddtconc: addressing teacher concerns outcome variable

Table 23

Comparison of Model 3 for All School Leadership Outcome Variables

Variable	schldrs ^a		schldNTC ^b		schclim ^c		tchreval ^d		addtconcr ^e	
	B	SE	β	SE	β	SE	β	SE	β	SE
Intercept	3.08***	0.02	3.07***	0.02	2.96***	0.02	3.22***	0.01	2.96***	0.01
Years experience in education	0.00**	0.00	0.00**	0.00	0.00***	0.00	0.00*	0.00	0.00**	0.00
Years at current school	-0.01***	0.00	-0.01***	0.00	-0.01***	0.00	-0.01***	0.00	0.00	0.00
School use of time NTC	0.02***	0.00	0.02***	0.00	0.04***	0.00	-0.01*	0.00	0.05***	0.00
Time on planning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01***	0.00
Time on non-instruction responsib.	-0.02***	0.00	-0.02***	0.00	-0.02***	0.00	-0.01***	0.00	-0.03***	0.00
Time on assessments	0.00	0.00	0.00	0.00	-0.01	0.00	0.00**	0.00	0.00	0.00
Time outside workday: none	0.00	0.01	0.00	0.01	0.01	0.01	-0.02	0.01	0.03	0.02
Time outside workday: < 1 hr	-0.01**	0.00	-0.01**	0.00	0.00	0.01	-0.03***	0.01	0.00	0.01
Time outside workday: 1 < 3 hrs	0.00	0.00	0.00	0.00	0.01*	0.00	-0.02***	0.00	0.00	0.00
Time outside workday: 3 < 5 hrs	0.00	0.00	0.00	0.00	0.01**	0.00	-0.01**	0.00	0.00	0.00
Time outside workday: > 10 hrs	0.00	0.00	0.00	0.00	0.00	0.00	0.01**	0.00	0.00	0.00
Resources	0.00	0.00	0.00	0.00	0.00	0.00	0.01***	0.00	0.00	0.00
Facilities	0.03***	0.00	0.03***	0.00	0.02***	0.00	0.04***	0.00	0.01***	0.00
Community/parent involvement	0.08***	0.00	0.07***	0.00	0.04***	0.00	0.12***	0.00	0.04***	0.00
Community/parent support	-0.01***	0.00	-0.01**	0.00	0.01***	0.00	-0.04***	0.00	0.02***	0.00
Managing student conduct NTC	0.19***	0.00	0.19***	0.00	0.21***	0.00	0.16***	0.00	0.13***	0.00
Teacher leadership	0.39***	0.00	0.40***	0.00	0.48***	0.01	0.28***	0.01	0.29***	0.00
Teacher role: class decisions	0.00	0.00	0.00	0.00	-0.01*	0.00	0.01***	0.00	0.00	0.00
Teacher role: school decisions	0.06***	0.00	0.07***	0.00	0.11***	0.00	0.01**	0.00	0.10***	0.00
Professional development NTC	0.16***	0.00	0.17***	0.00	0.14***	0.00	0.18***	0.01	0.26***	0.01
Usefulness of assessment data	-0.02***	0.00	-0.02***	0.00	-0.02***	0.00	-0.01***	0.00	0.00	0.00
Instructional practices	0.15***	0.00	0.15***	0.00	0.11***	0.00	0.21***	0.01	0.10***	0.01
Percent minority	0.00***	0.00	0.00***	0.00	0.00***	0.00	0.00***	0.00	0.00***	0.00
Percent free/reduced lunch	0.00**	0.00	0.00**	0.00	0.00***	0.00	0.00*	0.00	0.00**	0.00
Average daily membership (ADM)	0.00***	0.00	0.00***	0.00	0.00***	0.00	0.00***	0.00	0.00***	0.00

Table 23 continued

Locale: City	-0.02	0.02	-0.02	0.02	-0.03	0.02	-0.01	0.02	-0.02	0.02
Locale: Town	0.01	0.02	0.01	0.02	0.02	0.03	0.01	0.02	0.00	0.02
Locale: Rural area	0.01	0.02	0.01	0.02	0.01	0.02	0.00	0.01	0.01	0.02
Variance (Int)		0.07		0.07		0.10		0.05		0.06
Level-1, <i>r</i>		0.08		0.09		0.11		0.13		0.11
ICC		0.47		0.44		0.48		0.28		0.35
Variance between schools		0.00		0.00		0.00		-0.25		-0.20
Variance within schools		0.72		0.69		0.69		0.54		0.62
X ² (df)***		63494.94***(2396)		59688.07***(2396)		68478.47***(2396)		28213.72***(2396)		38747.40***(2396)
Deviance		33216.32		37461.47		54053.67		64776.55		51640.84

^aschldr: school leadership outcome variable

^bschldNTC: school leadership NTC outcome variable

^cschclim: school climate outcome variable

^dtchreval: teacher evaluation outcome variable

^eaddtcon: addressing teacher concerns outcome variable

Table 24

Comparison of Model 4 for All School Leadership Outcome Variables

Variable	schldrs ^a		schldNTC ^b		schclim ^c		tchreval ^d		addtconcr ^e	
	β	SE	β	SE	β	SE	β	SE	β	SE
Intercept	3.09***	0.05	3.09***	0.05	2.97***	0.06	3.24***	0.04	2.97***	0.04
Years experience in education	0.00**	0.00	0.00**	0.00	0.00***	0.00	0.00*	0.00	0.00**	0.00
Years at current school	-0.01***	0.00	-0.01***	0.00	-0.01***	0.00	-0.01***	0.00	0.00	0.00
School use of time NTC	0.02***	0.00	0.02***	0.00	0.04***	0.00	-0.01*	0.00	0.05***	0.00
Time on planning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01***	0.00
Time on non-instruction responsib.	-0.02***	0.00	-0.02***	0.00	-0.02***	0.00	-0.01***	0.00	-0.03***	0.00
Time on assessments	0.00	0.00	0.00	0.00	-0.01***	0.00	0.00**	0.00	0.00	0.00
Time outside workday: none	0.00	0.01	0.00	0.01	0.01	0.01	-0.02	0.01	0.03	0.02
Time outside workday: < 1 hr	-0.01**	0.00	-0.01**	0.00	0.00	0.01	-0.03***	0.01	0.00	0.01
Time outside workday: 1 < 3 hrs	0.00	0.00	0.00	0.00	0.01*	0.00	-0.02***	0.00	0.00	0.00
Time outside workday: 3 < 5 hrs	0.00	0.00	0.00	0.00	0.01**	0.00	-0.01**	0.00	0.00	0.00
Time outside workday: > 10 hrs	0.00	0.00	0.00	0.00	0.00	0.00	0.01**	0.00	0.00	0.00
Resources	0.00	0.00	0.00	0.00	0.00	0.00	0.01***	0.00	0.00	0.00
Facilities	0.03***	0.00	0.03***	0.00	0.02***	0.00	0.04***	0.00	0.01***	0.00
Community/parent involvement	0.08***	0.00	0.07***	0.00	0.04***	0.00	0.12***	0.00	0.04***	0.00
Community/parent support	-0.01***	0.00	-0.01**	0.00	0.01***	0.00	-0.04***	0.00	0.02***	0.00
Managing student conduct NTC	0.19***	0.00	0.19***	0.00	0.21***	0.00	0.16***	0.00	0.13***	0.00
Teacher leadership	0.39***	0.00	0.40***	0.00	0.48***	0.01	0.28***	0.01	0.29***	0.00
Teacher role: class decisions	0.00	0.00	0.00	0.00	-0.01*	0.00	0.01***	0.00	0.00	0.00
Teacher role: school decisions	0.06***	0.00	0.07***	0.00	0.11***	0.00	0.01**	0.00	0.10***	0.00
Professional development NTC	0.16***	0.00	0.17***	0.00	0.14***	0.00	0.18***	0.01	0.26***	0.01
Usefulness of assessment data	-0.02***	0.00	-0.02***	0.00	-0.02***	0.00	-0.01***	0.00	0.00	0.00
Instructional practices	0.15***	0.00	0.15***	0.00	0.11***	0.00	0.21***	0.01	0.10***	0.01
Percent minority	0.00***	0.00	0.00***	0.00	0.00***	0.00	0.00***	0.00	0.00***	0.00
Percent free/reduced lunch	0.00**	0.00	0.00**	0.00	0.00***	0.00	0.00	0.00	0.00**	0.00
Average daily membership (ADM)	0.00***	0.00	0.00***	0.00	0.00***	0.00	0.00***	0.00	0.00***	0.00

Table 24 continued

Locale: City	-0.04	0.05	-0.04	0.05	-0.04	0.06	-0.04	0.04	-0.02	0.04
Locale: Town	-0.01	0.05	-0.01	0.05	0.01	0.06	-0.02	0.04	0.00	0.04
Locale: Rural area	-0.01	0.05	-0.01	0.05	0.01	0.06	-0.03	0.04	0.00	0.04
% minority X suburb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
% free/reduced lunch X suburb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ADM X suburb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variance (Int)	0.07		0.07		0.10		0.05		0.06	
Level-1, <i>r</i>	0.08		0.09		0.11		0.13		0.11	
ICC	0.47		0.44		0.48		0.28		0.35	
Variance between schools	0.00		0.00		0.00		-0.25		-0.20	
Variance within schools	0.72		0.69		0.69		0.54		0.62	
X ² (df)***	63290.35***(2393)	59503.18***(2393)	68240.02***(2393)	28138.73***(2393)	38622.32***(2393)					
Deviance	33254.85	37499.94	54091.22	64819.92	51679.64					

^aschldr: school leadership outcome variable

^bschldNTC: school leadership NTC outcome variable

^cschclim: school climate outcome variable

^dschreval: teacher evaluation outcome variable

^eaddtconc: addressing teacher concerns outcome variable

The Model 1 (null) intercept for all school leadership outcome variables was approximately 3.00, equivalent to an agree response. Model 1 was statistically significant ($p \leq 0.001$) for all outcome variables.

The Model 2 (Level 1) intercept for all school leadership outcome variables was approximately 3.00, equivalent to an agree response. Model 2 was statistically significant ($p \leq 0.001$) for all school leadership outcome variables. The deviance for Model 2 decreased by at least 53% for all school leadership outcome variables, with the largest decrease in deviance occurring for school leadership NTC (74% decrease). None of the models using the alternate school leadership outcome variables accounted for between-school variance, but they accounted for at least 54% (teacher evaluation) and as much as 69% (school leadership NTC and school climate) of the within-school variance. Based on the percentage of within-school variance explained, the models using the school leadership outcome variables school leadership, school leadership NTC, and school climate seemed to be better models than those using the school leadership outcome variables teacher evaluation and addressing teacher concerns.

The alternate school leadership outcome variable school leadership NTC was the most similar in composition to the school leadership outcome variable school leadership, using nine of the 11 factors included in school leadership. The models using school leadership NTC produced the most similar results to those emerging from the models using school leadership as the school leadership outcome variable. The statistical significance and size and direction of the magnitude of all of the Level 1 and Level 2 variables were generally the same, with four exceptions having a 0.01 increase or decrease in magnitude.

The results of the models using the school leadership outcome variables school climate, teacher evaluation, and addressing teacher concerns differed more with the primary models than did those of the models using school leadership NTC as the outcome variable. For each of these three outcome variables, more than half of the variables exhibited a change in statistical significance or magnitude. The models using teacher evaluation as the school leadership outcome variable displayed the most differences, with 19 of the 22 Level 1 variables exhibiting a change in statistical significance or magnitude.

There were several variables that displayed a change in statistical significance for the alternate school leadership outcome variables when compared to the results for models using the school leadership outcome variable school leadership. The variables that were statistically significant in the school leadership models but not statistically significant in other models were years at current school (addressing teacher concerns), time outside workday: < 1 hr (school climate and addressing teacher concerns), and usefulness of assessment data (addressing teacher concerns).

Some variables were not statistically significant for the school leadership outcome variable school leadership but were statistically significant in models using other school leadership outcome variables. For school climate these variables were time on assessments ($\beta = -0.01$, $SE = 0.00$, $p \leq 0.001$), time outside workday: 1 < 3 hrs ($\beta = 0.01$, $SE = 0.00$, $p \leq 0.05$), time outside workday: 3 < 5 hrs ($\beta = 0.01$, $SE = 0.00$, $p \leq 0.01$), and teacher role: class decisions ($\beta = -0.01$, $SE = 0.00$, $p \leq 0.05$). For teacher evaluation, the variables that “became” statistically significant were time on assessments ($\beta = 0.00$, $SE = 0.00$, $p \leq 0.01$), time outside workday: 1 < 3 hrs ($\beta = -0.02$, $SE = 0.00$, $p \leq 0.001$), time outside workday: 3 <

5 hrs ($\beta = -0.01$, SE = 0.00, $p \leq 0.01$), time outside workday: >10 hrs ($\beta = 0.01$, SE = 0.00, $p \leq 0.05$), resources ($\beta = 0.01$, SE = 0.00, $p \leq 0.001$), and teacher role: class decisions ($\beta = 0.01$, SE = 0.00, $p \leq 0.001$). For addressing teacher concerns the only variable with this difference was time on planning ($\beta = 0.01$, SE = 0.00, $p \leq 0.001$).

When examining the models using different measures of school leadership as the outcome variable, three variables displayed a change in direction of magnitude when compared to the results of models using the school leadership outcome variable school leadership. Community/parent support, which had a negative relationship with school leadership, had a positive relationship with school climate ($\beta = 0.01$, SE = 0.00, $p \leq 0.001$) and with addressing teacher concerns ($\beta = 0.02$, SE = 0.00, $p \leq 0.001$). School use of time, which had a positive relationship with school leadership, had a negative relationship with teacher evaluation ($\beta = -0.01$, SE = 0.00, $p \leq 0.05$).

Comparison of the models across different measures of school leadership displayed several variables with a range in magnitude of greater than 0.05 difference. These variables were school use of time (ranged from $\beta = -0.01$, SE = 0.00, $p \leq 0.05$ for teacher evaluation to $\beta = 0.05$, SE = 0.00, $p \leq 0.001$ for addressing teacher concerns), community/parent involvement (ranged from $\beta = 0.04$, SE = 0.00, $p \leq 0.001$ for school climate and addressing teacher concerns to $\beta = 0.12$, SE = 0.00, $p \leq 0.001$ for teacher evaluation), community/parent support (ranged from $\beta = -0.04$, SE = 0.00, $p \leq 0.001$ for teacher evaluation to $\beta = 0.02$, SE = 0.00, $p \leq 0.001$ for addressing teacher concerns), managing student conduct NTC (ranged from $\beta = 0.13$, SE = 0.00, $p \leq 0.001$ for addressing teacher concerns to $\beta = 0.21$, SE = 0.00, $p \leq 0.001$ for school climate), teacher leadership (ranged from $\beta = 0.28$, SE = 0.01, $p \leq 0.001$

for teacher evaluation to $\beta = 0.48$, $SE = 0.01$, $p \leq 0.001$ for school climate), teacher role: school decisions (ranged from $\beta = 0.01$, $SE = 0.00$, $p \leq 0.001$ for teacher evaluation to $\beta = 0.11$, $SE = 0.00$, $p \leq 0.001$ for school climate), professional development (ranged from $\beta = 0.14$, $SE = 0.00$, $p \leq 0.001$ for school climate to $\beta = 0.26$, $SE = 0.01$, $p \leq 0.001$ for addressing teacher concerns), and instructional practices (ranged from $\beta = 0.10$, $SE = 0.01$, $p \leq 0.001$ for addressing teacher concerns to $\beta = 0.21$, $SE = 0.01$, $p \leq 0.001$ for teacher evaluation).

Level 2 variables exhibited very little change when comparing results across models for different measures of school leadership.

Comparison of HLM using the New Teacher Center Variation of Predictor Variables

To this point, the description of this study's results has focused on the HLM using the composite variables created based on CFA and IRA results, HLM was also conducted using another variation of the predictor variables. This variation used the composite variables identified by NTC in their analysis of the 2012 NC TWC Survey data. There was one NTC composite variable for each subsection of the NC TWC Survey (excluding "School Leadership" since it is the outcome variable) making a total of seven NTC composite variables used as predictor variables. A comparison matrix reflecting the differences in output for these models is located in Table 26.

Table 25

Comparison of Results for New Teacher Center Composite Variables Models with Primary Variables Models

	Model 1	Model 2	Model 3	Model 4
Variable	Change in β^a	Change in β	Change in β	Change in β
Intercept				+0.01
Years experience in education				
Years at current school				
School use of time NTC		-0.01	-0.01	-0.01
Time on planning		n/a ^b	n/a	n/a
Time on non-instruction responsib.		n/a	n/a	n/a
Time on assessments		n/a	n/a	n/a
Time outside workday: none				
Time outside workday: < 1 hr				-0.01
Time outside workday: 1 < 3 hrs ^c		$\beta = -0.01^*$	$\beta = -0.01^*$	$\beta = -0.01^*$
Time outside workday: 3 < 5 hrs				
Time outside workday: > 10 hrs				
Resources		when combined to form NTC variable, $\beta = 0.02^{***}$	when combined to form NTC variable, $\beta = 0.02^{***}$	when combined to form NTC variable, $\beta = 0.02^{***}$
Facilities				
Community/parent involvement		when combined to form NTC variable, $\beta = 0.04^{***}$	when combined to form NTC variable, $\beta = 0.04^{***}$	when combined to form NTC variable, $\beta = 0.04^{***}$
Community/parent support				
Managing student conduct NTC		-0.03	-0.03	-0.03
Teacher leadership		+0.13	+0.13	+0.13
Teacher role: class decisions		n/a	n/a	n/a
Teacher role: school decisions		n/a	n/a	n/a
Professional development NTC		-0.03	-0.03	-0.03

Table 25 continued

		when combined to form NTC variable, $\beta = 0.17^{***}$	when combined to form NTC variable, $\beta = 0.17^{***}$	when combined to form NTC variable, $\beta = 0.17^{***}$
Usefulness of assessment data				
Instructional practices				
Percent minority				
Percent free/reduced lunch				
Average daily membership (ADM)				
Locale: City				
Locale: Town				
Locale: Rural area				
% minority X suburb				
% free/reduced lunch X suburb				
ADM X suburb				
Variance (Int)				
Level-1, r		-0.01	-0.01	-0.01
ICC		+0.03	+0.03	+0.03
Variance between schools				
Variance within schools		+0.04	+0.04	+0.04
$X^2(df)^{***}$ (actual results)	21654.59(2402) ^{***}	80350.10(2402) ^{***}	72962.20(2396) ^{***}	72769.90(2393) ^{***}
Deviance (actual results)	138742.87	25974.34	25789.30	25831.99

^aChange in β as compared to the β for the primary model using school leadership as the outcome variable

^bn/a indicates this composite variable was not included in the NTC composite variable.

^cThis variable was not statistically significant in the primary model.

When comparing the models using the NTC composite variables to the primary models the majority of the differences were changes of +/- 0.01 in the size of the magnitude. There were no changes in the direction of any of the relationships. Three variables had a magnitude change greater than +/- 0.01. Managing student conduct NTC decreased by -0.03 ($\beta = 0.16, p \leq 0.001$). Teacher leadership increased by 0.13 ($\beta = 0.52, p \leq 0.001$). Professional development decreased by -0.03 ($\beta = 0.13, p \leq 0.001$). One variable that was not statistically significant for school leadership but was statistically significant for school leadership NTC models was time outside workday: 1 < 3 hrs ($\beta = -0.01, p \leq 0.05$).

Several variables in the primary models were combined to form the larger NTC composite variables. All of the NTC composite variables were statistically significant predictors of school leadership. In the primary model, some of the composite variables that are a subset of the NTC composite variables were not statistically significant. For example, the composite variable resources did not have a statistically significant relationship with the outcome variable school leadership, but when combined with the composite variable facilities to form the larger composite variable facilities and resources NTC, the relationship was statistically significant ($\beta = 0.02, p \leq 0.001$). The NTC models accounted for 75% of the within-school variance.

Summary

This chapter provided detailed descriptive statistics for each variable included in the study to answer Research Question 1, along with the results of the HLM analysis for the outcome variable school leadership for Research Question 2, Research Question 3, and Research Question 4. The magnitude of the β coefficients, standard errors, and statistical

significance were presented for each predictor, and measures of the appropriateness of the models were discussed. Comparisons of HLM analysis of other measures of school leadership were presented. This study developed models that explained as much as 72% of the within-school variance of teachers' perceptions of school leadership as a working condition. This came almost exclusively from teacher-level factors, because, although the variables percent minority, percent free/reduced lunch, and average daily membership were all statistically significant ($p \leq 0.001$), the magnitudes were negligible ($\beta = 0.00$, $SE = 0.00$). The three variables related to urban-centric locale (city, town, and rural area) were not statistically significant. Chapter 5 will discuss key findings and limitations of the study and offer theoretical and practical implications and suggestions for future directions for research.

CHAPTER 5: DISCUSSION

Introduction

The purpose of this study was to determine if a relationship exists between teachers' perceptions of school leadership as a working condition and a school's urban-centric locale. Since working conditions have been shown to have a strong relationship with teacher retention (Borman & Dowling, 2008; Charlotte Advocates for Education, 2004; Darling-Hammond, 2003; Hirsch & Church, 2009; Johnson, 2006; Johnson, Berg, & Donaldson, 2005; Ladd, 2011; Loeb, Darling-Hammond, & Luczak, 2005; Tomon, 2009), and school leadership has emerged as one of the working conditions having the greatest impact on teacher retention decisions (Boyd, Grossman, Ing, Lankford, Loeb, & Wyckoff, 2011; Ladd, 2011; National Center for Educational Statistics, 2007; National Center for Educational Statistics, 2010; North Carolina Teacher Working Conditions Survey Research Brief, 2010; Turner, 2003), exploring the possibility of a relationship between teachers' perceptions of school leadership and urban-centric locale could provide additional insight into efforts to improve teacher retention.

There is a strong body of research on school leadership as a working condition (Boyd et al., 2011; Certo & Fox, 2002; Ladd, 2011; Reichardt, Snow, Schlang, & Hupfeld, 2008; Tomon, 2009; Turner, 2003; Turner, 2008), and some research exists on the relationship between a school's urban-centric locale and working conditions in general (Abel & Sewell, 1999; Hanushek & Rivkin, 2007; Horng, 2009). However, little research exists on the connection of urban-centric locale to school leadership as a working condition (Hanushek & Rivkin, 2007; Turner, 2008). This study used hierarchical linear modeling to explore this

relationship in an effort to add to that body of research. Key findings of this study based on the results of the analysis are discussed in this chapter. Implications of these findings and suggestions for future research are offered.

Key Findings

A key finding of this study is that a school's urban-centric locale did not have a statistically significant relationship to teachers' perceptions of school leadership as a working condition. This finding contradicts some research that has shown that teachers' perceptions of school leadership as a working condition varies by urban-centric locale (e.g., Hanushek & Rivkin, 2007; Turner, 2008). It may likely be due to the inclusion of other school contextual variables in the model, such as other measures of working conditions that are typically associated with undesirable organizational environments commonly found in urban and rural schools. These findings seem to contradict the conclusions drawn by Hanushek and Rivkin (2007) in their analysis of the 1999-2000 Schools and Staffing Survey (SASS). However, their analysis was not designed to explore the relationship between school contextual factors, such as urban-centric locale, and teachers' perceptions of school leadership as a working condition. Hanushek's and Rivkin's research ultimately focused on the relationship between pay, working conditions, and teacher quality. In building their argument, they presented data from the 1999-2000 SASS that showed the percent of respondents, disaggregated by community type (roughly equivalent to urban-centric locale), indicating supportive administration. They then concluded that across the nation teachers in urban districts were more likely to indicate much less administrator support than teachers in suburban or rural communities. The data as presented did not provide an analysis for statistical significance. In

contrast, this study's finding that a school's urban-centric locale did not have a statistically significant relationship to teachers' perceptions of school leadership as a working condition is likely a more detailed description of this relationship rather than a contradiction.

This result also contradicts Turner's (2008) identification of a correlation between teachers in rural schools and reported positive perceptions of principal leadership. This contradiction can perhaps be explained by the fact that Turner's (2008) study had a limited sample which only included responses from 169 teachers in six public high schools in Virginia. The scale of this study (sample size of 85,306 teachers) and the inclusion of a wider range of control variables and school types suggest that these findings are likely more valid and generalizable.

The results also showed that, although the relationship between teachers' perceptions of school leadership as a working condition and the school contextual factors (as measured by percent of student body that is minority, percent of student body eligible to receive free or reduced-price lunch, and average daily membership) is statistically significant, the magnitude of the relationship is negligible. These school contextual factors did not have a practical relationship to teachers' perceptions of school leadership and did not contribute to the model's capacity to account for between-school variance. In addition, when this relationship was further explored by removing these school-level variables, the results indicated the relationship between the city locale and teachers' perceptions of school leadership was statistically significant. These findings reinforce the work of several researchers which finds teacher turnover is not due to students' demographics per se, but the conditions commonly associated with schools with a large proportion of students who are low-income or identified

as minorities (Hanushek, Kain, & Rivkin, 2004; Hanushek & Rivkin, 2007; Horng, 2009; Loeb, Darling-Hammond, & Luczak, 2005).

Additionally, none of the models in this study were able to account for between-school variance, suggesting that other school-level characteristics explain the variation between schools in teachers' perceptions of school leadership. However, all of the models were able to account for at least 54%, and as much as 75%, of the within-school variance. These results support the statement of Berry, Smylie, and Fuller (2008) that there is more variance in perceptions of working conditions within schools than between schools. It is unclear from this study what characteristics of teachers explain for different perceptions of the same context. The two teacher demographic variables considered, years experience in education and years at current school, each had a statistically significant relationship to perceptions of school leadership. However, since the magnitude of each of those relationships was essentially negligible, those teacher demographics do not sufficiently explain the variation of teachers' perceptions of school leadership within schools.

To discuss the next finding, the New Teacher Center (NTC) composite variables will be used because they better encompass the larger categories of working conditions than the smaller composite variables used in the primary models. Although aspects of the larger working conditions categories were not statistically significant in the primary models, based on the NTC models, all of the variables related directly to the larger categories of working conditions were statistically significant. The following variables had a statistically significant relationship to teachers' perceptions of school leadership: school use of time, facilities and resources, community support and involvement, managing student conduct, teacher

leadership, professional development, and instructional practices and support. This list encompasses all of the categories of working conditions included in the 2012 NC TWC Survey. The finding that each of these categories of working conditions had a statistically significant relationship to teachers' perceptions of school leadership supports the idea that perceptions of different working conditions are correlated with one another. Of these working conditions, teacher leadership, managing student conduct, professional development, and instructional practices and support were most related to perceptions of school leadership ($\beta \geq 0.15$), and the relationship of each was positive.

Implications

The findings of this study have practical implications for school administrators. From a district-level perspective, superintendents can use the results of this study to inform interpretation of working conditions survey results regarding school leadership for their district. Superintendents can use these results to help school administrators understand that they must look for explanations of teachers' perceptions of their leadership other than the school's student demographics and urban-centric locale.

Practical implications for school administrators, similar to those for district-level administrators, include using this study's results to inform interpretation of working conditions survey results regarding teachers' perceptions of their leadership. School administrators understand that school leadership is an extremely complex construct, and the perceptions of school leadership are affected by countless factors. As they reflect on the quality of their leadership and how to improve perceptions of their leadership, based on the results of this study, school administrators can now eliminate from consideration the factors

of urban-centric locale, percent of student body that is minority, percent of student body eligible to receive free or reduced-price lunch, and average daily membership. School administrators can spend time attending to factors in their complex role that are more significant and more related to teachers' perceptions of school leadership. More specifically, school administrators can focus on the variables that are positively related and have a relationship of greater magnitude to perceptions of school leadership, which include teachers' perceptions of teacher leadership, management of student conduct, professional development, and instructional practices and support in the school.

School administration degree (pre-service) programs and professional development programs for current school administrators can use this study's results to inform curriculum content for their students by placing a focus on the working conditions that seem to have the strongest relationship to teachers' perceptions of school leadership: teacher leadership, management of student conduct, professional development, and instructional practices in the school. If administrative support is, in fact, one of the most prominent factors affecting teacher retention decisions (Boyd, Grossman, Ing, Lankford, Loeb, & Wyckoff, 2011; Ladd, 2011; National Center for Educational Statistics, 2007; National Center for Educational Statistics, 2010; North Carolina Teacher Working Conditions Survey Research Brief, 2010; Turner, 2003), and if, administrative support is reflected in the ability of school administrators to ease teacher's burdens by creating a supportive working environment (Certo & Fox, 2002; Reichardt, Snow, Schlang, & Hupfeld, 2008), then pre-service and current school administrators who have a good understanding of how to create such work

environments by focusing on these working conditions should be able to improve teachers' perceptions of school leadership and, therefore, improve teacher retention.

The results of this study also point to a possible strategy that school leaders could use to target retention of experienced teachers. Considering that teachers' perceptions of school leadership had a negative relationship with years of experience in education and a strong and positive relationship with teacher leadership, school leaders should consider providing teacher leadership opportunities to teachers with more years of experience. This approach could serve as a means to offset the negative effects of the relationship between years of experience and teachers' perceptions of school leadership and potentially result in improved perceptions of school leadership, and therefore, increased retention of experienced teachers.

Overall, the findings emphasize the link between teachers' perceptions of working conditions and their perceptions of school leadership. This study should reaffirm the need for school administrators to focus on improving working conditions, perhaps attending more to those with greater magnitudes (i.e., teacher leadership, instructional practices and support, managing student conduct, and professional development), in efforts to improve teachers' perceptions of school leadership. In theory, these improved working conditions should translate into improved teacher retention. Currently in North Carolina, as a part of the evaluation process for school administrator's performance, principals and assistant principals are expected to provide evidence of using their school's NC TWC Survey results to inform improvement efforts. The results of this study can enhance the ability of school administrators to interpret and apply the survey results. It is important to note, however, that because teachers' perceptions of school leadership appear to be quite individualized (variable

within teachers in the same context), efforts to address these perceptions via policy measures will likely be challenging.

There are methodological implications of this study as well. Specifically, how school leadership is measured can slightly modify the results. In this study, when the measure of the outcome variable was changed, the intercept changed, as did the ICC. The percent of within-school variance for which the model accounted also changed. For example, when school leadership was defined by factors related exclusively to teacher evaluation, a much more limited definition than of the outcome variable school leadership, the intercept increased by 0.13 to 3.24, the ICC dropped by -0.22 to 0.28, and the within-school variance decreased from 72% to 54%. This implies that how school leadership is operationalized can alter the findings. It also points to the challenge in making comparisons between studies of perceptions of school leadership without a consistent definition and measurement of school leadership.

Limitations of the Study

This study is limited by the fact that teachers' perceptions of school leadership is a complex issue, and the only aspects of school leadership considered in this study are the ones identified by the NC TWC Survey. As such, other valid measures or aspects of school leadership or possible predictors are not taken into account. The design of this study, for example, does not take into account all the contextual circumstances surrounding a school's leadership. For example, the number of years the principal or assistant principal has been serving in the school could be an important nuance to consider. Whether the school's leadership was in flux during the 2011-2012 school year could affect the teachers'

perceptions of school leadership. In addition, the school's academic performance is also not taken into account, another factor that could impact teachers' perceptions of school leadership.

This study also encounters the potential limitations inherent in relying on survey data. A positive correlation between teacher job satisfaction and perceptions of working conditions has been observed (Boyd et al., 2011). However, teacher responses on working conditions surveys are affected by both their perceptions of their working conditions and their overall outlook, whether positive or negative (Boyd et al., 2011). Situational factors can also affect teachers' responses. For example, an experience of a significant student behavior matter or of a negative interaction with school administration occurring in close proximity to the completion of the survey can have a magnified effect on the teacher's perceptions of working conditions. These limitations should be mitigated by the substantially large size of the data set (Boyd et al., 2011).

Although the data set was sufficiently large, it only included perceptions of working conditions of teachers in North Carolina's public schools. It is conceivable that results might vary if a comparable study was conducted in another state, perhaps in a different region of the United States. Data from the 1999-2000 SASS does indicate the potential for a difference in perception of school leadership in the Northeast as compared to other regions (Hanushek & Rivkin, 2007). In addition, because the data set was so large, important nuances may have been missed by not disaggregating the data into other categories, such as elementary, middle, and high school.

Another limitation of this study is the exclusion of salary as a factor in the model. North Carolina has a state-wide salary schedule that ranked 49th in the nation during the 2011-2012 school year (National Education Association, 2013). Prior to that, teachers' base salary in North Carolina had been stagnant since 2008 (Sawchuck, 2014). In North Carolina, local districts are allowed to supplement that base salary as they so choose. During the 2011-2012 school year, this local supplement ranged from \$0 to \$6,072 across the state, with an average of \$3,433 (North Carolina Department of Public Instruction, n.d.). These facts, along with the trend in the literature to include salary as a working condition, likely make salary an important factor to consider when exploring teachers' perceptions of working conditions in North Carolina. This working condition, however, is excluded from the NC TWC Survey.

Some may speculate that salary should be considered in this model. However, Ladd (2011), who accounted for salary and cost-of-living, concluded that there was little variation in salary across districts and stated, "Given this small variation, and the fact that teachers have already made their initial job decision with full knowledge of the salary, salary differentials are likely to have little or no predictive power in this cross-sectional analysis" (p. 245). Further, in North Carolina, teacher salary is a variable over which school leaders have no control. Given the small magnitudes of the relationships between teachers' perceptions of school leadership and the variables over which school leaders likely have less control (e.g., resources, facilities, usefulness of data) evident in this current study, it is reasonable to speculate that if a statistically significant relationship between salary and teachers' perceptions of school leadership were to exist, it is likely to have a small or even negligible magnitude. Therefore, using reasoning similar to Ladd's, differences in salary

would likely have very little, if any, predictive power with respect to teachers' perceptions of school leadership in this study's models.

This study was limited by the school-level variables used in the models. Even though sufficient between-school variance existed in the data set, this study was unable to explain any of this variance. In addition, this study was limited by the outcome variables.

Future Research

Considering that this study's finding that a school's urban-centric locale did not have a statistically significant relationship to teachers' perceptions of school leadership as a working condition is contradictory to the conclusions of other analyses (Hanushek & Rivkin, 2007; Turner, 2008), additional research in this area could help to clarify the nature of this relationship. Are the teachers and school contextual factors in North Carolina different from those of the nation at large to a degree sufficient to cause contradictory results? If the responses of only North Carolina respondents to the 1999-2000 SASS were analyzed, would the results match those gleaned from the national data set? Does the relationship between urban-centric locale and teachers' perceptions of school leadership vary by region of the United States? What is the relationship between a school's urban-centric locale and teachers' perceptions of working conditions other than school leadership? Then, if other analyses show urban-centric locale matters, we need to understand ultimately what this construct captures.

Furthermore, future research could include qualitative research using teacher focus groups to determine what factors account for the variance in teachers' perceptions of school leadership between schools. This study is an example of how the complexity of the school environment contributes to the difficulty in identifying clear relationships. Sufficient

variance in teachers' perceptions of school leadership between schools existed in the data set analyzed, but the school-level variables used in this study were unable to explain this variance. Quite simply, more research is needed to identify factors that are stronger predictors in explaining the between-school variance.

Conclusion

To improve teacher retention, many scholars have set out to identify which teacher working conditions influence teachers' decisions to remain in the profession or stay in a particular school or district. School leadership has been identified as one of the most important working conditions affecting teachers' decisions to remain in a school. Therefore, with a hope of expanding our understanding of teachers' perceptions of working conditions and subsequently our efforts to reduce teacher turnover associated with school leadership as a working condition, this study examined teachers' perceptions of school leadership as a working condition. More specifically, this study sought to determine if a school's urban-centric locale has a relationship with teachers' perceptions of school leadership as a working condition. There is currently little research available regarding this relationship.

Using data collected by the 2012 North Carolina Teacher Working Conditions Survey and school demographics for the 2011-2012 school year (i.e., urban-centric locale, percent of student body eligible to receive free or reduced-price lunch, percent of student body that is minority, and average daily membership), hierarchical linear modeling was conducted to examine the relationship between teacher demographics and school demographics and teachers' perceptions of school leadership as a working condition. In addition, this study sought to understand to what extent does the relationship between school contextual factors

and teachers' perceptions of school leadership as a working condition vary according to a school's locale.

The results indicated that a statistically significant relationship does not exist between teachers' perceptions of school leadership and urban-centric locale and that the relationship between school contextual factors often considered predictive of working conditions (percent minority, percent eligible to receive free or reduced-price lunch, and average daily membership) and teachers' perceptions of school leadership is statistically significant, although the magnitude is negligible. Seventy-one percent of the variance in teachers' perceptions of school leadership was explained by differences within teachers in a school. This means that teachers' perceptions of their working conditions explain their perceptions of their school leadership more than characteristics of the student population. In brief, teachers are not penalizing school administrators for working in schools with substantial populations of low-income and minority students. The two teacher demographic variables considered, years experience in education and years at current school, each had a statistically significant relationship to perceptions of school leadership, however, the magnitude of each of those relationships was essentially negligible. Teacher leadership, managing student conduct, professional development, and instructional practices and support were the strongest predictors of perceptions of school leadership.

This study reaffirms the need for school administrators to focus on improving working conditions, with greater attention to those more strongly related to teachers' perceptions of school leadership. Since these perceptions appear to be quite individualized, this study also points to the difficulty in using policy measures to impact teachers'

perceptions of school leadership. Future research is needed to help clarify the nature of the relationship between urban-centric locale and teachers' perceptions of school leadership. Further research is also needed to determine what factors account for the variance in teachers' perceptions of school leadership between schools.

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APPENDIX

Appendix A

Tables of Results across Different Measures of School Leadership

Table A1

Outcome Variable: School Leadership NTC Composite Variable

Variable	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	3.06***	0.01	3.07***	0.01	3.07***	0.02	3.09***	0.05
Years experience in education			0.00**	0.00	0.00**	0.00	0.00**	0.00
Years at current school			-0.01***	0.00	-0.01***	0.00	-0.01***	0.00
School use of time NTC			0.02***	0.00	0.02***	0.00	0.02***	0.00
Time on planning			0.00	0.00	0.00	0.00	0.00	0.00
Time on non-instruction responsib.			-0.02***	0.00	-0.02***	0.00	-0.02***	0.00
Time on assessments			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: none			0.00	0.01	0.00	0.01	0.00	0.01
Time outside workday: < 1 hr			-0.01**	0.00	-0.01**	0.00	-0.01**	0.00
Time outside workday: 1 < 3 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: 3 < 5 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: > 10 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Resources			0.00	0.00	0.00	0.00	0.00	0.00
Facilities			0.03***	0.00	0.03***	0.00	0.03***	0.00
Community/parent involvement			0.07***	0.00	0.07***	0.00	0.07***	0.00
Community/parent support			-0.01**	0.00	-0.01**	0.00	-0.01**	0.00
Managing student conduct NTC			0.19***	0.00	0.19***	0.00	0.19***	0.00
Teacher leadership			0.40***	0.00	0.40***	0.00	0.40***	0.00
Teacher role: class decisions			0.00	0.00	0.00	0.00	0.00	0.00
Teacher role: school decisions			0.07***	0.00	0.07***	0.00	0.07***	0.00
Professional development NTC			0.17***	0.00	0.17***	0.00	0.17***	0.00
Instructional practices			-0.02***	0.00	-0.02***	0.00	-0.02***	0.00
Percent minority			0.15***	0.00	0.15***	0.00	0.15***	0.00
Percent free/reduced lunch					0.00***	0.00	0.00***	0.00
Average daily membership (ADM)					0.00**	0.00	0.00**	0.00
Locale: City					0.00***	0.00	0.00***	0.00
Locale: Town					-0.02	0.02	-0.04	0.05
Locale: Rural area					0.01	0.02	-0.01	0.05

Table A1 continued

% minority X suburb			0.01	0.02	-0.01	0.05
% free/reduced lunch X suburb					0.00	0.00
ADM X suburb					0.00	0.00
Variance (Int)	0.07	0.08		0.07		0.07
Level-1, <i>r</i>	0.29	0.09		0.09		0.09
ICC	0.19	0.47		0.44		0.44
Variance between schools	-	-0.14		0.00		0.00
Variance within schools	-	0.69		0.69		0.69
X ² (df)***	20784.25***(2402)	65344.39***(2402)		59688.07***(2396)		59503.18***(239)
Deviance	141442.42	37646.09		37461.47		37499.94

Table A2

Outcome Variable: Climate Composite Variable

Variable	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	2.96***	0.01	2.96***	0.01	2.96***	0.02	2.97***	0.06
Years experience in education			0.00***	0.00	0.00***	0.00	0.00***	0.00
Years at current school			-0.01***	0.00	-0.01***	0.00	-0.01***	0.00
School use of time NTC			0.04***	0.00	0.04***	0.00	0.04***	0.00
Time on planning			0.00	0.00	0.00	0.00	0.00	0.00
Time on non-instruction responsib.			-0.02***	0.00	-0.02***	0.00	-0.02***	0.00
Time on assessments			-0.01***	0.00	-0.01	0.00	-0.01***	0.00
Time outside workday: none			0.01	0.01	0.01	0.01	0.01	0.01
Time outside workday: < 1 hr			0.00	0.01	0.00	0.01	0.00	0.01
Time outside workday: 1 < 3 hrs			0.01*	0.00	0.01*	0.00	0.01*	0.00
Time outside workday: 3 < 5 hrs			0.01**	0.00	0.01**	0.00	0.01**	0.00
Time outside workday: > 10 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Resources			0.00	0.00	0.00	0.00	0.00	0.00
Facilities			0.02***	0.00	0.02***	0.00	0.02***	0.00
Community/parent involvement			0.04***	0.00	0.04***	0.00	0.04***	0.00
Community/parent support			0.01***	0.00	0.01***	0.00	0.01***	0.00
Managing student conduct NTC			0.21***	0.00	0.21***	0.00	0.21***	0.00
Teacher leadership			0.48***	0.01	0.48***	0.01	0.48***	0.01
Teacher role: class decisions			-0.01*	0.00	-0.01*	0.00	-0.01*	0.00
Teacher role: school decisions			0.11***	0.00	0.11***	0.00	0.11***	0.00
Professional development NTC			0.14***	0.00	0.14***	0.00	0.14***	0.00
Usefulness of assessment data			-0.02***	0.00	-0.02***	0.00	-0.02***	0.00
Instructional practices			0.11***	0.00	0.11***	0.00	0.11***	0.00
Percent minority					0.00***	0.00	0.00***	0.00
Percent free/reduced lunch					0.00***	0.00	0.00***	0.00
Average daily membership (ADM)					0.00***	0.00	0.00***	0.00
Locale: City					-0.03	0.02	-0.04	0.06
Locale: Town					0.02	0.03	0.01	0.06
Locale: Rural area					0.01	0.02	0.01	0.06

Table A2 continued

% minority X suburb				0.00	0.00
% free/reduced lunch X suburb				0.00	0.00
ADM X suburb				0.00	0.00
Variance (Int)	0.10	0.11	0.10		0.10
Level-1, <i>r</i>	0.35	0.11	0.11		0.11
ICC	0.22	0.50	0.48		0.48
Variance between schools	-	-0.10	0.00		0.00
Variance within schools	-	0.69	0.69		0.69
X ² (df)***	23996.32***(2402)	73494.46***(2402)	68478.47***(2396)		68240.02***(2393)
Deviance	158291.38	54209.95	54053.67		54091.22

Table A3

Outcome Variable: Teacher Evaluation Composite Variable

Variable	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	3.20***	0.00	3.21***	0.01	3.22***	0.01	3.24***	0.04
Years experience in education			0.00*	0.00	0.00*	0.00	0.00*	0.00
Years at current school			-0.01	0.00	-0.01***	0.00	-0.01***	0.00
School use of time NTC			-0.01*	0.00	-0.01*	0.00	-0.01*	0.00
Time on planning			0.00	0.00	0.00	0.00	0.00	0.00
Time on non-instruction responsib.			-0.01***	0.00	-0.01***	0.00	-0.01***	0.00
Time on assessments			0.00**	0.00	0.00**	0.00	0.00**	0.00
Time outside workday: none			-0.02	0.01	-0.02	0.01	-0.02	0.01
Time outside workday: < 1 hr			-0.03***	0.01	-0.03***	0.01	-0.03***	0.01
Time outside workday: 1 < 3 hrs			-0.02***	0.00	-0.02***	0.00	-0.02***	0.00
Time outside workday: 3 < 5 hrs			-0.01**	0.00	-0.01**	0.00	-0.01**	0.00
Time outside workday: > 10 hrs			0.01*	0.00	0.01**	0.00	0.01**	0.00
Resources			0.01***	0.00	0.01***	0.00	0.01***	0.00
Facilities			0.04***	0.00	0.04***	0.00	0.04***	0.00
Community/parent involvement			0.12***	0.00	0.12***	0.00	0.12***	0.00
Community/parent support			-0.04***	0.00	-0.04***	0.00	-0.04***	0.00
Managing student conduct NTC			0.16***	0.00	0.16***	0.00	0.16***	0.00
Teacher leadership			0.28***	0.01	0.28***	0.01	0.28***	0.01
Teacher role: class decisions			0.01***	0.00	0.01***	0.00	0.01***	0.00
Teacher role: school decisions			0.01**	0.00	0.01**	0.00	0.01**	0.00
Professional development NTC			0.18***	0.01	0.18***	0.01	0.18***	0.01
Usefulness of assessment data			-0.01***	0.00	-0.01***	0.00	-0.01***	0.00
Instructional practices			0.21***	0.01	0.21***	0.01	0.21***	0.01
Percent minority					0.00***	0.00	0.00***	0.00
Percent free/reduced lunch					0.00*	0.00	0.00	0.00
Average daily membership (ADM)					0.00***	0.00	0.00***	0.00
Locale: City					-0.01	0.02	-0.04	0.04
Locale: Town					0.01	0.02	-0.02	0.04
Locale: Rural area					0.00	0.01	-0.03	0.04

Table A3 continued

% minority X suburb				0.00	0.00
% free/reduced lunch X suburb				0.00	0.00
ADM X suburb				0.00	0.00
Variance (Int)	0.04	0.05	0.05		0.05
Level-1, <i>r</i>	0.28	0.13	0.13		0.13
ICC	0.13	0.28	0.28		0.28
Variance between schools	-	-0.25	-0.25		-0.25
Variance within schools	-	0.54	0.54		0.54
X ² (df)***	15496.38***(2402)	32133.51***(2402)	28213.72***(2396)		28138.73***(2393)
Deviance	137490.76	64988.96	64776.55		64819.92

Table A4

Outcome Variable: Addressing Teacher Concerns Composite Variable

Variable	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	2.96***	0.01	2.96***	0.01	2.96***	0.01	2.97***	0.04
Years experience in education			0.00**	0.00	0.00**	0.00	0.00**	0.00
Years at current school			0.00	0.00	0.00	0.00	0.00	0.00
School use of time NTC			0.05***	0.00	0.05***	0.00	0.05***	0.00
Time on planning			0.01***	0.00	0.01***	0.00	0.01***	0.00
Time on non-instruction responsib.			-0.03***	0.00	-0.03***	0.00	-0.03***	0.00
Time on assessments			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: none			0.03	0.02	0.03	0.02	0.03	0.02
Time outside workday: < 1 hr			0.00	0.01	0.00	0.01	0.00	0.01
Time outside workday: 1 < 3 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: 3 < 5 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Time outside workday: > 10 hrs			0.00	0.00	0.00	0.00	0.00	0.00
Resources			0.00	0.00	0.00	0.00	0.00	0.00
Facilities			0.01***	0.00	0.01***	0.00	0.01***	0.00
Community/parent involvement			0.04***	0.00	0.04***	0.00	0.04***	0.00
Community/parent support			0.02***	0.00	0.02***	0.00	0.02***	0.00
Managing student conduct NTC			0.13***	0.00	0.13***	0.00	0.13***	0.00
Teacher leadership			0.29***	0.00	0.29***	0.00	0.29***	0.00
Teacher role: class decisions			0.00	0.00	0.00	0.00	0.00	0.00
Teacher role: school decisions			0.10***	0.00	0.10***	0.00	0.10***	0.00
Professional development NTC			0.26***	0.01	0.26***	0.01	0.26***	0.01
Usefulness of assessment data			0.00	0.00	0.00	0.00	0.00	0.00
Instructional practices			0.10***	0.01	0.10***	0.01	0.10***	0.01
Percent minority					0.00***	0.00	0.00***	0.00
Percent free/reduced lunch					0.00**	0.00	0.00**	0.00
Average daily membership (ADM)					0.00***	0.00	0.00***	0.00
Locale: City					-0.02	0.02	-0.02	0.04
Locale: Town					0.00	0.02	0.00	0.04
Locale: Rural area					0.01	0.02	0.00	0.04

Table A4 continued

% minority X suburb				0.00	0.00
% free/reduced lunch X suburb				0.00	0.00
ADM X suburb				0.00	0.00
Variance (Int)	0.05	0.06	0.06		0.06
Level-1, <i>r</i>	0.29	0.11	0.11		0.11
ICC	0.15	0.35	0.35		0.35
Variance between schools	-	-0.20	-0.20		-0.20
Variance within schools	-	0.62	0.62		0.62
X ² (df)***	16093.08***(2402)	41386.88***(2402)	38747.40***(2396)		38622.32***(2393)
Deviance	138723.94	51794.79	51640.84		51679.64