

## ABSTRACT

Title of Document: THE EFFECTS OF CLASSROOM AUTONOMY, STAFF COLLEGIALITY, AND ADMINISTRATIVE SUPPORT ON TEACHERS' JOB SATISFACTION

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The purpose of my dissertation was to determine which job-related factors are most likely to explain teachers' sense of satisfaction with their current job. Based on previous research (Fairchild et al., 2012; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997), I hypothesized that teachers' perceptions of classroom autonomy, staff collegiality, and administrative support would have a greater impact on teachers' job satisfaction than demographic characteristics of either teachers or schools.

My study used a dataset of 19,130 teachers in 2,420 schools drawn from the 2007-08 Schools and Staffing Survey (SASS). The study employed a two-level hierarchical linear modeling (HLM) technique. I modeled the key constructs at both the individual and collective levels by conceptualizing autonomy, collegiality, and support as individual teachers' perceptions and as the average of all teachers' perceptions in the school.

My dissertation found that individual teachers' perceptions of classroom autonomy, staff collegiality, and administrative support had a greater impact on teachers' job satisfaction than demographic characteristics of schools and teachers. In addition, my study found that school-wide perceptions of classroom autonomy, staff collegiality, and administrative support had a significant effect on teachers' job satisfaction over and above the effects of individual teachers'

perceptions. The study found significant negative effects on job satisfaction for teachers working in Catholic schools and for teachers working in schools where poverty was perceived to be a school-wide problem.

Based on my findings, I recommend that policy makers who are concerned about addressing low levels of job satisfaction among teachers should begin by improving factors related to classroom autonomy, staff collegiality, and administrative support, since these are likely to have a meaningful impact. I also recommend that future research should employ a narrow definition of the outcome focusing on teachers' satisfaction with their job rather than their satisfaction with teaching in general.

THE EFFECTS OF CLASSROOM AUTONOMY, STAFF COLLEGIALLY, AND  
ADMINISTRATIVE SUPPORT ON TEACHERS' JOB SATISFACTION

by

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## DEDICATION

To my Dad  
Rollin Amos Lasseter III  
November 7, 1939-May 12, 2008  
The best teacher I ever had

## ACKNOWLEDGMENTS

I would like to recognize and express my appreciation for the many people who helped me through my graduate studies program. My family and friends, colleagues, dissertation committee, professors, and fellow graduate students provided invaluable assistance and encouragement that allowed me complete my doctoral program and this dissertation.

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## **Chapter 1. Introduction**

### **Importance of the topic**

Teachers' sense of job satisfaction is in steep decline. According to the MetLife Survey of the American Teacher, the number of teachers who reported they were "very satisfied" with their jobs has dropped 15 points in only 2 years, from 59% in 2009 to 44% in 2011 (Markow & Pieters, 2012). This percentage represents the lowest level of teacher satisfaction in over 20 years of the MetLife survey. The decline in teachers' sense of satisfaction with their jobs is tied to other negative indicators, such as a decrease in their sense of commitment to the profession. For example, when the survey asked teachers about their plans to leave teaching, almost a third of them answered "fairly likely" or "very likely" to leave, an increase of 12 percent since 2009. According to the same report, other negative outcomes related to low job satisfaction are becoming more prevalent, including a decrease in teachers' sense of job security, professionalism, and fair treatment. Low satisfaction among teachers may be associated with changes in education policy such as high-stakes accountability and an increase in standardized testing (Markow & Pieters, 2012). The MetLife authors describe these results as "dramatic" (Markow & Pieters, 2012, p. 5) and suggest troubling consequences for the status of American teachers.

The decline in teachers' sense of job satisfaction is important for a number of reasons. That teachers should feel satisfied with their work is valuable, of course, simply for its own sake. But in addition to its inherent value, teachers' job satisfaction is important because of its connection with a variety of outcomes including student learning (Lee & Smith, 1996; Louis, Marks, & Kruse, 1996; Rosenholtz, 1989) and teachers' productivity (Shen et al., 2011), efficacy (Lee, Dedrick, & Smith, 1991; Talbert & McLaughlin, 1994), commitment to the profession

(Perrachione et al., 2008; Tickle, 2011; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011), and retention (Cha, 2008; Ingersoll, 2001; Liu & Meyer, 2005). By informing policy makers about issues related to these important outcomes, studying the factors associated with teachers' job satisfaction will help improve teacher- and student-related policy. The following paragraphs explain the connection between these outcomes and teachers' job satisfaction.

Teachers' job satisfaction is important because of its impact on students' learning. According to Perie and Baker, "with teachers, satisfaction with their career may have strong implications for student learning" (1997, p. 2). Rosenholtz (1989) found that, after controlling for students' prior achievement and SES, teachers' increased satisfaction had a positive and significant impact on the math and reading of fourth-graders in Tennessee. Lee and Smith (1996) found significant gains in math and reading scores between eighth and tenth grades for students nationwide whose teachers had positive attitudes about their workplace. Calimeris (2012) used the Schools and Staffing Survey (SASS) to study the effect of teachers' job satisfaction on students' graduation rates and college enrollment, and found significant positive effects on both outcomes after controlling for school and teacher background characteristics. Teachers' satisfaction with their present job was found to be the strongest within-school predictor of teachers' sense of responsibility for their students' learning (Louis, Marks, & Kruse, 1996). Teacher job satisfaction is also related to students' sense of satisfaction with school (Somech & Bogler, 2002). It has been empirically demonstrated that when teachers feel good about their work, student achievement rises (Black, 2001). In fact, it makes sense that teachers' job satisfaction would be related to students' performance. As one researcher has written, "logically, supported and contented teachers do a better job of teaching than their disgruntled colleagues since satisfied teachers will be more enthusiastic about investing time and energy in teaching

their students” (Leslie, 2009, p. 2). Schools in which teachers report higher levels of job satisfaction also tend to be schools with higher levels of student achievement, although the direction of causality in such cases is not clear (Henke et al., 1997; Perie & Baker, 1997).

In addition to its relationship with student outcomes, teachers’ job satisfaction is related to six teacher outcomes: productivity, efficacy, commitment to the profession, and retention. The next few paragraphs describe these outcomes and their importance.

One outcome of teachers’ job satisfaction is teachers’ productivity. Job theory outside of the educational sector has identified a connection between workers’ productivity and their sense of satisfaction with work (Rice, Gentile, & McFarlin, 1991; Spector, 1997). Teachers with low satisfaction are less likely to produce their best work or to try their hardest (Ashton & Webb, 1986; Evans, 2001; Ostroff, 1992; Perie & Baker, 1997). According to Shen and colleagues, “if dissatisfied teachers stay in the profession, they are hardly motivated to do their best” (Shen et al., 2011, p. 2).

Teachers’ job satisfaction also results in self-efficacy. Lee, Dedrick and Smith (1991) found a connection between teachers’ sense of job satisfaction and their sense of efficacy in teaching their students. Teachers who reported higher levels of satisfaction are more likely to believe in their students’ ability to learn successfully, as indicated by their level of disagreement with the statement, “most of the students I teach are not capable of learning the material I should be teaching them” (Talbert & McLaughlin, 1994, p. 149). Teachers’ sense of self-efficacy was also found to be associated with their sense of job satisfaction (Ware & Kitsantas, 2011).

Several studies have focused on the relationship between job satisfaction and job commitment, defined as teachers’ intent to remain in teaching (Ingersoll & Alsalam, 1997; Skaalvik & Skaalvik, 2009; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011). Research has

demonstrated that when teachers do not feel satisfied with their work, they are less committed to remain in teaching (Perrachione et al., 2008; Price & Collett, 2010; Rosenholtz, 1990; Skaalvik & Skaalvik, 2011; Stockard & Lehman, 2004; Tickle, 2011). Teachers who have little commitment to remain in teaching are the most likely to actually leave their jobs (Perrachione et al., 2008).

Retention is a final outcome that may be related to job satisfaction. According to Liu and Meyer, “extensive literature in organizational psychology shows a close relation between employee turnover and job satisfaction” (Liu & Meyer, 2005, p. 988). Stockard and Lehman (2004) used the Teacher Follow-up Survey (TFS) to show that low satisfaction was correlated with high turnover among first-year teachers. Several studies have stated that low satisfaction results in high turnover among teachers (Perie & Baker, 1997; Perrachione et al., 2008; Sentovich, 2004). Higher job satisfaction results in higher levels of teacher retention (Cockburn, 2000; Perrachione et al., 2008). Highly satisfied teachers are less likely to switch schools or to quit the profession than those who are dissatisfied (Cha, 2008; Choy et al., 1993; Baker & Smith, 1997; MacDonald, 1999). Retention is cited by one study as the most important outcome related to teacher satisfaction (Perie & Baker, 1997). Teacher dissatisfaction (conceptually distinct from satisfaction) has consistently been shown to be a leading factor in teacher turnover, especially among voluntary departures (Fairchild et al., 2012; Ingersoll, 2001; Ingersoll, 2003; Johnson, 2006; Marvel et al., 2006). At least one study using the Teacher Follow-up Survey has stated that there may be no correlation between job satisfaction and turnover (Cha, 2008).

In summary, teachers’ job satisfaction is an important topic for examination because of its relationship with students’ learning and teachers’ productivity, efficacy, commitment to the

profession, and retention. The steep decline in teachers' job satisfaction, as reported by the MetLife Survey (Markow & Pieters, 2012) makes this a timely and even urgent topic of study.

### **Study purpose and research questions**

The purpose of my dissertation is to determine what factors are most likely to explain teachers' sense of satisfaction with their current job. I hypothesize that teachers' perceptions of classroom autonomy, staff collegiality, and administrative support have a significant impact on teachers' job satisfaction after controlling for other variables. To test this hypothesis I use an analytic sample of 19,130 teachers from the 2007-08 Schools and Staffing Survey (SASS) and a two-level HLM regression analysis.

In formulating my hypothesis, my study employs a conceptual framework based on the value-percept theory prominent in the field of industrial and organization psychology (Locke, 1976; Rice & McFarlin, 1991). According to this theory, three of the most important factors influencing overall job satisfaction are the employee's feelings of satisfaction with supervisor support, satisfaction with coworkers, and satisfaction with the nature of the work itself, of which task autonomy is considered to be the most important component (Hackman & Oldham, 1980; Colquitt et al., 2012). In Chapter 2 I provide a full explanation of the value-percept theory and how it informs my conceptual model.

In formulating my hypothesis, my study also builds on previous research studies which found that teachers' perceptions of classroom autonomy, staff collegiality, and administrative support had a significant impact on teachers' job satisfaction after controlling for background characteristics of teachers and schools (Cha, 2004; Fairchild et al., 2012; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Perrachione et al., 2008; Price, 2012; Renzulli et al., 2011; Shen et al., 2011; Skaalvik & Skaalvik, 2009; Stockard & Lehman, 2004; Tickle et al., 2011; Ware &

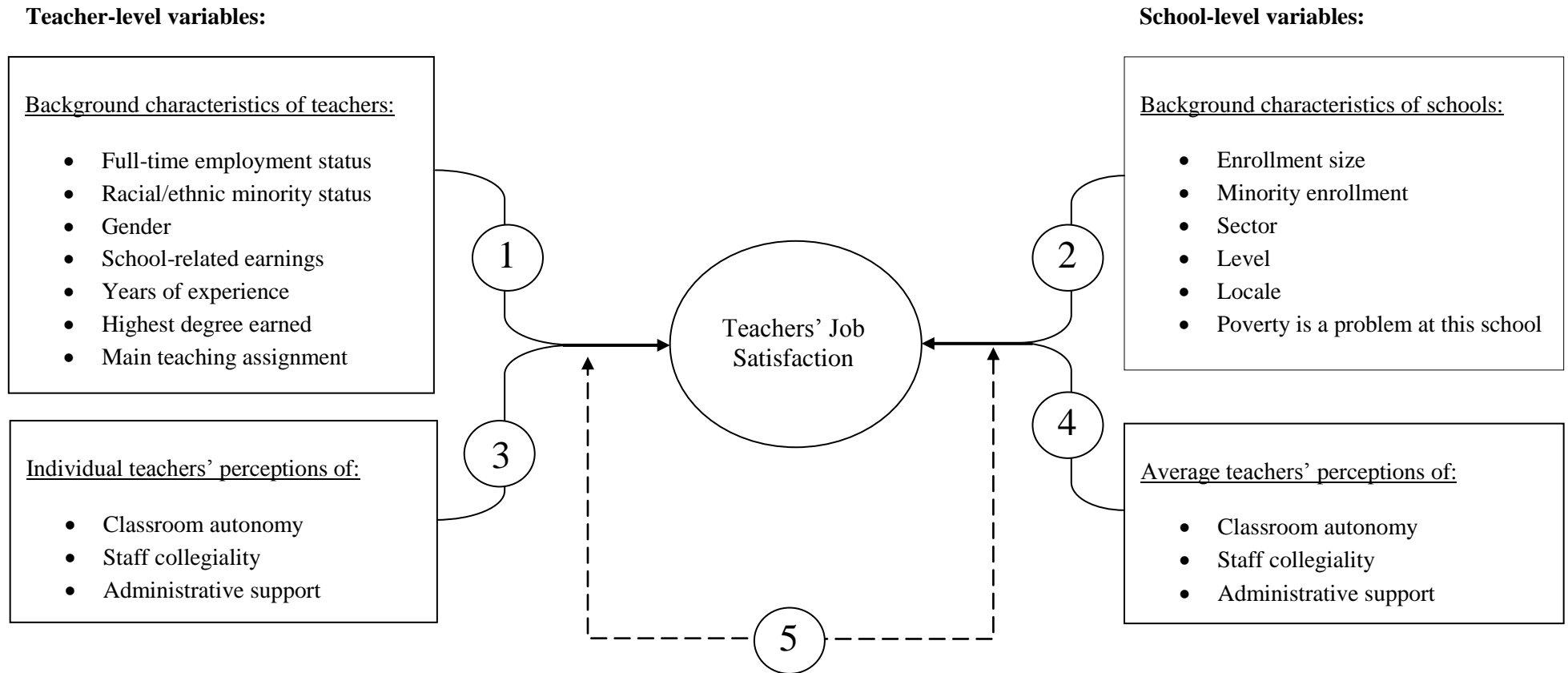


Kitsantas, 2011). Research in the sociology of education has frequently identified these three variables as leading indicators of school climate, which in turn is a leading predictor of teachers' job satisfaction (Lee, Bryk, & Smith, 1993; Lee, Dedrick, & Smith, 1991; Rowan, Raudenbush, & Kang, 1991). Several empirical studies have found that these three variables are leading predictors of teachers' job satisfaction (e.g., Fairchild et al., 2012; Perie & Baker, 1997; Price, 2012). In Chapter 2 I provide a full explanation of the empirical research evidence that informed my study.

My study asks the following research questions:

1. What effects do teacher-level background characteristics (e.g., full-time status, minority status, gender, school-related earnings, years of experience, highest degree earned, and main teaching assignment) have on teachers' job satisfaction?
2. What effects do school-level background characteristics (e.g., school size, minority enrollment, sector, level, locale, and average teachers perceptions of student poverty) have on teachers' job satisfaction?
3. What effects do teacher-level perceptions of classroom autonomy, staff collegiality, and administrative support have on teachers' job satisfaction after controlling for background characteristics of schools and teachers?
4. What effects do school-level perceptions of classroom autonomy, staff collegiality, and administrative support have on teachers' job satisfaction after controlling for background characteristics of schools and teachers?
5. How much of the variation in teachers' job satisfaction can be explained by differences between schools as opposed to differences between teachers?

Figure 1. Conceptual model of research questions



The effect of teacher background characteristics on teachers' job satisfaction is the first question addressed by the analysis. This research question is depicted by arrow 1 in Figure 1. Background characteristics of teachers include the following variables: full-time status, minority status, gender, school-related earnings, years of experience, highest degree earned, and main teaching assignment. I chose these variables because my review of the research evidence (conducted in Chapter 2) showed that each of these variables had a significant relationship with teachers' job satisfaction in at least one prior study, and because several studies using regression techniques included some or all of these background characteristics as control variables.

The effect of school background characteristics on teachers' job satisfaction is the second question addressed by the analysis. This research question is depicted by arrow 2 in Figure 1. Background characteristics of schools include the following variables: school size, minority enrollment, sector, level, locale, and average teachers perceptions of student poverty as a problem at the school. I chose these variables for the same reasons as I chose the background characteristics of teachers listed above.

The third research question addresses the effects of individual teachers' perceptions of classroom autonomy, staff collegiality, and administrative support on teachers' job satisfaction. This research question is depicted in the figure by arrow 3. I refer to autonomy, collegiality, and support as the primary predictors of interest (or primary independent variables of interest) because studying their effect is the primary objective of my study.

The fourth research question seeks to understand the effects of average teachers' perceptions of autonomy, collegiality, and support on the outcome. This question is represented in the figure by arrow 4. In order to answer this question I aggregated the three primary

predictors of interest to the level of the school by averaging the answers of all teachers in each school. Based on previous teacher satisfaction research using multi-level modeling, I expect that the average amount of perceived autonomy, collegiality, and support in a school will have a unique effect on teachers' job satisfaction, over and above the effects of individual teacher's perceptions of autonomy, collegiality, and support (Lee, Dedrick, & Smith, 1991; Pogodzinski et al., 2011; Renzulli et al., 2011; Shen et al., 2011; Ware & Kitsantas, 2011).

The fifth research question seeks to determine how much of the variation in the outcome occurs at the level of schools versus at the level of teachers. This question is represented in the figure by arrow 5. This question is appropriate to any study, such as mine, that uses HLM techniques.

The five research questions will be answered in Chapter 5 of the dissertation.

### **Proposed contributions and limitations of the study**

My dissertation builds on previous research regarding teachers' job satisfaction. While I reviewed many studies as part of the literature basis for my dissertation, four studies in particular had a strong influence on my choice of dataset, methods, and research design (Lee, Dedrick, & Smith, 1991; Renzulli et al., 2011; Shen et al., 2011; Ware & Kitsantas, 2011). Each of these studies included teachers' job satisfaction as the dependent variable, and included at least two of my three primary predictors of interest as independent variables. Each of the studies used a large-scale NCES dataset such as SASS and employed HLM methods to control for the effects of teacher and school characteristics.

For the most part my study reconfirms the findings of these four studies about teachers' job satisfaction. But while I am indebted to their work, my study is not simply an imitation of their data and methods, nor did I attempt to merely replicate the work they had done. My study's

dataset, methods, design, and findings provide several contributions to previous research, as described in the following paragraph and in Chapter 5. Specifically, my study adds to these four studies, and to other research on teachers' job satisfaction, in five ways, as described below.

First, I propose a more precise construction of the job satisfaction outcome than some previous studies by ensuring that all survey items included in the composite were directly related to the construct, as recommended by Judge and colleagues (2008).

Second, I employ a narrow definition of job satisfaction that only considers teachers' attitudes about their immediate workplace, and does not mix in their satisfaction with the teaching profession as a whole. In making this distinction I try to imitate a similar distinction made in the teacher retention literature between teachers who depart their immediate workplace and teachers who depart the profession as a whole (Ingersoll, 2001; Stockard & Lehman, 2004).

Third, my study improves on previous HLM studies of teachers' job satisfaction by incorporating into the dependent variable survey items related to both individual and group satisfaction, and by modeling the effects of group-level perceptions over and above the effects of individuals' perceptions (Grissom, 2011; Lee, Dedrick, & Smith, 1991; Price, 2012; Shen et al., 2011).

Fourth, my study brings to bear the most recent national data available by employing the 2007-08 SASS dataset. Much of the research on teachers' job satisfaction has been conducted using older datasets such as the 1980-81 High School and Beyond survey (Bryk & Driscoll, 1988; Lee, Dedrick, & Smith, 1991) or the 1993-94 SASS panel (Ingersoll & Alsalam, 1997; Perie & Baker, 1997). To my knowledge, no other study of teachers' job satisfaction has made use of the 2007-08 SASS data at this time.

Fifth, my study improves on previous SASS-based HLM studies of teachers' job satisfaction by restricting the analytic sample to schools with six or more respondents in order to raise the within-school sample size. Previous studies using SASS data have not restricted the dataset in this way, resulting in less variation between schools (Cha, 2008; Fairchild et al., 2012; Grodsky & Gamoran, 2003; Ingersoll & Alsalam, 1997; Price, 2012; Renzulli et al., 2011; Tickle et al., 2011; Ware & Kitsantas, 2011).

All of these contributions will be discussed in more detail in Chapter 5.

In additions to its contributions to research, my dissertation is also valuable because of its potential contribution to policy. In studying the relationship between job attitudes and their related factors, I hope to inform policy makers and other educational leaders about the policy-amenable factors related to teachers' job satisfaction. Before policy makers can craft strategies to address the problem of low job satisfaction among teachers they must have a better understanding of what factors may or may not have an association with the outcome. My dissertation provides a further step toward that understanding by building on previous research. As one study of teachers' job satisfaction has observed, studying teachers' perceptions of the workplace "can inform policymakers of problem areas in which intervention measures might bring about real improvement" (Liu & Meyer, 2005, p. 988). Without an adequate understanding of why job satisfaction may be declining among today's teachers, policy makers and other educational leaders lack evidence needed to address the root causes of low satisfaction and its consequences, such as low commitment, decreased student learning, and increased turnover.

My study is limited in several ways. The most noticeable limitation is the absence of qualitative methods. By choosing to conduct a purely quantitative analysis, I limited myself to a small set of survey items on a standardized survey which can hardly do justice to the richness

and complexity of concepts such as job satisfaction, autonomy, or collegiality. Previous research on teachers' job satisfaction has employed to good effect either qualitative methods (Evans, 1997) or mixed methods (Perrachione et al., 2008). In addition, my study does not model several important relationships, such as the relationship between job satisfaction and turnover, which have been included in previous studies (Cha, 2008; Stockard & Lehman, 2004). My dataset, the 2007-08 SASS, is limited with regard to causal inference since, without using a randomized control trial, it is not possible to confirm that other variables, not accounted for here, might have influenced the outcome (Schneider et al., 2005). Finally, my HLM methods are limited because I do not take into consideration any interaction effects between the independent variables, nor do I model slopes as outcomes, as previous HLM studies of teachers' job satisfaction have done (Lee, Dedrick, & Smith, 1991). All of these limitations are described in more detail in the final chapter.

### **Organization of the study**

This dissertation is organized into five chapters. Chapter 1 is an introduction, and has presented the purpose, conceptual framework, research questions, and contributions to research and policy. Chapter 2 provides a review of the relevant literature regarding the conceptual framework and empirical evidence. Chapter 3 outlines the data and analytic methods to be used in my analysis, with particular emphasis on the creation of the analytic sample and the construction of variables. Chapter 4 presents the results of the HLM analyses. Chapter 5 discusses the results, examines contributions to policy and research, and makes suggestions for future study. A list of references is included at the end of the dissertation. The appendices include useful information that is relevant to the earlier chapters, including SASS questionnaires, a description of the composite construction, and an annotated bibliography.

## **Chapter 2. Literature review**

The purpose of this chapter is to review previous research regarding teachers' job satisfaction and the factors that influence it. I seek to better inform the design of my study by learning from the theory and findings of previous authors in my field. The chapter is divided into two parts. Part one explains the value-percept theory of Edwin Locke (1976), who provides the conceptual framework of my dissertation. Part two examines empirical evidence about factors that previous research has found are associated with teachers' job satisfaction. Each part ends with a summary of how the literature review informs my study.

### **Conceptual framework**

The purpose of this part of Chapter 2 is to review the value-percept theory of Edwin Locke (1976). This theory provides the conceptual framework used in my study. Locke's theory influences my study's definition of job satisfaction, its choice of primary predictors, and its conceptualization of the independent variables. While not identical to Locke's theory, my study draws heavily on the concepts and definitions explained in it. Part one of the literature review is divided into seven sections: an overview of Locke's theory, the definition of job satisfaction, the relationship of job facets to overall job satisfaction, five major job facets, measuring overall job satisfaction, an explanation of how Locke's theory informs my study, and an explanation of how my study diverges from Locke's theory.

#### **Overview of Locke's theory**

Locke's value-percept theory is situated within the larger field of industrial and organizational psychology. Several reviews of the industrial and organizational psychology literature agree that theories of job satisfaction tend to fall into three major categories: situational theories, dispositional theories, and interactive theories (Colquitt, 2012; Cranny, Smith, & Stone,



1991; Judge et al., 2001; Judge et al., 2009; Parker, 2007). According to situational theories, job satisfaction is primarily determined by characteristics of the job (i.e., the “situation”). According to dispositional theories, job satisfaction is primary determined by characteristics of the employee (i.e., the employee’s “disposition”). According to interactive theories, characteristics of job and employee tend to interact in order to determine job satisfaction. The following chart summarizes five leading theories of job satisfaction according to this taxonomy.

Table 1. Leading theories of employee job satisfaction

Type of theory:	Name of theory:	Principal authors:
Situational	two-factor theory	Frederick Herzberg
	job characteristics theory	Richard Hackman, Greg Oldham
Dispositional	core self-evaluations theory	Timothy Judge
Interactive	Cornell model	Patricia Smith, Charles Hulin
	value-percept theory	Edwin Locke

The two-factor theory (Herzberg, 1959) and the job characteristics theory (Hackman & Oldham, 1976) emphasize the job situation as the main determinant of employees’ job satisfaction. The core self-evaluations model (Judge et al., 1997) points to dispositional factors as the main determinant. The Cornell model (Smith, Kendall & Hulin, 1969) and value-percept theory (Locke, 1976) are interactive theories because they consider both situational and dispositional elements of job satisfaction. My study focuses on value-percept theory, which I will explain in the following paragraphs.

The value-percept theory<sup>1</sup> gets its name from its central proposition, namely, that job satisfaction is determined by a combination of one's perceptions and values. According to this theory, employees are satisfied when they perceive that their job provides an adequate amount of the things that they value (Locke, 1976).

The value-percept theory has received wide acceptance and at least one review calls it the leading theory of job satisfaction in the field of industrial and organizational psychology (Colquitt et al., 2012). Locke's theory has been confirmed in numerous field trials. Two studies in particular have provided empirical confirmation of the theory (McFarlin et al., 1995; Rice, Gentile, & McFarlin, 1991).

The value-percept theory has evolved over time. In 1969, Locke introduced a definition of job satisfaction that became widely influential and is still considered the dominant definition in the field, even when other theoretical models are in use (Colquitt et al., 2012; Cranny, Smith, & Stone, 1992; Judge et al., 2001; Judge et al., 2009; Parker, 2007). Later, in a chapter of the *Handbook on Industrial and Organizational Psychology*, Locke proposed a comprehensive theory of the factors that influence job satisfaction (Locke, 1976). The theory was further refined by McFarlin and Rice, who eliminated a redundancy between the terms "value" and "importance" as they appeared in the original theory (McFarlin & Rice, 1992).

### **Locke's definition of job satisfaction**

Locke defined job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1969, p. 316). He later restated the same definition as part of a larger theory of how job factors relate to overall job satisfaction (Locke, 1976). In the following paragraphs I will describe what Locke's definition means. In doing so, I

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<sup>1</sup> Value-percept theory is also called range of affect theory in some literature (Rice, Gentile, & McFarlin, 1991).

draw extensively from other reviews which summarized or interpreted Locke's original work. (Colquitt et al., 2012; Hulin & Judge, 2003; Judge et al., 2001; Judge et al., 2008).

Psychological attitudes such as job satisfaction are typically conceived as interior responses to exterior entities such as one's job. These attitudes consist of two parts, emotion and thought, that are externalized through behavior (Eagley & Chaiken, 1993). The emotional response is referred to as "affective" while the thought response is referred to as "evaluative" or sometimes as "cognitive" (Judge et al., 2008). Locke's definition of job satisfaction is important because it efficiently combines these two basic elements of psychological attitudes, emotion and "appraisal" or thought (Judge et al., 2001). In defining job satisfaction as a combination of these two elements, Locke was building on a previous psychological tradition that proposed a two-part definition for all psychological attitudes like satisfaction (Hulin & Judge, 2003).

Most job satisfaction theories agree that the affective component of job satisfaction tends to occur after the cognitive component (Judge et al., 2001). The affective component refers to the pleasant or unpleasant feelings that one experiences after carrying out an evaluation. Individuals who evaluate their job in a positive way experience a pleasurable emotional state (Parker, 2007). Individuals who evaluate their job in a negative way experience the opposite emotional state. According to one review of the literature,

"Employees with high job satisfaction experience positive feelings when they think about their duties or take part in task activities. Employees with low job satisfaction experience negative feelings when they think about their duties or take part in their task activities" (Colquitt, 2012, p. 105).

With regard to its other component, cognition, job satisfaction consists of an evaluation of one's job circumstances in light of previous expectations. Most of the theoretical literature

focuses on this component (Judge et al., 2001). The key part of the cognitive component involves the comparison of previous expectations. Locke (1976) was the first to propose that a person's comparison of expectations to realities lay at the heart of the evaluative process that is job satisfaction. Later theorists have agreed (Cranny, Smith, & Stone, 1992). As one review has put it,

“There appears to be general agreement that job satisfaction is an affective (that is emotional) reaction to a job that results from the incumbent's comparison of actual outcomes with those that are desired, expected, deserved, and so on” (Cranny, Smith, & Stone, 1992, p. 1).

Another review of the literature describes the evaluative component of job satisfaction as follows:

“Job outcomes (and perhaps inputs) and standards are processed through a comparator and the result of these cognitive processes is an evaluation of one's job, job satisfaction” (Judge et al., 2009, p. 31).

According to this understanding, job satisfaction is determined when one evaluates the difference between what one expects to receive from a job and what one actually does receive (Evans, 1997). Thus the cognitive aspect of job satisfaction refers to the thoughtful comparison of outcomes to expectations, while the affective aspect refers to the emotional reaction which follows after the comparison. Both aspects together, cognitive and affective, make up the whole of job satisfaction.

### **Overall satisfaction vs. facet satisfaction**

After Locke's initial formulation of the job satisfaction definition (1969), he went on to develop a theory of how individual job factors (referred to by Locke as "facets") tend to influence overall job satisfaction.

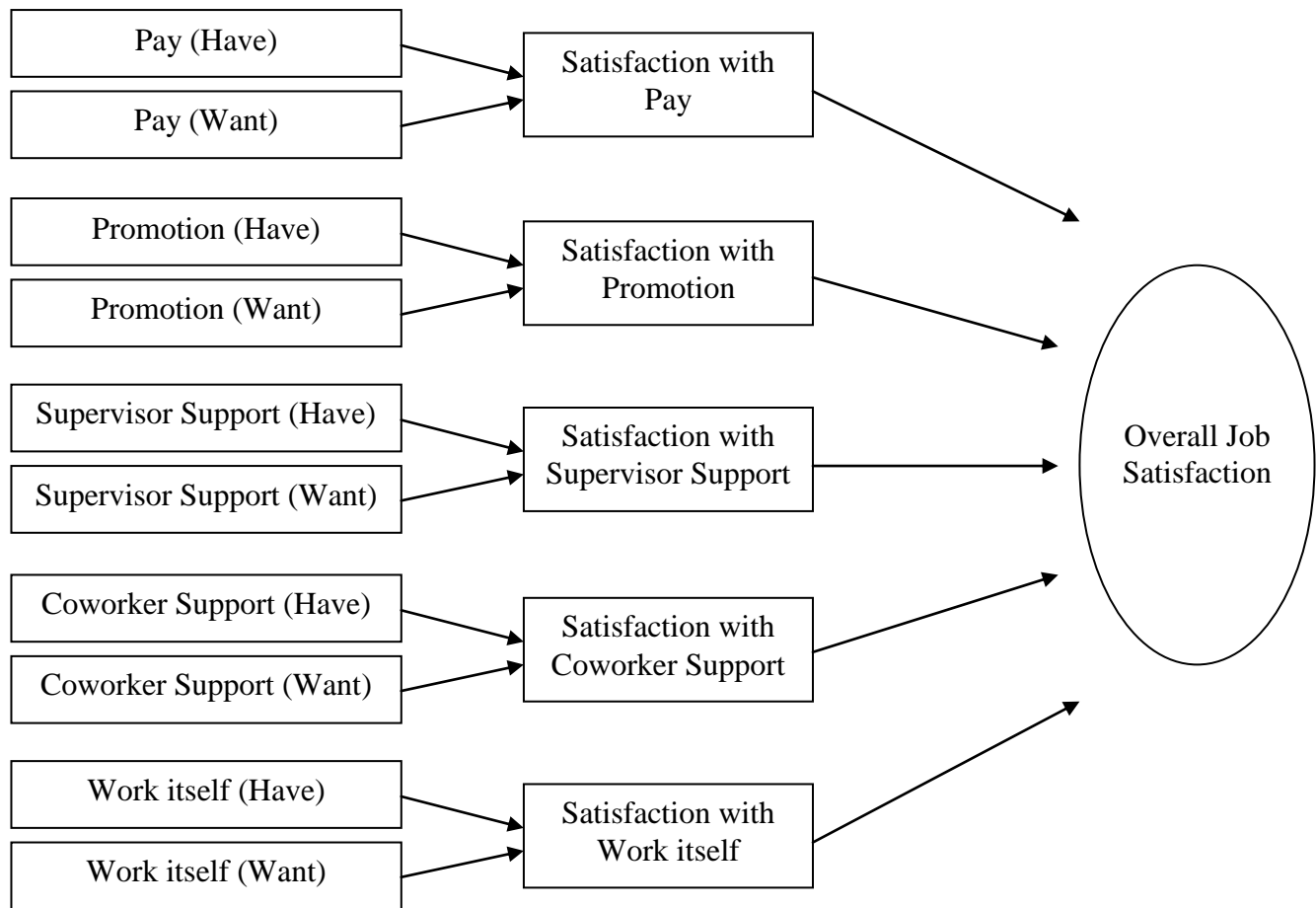
A job facet, according to Locke (1976), is any job characteristic or aspect of a job which might influence one's overall job satisfaction. Locke divides job facets into four categories: rewards, other people, nature of the work, and organizational context (Sentovich, 2004). Some of these facets have a greater impact on overall job satisfaction than others, and different people tend to value different job facets to greater or lesser degrees. Studies using Locke's theory as a conceptual framework may employ different lists of job facets. For example, one empirical study of the value-percept theory tested twelve job facets, including the major five plus hours per week, commuting time, client contact, opportunity to learn skills, mental effort required and physical effort required (Rice, Gentile, & McFarlin, 1991). This study did not include the nature of the work itself as a facet, but it did include measures of task autonomy such as decision making and control over schedule. Another study listed eight facets, including the major five plus altruism, status, and environment (Dawis, 1991, as cited in Colquitt et al., 2012). In spite of this variety, Locke names five job facets as highly valuable to most people: pay, opportunities for promotion, supervisor support, coworker support, and the nature of the work itself (Colquitt et al., 2012). Of these five, the most important is employee's satisfaction with the nature of the work itself, which includes three aspects: task autonomy, meaningful work, and feedback about the results (Colquitt et al., 2012; Hackman & Oldham, 1980). Many other facets also exist, but these five tend to be among the most important for many people.

Just as employees experience overall job satisfaction, they also experience satisfaction with individual job facets. Like overall job satisfaction, facet satisfaction is determined by an evaluative comparison between what the employee perceives and what the employee values. For example, if an employee values autonomy and also perceives that she has a lot of autonomy in her job, then she will feel satisfaction with the facet of autonomy. If an employee values autonomy but does not perceive that she has much autonomy in her job, she will not feel satisfaction with that facet. If an employee does not value a particular facet very highly, then her satisfaction with that facet will be about the same regardless of the amount perceived. The process is repeated for each facet, and it is possible to feel satisfied about some job facets but dissatisfied about others.

According to Locke, overall job satisfaction is not the sum of facet satisfactions, but it is impacted by them. An employee who generally feels well-satisfied with most facets of the job will also experience high overall job satisfaction. An employee who feels dissatisfied with many or all facets of the job will experience low overall job satisfaction. According to Locke's theory, many variables other than facet satisfaction, such as an employee's health and background, the external job market, or the availability of possible alternatives can also help to determine overall job satisfaction, but facet satisfactions have the primary impact (Judge et al., 2009).

Figure 2 depicts the five principal job facets, their determinants, and their relationship to overall job satisfaction, consistent with Locke's theory. In the figure, "have" refers to the amount of the facet which the employee perceives that he or she has on the job. "Want" refers to the amount of the facet which the employee desires to have on the job.

Figure 2. Locke's Value-Percept Theory

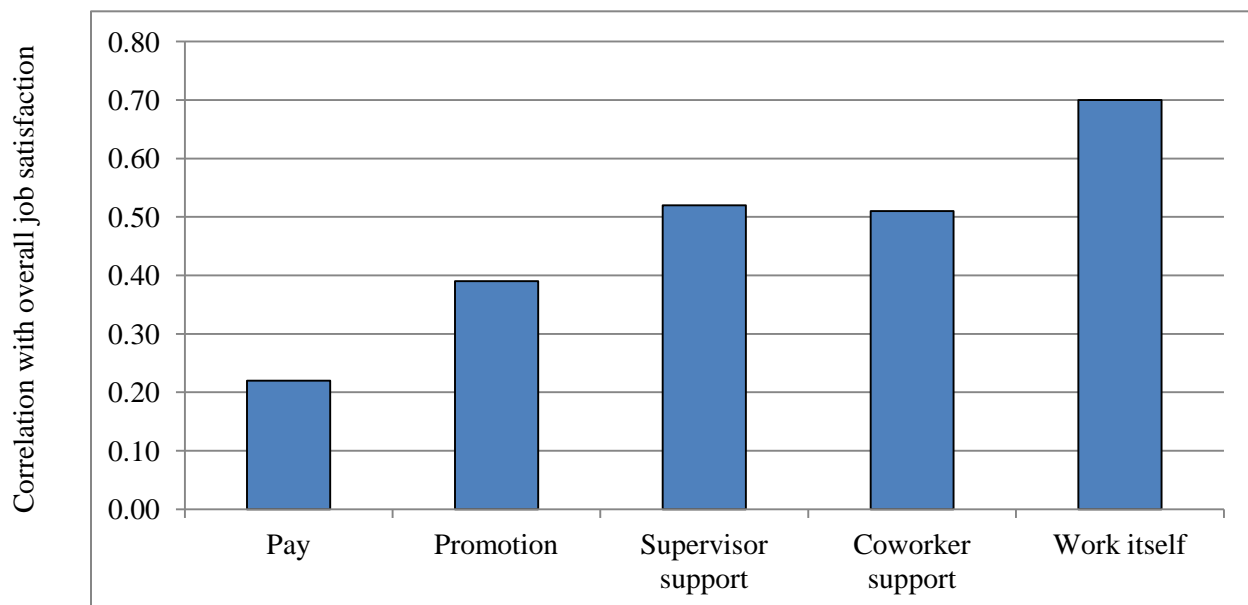


Source: Colquitt et al., 2012, p. 108

### The five major job facets

As explained above, while many job facets exist, Locke (1976) proposes that five tend to be among the most highly valued: pay, opportunities for promotion, supervisor support, coworker support, and the nature of the work itself. These facets do not, however, have the same level of correlation with overall job satisfaction. For most people, satisfaction with pay and promotions tend to have the least correlation with overall job satisfaction, while satisfaction with the nature of the work itself tends to have the highest level of correlation. One review of Locke's theory estimates the levels of correlation, as depicted in the Figure 3 (Colquitt et al., 2012). Of course, these are only proposed as average estimates for most people. Certain individuals might find greater or lesser satisfaction in supervisor support, for example, than the average presented here.

Figure 3. Five principal job facets and their correlation with overall job satisfaction



Source: Colquitt et al., 2012, p. 110



According to Locke (1976), the nature of the work itself tends to be the most important determinant of overall job satisfaction. Locke proposes that task autonomy is an important part of the work itself. Being able to control one's own work environment and activities, free from outside interference, is an essential part of feeling satisfied with one's own work. Rice and McFarlin, in their field study of Locke's theory, replace "work itself" with "autonomy" (Rice & McFarlin, 1992). Other organizational theorists, building on Locke's theory, have also stated that satisfaction with task autonomy is an essential component of satisfaction with the nature of the work itself (Colquitt et al., 2012; Hackman & Oldham, 1980; Judge et al., 2001).

Of course, there are jobs that do not contain all of the five main facets proposed by Locke (1976). Some individuals work alone, so support from coworkers would not be a relevant facet. If an employee were self-employed, then supervisor support would no longer have any effect on job satisfaction. In a job such as teaching, opportunities for professional development might be a more relevant facet of job satisfaction than opportunities for promotion.

### **Measuring overall job satisfaction**

When using Locke's value-percept theory as a theoretical framework, three considerations should be kept in mind when measuring the outcome, overall job satisfaction. The outcome should be measured using multiple survey items, the outcome should measure satisfaction with a specific job, and the outcome should not measure unrelated constructs such as retention or job commitment. These points are explained in the following paragraphs.

Overall job satisfaction in Locke's theory should be measured using a composite of multiple survey items rather than with a single item. Locke himself does not make this point in the original formulation of his theory (1976), but leading field tests of the theory have consistently used a multi-item composite as a way to increase reliability (Locke et al., 1980;

Locke, Fitzpatrick, & White, 1983; McFarlin & Rice, 1992; McFarlin et al., 1995; Rice, Gentile, & McFarlin, 1991). Questions of study reliability arise when a single item is used to measure overall job satisfaction (Balzer & Gillespie, 2007; Judge & Klinger, 2008). According to one review of the literature, “most job satisfaction researchers have assumed that single-item measures are unreliable and therefore should not be used” (Judge & Klinger, 2008, p. 297). In addition, a leading review of the job satisfaction literature makes clear that only surveys with multiple items should be considered highly reliable (Judge et al., 2009).

When measuring overall job satisfaction, survey items should measure satisfaction with a specific job rather than with a job in general. The concrete circumstances of the actual job play a central role to the process of cognitive evaluation. The employee does not evaluate the positive and negative traits of a job in general, but of a particular job in a particular location. For example, it is very different to ask a teacher “are you satisfied with teaching” or to ask, “are you satisfied with teaching *at this school*.” Since the cognitive evaluation process involves a comparison of expectations to realities, it is necessary to consider the real circumstances of the particular job rather than the hypothetical circumstances of a job in general. The object of evaluation in studies using Locke’s theory is always the current job situation and not the job in general (Rice & McFarlin, 1991). This emphasis on concrete job circumstances is important because it distinguishes job satisfaction from a broader topic, career satisfaction (Colquitt et al., 2012). An employee may be dissatisfied with a particular job while still feeling satisfied with the overall career, as sometimes happens when a teacher chooses to leave one school and continues teaching in another.

When measuring overall job satisfaction, care should be taken not to include survey items that measure other job attitudes. While there are conceptual similarities between job satisfaction

and other job-related attitudes such as job commitment, job retention, or a sense of self-efficacy on the job, there are also important differences (Judge, 2009). For example, choosing to leave one's job is not the same thing as being dissatisfied with one's job (Locke, 1983). This failure to distinguish key terms has been especially problematic in the literature related to teachers' sense of job satisfaction (Evans, 1997; Skaalvik & Skaalvik, 2011). According to one review, the failure to distinguish job satisfaction properly from its related constructs has caused many studies to improperly specify their outcome variable (Skaalvik & Skaalvik, 2011).

### **How Locke's theory informs the study**

While Locke's value-percept theory may be the dominant theory of job satisfaction in the field of industrial and organizational psychology (Colquitt et al., 2012), it does not appear to be as widely accepted in educational research. In my review of the educational research literature I found no K-12 teacher satisfaction studies and only two college professor satisfaction studies which used the value-percept theory as a conceptual model (Locke, 1983; Indiresan, 1981). I found nine studies of K-12 teachers that referenced Locke's definition of job satisfaction, but none of these authors used Locke's value-percept theory as the underlying conceptual framework of the study (Davis & Wilson, 2000; Evans, 1997; Evans, 2000; Evans, 2001; Markow & Pieters, 2012; Markow et al., 2006; Stempien & Loeb, 2002; Verdugo et al., 1997; Viel-Ruma et al., 2010). I found many studies of teachers' job satisfaction that used other theories as their conceptual frameworks, such as the two-factor theory of Frederick Herzberg (1959) or the self-efficacy theory of Anthony Bandura (1986), but I did not choose to use either of these theories as the conceptual framework of my dissertation. The Herzberg theory (1959) has fallen out of use in the field of industrial and organizational psychology (Judge et al., 2009). Bandura's theory (1986) cannot be supported by the SASS dataset, which has no variables measuring teachers'

sense of self-efficacy or collective efficacy.

In spite of its apparent lack of use in educational research, Locke's value-percept theory is highly applicable to studies of teachers' job satisfaction, and it serves as the conceptual framework of my dissertation. Locke's theory informs my study in three ways: the definition of the dependent variable, the choice of the three primary independent variables, and the conceptualization of the primary independent variables.

Locke's value-percept theory informs the definition of the dependent variable in my study. In defining my dependent variable and in choosing the survey items which compose it, I took into consideration several points from Locke's theory. For example, Locke's theory specified that overall job satisfaction is not simply the sum of facet satisfactions, but a distinct construct that is affected by facet satisfactions. Following this specification, my study includes a measure of overall job satisfaction as the dependent variable, including the survey item "I am generally satisfied with being a teacher at this school." Locke's theory specifies that overall job satisfaction should not be measured by a single item, but should be a composite of several survey items for greater validity; my study measures job satisfaction with five survey items. Locke (1969) defined job satisfaction as a positive emotional state arising from a cognitive evaluation of one's job (Locke, 1969). The evaluation, in turn, represents an act of comparing what one expects with what one perceives. In my definition of teachers' job satisfaction I included survey items that measure both the affective and cognitive components of teachers' job satisfaction, such as "I like the way things are run at this school" or "the stress and disappointments involved in teaching at this school aren't worth it." Most importantly, Locke's theory requires that job satisfaction be measured with regard to a specific, concrete job rather than with a job in general. All of the survey items used in my definition of job satisfaction include the specification "at this

school.” For all these reasons, the definition of job satisfaction in my study conforms to Locke’s value-percept theory.<sup>2</sup>

Locke’s theory informs the choice of the three primary independent variables in my study. Locke (1976) proposed that employees’ satisfaction with supervisor support, coworker support, and the nature of the work itself were the three most important facets affecting overall job satisfaction. He also included satisfaction with pay and promotions as important facets, but as has been demonstrated, he demonstrated that these two items had less of an effect on overall job satisfaction (Colquitt et al., 2012). Furthermore, Locke (1976) and other theorists building on his work held that task autonomy was the most important component of satisfaction with the work itself (Colquitt et al., 2012; Hackman & Oldham, 1980; Judge et al., 2001; Rice & McFarlin, 1992). In my study, the three primary independent variables are autonomy, supervisor support, and staff collegiality, which is conceptualized as a kind of coworker support appropriate to teachers. By designating these three variables as the primary predictors, my study operationalizes Locke’s conceptual framework and provides empirical evidence about its validity.

Locke’s theory informs how the primary independent variables are conceptualized in my study. Locke’s theory emphasizes the effects of facet perception and facet value rather than the effects of the facet itself. According to the model, it is not the actual facet that affects the outcome, but the employee’s perception of the facet. For example, Locke (1976) maintains that an employee’s overall job satisfaction is not determined by the amount an employee is paid but by the employee’s perception of how well actual pay compares to desire for pay. Two employees receiving the same amount of pay might have very different levels of satisfaction since they perceive and value pay differently.

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<sup>2</sup> I present more information about the definition and construction of my study’s dependent variable in Chapter 3 and in the appendix.

Informed by this theory, in my study the three primary independent variables – autonomy, collegiality, and support - are conceptualized as teachers’ perceptions, not as actual school characteristics. For example, my study does not define teachers’ autonomy with survey items measuring actual school characteristics, such as the presence of specific policies allowing teachers to choose textbooks, set grading rubrics, or write their own tests. Instead, autonomy in my study is measured by teachers’ perceptions, on a Likert scale, about the amount of classroom autonomy they feel they have. The six survey items included in the autonomy composite ask whether or not teachers perceive their desired level of autonomy in six areas: control over textbooks, content matter, teaching techniques, grading, discipline, and homework. By conceptualizing autonomy in this way, my study focuses on the effect of teachers’ perceptions of autonomy on teachers’ job satisfaction, rather than the effect of actual autonomy on teachers’ job satisfaction. Therefore, my study’s conceptualization of the primary independent variables is consistent with Locke’s theory of job satisfaction predictors.

### **How the study diverges from Locke’s theory**

While my study is informed by Locke’s theory as its conceptual framework, some modifications of the theory are necessary when applying it to teachers in the SASS dataset. My study therefore diverges from Locke’s theory in three ways. My study omits satisfaction with pay and promotion opportunities, my study includes control variables, and my study uses a two-level model rather than the single-level model proposed by Locke. I will explain each of these three differences in the following paragraphs.

Locke’s theory includes satisfaction with pay and promotions as part of the five main job facets, but my study does not include them. I include school-related earnings are included as one of the background characteristics of teachers, but the variable is not the same thing as satisfaction

with pay. I did not include these two facets because previous research about teachers' job satisfaction has shown that pay and opportunities for promotion have little effect or no effect on teachers' job satisfaction once other factors are taken into consideration (Cha, 2008; Conley and Levinson, 1993; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Shen et al., 2011; Skinner, 2008; Stockard & Lehman, 2008).<sup>3</sup> Furthermore, satisfaction with pay and promotions are not an essential part of Locke's model. They have less correlation with job satisfaction than satisfaction with coworkers, supervisors, and the nature of the work itself, as has been demonstrated (Colquitt et al., 2012). Furthermore, Locke's list of five important facets is a recommendation, not a prescription. Important field tests of Locke's theory frequently lack some or all of these five facets, while including other facets not listed by Locke himself in his original formulation of the theory (McFarlin & Rice, 1992; McFarlin et al., 1995; Rice, Gentile, & McFarlin, 1991). Therefore, the fact that my study excludes satisfaction with pay and promotions does not diminish my study's use of value-percept theory as a conceptual framework.

My study diverges from Locke's theory because I include as statistical controls the background characteristics of teachers and schools. Locke's explanation of the value-percept theory (1976) does not mention controlling for any variables other than facet satisfactions. Important field tests of Locke's theory also did not include any control variables, even though they used multiple regression techniques (McFarlin & Rice, 1992; McFarlin et al., 1995; Rice, Gentile, & McFarlin, 1991). Controlling for background characteristics is, however, an established procedure in the social sciences. It is useful for separating primary effects from secondary effects, and allows the researcher to isolate the effects of important predictors. Many

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<sup>3</sup> The effects of pay and promotion are different among teachers than among other professions because of factors unique to the educational sector. For example, most school districts use a single salary schedule rather than differentiated pay, and most teachers do not have opportunities for promotion other than moving into a different profession, such as school administration (Evans, 1997).

studies of teachers' job satisfaction have used control variables, even though none of these studies used Locke's model as a conceptual framework (e.g., Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Shen et al., 2011; Stockard & Lehman, 2004). Following the example of these and other studies, I chose to include background characteristics of teachers and schools as control variables, even though this represents a departure from Locke's theory.

My study diverges from Locke's theory because I use a two-level regression model instead of a single-level model. Locke proposed that both the dependent variable (overall job satisfaction) and the independent variables (facet satisfactions) should be conceptualized at the same unit of measurement, namely, characteristics of employees. Important field tests of Locke's theory were conducted as single-level studies using OLS regression models (Locke et al., 1980; Locke, Fitzpatrick, & White, 1983; McFarlin & Rice, 1992; McFarlin et al., 1995; Rice, Gentile, & McFarlin, 1991). In my study, I conceptualize the primary predictors of interest – teachers' perceptions of autonomy, collegiality, and support – as individual-level variables (referred to as Level 1), just as in Locke's original formulation of the theory (1976). But I also conceptualize these predictors as school-level variables (referred to as Level 2), namely, the average perceptions of autonomy, collegiality, and support among all teachers in a school. I hypothesize that working in a school with a high or low average level of perceived autonomy, collegiality, and support has a unique effect on the outcome, over and above an individual teacher's perceptions of autonomy, collegiality, and support.

### **Conclusion of part one**

In conclusion, Edwin Locke's value-percept theory serves as the conceptual framework of my dissertation. Locke defined job satisfaction as a pleasant emotion following the cognitive evaluation of one's job (Locke, 1969). Cognitive evaluation consists of comparing the amount of



job facets perceived with the amount of job facets valued. Job satisfaction is defined narrowly, as pertaining to a concrete and specific job circumstance rather than a job in general. Five main facets tend to effect overall job satisfaction, but these five are not the only ones, nor are they all equally important. Locke's theory is prevalent in the field of industrial and organization psychology, but it has been seldom used in the field of educational research. Locke's theory informs my study in three ways, but it also diverges from Locke's theory in three ways.

### **Evidence regarding teachers' job satisfaction**

Part two of this chapter examines the evidence about teachers' job satisfaction. The purpose of this part is to determine which characteristics of schools and teachers have been identified in previous studies as being associated with teachers' job satisfaction. This review also reinforces the conceptual framework by providing empirical evidence in support of it. Part two is divided into five sections: parameters of the review, an overview of empirical findings, evidence about the primary predictors of interest, evidence about the background characteristics of teachers and schools, and an explanation of how the empirical evidence informs my study.

#### **Parameters of the review**

In conducting my review I followed certain parameters about which studies to include. Establishing these parameters enabled me to concentrate on the set of studies that was most relevant to my topic. It also allowed me to reduce the number of reviewed studies to a manageable size, since the amount of research on my topic was quite extensive. The following paragraphs describe these parameters.

The first step in my search of the literature was to find as many studies as possible that empirically examined teachers' job satisfaction. As part of this first step I conducted a search using the ERIC database for any study with the terms "teacher job satisfaction" or "teachers' job

satisfaction” in the title or abstract. As an additional search criteria I only considered studies published in the last fifteen years (in order to ensure that I was using the most up-to-date research), and the country in which the study took place (United States only). This search turned up a list of several hundred studies. I augmented this list by using the same search terms in Google Scholar. However, because Google Scholar tends to capture a large number of irrelevant, non-research-based entries I added the additional criterion that search results be cited at least 75 times in other research. This criterion helped to limit the pool of search results to actual research studies, though it was still necessary to consider each of the Google results one-by-one.

After the initial search I had a list of about 400 possible sources. I then began to narrow the group of studies using the following criteria. I chose only to consider studies in which the outcome variable was teachers’ job satisfaction. I did not include studies in which job satisfaction was used as a predictor variable, or studies whose dependent variables were similar but distinct, such as teachers’ job retention, job commitment, or intent to remain in teaching. I only considered studies in which teachers working in K-12 schools were the primary sampling population, thus excluding studies about university teaching staff or the non-educational sector. I included primarily studies published in peer-reviewed journal articles. I included one book because it used compiled evidence from peer-reviewed articles, and because it has received acclaim for its findings (Bryk, Lee, & Holland, 1993). I excluded almost all dissertations because the ones I reviewed seemed methodologically weak and because the sheer number of dissertations on the topic of teachers’ job satisfaction made it difficult to review all of them. However, I did choose to keep six dissertations because they were highly relevant to my study, they were methodologically strong, and they were cited by other authors in peer-reviewed articles (Cha, 2008; Horne, 2010; Keefe, 2008; Leslie, 2009; Sentovich, 2004; Skinner, 2008). I

excluded all conference presentations I did not know if they were peer-reviewed. For the most part I excluded research reports because they were not peer-reviewed, but I chose to include eight reports because they were published by well-respected research organizations such as the National Center for Education Statistics, and because each of the eight has been widely cited in other peer-reviewed studies (Henke et al., 1997; Kim & Loadman, 1994; Markow & Cooper, 2008; Markow & Pieters, 2009; Markow & Pieters, 2012; Markow et al., 2006; Marlow et al., 1996; Perie & Baker, 1997).

While my initial search criteria only included studies from the last 15 years, I found references to many studies from before this time and included those which seemed influential or important (e.g., Lee, Dedrick, & Smith, 1991). The initial search criteria also did not include foreign studies, but whenever I found a reference to a job satisfaction study from a foreign country I examined it for relevance, peer review, and methodological strength. Based on these criteria, I added to my pool of reviewed studies seventeen foreign studies (e.g., Brunetti, 2001; Caprara et al., 2003; Klassen & Chiu, 2010; Skaalvik & Skaalvik, 2009).

I did not exclude any studies based on the type of methods used (qualitative or quantitative), nor did I exclude studies based on the size or procedure of the sampling strategy.

### **Overview of empirical findings**

The final list of sources for my review of the literature totaled 74 studies. There were 60 journal articles, eight reports, six dissertations, and one book. With regard to methodology, there were 39 studies using exclusively quantitative methods with some sort of statistical controls, such as multiple regression analysis or structural equation modeling. There were 24 studies using exclusively quantitative methods with no statistical controls, such as correlations, crosstabs, and

frequencies. There were six studies using exclusively qualitative methods. There were five studies using both qualitative and quantitative methods, but only one of these employed statistical controls in the quantitative section (Bryk, Lee, and Holland, 1993). These results are summarized in Table 2. An annotated bibliography is included in the appendix, explaining the data, methods, principal findings, and possible limitations of each study.

The 74 studies represented a wide range of possible factors that are associated with teachers' job satisfaction. Most of the studies indicated that several factors impacted the outcome significantly. A review of the 74 studies showed that at least eleven factors were significantly associated with teachers' job satisfaction. These factors included administrative support (44 studies), staff collegiality (29 studies), classroom autonomy (25 studies), student interactions (22 studies), teacher background characteristics (21 studies), influence over policy (20 studies), school background characteristics (17 studies), earnings (15 studies), efficacy (15 studies), stress and workload (15 studies), and parental engagement (9 studies). The literature also listed several other factors as significantly associated with teachers' job satisfaction, including teachers' occupation perceptions, sense of cohesion, commitment, recognition, attitudes to change, and self-image. Table 2 shows all factors associated with teachers' job satisfaction, and the number of studies which found them to be significant predictors.

Table 2. Factors associated with teachers' job satisfaction

Studies ( <i>n</i> = 74)	Methodology <sup>4</sup>	Administrator support	Staff collegiality	Classroom autonomy	Student interactions	Teacher background	Influence over policy	School background	Earnings	Efficacy	Stress & workload	Parental engagement	Other factors:
Total number of studies reporting that the factor is related to teachers' job satisfaction	-	44	29	25	22	21	20	17	15	15	15	9	
Adera & Bullock (2010)	4				+						+	+	inconsistent expectations
Bishay (1996)	2					+							gender
Bogler (2001)	3	+		+		+	+						occupation perceptions
Bogler (2002)	3	+		+		+							occupation perceptions
Bogler & Nir (2012)	3	+					+			+			
Brunetti (2001)	2		+	+									passion for teaching
Bryk & Driscoll (1989)	3		+					+				+	community, selectivity
Bryk, Lee, & Holland (1993)	4		+					+				+	community, selectivity
Butt et al. (2005)	4	+									+		
Caprara et al. (2003)	3	+	+							+			
Caprara et al. (2006)	3									+			
Cha (2008)	3		+			+		+	+				working conditions
Conley & Levinson (1993)	2					+	+		+				experience
Culver, Wolfle, & Cross (1990)	2					+							race, gender
Davis & Wilson (2000)	2	+					+				+		motivation
Ellis & Bernhardt (1992)	2	+		+		+		+					gender, school SES
Evans (1997)	1	+											professionalism orientation
Evans (2000)	1												attitudes to change
Evans (2001)	1	+	+										intrinsic factors, self-image
Fairchild et al. (2012)	3	+	+	+	+	+	+	+			+		race, gender, school level
Fraser, Draper & Taylor (1998)	2	+	+			+	+						recognition
Grissom (2011)	3	+						+					school poverty
Haser & Nasser (2003)	1	+											flexible schedule
Heller, Clay, & Perkins (1993)	2	+	+						+				
Heller, Rex, & Cline (1992)	3												meeting students' needs
Henke et al. (1997)	2	+	+	+	+	+	+	+	+				safety, promotion
Horne (2010)	3	+	+		+							+	teaching assignment

<sup>4</sup> Type of study: 1=qualitative; 2=quantitative, no controls; 3=quantitative, controls; 4=mixed methods

Table 2: Factors associated with teachers' job satisfaction (continued)

Studies ( <i>n</i> = 74)	Methodology <sup>5</sup>	Administrator support	Staff collegiality	Classroom autonomy	Student interactions	Teacher background	Influence over policy	School background	Earnings	Efficacy	Stress & workload	Parental engagement	Other factors:
Total number of studies reporting that the factor is related to teachers' job satisfaction	-	44	29	25	22	21	20	17	15	15	15	9	
Huysman (2008)	4	+	+										appreciation
Ingersoll (2001)	2	+			+		+		+				
Keefe (2008)	3			+			+						
Kim & Loadman (1994)	3		+	+					+		+		workload, promotion
Klassen & Chiu (2010)	3					+				+	+		
Klassen, Chiu, & Bong (2010)	3									+	+		collective motivation
Kniveton (1991)	4	+							+				class size
Kreis & Brockoff (1986)	2			+			+	+					sector
Lam & Yan (2011)	1			+							+		workload
Landers, Alter, & Servilio (2008)	2				+			+					school level
Lee, Dedrick, & Smith (1991)	3	+		+			+			+			sector
Leslie (2009)	3	+	+	+			+						workplace conditions
Littrell et al. (1994)	2	+						+			+		
Liu & Meyer (2005)	3				+	+		+	+				sector; race
Liu & Ramsey (2008)	3	+			+	+			+				safety; race
Ma & MacMillan (1999)	3	+				+							gender; experience
Markow et al. (2006)	2	+	+		+		+		+				appreciation; prof. dev.
Markow & Cooper (2008)	2	+			+		+		+			+	appreciation; prof. dev.
Markow & Pieters (2009)	2	+	+							+			urban locale
Markow & Pieters (2012)	2								+			+	job security; prof. dev.
Marlow et al. (1996)	2	+			+				+		+	+	
Mau et al. (2008)	2					+		+		+			experience; license; race
Mertler (2002)	2					+		+					male; experience; suburbs
Pearson & Moomaw (2005)	2			+			+				+		professionalism
Perie & Baker (1997)	3	+	+	+	+		+					+	
Perrachione et al. (2008)	3				+					+			
Price (2012)	3	+	+										staff cohesion

<sup>5</sup> Type of study: 1=qualitative; 2=quantitative, no controls; 3=quantitative, controls

Table 2. Factors associated with teachers' job satisfaction (continued)

Studies ( <i>n</i> = 74)	Methodology <sup>6</sup>	Administrator support	Staff collegiality	Classroom autonomy	Student interactions	Teacher background	Influence over policy	School background	Earnings	Efficacy	Stress & workload	Parental engagement	Other factors:
Total number of studies reporting that the factor is related to teachers' job satisfaction	-	44	29	25	22	21	20	17	15	15	15	9	
Renzulli et al. (2011)	3	+	+	+	+	+		+					race; charter school
Reyes & Shin (1995)	3	+				+		+					commitment
Schneider (1984)	2			+			+						
Sentovich (2004)	3	+	+	+	+								charter schools
Shann (1998)	1		+		+		+					+	curriculum
Shen et al. (2012)	3	+	+	+	+		+						working conditions
Skaalvik & Skaalvik (2009)	3	+		+							+	+	time pressure
Skaalvik & Skaalvik (2012)	3	+	+		+						+	+	time pressure
Skinner (2008)	3	+	+	+			+						
Stempien & Loeb (2002)	2				+	+							special ed assignment
Stockard & Lehman (2004)	3	+	+	+			+			+			
Taylor & Tashakkori (1995)	3	+	+				+			+			school climate
Thompson et al. (1997)	3	+											role ambiguity; role conflict
Tickle, Chang, & Kim (2011)	3	+			+				+				experience
Verdugo et al. (1997)	2	+	+	+									bureacracy; community
Viel-Ruma et al. (2010)	3									+			collective efficacy
Ware & Kitsantas (2007)	3	+	+	+						+			job commitment
Ware & Kitsantas (2011)	3	+	+	+						+			job commitment; principals
Watson et al. (2010)	3										+		holistic wellness
Winter et al. (2006)	3			+		+		+					meaningfulness; feedback

Among the eleven factors, more studies reported that administrative support, staff collegiality, and classroom autonomy were significantly related to teachers' job satisfaction than other factors. Seven studies found that administrative support had a larger effect on teachers' job satisfaction than any other variable (Fairchild et al., 2012; Grissom, 2011; Ma & McMillan, 1999; Price, 2012; Sentovich, 2004; Taylor & Tashakkori, 1995; Tickle et al., 2011). Several

<sup>6</sup> Type of study: 1=qualitative; 2=quantitative, no controls; 3=quantitative, controls

studies identified staff collegiality and classroom autonomy as highly important factors predicting teachers' job satisfaction (Keefe, 2008; Lee et al., 1991; Perrachione et al., 2008; Price, 2012; Skaalvik & Skaalvik, 2011). Many of the reviewed studies listed all three factors – autonomy, collegiality, and administrative support - as being significantly related to teachers' job satisfaction.

Among the 74 studies I reviewed, twelve studies in particular confirmed the importance of autonomy, collegiality, and support as predictors of teachers' job satisfaction (Cha, 2004; Fairchild et al., 2012; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Perrachione et al., 2008; Price, 2012; Renzulli et al., 2011; Shen et al., 2011; Skaalvik & Skaalvik, 2009; Stockard & Lehman, 2004; Tickle et al., 2011; Ware & Kitsantas, 2011). These studies used large-scale, nationally representative datasets, they employed statistical techniques to control for the effects of multiple job factors at one time, and they had a carefully constructed composite measure of teachers' job satisfaction as the dependent variable. The twelve studies drew similar conclusions about the factors related to teachers' job satisfaction. While recognizing that many variables have an impact, these studies agreed that factors related to school process, climate and working conditions tend to have the greatest predictive value. These studies demonstrated that teachers' job satisfaction was determined more by working conditions and school climate than by teachers' salary, benefits, demographics, or school background characteristics. All of these studies found that at least one of the three primary predictors in my study - autonomy, collegiality, and support – was significantly associated with teachers' job satisfaction. As one study put it,

“Although certain background variables, such as teacher's age and years of experience, are related to teacher satisfaction, they are not nearly as significant in explaining the



different levels of satisfaction as are the workplace condition factors, such as administrative support, parental involvement, and teacher control over classroom procedures” (Perie & Baker, 1997, p. ix).

Based on these twelve studies and on other research that I reviewed, I conclude that factors related to school climate – especially teachers’ sense of autonomy, collegiality, and support – are the primary determinants of teachers’ satisfaction with work.

Most studies I reviewed tended to agree that background characteristics of teachers and schools tended to have some effect, but these characteristics had small or insignificant effects once autonomy, collegiality, and support were taken into consideration (Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Shen et al., 2012). Stockard and Lehman (2004) found that no variables measuring teachers’ demographics were significantly associated with job satisfaction once school climate and process were taken into account. Perie and Baker (1997) concluded that few teacher or school characteristics were strongly associated with teacher satisfaction once measures of school process and climate were included in the model.

In my review of the 74 studies I found that several factors other than autonomy, collegiality, support, and background characteristics were important predictors of teachers’ job satisfaction. These factors were student interactions, influence over policy, efficacy, stress and workload, and parental engagement. I did not include any of these five variables in my study, but instead chose to focus on autonomy, collegiality, and support as the primary predictors of interest. I made this decision for several reasons. More studies identified these three as significant predictors than any other factors. These three predictors matched the primary facets in my conceptual framework, Locke’s value-percept theory. Studies using regression techniques consistently found that these three predictors had the largest coefficients (Cha, 2004; Fairchild et

al., 2012; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Perrachione et al., 2008; Price, 2012; Renzulli et al., 2011; Shen et al., 2011; Skaalvik & Skaalvik, 2009; Stockard & Lehman, 2004; Tickle et al., 2011; Ware & Kitsantas, 2011). Finally, I wished to keep a narrow focus and not overwhelm my study with too many independent variables. It was not possible to include every significant factor in my study, and I felt that by focusing on the three most important predictors my study would provide more focused, useful findings for researchers and policy makers.

In addition to the three primary predictors, I also chose to include teachers' earnings and other background characteristics of teachers and schools as statistical controls in order to shed greater light on the primary effects of autonomy, collegiality, and support.

In the following paragraphs I describe the research evidence about the effects of the primary predictors of interest on teachers' job satisfaction. I then examine the research evidence about the effects of background characteristics of teachers (including earnings) and background characteristics of schools. I conclude by explaining how the review of the empirical evidence has informed my study.

### **Evidence about the primary predictors of interest**

The purpose of this section is to discuss the empirical research evidence about the effects of the primary predictors of interest – administrative support, staff collegiality, and classroom autonomy – on teachers' job satisfaction. Each section begins with a definition of the variable, then presents evidence about its effect on teachers' job satisfaction, and then discusses how it interacts with other variables' effects on teachers' job satisfaction.

### ***Administrative support***

Administrative support is the degree to which the principal and other school administrators support the work of teachers at the school through encouragement, recognition, communication, and the consistent enforcement of student rules (Perie & Baker, 1997; Stockard & Lehman, 2004). According to one study, administrative support involves “clear communication and supportive behavior...that facilitates teaching and learning” (Shen et al., 2011, p. 11). Administrative support is measured by teachers’ perceptions of their relationship with their principal. It includes both measures of individual support such as “my principal backs me up” and measures of group support such as “staff members are recognized for a job well done” (SASS 2007-08 Public teacher questionnaire, Items 55g-k). A supportive principal is able to formulate a compelling vision for the school and communicate it to others (SASS 2007-08 Public teacher questionnaire, Item 55h). A principal supports teachers by effectively leading the school towards transformation (Bogler, 2002). Being a supportive administrator also means empowering staff to take on their own leadership (Davis & Wilson, 2000). Administrative support has been called “pedagogical leadership” because it empowers teachers and draws out their ability to take leadership and responsibility on their own (Sergiovanni, 1998).

Teachers’ relationship with their administrators has been cited as one of the leading factors associated with teachers’ sense of job satisfaction. Teachers are less satisfied when they feel that their administrator does not support them. Teachers are significantly more likely to be satisfied when they feel that they have high levels of support from administrators (Cha, 2008). Of the 74 studies I reviewed, 44 indicated that administrative support was an important predictor of teachers’ job satisfaction. In 14 of the reviewed studies, administrative support was identified as the most important of the factors influencing teachers’ job satisfaction (Cha, 2008; Evans,

1997; Evans, 2001; Fairchild et al., 2012; Grissom, 2011; Lee, Dedrick, & Smith, 1991; Leslie, 2009; Littrell et al., 1994; Ma & MacMillan, 1999; Perie & Baker, 1997; Price, 2012; Sentovich, 2004; Stockard & Lehman, 2004; Tickle et al., 2011). Thirty other studies found that administrator support had some significant relationship to teachers' job satisfaction. These studies are listed in Table 2.

Eleven studies used simple quantitative techniques to examine the connection between administrative and job satisfaction among teachers. Some of these studies reported that teachers with administrator support also tended to experience a higher degree of job satisfaction (Davis & Wilson, 2000; Fraser et al., 1998; Henke et al., 1997; Markow & Cooper, 2008; Markow & Pieters, 2009). Other studies found a significant correlation between administrator support and teachers' job satisfaction (Heller, Clay, & Perkins, 1993; Ingersoll, 2001; Littrell et al., 1994).

Twenty-seven studies used regression techniques to calculate a coefficient for the effect of administrative support on teachers' job satisfaction, after controlling for other factors. Seven studies using regression techniques found that administrative support had a larger effect on teachers' job satisfaction than any other variable (Fairchild et al., 2012; Grissom, 2011; Ma & McMillan, 1999; Price, 2012; Sentovich, 2004; Taylor & Tashakkori, 1995; Tickle et al., 2011). Cha (2008) used structural equation modeling to predict teachers' job satisfaction, and found the largest effect size was for working conditions, of which administrator support was a component. Lee and colleagues (1991), in an HLM study of high school teachers, found that in addition to its effect on teachers' job satisfaction, administrator support impacted the slope of classroom autonomy on teachers' job satisfaction. Perie and Baker (1997) found that administrator support was a significant predictor of teachers' job satisfaction, but its effect was smaller than other variables, including student behavior. Shen and colleagues (2012) found that working conditions,

administrative support, and staff collegiality had a greater effect on teachers' job satisfaction than background characteristics of teachers, schools, or principals.

Several types of administrator support have been associated with increased teacher job satisfaction. These types of support include treating teachers with respect, providing a clear direction for the school, making himself/herself accessible to staff, showing appreciation for teachers' work, and handling student discipline fairly (Markow, 2006). Respect and recognition for a job well done also contribute to teachers' job satisfaction (Markow & Cooper, 2008). In one study, teachers experienced higher satisfaction when they received recognition for their efforts (Perie & Baker, 1997). Recognition from the principal is especially important to female teachers (Fraser, Draper, & Taylor, 1998). Different types of leadership behaviors on the part of the principal, such as telling, selling, participating, and delegating work to teachers, may have differential effects on teachers' job satisfaction (Heller, Clay, & Perkins, 1993). Most teachers are generally well-satisfied with their principals' leadership style (Henke et al., 1997). Teachers express a higher level of satisfaction when they perceive their principal as a transformational leader (Bogler, 2002). Principals' transformational leadership affects teachers' job satisfaction both directly and indirectly through their occupation perceptions (Bogler, 2001).

Effective leadership on the part of principals leads to teachers' job satisfaction in two ways, buffering and delegating. Buffering involves protecting teachers' classroom activities from outside interruptions, while delegating means fostering leadership among the staff rather than assuming all decision-making power (Lee, Dedrick, & Smith, 1991). In this way, effective leadership is closely associated with two other predictors of teachers' job satisfaction, classroom autonomy and influence over decision-making. Empowering staff to take on leadership leads to higher job satisfaction. For example, in one study, principals' empowering behaviors toward

teachers explained 14% of the variation in teachers' job satisfaction (Davis & Wilson, 2000).

Internal management from within the school also tends to be more effective at raising teacher job satisfaction than externally imposed measures such as district-wide policies and initiatives (Butt et al., 2005). A strict, bureaucratic administration is associated with lower teacher job satisfaction, while an administration based on community governance regime leads to higher teacher job satisfaction (Verdugo et al., 1997).

In addition to its impact on teachers' job satisfaction, administrator support is also a leading source of dissatisfaction. For example, among the public school teachers who left teaching because of dissatisfaction, inadequate support from administration was the most frequently listed reason for being dissatisfied (Guarino & Santibanez, 2006; Ingersoll, 2001). Lack of recognition from administrators was a leading cause of dissatisfaction among rural elementary school teachers in one state (Huysman et al., 2008). In one qualitative study, teachers in one study who were otherwise fairly well-satisfied identified feelings of frustration with being overly restricted by their superiors (Kniveton, 1991). One study found relatively low satisfaction among teachers whose administrators showed a "laissez-faire" form of leadership (Ellis & Bernhardt, 1992). Ineffective leadership leads to role ambiguity and role conflict between teachers and principals, and these role-related factors in turn have a high correlation with dissatisfaction among teachers (Thompson et al., 1997).

Some job satisfaction studies have shown that administrator support is significantly associated with other variables which in turn effect teachers' job satisfaction. For example, teachers tend to feel greater levels of administrator support when they also have more teaching experience, more positive interactions with students, and a higher satisfaction with their salary (Tickle et al., 2011). In another example, principals' leadership was found to be significantly

associated with collective efficacy beliefs which in turn impacted teachers' sense of job satisfaction (Caprara et al., 2003). Supervisor support was significantly correlated with teachers' sense of autonomy (Skaalvik & Skaalvik, 2009; Skaalvik & Skaalvik, 2011). Effective principal leadership was found to be the primary predictor of a positive school climate, which in turn was associated with increased job satisfaction among teachers (Taylor & Tashakkori, 1995).

Administrator support can interact with other variables affecting teachers' job satisfaction. For example, changes to the academic calendar or flexibility in scheduling were found to promote teacher morale when combined with support from administrators (Haser & Nasser, 2003). Principals' effective leadership is particularly important for raising the job satisfaction of teachers in disadvantaged schools (Grissom, 2011). Principals' demographic and background characteristics (such as experience, specialization, or highest degree earned) were found to have little effect on teachers' job satisfaction (Shen et al., 2011). Teachers tend to be more satisfied when working with a principal of the same race (Fairchild et al., 2012; Renzulli, 2011) or gender (Price, 2012) as themselves. Effective administrator support is particularly important to the job satisfaction of beginning teachers (Horne, 2010) and female teachers (Fraser et al., 1998). Effective, supportive administrators are pivotal in promoting the satisfaction and retention of first-year teachers (Stockard & Lehman, 2004). Satisfaction with administrator leadership tends to be higher in private schools and elementary schools (Henke et al., 1997).

### ***Staff collegiality***

Staff collegiality means cooperative effort among teachers in pursuit of a common goal. It has been defined as a sense of collaboration and shared purpose among faculty within the same school (Bryk & Driscoll, 1988; Bryk, Lee, & Holland, 1993). According to one study, "collegiality refers to a positive working relationship among teachers highlighted by a sense of

collaboration with and recognition from colleagues” (Shen et al., 2011, p. 10). The definition of staff collegiality is limited to the relationship between teachers as peers, and typically does not include the relationship between teachers and their supervisors (Ingersoll, 2001). Collegiality has been measured as the work-related product of interpersonal relations within the school (Evans, 1997). Collegiality has also been measured as the absence of conflict among faculty members (Ingersoll, 2001; Weathers, 2006). Collegiality includes features such as the degree and quality of teamwork, cooperative ways of working, consultation, interdependence, and support among colleagues (Evans, 2001).

In studies of teachers’ job satisfaction, the term “collegiality” has often been used to name teachers’ perceptions of their interactions with other teachers (Fairchild et al., 2012; Leslie, 2009; Sentovich, 2004; Shen et al., 2011; Skinner, 2008; Taylor & Tashakkori 1995) but there are also other studies using different names for virtually the same construct, as demonstrated by a comparison of the underlying survey items used in the composites (see appendix for more details). Alternative names for the construct known as “collegiality” include “coworker support” (Huysman et al., 2008; Renzulli et al. 2011; Stockard & Lehman, 2004), “collaboration with colleagues” (Kim & Loadman, 1994), “staff cohesion” (Keefe, 2008; Price, 2012), “staff community” (Louis, Marks & Kruse 1996; Talbert & McLaughlin, 1994; Verdugo, 1997; Weathers, 2006), and “shared responsibility for student learning” (Bryk & Driscoll 1988; Bryk, Lee, & Holland, 1993; Lee, Dedrick & Smith 1991; Lee & Smith, 1996; Markow 2009). These constructs are not identical (hence the difference in names) but they are very similar because they are composed of the same or almost the same SASS survey items. What all of the names and composites have in common is a measurement of teachers’ working together with fellow teachers towards a common goal.



Three survey items from the Schools and Staffing Survey (SASS) have frequently been used to measure teachers' sense of collegiality (Grodsky & Gamoran 2002; Ingersoll, 1996; Ingersoll, 2003; Leslie, 2009; Perie & Baker, 1997; Price, 2012; Renzulli, 2011; Shen et al., 2011; Shouse, 1996; Smith & Rowley, 2005; Stockard & Lehman, 2004; Weathers, 2006). These survey items provide a good summary of the traits which comprise collegiality among teachers. In a school marked by collegiality, there is "a great deal of cooperative effort among the staff" (2007-08 SASS, Item 55k). In a collegial environment, all teachers "enforce rules consistently, even for students not in their classes" (2007-08 SASS, Item 55h). Most importantly, teachers feel collegiality when they can say "my colleagues share my beliefs and values about the central mission of the school" (2007-08 SASS, Item 55i). In addition to studies using SASS, teacher satisfaction studies have used other large-scale NCES datasets to create composite measures of collegiality (Bryk & Driscoll 1988; Bryk, Lee, & Holland, 1993; Lee & Smith, 1996; Lee, Dedrick, & Smith 1991; Louis, Marks, & Kruse 1996; Talbert & McLaughlin, 1994).

Staff collegiality is one of the most important factors influencing teachers' sense of satisfaction with their jobs. In my review of the literature, I found 29 studies that listed collegiality as an important predictor of teachers' job satisfaction. These studies are listed in Table 2 and described in the following paragraphs. One study found collegiality to be the single most important cause of teachers' job satisfaction (Stockard & Lehman, 2004). Using evidence from both a national sample and a regional sample, the authors reported that "the most important influence on the teachers' reported satisfaction was the extent to which teachers received support from their colleagues" (Stockard & Lehman, 2004, p. 757).

While the study by Stockard and Lehman (2004) is the only study to name staff collegiality as the primary cause of teachers' job satisfaction, several other studies found

collegiality was significantly correlated with increased teacher job satisfaction (Brunetti, 2001; Heller, Clay, & Perkins, 1993; Huysman et al., 2008; Perie & Baker, 1997; Price, 2012; Renzulli et al., 2011; Sentovich, 2005; Shen et al., 2011; Skinner, 2008). For example, collegiality was one of several factors significantly correlated with overall job satisfaction among teachers in a rural setting (Huysman et al., 2008). Another study found that staff collegiality had a strong correlation (.716) with teacher satisfaction among public elementary schools (Price, 2012).

Several studies have used regression techniques to calculate the effect of teachers' sense of collegiality on job satisfaction. Interaction with colleagues (defined as a sense of collaboration and community among faculty) was found to be one of seven significant factors influencing teachers' job satisfaction in a regression analysis (Kim & Loadman, 1994). Shen and colleagues (2012) found that staff collegiality had an effect size of .43 on teachers' reported job satisfaction. In another study, collegiality was found to be one aspect of "school process," which had a significant effect when regressed on job satisfaction (Leslie, 2009). In a study using HLM methods to analyze teachers' job satisfaction, coworker support (a component of overall work environment) had a significant effect size of .11, the third largest effect in the study and on par with teachers' sense of classroom autonomy (Renzulli et al., 2011). In another HLM study, staff collegiality had a significant impact on teacher satisfaction, after controlling for teacher and school background characteristics (Sentovich, 2004).

In addition to its direct impact on teachers' job satisfaction, staff collegiality has also been shown to interact with other satisfaction-related variables. Collegiality is associated with collective-efficacy beliefs which in turn effect teachers' job satisfaction (Caprara et al., 2003). Stockard and Lehman (2004) reported that the influence of several school-process variables such as social support and school management was indirectly funneled through the major influences

of supportive colleagues and teaching at a preferred grade level. In one study, teachers in high-achieving schools tended to report more satisfying interactions with their colleagues, while teachers in low-achieving schools were less satisfied with teacher-teacher relationships (Shann, 1998). In another study of teachers' job satisfaction, elementary school teachers considered collegiality a more important factor than high school teachers, and younger faculty members considered collegiality more important than older faculty members (Brunetti, 2001). Shen and colleagues (2011) found the opposite result, reporting that collegiality was a strong component of teacher job satisfaction at the high school level.

Perhaps the most frequently reported interaction effect is the relationship between staff collegiality and administrative support, both of which tend to affect teachers' sense of job satisfaction (Cha, 2008; Stockard & Lehman, 2004). In one study, support from colleagues was highly correlated with support from administrators (Horne, 2010). In another study, higher levels of collegiality among staff were associated with higher levels of trust between teachers and principals (Markow et al., 2009). Positive interactions with colleagues have been grouped with two other factors, interactions with supervisors and autonomy in the classroom, as indicators of teachers' job satisfaction (Cha, 2008) or school climate (Evans, 1997; Evans, 2001). Together with supervisor support and parental support, collegial relations with teachers create a sense of belonging, which in turn affects teachers' job satisfaction (Skaalvik & Skaalvik, 2009; Skaalvik & Skaalvik, 2011).

### ***Classroom autonomy***

Classroom autonomy is the amount of control which teachers perceive they hold over internal aspects of their immediate work environment, the classroom (Perie & Baker, 1997). The name "autonomy" suggests a degree of freedom from interference by stakeholders outside the

classroom, which may include parents, school administrators, or district officials (Pearson & Moomaw, 2004). Virtually the same construct has been referred to by different names, such as classroom control (Cha, 2008; Ingersoll, 2003) or teacher empowerment (Shen et al., 2011), but the underlying survey items used in these studies are essentially same (see appendix for further details). Classroom autonomy is related to, but distinct from, teachers' level of influence over the school itself (Ingersoll, 2001).

Teachers' sense of autonomy over their classroom has frequently been defined using survey items from the Schools and Staffing Survey. Thirteen of the studies identified in my review defined classroom autonomy using SASS survey items (Fairchild et al., 2012; Ingersoll, 1994; Ingersoll, 1996; Ingersoll, 2003; Ingersoll & Alsalam, 1997; Lee, Dedrick, & Smith, 1991; Lee & Smith, 1996; Leslie, 2009; Perie & Baker, 1997; Renzulli, 2011; Shen et al., 2011; Smith & Rowley, 2005; Stockard & Lehman, 2004; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011; Weathers, 2006). All thirteen studies use virtually the same SASS survey items to measure autonomy. Specifically, on the SASS public teacher questionnaire, teachers were asked to indicate, on a scale of one to four, their answer to the following question: "How much actual control do you have in your classroom at this school over the following areas of your planning and teaching?" (SASS public school teacher questionnaire, Item 54). The question then lists six areas: instructional materials, content, techniques, grading, discipline, and homework. When combined using factor analysis, these six items provide a composite measure of teachers' overall sense of autonomy in the classroom (Cha, 2008).

Empirical evidence points to a strong connection between classroom autonomy and job satisfaction in schools. Teachers' sense of autonomy in the classroom is an important predictor of teachers' sense of job satisfaction. In my review of the literature I found 25 studies that listed

autonomy as a significant predictor of the job satisfaction outcome. These studies are summarized in the following paragraphs and in Table 2.

Three studies found that classroom autonomy was the principal cause of teachers' job satisfaction (Renzulli, 2011; Skaalvik & Skaalvik, 2009; Skinner, 2008). Skaalvik and Skaalvik (2009) found that three variables (time pressure, relationships with parents, and autonomy) tended to predict teachers' job satisfaction, but the most important relationship was with autonomy. They found a correlation of .37 between autonomy and job satisfaction, and reported that autonomy was "the strongest predictor of job satisfaction" (Skaalvik & Skaalvik, 2009, p. 1015). Skinner (2008) also found that teachers' perceptions of classroom autonomy (called "control") were positively related to teachers' job satisfaction. Renzulli and colleagues (2011) used HLM techniques to study teachers' job satisfaction, and found that autonomy had a significant effect size of .13, larger than any other variable in the model. They concluded that "all else equal, an organizational model that promotes autonomy may be associated with high levels of worker satisfaction" (Renzulli et al., 2011, p. 43).

In addition to the three studies mentioned above, several other studies of job satisfaction found that autonomy was a highly important factor (Bogler, 2001; Bogler, 2002; Brunetti, 2001; Cha, 2008; Fairchild et al., 2012; Kim & Loadman, 1994; Kreiss & Brockoff, 1986; Lee, Dedrick, & Smith, 1991; Leslie, 2009; Sentovich, 2004; Sergiovanni, 1967; Shen et al., 2011; Stockard & Lehman, 2004; Winter et al., 2006). The effect of teachers' perceived autonomy in the classroom is positively correlated with job satisfaction (Bogler, 2001; Kim & Loadman, 1994; Kreiss & Brockoff, 1986). Sergiovanni (1968) found that teachers' sense of responsibility over their own work (a construct very similar to autonomy) was one of the top three intrinsic factors associated with teachers' satisfaction with work. A qualitative study found that beginning

teachers, when interviewed, often listed classroom autonomy as a leading source of satisfaction or dissatisfaction with work (Lam & Yan, 2011).

Several studies using regression techniques have reported significant coefficients for the effect of autonomy on teachers' job satisfaction. One study reported a significant effect for autonomy on job satisfaction (Stockard & Lehman, 2004). Another study (Keefe, 2008) found that after controlling for other factors, teachers' control over classroom curriculum had a significant effect on job satisfaction, while control over classroom discipline also had a significant effect. Perie and Baker (2007) reported that classroom autonomy had a significant impact in their final model. Other studies have reported significant results for the effect of autonomy on job satisfaction after controlling for other factors (Fairchild et al., 2012; Leslie, 2009; Shen et al., 2011). While all of these studies used regression techniques, not all of them used a standardized dependent variable, so their coefficients cannot be interpreted as effect sizes nor can they be compared to one another.

Teachers' autonomy in the classroom tends to interact with other variables in its effect on teachers' job satisfaction. Kreiss and Brockoff (1986) found that the relationship between autonomy and job satisfaction was stronger in parochial than in public schools. Lam and Yan (2011) found that beginning teachers, when interviewed about job satisfaction, tended to value autonomy more highly than experienced teachers. Pearson and Moomaw (2005) indicated that autonomy did not directly affect job satisfaction, but it had a strong relationship with decreased job stress which in turn affected the satisfaction outcome. Three studies using a national dataset found that charter school teachers tended to be more satisfied than public school teachers due to greater autonomy in the classroom (Renzulli et al., 2011; Sentovich, 2004; Skinner, 2008).

Teachers in Southern states reported lower levels of overall job satisfaction and lower levels of satisfaction with classroom autonomy (Stockard & Lehman, 2004).

Several studies of teachers' job satisfaction have indicated a strong correlation between teachers' sense of autonomy and administrator support (Bogler, 2001; Cha, 2008; Ellis & Burnhardt, 1992; Fairchild et al., 2012; Keefe, 2008; Kreiss & Brockoff, 1986; Sentovich, 2004; Skaalvik & Skaalvik, 2009; Skinner, 2008). For example, Bogler (2001) found that teachers' perceptions of autonomy at work were influenced by principals' transformational leadership and decision-making style. Highly authoritative principals are likely to grant teachers less autonomy, while principals with a more participatory leadership style are likely to grant teachers more autonomy (Bogler, 2001).

### **Evidence about the effects of background characteristics**

The purpose of this section is to examine the effects of background characteristics on teachers' job satisfaction. First, I examine the effects of background characteristics of teachers. Second, I examine the effects of teachers' earnings, which is a background characteristic but merits its own separate discussion because of its complicated usage in previous studies. Third, I examine the effects of background characteristics of schools.

#### ***Background characteristics of teachers (other than earnings)***

A range of variables comprises the category referred to as "teacher background characteristics." Nineteen of the 74 studies I reviewed included some form of background teacher characteristics, often as control variables in a regression analysis. The teacher characteristics which were most frequently identified as having a significant effect on job satisfaction were the following: gender, age, experience, race, teaching assignment, and certification. Most of these background characteristics can also be considered teacher

demographics, such as gender, race, or age. Some background characteristics, however, such as teaching assignment, earnings, or highest degree earned, are not demographic variables but simply characteristics of teachers. In the following paragraphs I describe research findings about the effects of teacher background characteristics on teachers' job satisfaction.

Prior research has found that women are more likely to be satisfied with their jobs, both in general (Spector, 1997) and specifically among teachers (Kim & Loadman, 1994; Sergiovanni, 1967). Several studies have found that female teachers were more satisfied with their jobs than male teachers (Bogler, 2001; Culver et al., 1990; Fairchild et al., 2012; Ma & MacMillan, 1999; Perie & Baker, 1997; Renzulli et al., 2007). Ma and MacMillan (1998) tested for interaction effects and found that female teachers were consistently more satisfied than male teachers regardless of teaching experience. Another study found the opposite results, reporting that female teachers were less satisfied than male teachers both with regard to their salaries and with regard to satisfaction with teaching in general (Bishay, 1996).

I found mixed research evidence regarding the effect of teachers' age on job satisfaction. Perie and Baker (1997) found that young teachers were more satisfied with their jobs than older teachers. Another study using a small sample size found that older teachers were more satisfied than younger teachers, but only with respect to their salary, not their jobs overall (Jaboun & Fook, 2001). Stockard and Lehman (2004) used the Teacher Follow-up Survey and found that older teachers tended to report higher levels of job satisfaction. Other researchers, however, determined that age has little explanatory value in predicting job satisfaction (Skinner, 2008; Thompson, McNamara, & Hoyle, 1997).

Research shows that teachers' experience is related to teachers' job satisfaction. Some studies have shown that less experienced teachers report higher levels of satisfaction than more



experienced teachers (Fraser, Draper, & Taylor, 1998; Mau, Ellsworth, & Hawley, 2008; Perie & Baker, 1997; Skaalvik & Skaalvik, 2009; Skinner, 2008; Tickle et al., 2011). But at least two studies found a small but positive effect size on satisfaction for teachers with over 10 years of experience (Bishay, 1996; Shen et al., 2012). While teachers with less than three years of experience are the most likely to leave the profession (Ingersoll, 2003), they also tend to have the highest reported levels of job satisfaction (Ingersoll & Alsalam, 1997; Perie & Baker, 1997).

Prior research has shown that, in comparison to teachers with bachelor's degrees, teachers with graduate degrees report lower job satisfaction (Perie & Baker, 1997) and also lower commitment to teaching (Ingersoll & Alsalam, 1997).

Several studies have considered whether teachers' race has an impact on their job satisfaction. Perie and Baker (1997) found statistically significant but small differences in job satisfaction among racial/ethnic groups, with white teachers tending to be more satisfied than non-white teachers. Prior research has found that minority and white teachers have significantly different levels of job satisfaction (Fairchild et al., 2012; Culver, Wolfle, & Cross, 1990; Renzulli et al., 2011). Minority teachers have also reported less commitment to teaching than white teachers (Ingersoll & Alsalam, 1997). Two studies found that white teachers in predominantly non-white schools experienced lower levels of job satisfaction after accounting for other variables (Fairchild et al., 2012; Renzulli et al., 2012). One study found that white teachers working with a non-white principal experienced lower job satisfaction after accounting for other variables (Price, 2012).

Teaching assignment may be associated with differences in teachers' job satisfaction. Several studies have found that teachers assigned to special education report lower levels of satisfaction and higher levels of dissatisfaction than other teachers, all else being equal

(Stempien & Loeb, 2002; Horne, 2010). Ingersoll (2001) has found that mathematics and science teachers tend to leave the profession at higher levels than other teachers, which may indicate lower levels of job satisfaction.

Possessing state certification may be associated with changes in job satisfaction. Teachers with advanced, regular, or probationary certification had 11% higher job satisfaction than non-certified teachers (Mau, Ellsworth, & Hawley, 2008; Shen et al., 2012). But another study found that teachers with standard state certification were less satisfied than teachers without certification (Skinner, 2008).

I found no studies that considered the effects of part-time teaching on teachers' job satisfaction. As far as I could tell, all studies that I reviewed limited their sample exclusively to full-time teachers.

### ***Earnings (A background characteristic of teachers)***

One background characteristic of my model, teachers' earnings, deserves special discussion because of its complicated place in research about teachers' job satisfaction. In the following paragraphs I discuss how previous teacher satisfaction research has often failed to distinguish between the effects of teachers' earnings and teachers' satisfaction with earnings.

The studies I reviewed were not consistent with regard to the definition of the variable "earnings" and its relationship to overall job satisfaction. At least in the area of research on teachers' job satisfaction, not all studies have looked at the impact of teachers' earnings in the same way. Of the 74 studies I reviewed, 14 found earnings to be a significant factor affecting teachers' job satisfaction. Among these 14 studies, at least two definitions of earnings appeared. On the one hand, some job satisfaction studies considered the effect of teachers' actual earnings, defined either as annual salary (Conley & Levinson, 1993; Hanushek, Kain, & Rivkin, 2004a;

Henke, 1997; Lee, Dedrick, & Smith, 1991; Skinner 2008; Shen et al., 2011; Stockard & Lehman, 2004) or as salary plus benefits (Cha, 2008; Perie & Baker, 1997). On the other hand, some job satisfaction studies did not consider the effects of actual earnings but instead looked at the effects of teachers' satisfaction with their earnings (Guarino & Santibanez, 2005; Ingersoll, 2001; Kim & Loadman, 1994; Liu & Meyer, 2005; Markow et al., 2006; Markow et al., 2008; Marlow et al., 1996; Shann, 1998; Tickle et al., 2011).

A clear distinction between the effects of earnings versus the effects of satisfaction with earnings was not always evident in the studies I reviewed. For example, one quantitative study found satisfaction with earnings to be a significant predictor of overall job satisfaction (Kim & Loadman, 1994). The authors stated that “the results of this study identified current salary as a predictor of job satisfaction” (Kim & Loadman, 1994, p. 8). However, the survey item used to measure “current salary” was not a monetary amount, but a Likert-scale item asking teachers to rank how satisfied they felt with their current salary. Therefore, stating that current salary is a predictor of job satisfaction is misleading, since the study did not actually examine current salary but satisfaction with salary.

Another study reported that “teachers' job satisfaction was related positively to teachers' salary” (Tickle et al., 2011, p. 347). But in fact, the study by Tickle and colleagues did not include any survey items about teachers' actual salary but instead used a survey item asking teachers if they were satisfied with their salary. Actual salary and satisfaction with salary are two different entities that are likely to impact teachers' overall job satisfaction in different ways. For example, one study using a national dataset found that public school teachers of different racial–ethnic backgrounds varied both in overall satisfaction and in their satisfaction with their salaries, even when they were paid the same amount (Henke et al., 1997). Another study found that actual

salary and benefits had a significant effect on overall job satisfaction, but teachers' satisfaction with salary did not (Perie & Baker, 1997). Results such as these serve as an important reminder to use precise language when discussing related items of research. While the effects of both variables are important, they should be kept conceptually distinct.

Having clarified the difference between earnings and satisfaction with earnings, I will now summarize the findings about their respective effects. First, researchers do not agree about whether teachers are satisfied with their earnings. For example, one national survey of teachers indicated that only 17 percent thought they were paid enough (Feistritzer, 1996). But another national study released the following year showed that 45 percent of teachers agreed with the statement "I am satisfied with my teaching salary" (Henke et al., 1997). A much later study (Markow, 2008) found that 66% of surveyed teachers felt satisfied with their salary. Some researchers have noted that the observed differences in teachers' satisfaction with salary are likely related both to differences in survey item wording as well as to the different economic conditions prevailing at the time the sample was taken (Henke et al., 1997; Markow et al., 2012).

Research has shown mixed results about the effect of teachers' earnings on their overall job satisfaction. One study found that annual salary had a significant impact on teachers' overall job satisfaction, once other factors were accounted for, but the coefficient was not as large as that of more intrinsic factors such as interactions with coworkers (Stockard & Lehman, 2008). Three studies using the SASS dataset found that annual salary and benefits together had a significant but small impact on overall satisfaction, after controlling for other variables (Cha, 2008; Perie & Baker, 1997; Shen et al., 2011). Conley and Levinson (1993) reported that differences in starting salaries were associated with differences in teachers' job satisfaction. Two studies found annual

salary had no significant effect on teachers' overall job satisfaction in the final regression model (Lee, Dedrick, & Smith, 1991; Skinner, 2008).

Like earnings, the evidence is mixed regarding the effect on teachers' overall job satisfaction of teachers' satisfaction with earnings. Kim and Loadman (1994) asked teachers about their satisfaction with salary and fringe benefits, and found it to be the most important of seven possible predictors of overall job satisfaction. Tickle and colleagues (2011) found similar results using the SASS dataset. Other teacher-related studies have found that low satisfaction with salary is connected to low overall job satisfaction. These studies have used both qualitative and quantitative techniques (Marlow et al., 1996; Markow et al., 2008; Markow et al., 2012). At the same time, there are researchers who report that being satisfied with one's salary has little or no effect on one's overall job satisfaction. In a qualitative study of teachers, Kniveton (1991) found that some teachers who had high levels of overall job satisfaction also felt frustrated by not feeling well-paid. In a series of interviews with teachers at one affluent school, Shann (1998) found that salary was "not an issue for the teachers in comparison with more pressing needs" (Shann, 1998, p. 72). In their study using the SASS dataset, Perie and Baker (1997) considered including the survey item "I am satisfied with my teaching salary" in their initial analysis, but later dropped it in favor of direct measures of salary and benefits. They explained their decision on the grounds that satisfaction with salary "was found to be a poor predictor of teacher satisfaction for all teachers" (Perie and Baker, 1997, p. 7). A review of the evidence suggests, then, that researchers differ in their understanding of the effect of salary satisfaction on overall job satisfaction among teachers.

In addition to the direct effect on teachers' overall job satisfaction, earnings and satisfaction with earnings both interact with other important variables that tend to effect teachers'

job satisfaction. Conley and Levinson (1993) found that salary had more impact on job satisfaction among beginning teachers than it did among experienced teachers. This may be because salary and years of experience are highly correlated (Henke et al., 1997). Other demographic differences among teachers and schools, such as race, sector, and urban location, also tend to interact with earnings satisfaction in its effect on overall job satisfaction (Henke et al., 1997). In particular, teachers belonging to a non-white minority are less likely to be satisfied with their earnings (Liu & Ramsey, 2008; Markow, 2008). Among teachers who left teaching for reasons of dissatisfaction, insufficient earnings were a leading source of their dissatisfaction (Ingersoll, 2001). When other variables were controlled for, teachers with lower earnings were more likely to switch schools or to leave teaching altogether (Stockard & Lehman, 2004). One study of teachers in Texas suggested somewhat different results, however, finding that job conditions had a more important impact on teachers' retention than earnings did (Hanushek, Rivkin, & Kain, 2004).

### ***Background characteristics of schools***

Like background characteristics of teachers, background characteristics of schools tend to be associated with differences in teachers' job satisfaction. Among the 74 studies I reviewed, 17 studies found that school characteristics had a significant effect on teachers' job satisfaction. School characteristics most frequently identified as having an impact on job satisfaction were school level, sector, size, urban locale, percentage of minority students, and percentage of students with low SES.

Studies show mixed results with regard to the effect of school level on teachers' job satisfaction. Some studies found that teachers were more satisfied working in high schools (Fairchild et al., 2012; Fraser, Draper, & Taylor, 1998; Lester, 1987; Renzulli et al., 2007). Other

studies found that teachers in elementary schools feel more satisfied with their jobs (Landers, Alter, & Servilio, 2008; Shen et al., 2012; Stockard & Lehman, 2004). According to one qualitative study of public school teachers, secondary school teachers are less likely than elementary school teachers to rate their satisfaction with their schools as excellent (Markow et al., 2006).

Sector and school size are both associated with teachers' job satisfaction. With regard to sector, teachers in private schools tend to be more satisfied than teachers in public schools (Alt & Peter, 2002; Convey, 2010; Lee, Dedrick, & Smith, 1991; Liu & Meyer, 2005; Perie & Baker, 1997). Public charter school teachers are more satisfied than are traditional public school teachers (Renzulli et al., 2012; Keefe, 2008; Sentovich, 2004). Several studies found that teachers in small schools experience greater job satisfaction than teachers in large schools (Bryk & Driscoll, 1988; Bryk, Lee, & Holland, 1993; Lee, Dedrick, & Smith, 1991; Shen et al., 2012).

In schools with a high percentage of minority students or students qualifying for free or reduced-price lunch, teachers tend to experience decreased job satisfaction (Ellis & Bernhardt, 1992; Markow et al., 2006; Shen et al., 2012; Skinner, 2008). Urban locale may be closely related to the race and SES of students and therefore is likely to have an effect on teachers' job satisfaction. According to one study, only 15% of teachers in urban schools were likely to rate their satisfaction as excellent, compared to 25% in suburban/rural schools (Markow et al., 2006). Grissom (2011) found that teachers working with underprivileged students generally felt less job satisfaction, but having an effective principal often made up the difference.

### **How the review of empirical evidence informs the study**

My review of the literature informed my dissertation in four ways. It influenced the selection of the primary predictors of interest, the selection of the control variables, the choice of

dataset, and the decision to use a two-level model. I will describe each of these four influences in the following paragraphs.

My review of the research literature shaped the choice of the primary predictors of interest in my study. Among the 74 studies I examined, eleven variables were frequently identified as important predictors of teachers' job satisfaction. These variables were administrative support, staff collegiality, classroom autonomy, student interactions, teacher background characteristics, influence over policy, school background characteristics, earnings, efficacy, stress and workload, and parental engagement. I chose to use the first three as the primary independent variables of interest for my study. I made this decision because administrative support, staff collegiality, and classroom autonomy were reported as significant predictors of teachers' job satisfaction more often than any of the other variables. Forty-four studies found that administrative support was significantly associated with teachers' job satisfaction. Twenty-nine studies found that staff collegiality was significantly associated, and twenty-five found that classroom autonomy was significantly associated. In addition these three variables have been used as proxies of school climate which has an effect on teachers' job satisfaction (Ingersoll & Alsalam, 1997; Perie & Baker, 1997; Stockard & Lehman, 2004). Finally, studies using regression techniques to control for the effects of multiple variables consistently found that administrative support, staff collegiality, and classroom autonomy had a greater effect on teachers' job satisfaction than any other variables (Cha, 2004; Fairchild et al., 2012; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Perrachione et al., 2008; Price, 2012; Renzulli et al., 2011; Shen et al., 2011; Skaalvik & Skaalvik, 2009; Stockard & Lehman, 2004; Tickle et al., 2011; Ware & Kitsantas, 2011). For all of these reasons, my review of the 74



studies convinced me that administrative support, staff collegiality, and classroom autonomy should be the primary predictors of interest in my study.

Reviewing the literature basis informed my choice of control variables. In addition to the three primary independent variables, my study contains thirteen independent variables as statistical controls. There are seven background characteristics of teachers (teaching status, minority status, gender, school-related earnings, teaching experience, highest degree earned, and main teaching assignment) and six background characteristics of schools (size, locale, minority enrollment, sector, level, and teachers' perception of poverty). I chose these thirteen controls because each of them had a significant association with teachers' job satisfaction in at least one study of the 74 I reviewed. The one exception was teachers' perception of poverty as a problem at the school; no previous study included this variable as a predictor. But several studies included a similar variable, average student socioeconomic status (Grissom, 2011; Perie & Baker, 1997; Shen et al., 2011). As I demonstrate in Chapter 3, because my dataset did not have an adequate measure of students' SES, I chose to use teachers' perception of poverty as a proxy measure after finding that it had a significant correlation of .59 with students' SES. In addition, those studies which used regression techniques to control for the effects of multiple variables used some or all of these variables as statistical controls in their models (Cha, 2004; Fairchild et al., 2012; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Perrachione et al., 2008; Price, 2012; Renzulli et al., 2011; Shen et al., 2011; Skaalvik & Skaalvik, 2009; Stockard & Lehman, 2004; Tickle et al., 2011; Ware & Kitsantas, 2011). By choosing these thirteen variables as statistical controls for my regression analysis I deliberately built on the findings and study designs of the 74 studies I reviewed.

My review of the job satisfaction literature was very influential in my choice of dataset for my dissertation. I chose to use the 2007-08 Schools and Staffing Survey (SASS) as the source of my data. I did so because many other studies had successfully used earlier versions of SASS to study teachers' job satisfaction. Nineteen of the 74 studies used SASS as their dataset (Cha, 2008; Fairchild et al., 2012; Grissom, 2011; Henke et al., 1997; Ingersoll, 2001; Keefe, 2008; Leslie, 2009; Liu & Meyer, 2005; Liu & Ramsey, 2008; Perie & Baker, 1997; Perrachione et al., 2008; Price, 2012; Renzulli et al., 2011; Sentovich, 2004; Shen et al., 2012; Stockard & Lehman, 2004; Tickle et al., 2011; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011). Four more studies used another NCES database of teachers which was highly similar to SASS (Bryk & Driscoll, 1989; Bryk, Lee, & Holland, 1993; Lee, Dedrick, & Smith, 1991; Taylor & Tashakkori, 1995). These studies demonstrated that SASS was nationally representative, had a robust selection of survey items related to teachers' job satisfaction, had many survey items related to the three primary independent variables I had selected, and was adequate for use in a quantitative study using regression techniques. My review of the literature, then, demonstrated that SASS had a robust history of use in previous studies of teachers' job satisfaction. By choosing SASS as my study's dataset I aimed to build on the design and findings of previous job satisfaction studies using SASS.

The literature review informed my decision to use a two-level hierarchical linear modeling (HLM) technique in my dissertation. As previously mentioned, the majority of the 74 studies I reviewed used quantitative methods. With regard to methodology, there were 39 studies using exclusively quantitative methods with some sort of statistical techniques to control for the effects of multiple variables at once. Of these 39 studies, twelve used either a two-level HLM model (Bryk, Lee, & Holland, 1993; Ingersoll & Alsalam, 1997; Lee, Dedrick, & Smith, 1991;

Leslie, 2009; Renzulli et al., 2011; Sentovich, 2004; Shen et al., 2012; Winter et al., 2006; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011) or a three-level HLM model (Liu & Meyer, 2005; Liu & Ramsey, 2008). These twelve studies tended to show a high degree of methodological strength and sophistication, reinforcing my desire to imitate their methods. In these twelve studies I saw a strong precedent for the use of HLM techniques in my own research. In addition, the very nature of teacher satisfaction research invites a multi-level model. Studying teachers' job satisfaction has typically been conceptualized as examining the effects of school-level and teacher-level factors on a teacher-level outcome (Lee, Dedrick, & Smith, 1991). Single-level techniques such as OLS regression must either distribute the variance of school-level predictors (such as school climate) across Level 1, or else aggregate the job satisfaction outcome to Level 2. Either solution tends to distort the standard errors and introduce bias into the study. Finally, the SASS dataset, which as previously explained has been highly influential in studies of teacher job satisfaction, is designed for use in two-level studies (Tourkin et al., 2010). For all these reason, my review of the literature led me to conclude that HLM techniques were the appropriate methodology for my study.

### **Summary of the chapter**

The purpose of this chapter was to review what previous research has discovered about teachers' job satisfaction. The first part of the chapter reviewed the value-percept theory of Edwin Locke. This theory serves as the conceptual framework for my dissertation. The second part of the chapter reviewed the empirical evidence about teachers' job satisfaction.

Based on my review of the conceptual and empirical research, my study uses Locke's value-percept theory as the conceptual framework for an analysis of teachers' job satisfaction. My study imitates previous teacher satisfaction studies by using the SASS dataset and a two-

level HLM model. Previous studies' results have shown that teachers' perceptions of classroom autonomy, staff collegiality, and administrative support are the primary predictors of teachers' job satisfaction. In addition, previous research has shown that seven background characteristics of teachers and six background characteristics of schools have some effect on teachers' job satisfaction in addition to the three primary predictors of interest.

The next chapter operationalizes the findings of the literature review with a dataset, variables and methods that correspond to the conceptual framework and empirical evidence presented in Chapter 2.

### **Chapter 3. Data and methods**

This chapter describes the data and research methods I used to examine teachers' job satisfaction. The chapter is divided into three parts. First, I describe my data source, the 2007-08 Schools and Staffing Survey (SASS). Second, I outline the variables included in my study and how they relate to the SASS dataset. Third, I give a description of the statistical methods I used to answer my research questions.

#### **Description of the dataset**

The purpose of this section is to describe the dataset used in my study. The section includes two parts: a description of the data source and a description of the analytic sample.

##### **The Schools and Staffing Survey (SASS)**

This dissertation uses data from the 2007-08 SASS, a survey conducted by the U.S. Department of Education's National Center for Education Statistics (NCES). SASS is part of NCES's ongoing work to provide researchers and policy makers with extensive and reliable data on American schools. SASS and its companion, the Teacher Follow-up Survey (TFS) have been carried out approximately every four or five years since 1988. SASS and TFS provide data on a wide variety of characteristics regarding teachers, administrators, professional development, class size, organizational and demographic conditions, and many other characteristics of schools and the people who work in them. Information in this section draws extensively on the documentation for the 2007–08 Schools and Staffing Survey (Tourkin et al., 2010).

The 2007-08 Schools and Staffing Survey is a nationally representative sample of teachers from all schools in the United States. Its sampling strategy is designed so as to permit comparisons of teachers at the national level on a wide variety of variables, including valid comparisons of public and private schools, elementary and secondary levels, geographic region,

and urban location. For certain subsets of the sample, comparisons are also representative of teachers at the regional and state level. Because of differences in the way public and private schools were selected, it is not possible to make state-level comparisons across school sector. Private schools were selected for sampling by religious affiliation and region rather than by state.

The 2007-08 SASS is nationally representative but it did not employ a simple random sample of all teachers in the nation. The survey designers used a complex sample design where schools were selected first and then teachers were selected from within schools. The way in which schools were selected for the 2007-08 survey differed for public and private schools. These differences are explained in the following two paragraphs.

For public schools, the foundation of the sample frame was the 2005–06 Common Core of Data (CCD) file. CCD is a comprehensive list of all public schools in the nation. In the 2005-06 year, it included slightly over 100,000 schools. After adding, deleting, and collapsing all school records from CCD, the SASS survey included a public school sampling frame with about 90,000 traditional public schools and 3,800 public charter schools. These schools were divided into a number of strata according to criteria such as state, urban locale, grade level, and minority enrollment. Within each stratum, schools were systematically selected using a probability proportionate to size (PPS) algorithm, meaning that smaller schools had a greater chance of being selected. This produced a total of 9,790 public schools in the 2007–08 SASS (Tourkin et al., 2010).

For private schools the base list was the 2005–06 Private School Survey (PSS). This survey is a fairly comprehensive list of all private schools in the country. The set of schools drawn from the PSS is referred to as the “list frame.” All schools in this frame were stratified according to religious affiliation and grade level. Like the public school sampling frame, within

each stratum private schools were systematically selected using a probability proportionate to size algorithm. Because some schools are missing from the PSS, however, the SASS sample design augmented the list frame with an “area frame” that included about 180 private schools not identified in the PSS. The private school sample size was 2,940 schools, of which 2,760 schools were from the list frame and 180 were from the area frame.

Once the sample population of public and private schools was determined, teachers were selected. Rather than employ a random sample of teachers, SASS used a complex sample design in order to account for under-representation of some categories. From each of the schools, a maximum of 20 teachers was chosen using a sampling method that ensured adequate representation of minority teachers and new teachers. The same sampling strategy was used for teachers in both public and private schools. Within each sampled school teachers were stratified into one of five teacher types based on their years of experience and expectations to remain in teaching. Within each of the five types, teachers in each school were selected with equal probability. On average there are about five teachers per school. Private schools and elementary schools, which typically are smaller, also had fewer sampled teachers per school.

Table 3. Number of teachers, schools, & principals in the 2007-2008 SASS sample

	Number sampled		Number of responses		
	Teachers	Schools & Principals	Teachers	Schools	Principals
All	56,590	12,560	44,240	9,540	9,350
Public	48,350	9,790	38,240	7,570	7,460
Private	8,230	2,940	5,990	1,970	1,890

SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), 2007-2008 Schools and Staffing Survey.

The number of teachers, schools, and principals in the SASS dataset is reported in the user's guide (Tourkin et al., 2010) and summarized in Table 3. The sample included 56,590 teachers in 12,560 schools. The final dataset, however, includes only 44,240 teachers in 9,540 schools. The number of teachers and schools in the dataset is lower than the number sampled. Part of the reason for this is nonresponse. Some schools and teachers, though sampled, did not agree to participate in the survey. The response rates for both SASS and TFS were quite high, strengthening the validity of the data and reducing the potential for bias, but nonresponse did still result in the loss of a not insignificant part of the original samples. The 2007-08 SASS questionnaire had an overall response rate of 82%, while TFS had a response rate of 92%. According to guideline 2-2-2a of the NCES statistical standards, cross-sectional surveys such as SASS and TFS should ideally have a response rate of 85% at both the school and teacher levels (U.S. Department of Education, 2003). In cases such as SASS when the response rate is below 85%, the authors must conduct a nonresponse bias analysis to ensure the validity of results. Such an analysis was conducted, and no significant differences were found (Tourkin et al., 2010).

### **Analytic sample**

The teachers included in my analytic sample were selected on the criteria that they have no missing data on any of the proposed variables for the model and that they belong to a school with at least six respondents on the SASS teacher questionnaire. The analytic sample included 19,130 teachers working in 2,420 schools. Table 4 displays a comparison of the full, analytic, and excluded samples.



Table 4. Comparison of the full, analytic, and excluded samples

	Full Sample		Analytic Sample		Excluded Cases	
Unweighted <i>n</i>	44,240		19,130		25,100	
Weighted <i>n</i>	44,240		12,410		31,830	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Part-Time	.10	.30	.08 *	.26	.11 *	.31
Minority	.16	.37	.15 *	.36	.17 *	.38
Male	.24	.43	.36 *	.48	.20 *	.40
School-Related Earnings	48,990	16,85	51,480 *	16,62	48,020 *	16,84
Years of Experience	13.60	10.36	13.50	10.34	13.63	10.37
Bachelor's Degree	.50	.50	.47 *	.50	.51 *	.50
Master's Degree	.43	.50	.45 *	.50	.42 *	.49
Other Graduate Degree	.07	.26	.07	.26	.07 *	.25
General Elementary	.32	.47	.08 *	.27	.42 *	.49
Special Education	.11	.31	.11	.31	.10	.31
English or Language Arts	.12	.32	.15 *	.36	.11 *	.31
Mathematics or Science	.21	.41	.34 *	.47	.16 *	.37
Other Subject Area	.24	.43	.33 *	.47	.20 *	.40
Public	.87	.33	.95 *	.22	.84 *	.36
Private, religious	.09	.29	.03 *	.18	.12 *	.32
Private, non-religious	.03	.18	.02 *	.13	.04 *	.19
School Size	775	636	916 *	799	582 *	425
Elementary	.47	.50	.10 *	.30	.62 *	.49
Middle	.16	.37	.15	.36	.16 *	.37
High	.28	.45	.67 *	.47	.12 *	.33
Combined	.09	.29	.08 *	.27	.10 *	.30
Urban	.28	.45	.26 *	.44	.30 *	.46
Suburban	.53	.50	.57 *	.49	.52 *	.50
Rural	.18	.39	.17 *	.38	.18 *	.39

Notes: Estimates for all three samples are weighted by TFNLWGT normalized to the full sample  $n=44,240$ . T-tests were conducted to measure differences between the full sample and the analytic sample, and between the analytic sample and the set of excluded cases. An asterisk (\*) indicates that these differences were significant ( $\alpha < .05$ ). SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), 2007-08 Schools and Staffing Survey.

As shown in the table, the analytic sample was different from the full SASS sample on a number of variables. Most noticeable was the difference in school size: while the average number of students in the full sample was 775, the average number in the analytic sample was 916. For the excluded cases, the average size was only 582. This difference may indicate that my criterion for inclusion – a high number of SASS respondents per school – filtered out smaller schools and selected predominantly the largest schools. Likewise, two-thirds of the teachers in the analytic sample worked in high schools, as opposed to 28% in the full sample, and only 12% of the excluded cases.

In addition to school size, the analytic sample is different from the full sample in a number of other ways. For the most part, the teachers in the analytic sample worked in schools that were more likely to be suburban or urban, and less likely to be private, than teachers in the full sample. The teachers in my sample were more likely to be male, work full-time, earn more, be a math or science teacher, and have a master's degree than teachers in the full sample. There was no significant difference with regard to years of experience, graduate degrees other than a master's, special education assignment, or working in middle schools.

When interpreting the study results it will be important to keep in mind the nature of the analytic sample. In spite of its differences from the full SASS sample, the analytic sample is both adequate and sufficient to answer the research questions of my study.

### **Variables used in the study**

In this section I describe the variables used in my study. After an introduction I define the dependent variable, the teacher-level independent variables, and the school-level independent variables. My analysis includes twenty-one variables: eleven teacher-level variables, nine school-level variables, and two weights. Tables 5 and 6 summarize the descriptive statistics for each

variable, with categorical items transformed into dummy-coded dichotomous variables. After the tables I provide further information about the construction of variables and the transformations performed on the original survey items.

In addition to the variables of interest, the study also includes two weights. The SASS teacher-level dataset includes two weighting variables called TFNLWGT (the teacher weight) and SFNLWGT (the school weight). These weights were constructed by NCES using the initial teacher-level and school-level base weights and then making adjustments for sampling error and nonresponse. I normalized the teacher-weight variable against the inverse of its mean according to the analytic sample of 19,130 teachers, and I have applied it to all school-level analyses. I normalized the school-weight variable against the inverse of its mean according to the analytic sample of 2,420 schools, and applied the normalized weight to all school-level analyses.<sup>7</sup>

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<sup>7</sup> For a justification of using normalized weights with large-scale datasets such as SASS, see Thomas and Beck (2005).

Table 5. Teacher-level variables

	Min	Max	Mean	S.D.
Job satisfaction	-4.19	2.21	0.00	1.00
Teaching status				
Full-time	0.00	1.00	0.92	0.26
Part-time	0.00	1.00	0.08	0.26
Minority status				
Non-Hispanic White	0.00	1.00	0.85	0.36
All others	0.00	1.00	0.15	0.36
Gender				
Female	0.00	1.00	0.64	0.48
Male	0.00	1.00	0.36	0.48
School-related earnings	\$0	\$144,200	\$53,400	\$16,620
Experience (in years)	1	55	14	10
Highest degree earned				
Bachelor's degree	0.00	1.00	0.47	0.50
Master's degree	0.00	1.00	0.45	0.50
Other graduate degree	0.00	1.00	0.07	0.26
Main teaching assignment				
General elementary	0.00	1.00	0.08	0.27
Special education	0.00	1.00	0.11	0.31
English/Language arts	0.00	1.00	0.15	0.36
Mathematics or science	0.00	1.00	0.34	0.47
Other subject area	0.00	1.00	0.33	0.47
Classroom autonomy	-5.58	1.08	0.00	1.00
Staff collegiality	-3.19	1.53	0.00	1.00
Administrator support	-3.55	1.05	0.00	1.00

Note: n=19,130 teachers. All results have been weighted by the normalized teacher final weight TFNLWGT. SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), 2007-08 Schools and Staffing Survey.

Table 6. School-level variables

	Min	Max	Mean	S.D.
School size	22	5300	916	683
Minority enrollment	0.00	1.00	0.35	0.31
Sector				
Public	0.00	1.00	0.92	0.27
Private	0.00	1.00	0.02	0.14
Level				
Elementary	0.00	1.00	0.13	0.34
Middle	0.00	1.00	0.15	0.36
High	0.00	1.00	0.59	0.49
Combined	0.00	1.00	0.13	0.33
Locale				
Urban	0.00	1.00	0.22	0.42
Suburban	0.00	1.00	0.53	0.50
Rural	0.00	1.00	0.25	0.43
Poverty				
Serious	0.00	1.00	0.09	0.28
Moderate	0.00	1.00	0.39	0.49
Minor	0.00	1.00	0.36	0.48
Little/None	0.00	1.00	0.16	0.36
Average classroom autonomy	-2.44	1.08	0.10	0.47
Average staff collegiality	-1.81	1.53	-0.01	0.53
Average administrator support	-2.42	1.05	-0.03	0.55

Note. n=2,420 schools. All results have been weighted by the normalized school final weight SFNLWGT. SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), 2007-08 Schools and Staffing Survey.

### **Dependent variable**

Teachers' job satisfaction measures teachers' self-reported sense of satisfaction with their particular workplace and specific job-related activities. It is the dependent variable in my analysis. This variable is a standardized, factor-weighted composite with a mean of zero and a standard deviation of one. It was created using principal components analysis from five items on the SASS teacher questionnaire. These items are as follows: I am generally satisfied with being a teacher at this school (T0302), the stress and disappointments involved in teaching at this school aren't really worth it (T0313), teachers at this school are a satisfied group (T0314), I like the way things are run at this school (T0315), I think about transferring to another school (T0317).

My study contributes a more precise construction of the job satisfaction outcome than some previous studies by ensuring that all survey items included in the composite are directly related to the construct (Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Price, 2012; Renzulli et al., 2011; Ware & Kitsantas, 2011). Unlike these previous studies, I did not include any survey items related to constructs such as teachers' efficacy, commitment, or intent to remain in teaching. Second, my study proposes a narrow definition of job satisfaction that only considers teachers' attitudes about their immediate workplace, and does not mix in their satisfaction with the teaching profession as a whole. Specifically, I only included items that measured teachers' satisfaction with teaching "at this school" or desire to transfer to "another school." I did not include any survey items in the final composite that measured teachers' satisfaction with teaching "in general." In doing so, I diverge from studies that have combined teachers' satisfaction with a particular school and satisfaction with teaching itself (Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Sentovich, 2004; Skaalvik & Skaalvik, 2011; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011). I imitate a similar distinction made in the teacher

retention literature (Ingersoll, 2001; Stockard & Lehman, 2004) which distinguishes between leaving a particular school (migration) and leaving the teacher profession itself (attrition). This distinction is similar to the difference in my study between satisfaction with teaching “at this school” versus satisfaction with teaching “in general.”

Before constructing my composite I carefully considered how other studies of teachers’ job satisfaction had built their composite dependent variables. I tried to use the same or similar survey items as previous studies. More information about the literature basis of the composite is provided in the appendix.

After having been informed by previous studies’ composites I used statistical techniques to construct my own composite measures. Table 7 lists 16 items from the 2007-08 SASS dataset which seemed relevant because they had been used in previous studies of teachers’ job satisfaction that used the SASS dataset (Cha, 2004; Fairchild et al., 2012; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Perrachione et al., 2008; Price, 2012; Renzulli et al., 2011; Stockard & Lehman, 2004; Tickle et al., 2011). Using exploratory factor analysis I ran several different combinations of these items to see which outcome would result in the strongest psychometric properties for my study purposes. Six variables were not relevant to my purpose since they did not load on any proposed factors and because they included content such as absenteeism or job security which was only tangentially related to the overall construct. These items are listed in Table 7. Removing the unrelated survey items from the factor analysis increased initial eigenvalues and Cronbach’s alpha for the resulting composite. Some of the excluded survey items have been used in prior studies’ composites of teacher satisfaction, but I chose to exclude them because they did not fit conceptually with my study’s narrow definition of job satisfaction

explained previously. Also, the items had low factor loadings when I included them in exploratory factor analysis.

Table 7. SASS survey items considered for principal components analysis (PCA)

Survey items that were excluded from PCA:	
A0230	The teachers at this school like being here; I would describe them as a satisfied group (principal survey).
T0287	I am satisfied with my teaching salary.
T0291	Routine duties and paperwork interfere with my job of teaching.
T0298	I worry about the security of my job because of the performance of my students on state and/or local tests.
T0299	State or district content standards have had a positive influence on my satisfaction with teaching.
T0306	Teacher absenteeism is a problem at this school.
Survey items that were included in PCA:	
T0302	I am generally satisfied with being a teacher at this school.
T0313	The stress and disappointments involved in teaching at this school aren't really worth it.
T0317	I think about transferring to another school.
T0314	Teachers at this school are a satisfied group (teacher survey).
T0315	I like the way things are run at this school.
T0316	If I could get a higher paying job I'd leave teaching as soon as possible.
T0318	I don't seem to have as much enthusiasm now as I did when I began teaching.
T0319	I think about staying home from school because I'm just too tired to go.
T0320	If you could go back to your college days and start over again, would you become a teacher?
T0321	How long do you plan to remain in teaching?

SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), 2007-08 Schools and Staffing Survey

After excluding these variables I was left with 10 relevant survey items to include in the factor analysis process. These items are listed in Table 7. Most of the items needed to undergo some transformation. I reversed items T0287, T0302, and T0320 to reflect an ordinal scale with higher values corresponding to greater satisfaction. The transformed values on survey items



T0287 and T0302 had a four-point Likert scale ranging from 1= “Strongly Agree” through 4 = “Strongly Disagree.” Item T0320 asked teachers “If you could go back to your college days and start over again, would you become a teacher or not?” with answers ranging on a five-point Likert scale from 1=“Certainly would” to 5=“Certainly would not.” I reversed this item so that higher scores reflected a more positive answer (i.e., more likely to become a teacher again).<sup>8</sup>

The ten survey items were combined using principal components analysis (PCA) for data reduction purposes. The results of the PCA are reported in Display 1. Two factors were extracted, explaining a combined total of 56% of the variance in all ten items. I only used the first factor and I named it teachers’ job satisfaction. I did not use the second factor further in my study.<sup>9</sup> Five items loaded on the job satisfaction factor: T0302, T0313, T0314, T0315, T0317. All five items showed robust correlation with the underlying construct, as demonstrated by the factor loadings. The item-to-total correlation exceeded .50 for each of the items, while the inter-item correlations were at .30 or higher. Cronbach’s alpha for the factors was robust (.82), indicating strong internal consistency. A Cronbach’s alpha above .70 is recommended (Nunnally, 1978; Gable & Wolf, 1993), but an alpha above .60 is also accepted as an adequate cut-off point (Netemeyer, Bearden, & Sharma, 2003). As shown in the histogram, the distribution of the variable was somewhat skewed. Micceri (1989) points out that true normality is exceedingly rare

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<sup>8</sup> Item T0321 presented complicated problems that could not be easily solved through recoding. Not a few studies of teachers’ job satisfaction and commitment have attempted to transform the variable in order to improve its analysis (Perie & Baker, 1997; Stockard & Lehman, 2004; Sentovich, 2004; Ware & Kitsantas, 2007; Cha, 2008; Tickle et al., 2011). The variable as it appears in the 2007-08 SASS dataset is especially complicated because it includes two new categories not used in previous versions of SASS. Placing responses such as “until parenthood/marriage” into an ordinal scale with items such as “as soon as I am able” is not a useful approach for measuring teachers’ plans to leave teaching because it is not possible to rank one of these responses as higher or lower than one another. The “undecided” category is especially problematic, since it cannot be easily ranked against other job decisions, yet it also cannot be deleted without eliminating a large proportion of respondents. However, the variable did not load on the final job satisfaction composite, so I simply eliminated the item from my analysis.

<sup>9</sup> The second factor was originally intended for a study of teachers’ job commitment but it had several problems, both conceptual and methodological, and was not suitable for further analysis.

in education and psychology. As a result, most studies in these fields use dependent variables that have at least some degree of non-normality. Yet as long as the degree of non-normality is not too great, and the researcher takes this limitation into consideration when interpreting the results for outlier cases, it is acceptable to treat a non-normally distributed outcome as if it were normal. The skewness estimate (.72) was below 1.0 indicating that it did not have an excessively non-normal distribution (Stenstrom & Iyer, 2005). Also, the histogram shows that the distribution does fit a superimposed normal curve for the most part, suggesting that it is sufficiently normal for the purposes of my study.

Display 1. Factor analysis results for teachers' job satisfaction

**Rotated Component Matrix<sup>a</sup>**

Survey items that loaded onto the final composite:	Loading	
	1	2
<b>Items loading on factor 1:</b>		
T0302: I am generally satisfied with being a teacher at this school	<b>.749</b>	.303
T0313: The stress and disappointments involved in teaching at this school aren't really worth it	<b>.591</b>	.472
T0314: Teachers at this school are a satisfied group	<b>.820</b>	.081
T0315: I like the way things are run at this school	<b>.842</b>	.078
T0317: I think about transferring to another school	<b>.626</b>	.295
<b>Items loading on factor 2:</b>		
T0316: If I could get a higher paying job I'd leave teaching as soon as possible	.212	<b>.731</b>
T0318: I don't seem to have as much enthusiasm now as I did when I began teaching	.366	<b>.629</b>
T0319: I think about staying home from school because I'm just too tired to go	.304	<b>.505</b>
T0320: I would certainly become a teacher again	.111	<b>.763</b>
T0321: How long do you plan to remain in teaching	.045	<b>.691</b>

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Note: I renamed factor 1 "Job Satisfaction" and it became the dependent variable of my study. I did not use factor 2 in any further analysis, but it is worthwhile to note that it bore a strong resemblance to composite measures named "Job Commitment" or "Intent to Remain in Teaching" in some previous studies (Ingersoll & Alsalam, 1997; Ware & Kitsantas, 2007; Cha, 2008; Price & Collett, 2010; Ware & Kitsantas, 2011; Skaalvik & Skaalvik, 2011; Price, 2012; Pogodzinski et al., 2012).

**Total Variance Explained**

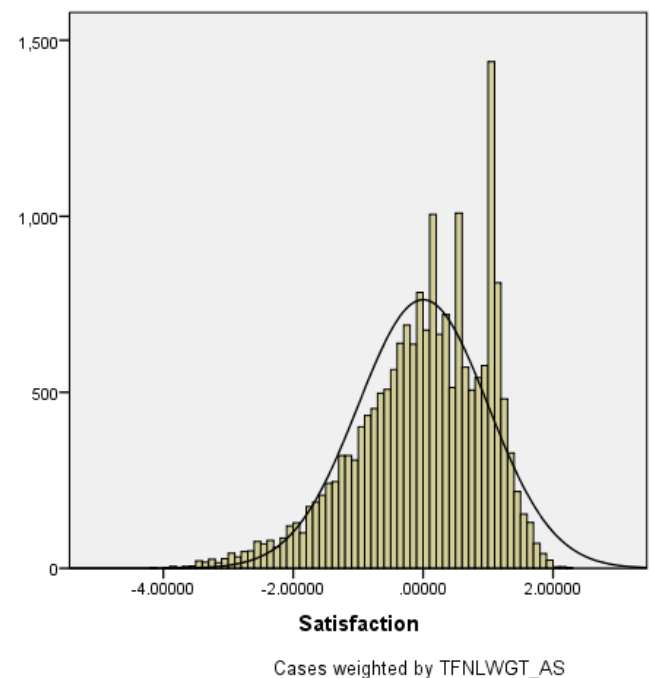
Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4.280	42.800	42.800
2	1.322	13.224	56.024

**Component 1: Teachers' job satisfaction**

Cronbach's Alpha	Items
.823	5

**Component 1: Teachers' job satisfaction**

N	Min	Max	Mean	Std. Dev
19,130	-4.19	2.21	.00	1.00
Skewness	SE	Kurtosis	SE	
-.72	.02	.30	.03	



### **Primary independent variables**

As explained in the introduction and in Chapter 2, I chose three characteristics of school climate as the primary independent variables of my study: teachers' sense of classroom autonomy, staff collegiality, and administrative support. I selected these three variables because my review of prior literature identified them as the most frequently cited predictors of teachers' job satisfaction. My review of the literature conducted in Chapter 2 demonstrated that autonomy, collegiality, and support have frequently been identified as important factors determining teachers' job satisfaction.

In my study the primary independent variables have been included both as Level 1 variables (characteristics of teachers) and as Level 2 variables (characteristics of schools) by aggregating the responses. Aggregating Level 1 responses to create Level 2 variables is not an uncommon practice in studies using HLM methods (Raudenbush & Bryk, 2002). It requires a clear conceptualization, however, of what the variables mean at each level, as described in the following passage:

“There is a very interesting but theoretically complex possibility that the same variable can exist at more than one level in a single data set... the conceptual issue is whether we can provide a distinct theoretical role for the same variable at the group level and the individual level” (Cohen et al., 2002, p. 564).

By modeling the primary independent variables at both Level 1 and Level 2, I hypothesize that an individual teacher's perceptions of autonomy, collegiality, and support have an effect on his/her job satisfaction. I also hypothesize that the average of all teachers' perceptions of autonomy, collegiality, and support has an effect on job satisfaction that is unique and distinct from the effect of individuals' perceptions. Several previous HLM studies of

teachers' attitudes about work served as models for arranging the independent variables in this way (Lee, Dedrick, & Smith, 1991; Pogodzinski et al., 2012; Rowan, Raudenbush, & Kang, 1991; Shen et al., 2011; Smith & Rowley, 2005).

My proposed dataset (2007-08 SASS) had readily available measures of all three items, but these items required some transformations prior to use.<sup>10</sup> I looked to previous research as a guide for conducting these transformations. First, I reviewed how previous studies had created similar composites. This review demonstrated that 13 items on SASS have a robust history of research use as indicators of teachers' autonomy, collegiality, and support. Next, I used exploratory factor analysis to see how these 13 variables would load together. Informed by previous research and the exploratory analysis, I used principal components analysis to create three composite measures. More information about the research basis for these composites is provided in the appendix.

The measure of classroom autonomy was created using six survey items from SASS (T0280-T0285). As shown in Display 2, these items were combined using principal components analysis to create a single composite factor. Prior to creating the factor, values on the six items were reversed so that higher scores reflected a more positive rating of classroom autonomy. There were no missing data to be accounted for. The eigenvalues, alpha coefficients, and factor loadings are listed in Display 2. Only one factor was extracted, explaining a combined total of 44% of the variance in the six items. The item-to-total correlation exceeded .55 for each of the items. Cronbach's alpha was .71, indicating strong internal consistency in the factor. Descriptive statistics showed that the composite variable ranged from about -5.5 to about 1, with a mean of

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<sup>10</sup> A fourth proposed factor, teachers' influence over school policy, also has a strong basis in prior literature as a predictor of teachers' job satisfaction (e.g., Perie & Baker, 1997; Ingersoll, 2001; Stockard & Lehman, 2004). I did not include it in my model primarily because the 2007-08 SASS does not have any teacher items that measure it. If adequate items had been available, I would have included it.

0.00 and a standard deviation of 1.00. The resulting continuous variable was positively skewed, with most teachers showing a high level of perceived autonomy in the classroom, as demonstrated by the histogram. Since a non-normal distribution might cause bias in the final analysis, I divided the teacher-level variable into three dummy variables representing roughly equal tertiles. I also aggregated the teacher-level variable to create the school-level variable.

Display 2. Factor analysis results for classroom autonomy

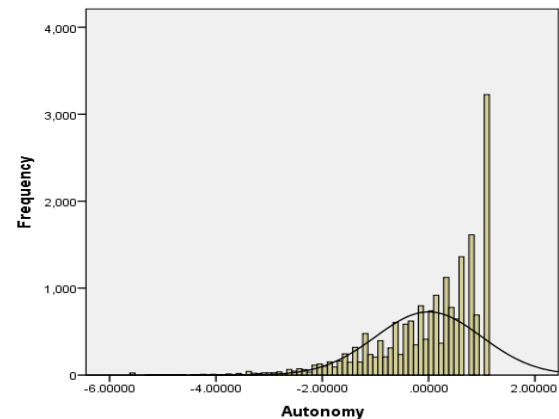
Survey items that loaded onto the final composite:	Loading
Control over selecting textbooks and other instructional materials in my classroom	.604
Control over selecting content, topics, and skills to be taught in my classroom	.669
Control over selecting teaching techniques in my classroom	.731
Control over evaluating and grading students in my classroom	.737
Control over disciplining students in my classroom	.559
Control over determining the amount of homework to be assigned in my classroom	.655

Total Variance Explained

Component	Initial Eigenvalues	
	Total	% of Variance
1	2.632	43.863

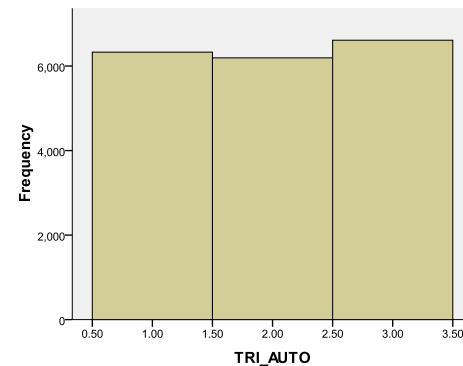
Autonomy: Teacher-level

Number	19,130
Mean	.00
Std. Deviation	1.00
Minimum	-5.58
Maximum	1.08



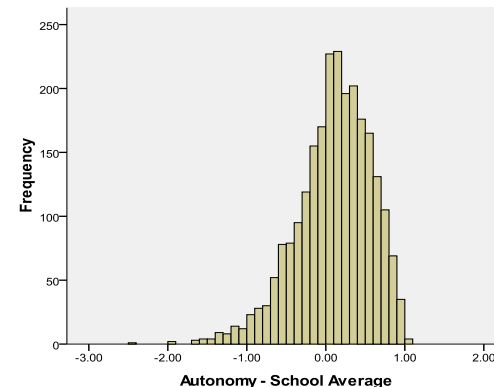
Autonomy: Teacher-level, by tertiles

Total	19,130	100%
Low (up to -.22)	6,329	33%
Medium	6,194	32%
High (above .61)	6,611	35%



Autonomy: School-level

Number	2,424
Mean	.0619
Std. Deviation	.52
Minimum	-2.44
Maximum	1.08



The measure of staff collegiality consists of three survey items from SASS (T0293, T0294, and T0296). As shown in Display 3, principal component analysis was used to create a composite factor from these items. Prior to creating the factor, values on all items were reversed so that higher scores reflected a more positive rating of collegiality. Values on the original survey items were coded as follows: 1= “Strongly Agree” through 4 = “Strongly Disagree.” The three items loaded onto one factor, with factor loadings at .80 and above. The eigenvalue was 1.93, and the resulting factor explained 66% of the total variance in the three items. Cronbach’s alpha coefficient was .74, indicating that the three items grouped well, and that the composite had strong internal consistency and reliability. Descriptive statistics showed that the factor ranged from about -3 to about 1.5, with a mean of zero and a standard deviation of one. The variable was highly skewed as demonstrated by the histogram in Display 3. Since a non-normal distribution might cause bias in the final analysis, I divided the teacher-level variable into three dummy variables representing roughly equal tertiles. I also aggregated the teacher-level variable to create the school-level variable.



Display 3. Factor analysis results for staff collegiality

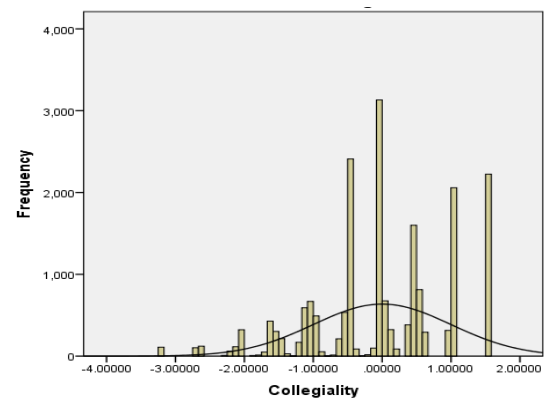
Survey items that loaded onto the final composite:	Loading
Teachers enforce rules consistently, even for students not in their classes	.797
My colleagues share my beliefs and values about the central mission of the school	.832
There is a great deal of cooperative effort among the staff	.811

#### Total Variance Explained

Component	Initial Eigenvalues	
	Total	% of Variance
1	1.984	66.118

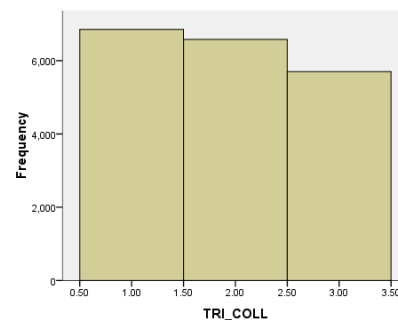
#### Collegiality: Teacher-level

Number	19,130
Mean	.00
Std. Deviation	1.00
Minimum	-3.19
Maximum	1.53



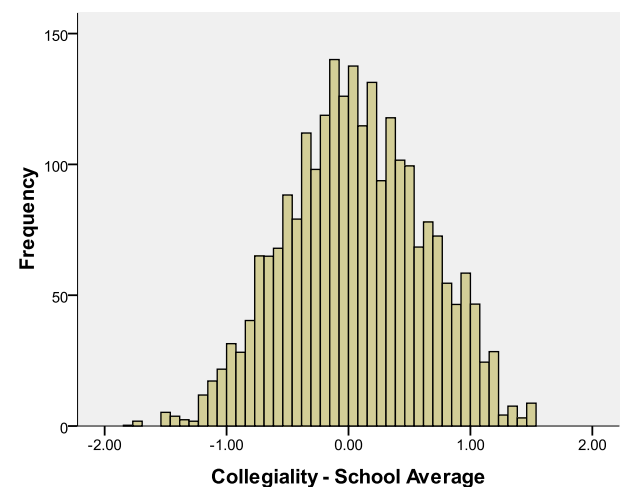
#### Collegiality: Teacher-level, by tertiles

Total	19,130	100%
Low (up to -.49)	6,854	35.8%
Medium	6,579	34.4%
High (above .49)	5,700	29.8%



#### Collegiality: School-level

Number	2,424
Mean	.06
Std. Deviation	.56
Minimum	-1.81
Maximum	1.53



The composite measure of administrative support consists of four items from the SASS teacher questionnaire (T0286, T0292, T0295, and T0297). As shown in Display 4, these items were combined into a single factor using principal components analysis. Values on the original survey items were coded as follows: 1= “Strongly Agree” through 4 = “Strongly Disagree.” These values were reversed so that higher scores reflected a more positive rating of administrators’ behavior toward staff. The four administrator items loaded onto one factor, with factor loadings at .79 and above. The eigenvalue was 2.67, explaining 67% of the variance in the three items. Cronbach’s alpha coefficient was a robust .83. The resulting factor ranged from about -3.5 to about 1, with a mean of zero and a standard deviation of one. The resulting distribution was highly skewed, as demonstrated by the histogram in Display 4. Since a non-normal distribution might cause bias in the final analysis, I divided the teacher-level variable into three dummy variables representing roughly equal tertiles. I also aggregated the teacher-level composite to create the school-level variable.

It was not possible to divide the distribution into exactly equal tertiles given the clustering of the original data. Using quartiles would have resulted in four nearly equal categories, but I felt that maintaining similarity with the autonomy and collegiality variables (which were divided into tertiles) outweighed the slight bias introduced by using categories with non-equal sizes.

#### Display 4. Factor analysis results for administrative support

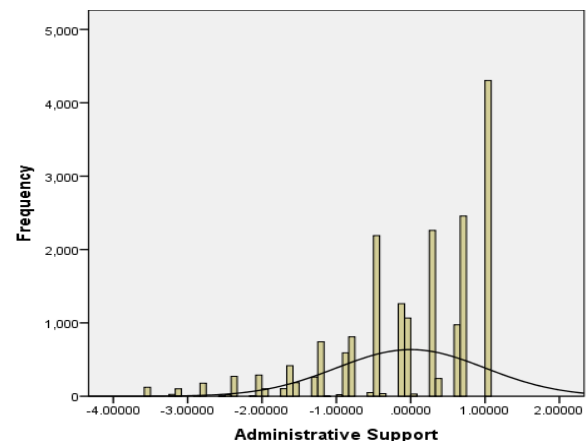
Survey items that loaded onto the final composite:	Loading
The administration is supportive and encouraging toward staff	.831
My principal backs me up when I need it	.827
The principal knows what kind of school he/she wants and communicates it to the staff	.821
The principal recognizes staff members for a job well done	.787

#### Total Variance Explained

Component	Initial Eigenvalues	
	Total	% of Variance
1	2.669	66.720

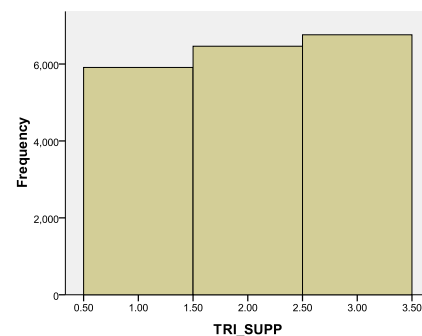
#### Support: Teacher-level

Number	19,130
Mean	.00
Std. Deviation	1.00
Minimum	-3.55
Maximum	1.05



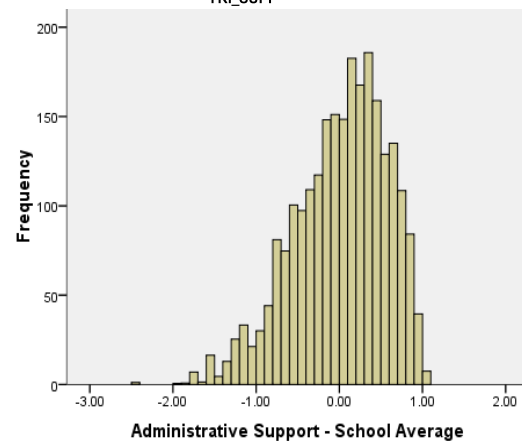
#### Support: Teacher-level, by tertiles

Total	19,130	100%
Low (up to -.44)	5,911	31%
Medium	6,463	34%
High (above .707)	7,760	35%



#### Support: School-level

Number	2,424
Mean	.02
Std. Deviation	.56
Minimum	-2.42
Maximum	1.05



## Control independent variables

My final HLM analysis includes a number of independent variables which I used as controls for background characteristics of teachers and schools. Whenever possible I attempted to ground my choice of control variables in previous studies of teachers' job satisfaction (e.g., Lee, Dedrick, & Smith, 1991; Renzulli et al., 2011; Sentovich, 2004; Skinner, 2008). I tried to use the same or similar SASS survey items as had been used by other SASS-based studies of job satisfaction for their control variables (e.g., Fairchild, 2012; Ingersoll & Alsalam, 1997; Perie & Baker, 1997; Price, 2012; Shen et al., 2011; Tickle et al., 2011). The variables used in my study and the SASS items from which they were created are listed in Table 8. The next section describes the transformations applied to each of these items prior to usage.

Table 8. SASS items used to construct control variables

Variable name:	Categories included in the variable:	SASS variables used:
Teacher background characteristics		
Teaching status	Full Time, Part Time	FTPT
Minority	White, All other racial/ethnic groups	RACETH_T
Gender	Female, Male	T0352
Earnings	Teacher's school-related yearly earnings.	EARNSCH
Years of experience	Continuous variable ranging from 1 to 56 years	TOTYREXP
Highest degree earned	Bachelors, Masters, or other graduate degree.	HIDEGR
Main teaching assignment	Early Childhood/Elementary, Special Ed, English, Mathematics/Science, or Other Assignment.	ASSIGN03
School background characteristics:		
Sector	Public, Catholic, Private non-Catholic, Private non-religious	SECTOR, RELIG
Minority enrollment	Continuous variable ranging from 0 to 100%	MINENR
Locale	Urban, Rural, Suburban	URBANS8
Level	Elementary, Middle, High, Combined	SCHLEVEL
Size	Total K-12 and ungraded enrollment	ENRK12UG
Perception of school poverty as problem	The average of teachers' perceptions regarding student poverty as a problem at the school.	T0310

SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), 2007-08 Schools and Staffing Survey.

### ***Background characteristics of teachers***

My study includes seven independent variables that control for background characteristics of teachers: teaching status, minority status, gender, school-related earnings, teaching experience, highest degree earned, and main teaching assignment. Percentages are based on the analytic sample of 19,130 teachers weighted using the normalized TFNLWGT variable.

Teaching status is a dichotomous variable that identifies whether a teacher is working full-time or part-time. The variable was recoded so that 1 = part-time and 0 = full-time.

Minority status is a dichotomous variable distinguishing white, non-Hispanic teachers from all other teachers (those belonging to a racial or ethnic minority). The variable was recoded so that 0 = white and 1 = minority.

Gender is a dichotomous variable. About two-thirds of the teachers in the analytic sample were female. The variable was recoded so that 0 = female and 1 = male.

The school-related earnings variable measures a teacher's annual earnings from all school-related activities. This variable includes not only salary but also other school-based income such as additional reimbursement for non-teaching activities. It does not include sources of income from outside the school (such as a second job) nor does it include benefits. The average school-related earnings in my analytic sample were \$53,000 per year.

Teaching experience is a continuous variable that measures the number of years a teacher has been in the teaching profession. This variable measures the number of years started, not completed, so the first year of teaching is counted as 1, the second as 2, and so on. The variable includes the total number of years in teaching, without making a distinction about gaps in

employment or change of teaching location. The average amount of experience for teachers in the analytic sample is 14 years.

Highest degree earned is a categorical variable with three levels: Bachelor's degree, Master's degree, and other graduate degree. The third category, other graduate degree, includes education specialist degree, certificate of advanced graduate studies, doctorate, and other professional degree. Slightly less than half (47%) of the teachers in the analytic sample had a bachelor's degree as their highest degree earned.

Main teaching assignment is a categorical variable that combines all teaching assignments into five categories: early childhood/elementary, special education, English and language arts, mathematics or science, and all other assignments. About a third of the teachers in the analytic sample taught mathematics or science.

### ***Background characteristics of schools***

My study includes six independent variables that control for background characteristics of schools: size, locale, minority enrollment, sector, level, and teachers' perception of poverty.

School size is a continuous variable measuring total student enrollment in the school. It is based on the SASS variable ENRK12UG, which includes both graded enrollment (those who are assigned to a particular grade level) and ungraded enrollment (for example, students are often classified as ungraded in special education centers, Montessori schools, and alternative schools). It does not include pre-kindergarten students. In my analytic sample the average school size was 916 students.

School locale is a categorical variable indicating the location of the school with respect to an urban center. Most schools in the analytic sample (53%) tended to be located in the suburbs.

Minority enrollment is a continuous variable measuring the number of students belonging to a racial or ethnic minority as a proportion of all students at a given school. The average school in the analytic sample had about 35% minority enrollment.

School sector is a categorical variable with four levels: public, Catholic, non-Catholic religious, and private schools with no religious affiliation. This variable was created by combining two SASS items, school sector and private school type. Most schools in my dataset (92%) were public. Among private schools, 24% were Catholic, 49% were non-Catholic religious, and 28% had no religious affiliation.

School level is a categorical variable consisting of four types: elementary, middle, high, and combined. Most schools in my analytic sample (59%) were high schools.

Perception of school poverty is a measurement of teachers' opinions about student poverty as a problem at the teacher's school (Item T0310). It is the school-level aggregate of individual teachers' perceptions. On the 2007-08 SASS teacher questionnaire, teachers were asked, "To what extent is each of the following a problem in this school? Poverty." Answers were scored on a four-point Likert scale ranging from "serious problem" to "not a problem." The item was measured alongside teachers' perceptions of other school-wide problems such as student tardiness, student dropping out, and poor student health. I aggregated teachers' responses to the school level so that the resulting composite would represent the average perception of all teachers at the same school. Another variable was also available to measure average student poverty, student enrollment in the National School Lunch Program. I chose not to use the NSLP variable due to its large amount of missing data. An exploratory analysis showed a robust level of correlation between available NSLP data and teachers' perceptions of poverty as a problem at the school, after accounting for missing data (Pearson's  $R = .596^{***}$ ). The correlation between

the two variables demonstrates that teachers' perception of average student poverty can serve as a useful alternative measure to NSLP. While perception of poverty is not identical with percentage NSLP enrollment, the two variables are correlated with one another. My findings regarding this variable should be considered in light of its meaning, namely, teachers' perceptions of poverty rather than actual student poverty.

## **Methods**

To answer my research questions I used a multi-level regression analysis with hierarchical linear modeling (HLM). In the following paragraphs I provide an introduction to HLM methodology, a list of HLM assumptions, and a description of the HLM models.

### **Introduction to HLM analysis**

My dissertation contributes to the ongoing discussion, within the larger field of education research and the sociology of education, concerning school effects and the social organization of schools. While older studies in the school effects tradition attempted to capture the outcomes of schooling either at the individual or the group level (Coleman et al., 1964; Jencks, 1972), this approach can lead to substantial bias (Bidwell & Kasarda, 1980). The effects of school organization can and should be identified not only at the individual level (such as students or teachers), but at the group level (such as classrooms, schools, or districts), since individuals are often incorporated within larger structures. The nested nature of most educational data invites researchers to consider multiple levels at the same time. For this reason, school effects research for the last 25 years has been closely tied to the methodological use of multi-level analytic models (Bryk & Raudenbush, 1992; Lee, 2000; Raudenbush & Bryk, 2002).

The nature of my research questions requires the use of a multi-level model. If my study only examined the effects of teacher-level characteristics on teacher-level outcomes it would not



be necessary to use two levels. Ordinary least squares (OLS) multiple linear regression or other methods restricted to a single unit of analysis would be appropriate in such a case. But when conducting research into the effects of school factors on individual teachers' job satisfaction, HLM is the appropriate methodology. Without HLM, individual teachers' data must either be aggregated to the school level, which introduces aggregation bias, or school data must be disaggregated to the level of teachers, which leads to an underestimation of standard errors (Raudenbush & Bryk, 2002; Wenglinsky, 2002). A multi-level regression model solves this problem by modeling not only the within-school relationships among teacher variables, but also the between-school variation in those relationships.

Prior research using HLM (Lee, Dedrick, & Smith, 1991) has suggested that organizational factors are an important predictor of teachers' job satisfaction, and that the effects of these factors tend to vary randomly between schools. Based on prior HLM research studies, it is reasonable to assume that a significant amount of between-school variation exists in teachers' job satisfaction (Ingersoll & Alsalom, 1997; Lee, Dedrick, & Smith, 1991; Leslie, 2009; Pogodzinski et al., 2012; Renzulli et al., 2011; Shen et al., 2011; Ware & Kitsantas, 2011). The nested nature of my dataset also calls for a multi-level model. The SASS survey was designed with multilevel analysis in mind, as evidenced by its sampling strategy. SASS employs a two-stage sample, with schools selected first, and then teachers selected within schools. The use of a school identification code allows researchers to link teacher-level data to school-level data, and the dataset provides two weights – a teacher final weight and a school final weight – so that researchers can conduct multilevel analyses. In addition, the sample design includes an adequate

number of teachers per school to allow multilevel analysis.<sup>11</sup> For all these reasons, it is appropriate to use HLM when studying teachers in SASS.

### **Assumptions of HLM**

The use of HLM requires certain assumptions on the part of the researcher. These are not the same assumptions as in single-level models such as OLS regression or one-way ANOVA. Unlike OLS regression, in HLM the errors in the outcome are not assumed to be independent, are not necessarily normally distributed, and are not assumed to be constant within or between schools. Instead, the following assumptions are held to apply before any hierarchical linear models may be used (Raudenbush & Bryk, 2002).

1. The portion of the error in the outcome that occurs at Level 1 ( $r_{ij}$ ) is normally distributed. It has a mean of zero in each school and equal variances across schools. Its variance is noted as  $\sigma^2$ .
2. The error in the outcome that occurs at Level 2 ( $u_{0j}$ ) is normally distributed with a mean of zero. Its variance is noted as  $\tau_{00}$ .
3. The Level 1 error ( $r_{ij}$ ) is independent of the Level 2 error ( $u_{0j}$ ).
4. Any possible Level 1 or Level 2 predictors that are not included in the models are assumed to be independent of the error terms  $r_{ij}$  and  $u_{0j}$ . They are also assumed to be independent of the predictor variables included at both levels.

Variables used in this dissertation look reasonably appropriate for the assumptions of HLM. The outcome is a continuous variable with a normal distribution that was measured at the level of teachers. All independent variables are measured either at the teacher or school level.

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<sup>11</sup> There is no specific number of teachers per school that is required for HLM analysis. Clearly, one or two teachers per school would be inadequate since there would be almost no between-school variation. Raudenbush and Bryk (2002) recommend 15-20 cases per unit as an ideal for HLM analysis, but many peer-reviewed studies have a ratio of less than 10 cases per unit (e.g., Grodsky & Gamoran, 2003).

Independent variables have normal distributions or have been transformed into dummy variables to account for their non-normality. There is no reason to believe that the error terms have non-normal distributions or are correlated with each other across levels.

### **Description of the HLM models**

In my study I used a two-level HLM analysis to explore the possible predictors of teachers' job satisfaction. The Level 1 units are teachers, and the Level 2 units are the schools in which those teachers were employed in the 2007-08 school year. My study only considers the fixed effects of independent variables (intercepts as outcomes) and does not include random effects (slopes as outcomes). The HLM analysis includes an unconditional model, a comparison model, and a final model. The unconditional model (Model 1) provides the baseline for comparison by determining whether any variation in the outcome occurs at the school level. The comparison model (Model 2) introduces background characteristics of schools and teachers as possible predictors of the outcome. The final model (Model 3) includes all the predictors from the comparison model, but also introduces the primary predictors of interest (autonomy, collegiality, and support). All Level 1 variables have been grand-mean centered including the Level 1 dummy variables representing autonomy, collegiality, and support. These have been grand-mean centered in order to emphasize the effects of school context. The equations for the HLM models are described in Table 9.

Table 9. HLM equations for teachers' job satisfaction

	Level 1 Equation	Level 2 Equation
Model 1	$JOBSAT_{ij} = \beta_{0j} + r_{ij}$	$\beta_{0j} = \gamma_{00} + u_{0j}$
Model 2	$JOBSAT_{ij} = \beta_{0j} +$ $\beta_{1j}*(PARTTIME_{ij}) +$ $\beta_{2j}*(MINOR_{ij}) +$ $\beta_{3j}*(MALE_{ij}) +$ $\beta_{4j}*(EARN SCH_{ij}) +$ $\beta_{5j}*(YEARS_{ij}) +$ $\beta_{6j}*(MASTER_{ij}) +$ $\beta_{7j}*(POSTMA_{ij}) +$ $\beta_{8j}*(EARLYCHL_{ij}) +$ $\beta_{9j}*(SPECIAL_{ij}) +$ $\beta_{10j}*(ENGLISH_{ij}) +$ $\beta_{11j}*(OTHER_{ij}) + r_{ij}$	$\beta_{0j} = \gamma_{00} + \gamma_{01}*(CATH_j) + \gamma_{02}*(NONCAT_j) + \gamma_{03}*(SECULR_j)$ $+ \gamma_{04}*(SIZE_j) + \gamma_{05}*(MINENR_j) + \gamma_{06}*(ELEM_j) +$ $\gamma_{07}*(MIDDLE_j) + \gamma_{08}*(COMB_j) + \gamma_{09}*(URBAN_j) +$ $\gamma_{010}*(RURAL_j) + \gamma_{011}*(PV\_SER_j) + \gamma_{012}*(PV\_MOD_j) +$ $\gamma_{013}*(PV\_MIN_j) + u_{0j}$ $\beta_{1j} = \gamma_{10}$ $\beta_{2j} = \gamma_{20}$ $\beta_{3j} = \gamma_{30}$ $\beta_{4j} = \gamma_{40}$ $\beta_{5j} = \gamma_{50}$ $\beta_{6j} = \gamma_{60}$ $\beta_{7j} = \gamma_{70}$ $\beta_{8j} = \gamma_{80}$ $\beta_{9j} = \gamma_{90}$ $\beta_{10j} = \gamma_{100}$ $\beta_{11j} = \gamma_{110}$
Model 3	$JOBSAT_{ij} = \beta_{0j} +$ $\beta_{1j}*(PARTTIME_{ij}) +$ $\beta_{2j}*(MINOR_{ij}) +$ $\beta_{3j}*(MALE_{ij}) +$ $\beta_{4j}*(EARN SCH_{ij}) +$ $\beta_{5j}*(YEARS_{ij}) +$ $\beta_{6j}*(MASTER_{ij}) +$ $\beta_{7j}*(POSTMA_{ij}) +$ $\beta_{8j}*(EARLYCHL_{ij}) +$ $\beta_{9j}*(SPECIAL_{ij}) +$ $\beta_{10j}*(ENGLISH_{ij}) +$ $\beta_{11j}*(OTHER_{ij}) +$ $\beta_{12j}*(AUTO\_MD_{ij}) +$ $\beta_{13j}*(AUTO\_HI_{ij}) +$ $\beta_{14j}*(COLL\_MD_{ij}) +$ $\beta_{15j}*(COLL\_HI_{ij}) +$ $\beta_{16j}*(SUPP\_MD_{ij}) +$ $\beta_{17j}*(SUPP\_HI_{ij}) + r_{ij}$	$\beta_{0j} = \gamma_{00} + \gamma_{01}*(CATH_j) + \gamma_{02}*(NONCAT_j) + \gamma_{03}*(SECULR_j)$ $+ \gamma_{04}*(SIZE_j) + \gamma_{05}*(MINENR_j) + \gamma_{06}*(ELEM_j) +$ $\gamma_{07}*(MIDDLE_j) + \gamma_{08}*(COMB_j) + \gamma_{09}*(URBAN_j) +$ $\gamma_{010}*(RURAL_j) + \gamma_{011}*(PV\_SER_j) + \gamma_{012}*(PV\_MOD_j) +$ $\gamma_{013}*(PV\_MIN_j) + \gamma_{014}*(L2AUTO_j) + \gamma_{015}*(L2COLLEG_j) +$ $\gamma_{016}*(L2SUPORT_j) + u_{0j}$ $\beta_{1j} = \gamma_{10}$ $\beta_{2j} = \gamma_{20}$ $\beta_{3j} = \gamma_{30}$ $\beta_{4j} = \gamma_{40}$ $\beta_{5j} = \gamma_{50}$ $\beta_{6j} = \gamma_{60}$ $\beta_{7j} = \gamma_{70}$ $\beta_{8j} = \gamma_{80}$ $\beta_{9j} = \gamma_{90}$ $\beta_{10j} = \gamma_{100}$ $\beta_{11j} = \gamma_{110}$ $\beta_{12j} = \gamma_{120}$ $\beta_{13j} = \gamma_{130}$ $\beta_{14j} = \gamma_{140}$

In all three models the primary independent variables (classroom autonomy, staff collegiality, and administrative support) have been included both as Level 1 variables

(characteristics of teachers) and as Level 2 variables (characteristics of schools) by aggregating the responses.

In Model 3, the background characteristics of teachers (such as age, earned income, and years of experience) were centered around the grand mean of all schools. The primary Level 1 predictors of interest (autonomy, collegiality, and support) were also centered around the grand mean of all schools. The Level 2 variables were left uncentered. The justification for these centering decisions comes in part from previous studies using HLM methods. Some studies of teachers' workplace attitudes using HLM methods centered the Level 1 measures of school organization around the grand mean, as I did (Grodsky & Gamoran, 2003; Ingersoll & Alsalam, 1997; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011). Other HLM studies of teachers' attitudes about work chose instead to center the Level 1 variables around the group mean (Lee, Dedrick, & Smith, 1991; Pogodzinski et al., 2012; Smith & Rowley, 2005). I chose to follow the lead of Ingersoll (1997) and other studies that use grand-mean centering in order to capture between-school differences and to maintain the study's focus on school-related predictors of job satisfaction.

Coefficients in my study represent effect sizes because the dependent variable has been standardized, with a mean of zero and a standard deviation of one. As a result, all coefficients can be interpreted in terms of standard deviations. Standardization simplifies the process of drawing comparisons between independent variables.

The constant in Model 1 represents all teachers in the sample. The constant in Model 2 represents full-time, white, female teachers of mathematics or science, with average earnings, average years of experience, and a bachelor's degree, who worked in public, suburban high schools with little or no poverty, average minority enrollment, and average size. For categorical

variables, the categories have been transformed into dichotomous dummy variables and one category from each variable has been excluded. The constant in Model 3 is the same as in the previous models, but also includes teachers with the lowest levels of autonomy, collegiality, and support at Level 1 (transformed into categorical variables with roughly equal tertiles) and teachers with average levels of autonomy, collegiality, and support at Level 2.

The intercept in each model represents the predicted mean job satisfaction of all teachers in the constant. Because the constant in the FUM includes all teachers in all schools, the intercept for the FUM should be the same as the average job satisfaction of all teachers in the sample (zero) if the model is predicting the outcome accurately. If the intercept in the FUM were significantly different zero then that may be a sign of low reliability in the outcome.

### **Summary**

Having established the literature basis of my study in Chapter 2, in Chapter 3 I examined the dataset, variables and methods that were most appropriate for my study. I chose the 2007-08 SASS dataset because it was nationally representative, had adequate measures of the primary variables of interest, and had a strong basis of prior use in research studies about teachers' job satisfaction. I limited my analytic sample to teachers working in schools with at least six respondents on the SASS teacher questionnaire. This limitation improved the amount of within-school variance but also meant that my analytic sample was not completely representative of all SASS teachers.

Informed by the literature basis from Chapter 2, in Chapter 3 I created a composite measurement of teachers' job satisfaction that included five items from the SASS dataset. This composite is different from the dependent variables used in some prior research because it includes only survey items directly related to teachers' job satisfaction and because it limits the

definition of job satisfaction to teachers' experiences "at this school" (Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Sentovich, 2004; Skaalvik & Skaalvik, 2011; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011).

The review of the literature in Chapter 2 identified three factors that have an important impact on teachers' job satisfaction: classroom autonomy, staff collegiality, and administrative support. Based on the literature review, I chose these three factors as the primary independent variables for my study. After reviewing how other studies had measured these factors, I created composite measurements of autonomy, collegiality and support using principal components analysis. Because the variables were highly skewed I transformed them into tertiles for ease of analysis and to remove any possible bias from my study. I also aggregated each of the three factors to the level of school by taking the average of all teachers in each school. Aggregating in this way allowed me to include autonomy, collegiality, and support as both teacher- and school-level predictors in my study. Based on previous research, I hypothesized that the school-wide perceptions of autonomy, collegiality, and support would have a unique effect on teachers' job satisfaction over and above the effect of individual perceptions (Lee, Dedrick, & Smith, 1991; Pogodzinski et al., 2012; Rowan, Raudenbush, & Kang, 1991; Shen et al., 2011; Smith & Rowley, 2005). In addition to the primary predictors of interest, I chose sixteen background characteristics of teachers and schools as control independent variables based on their usage in prior studies of teachers' job satisfaction.

In the last part of Chapter 3 I described my research method, hierarchical linear modeling (HLM). An HLM technique is appropriate given the nested nature of the SASS dataset, and because prior research on the topic has employed this method (Lee, Dedrick, & Smith, 1991; Pogodzinski et al., 2012; Shen et al., 2011; Smith & Rowley, 2005; Ware & Kitsantas, 2011).

Without using HLM, it is likely that bias would be introduced into my study. I demonstrated that my dataset meets the assumptions for an HLM study, and I explained the three models (unconditional, comparison, and final) that I planned develop. The next chapter will describe each of these three models in more detail and explain the results of the HLM analysis. The last chapter will summarize the results and explain implications for research and policy.



## **Chapter 4. Results of HLM analysis**

The purpose of this chapter is to determine the impact of the three primary predictors (classroom autonomy, staff collegiality, and administrator support) on teachers' job satisfaction, after controlling for other factors of schools and teachers. The analysis begins with a fully unconditional model (Model 1). It then examines a comparison model that includes control variables but does not include the three primary predictors of interest (Model 2). The analysis concludes with a final model that examines the effect of the primary predictors on the outcome after controlling for other factors (Model 3). The arrangement of the independent variables is the same across models in order to facilitate comparison. There are no random effects in any of the models in this analysis. Results for Models 1-3 are presented in Table 10 and are discussed in the following paragraphs. The original HLM-7 output for all models is included for reference in the appendix.

Table 10. Factors predicting teachers' job satisfaction

	Model 1	Model 2	Model 3
Level 1: Characteristics of teachers			
Intercept (mean job satisfaction)	.014	.351 ***	.138 ***
Works part-time		.150 ***	.074 *
Belongs to a racial/ethnic minority		.075 *	-.031
Male		.057 **	.014
School-related earnings (per \$1,000)		.000	.002 ***
Years of experience		.005 ***	.002 *
Master's degree		-.066 **	-.032
Graduate degree other than a master's		-.112 **	-.100 *
Early childhood & general elementary assignment		.119 *	.027
Special education assignment		-.005 *	-.063 *
English/language arts assignment		-.017	-.040
Other subject area assignment		.046 *	-.045 *
Classroom autonomy (med)			.158 ***
Classroom autonomy (high)			.192 ***
Staff collegiality (med)			.353 ***
Staff collegiality (high)			.516 ***
Administrative support (med)			.669 ***
Administrative support (high)			1.066 ***
Level 2: Characteristics of schools			
Private, Catholic		-.146	-.140 *
Private, religious, non-Catholic		.059	-.084
Private, non-religious		.072	-.088
Size (per 100 students)		.001	.005 **
Percentage of enrollment that is a racial/ethnic minority		-.003 ***	.003 ***
Elementary level		.055	-.079
Middle level		.105 *	-.012
Combined level		.010	-.053
Urban location		.088 *	.062 *
Rural location		-.032	.014
"Poverty is a serious problem at this school"		-.523 ***	-.222 ***
"Poverty is a moderate problem at this school"		-.383 ***	-.148 ***
"Poverty is a minor problem at this school"		-.185 ***	-.088 **
Classroom autonomy (Average)			.126 ***
Staff collegiality (Average)			.283 ***
Administrative support (Average)			.547 ***
Unexplained within-school variance ( $\sigma^2$ )	.81	.80	.51
Unexplained between-school variance ( $\tau_{00}$ )	.21 ***	.15 ***	.03 ***
Reliability of job satisfaction outcome ( $\lambda$ )	.67	.60	.33

Outcome=Teachers' job satisfaction. N=19,130 teachers in 2,420 schools, weighted by TFNLWGT and SFNLWGT normalized to analytic sample. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), 2007-08 Schools and Staffing Survey.

## Fully unconditional model

The first model is the fully unconditional model (FUM) with teachers' job satisfaction as the outcome. This model represents the baseline for my subsequent HLM analyses of teachers' job satisfaction. The constant in Model 1 represents all teachers in the sample. In the FUM, no independent variables are included as predictors because the FUM hypothesizes that the outcome (satisfaction of teacher  $i$  in school  $j$ ) is a function of the mean satisfaction of all teachers in all schools, plus error associated with teacher  $i$  in school  $j$ . As explained in Chapter 3, the equation for the FUM is written as  $JOBSAT_{ij} = \beta_{0j} + r_{ij}$ . The intercept in the FUM represents the predicted mean job satisfaction of all teachers in the sample. The intercept for my analysis is .01, which is not significantly different from the actual mean job satisfaction of all teachers in all schools.<sup>12</sup> The FUM also allows the researcher to calculate two important statistics, the intraclass correlation and the reliability estimate, which are essential before proceeding with further HLM analysis. The next several paragraphs will discuss these statistics.

The intraclass correlation (or ICC, also written as  $\rho$ ) is the proportion of total variance which occurs between schools in the outcome, job satisfaction. Its equation is written as  $\rho = \tau_{00} / \tau_{00} + \sigma^2$ . The unexplained within-school variance ( $\sigma^2$ ) is .81 in the FUM, while the unexplained between-school variance ( $\tau_{00}$ ) is .21. Therefore, for Model 1, the ICC is .20. This means that 20% of the variation in teachers' job satisfaction might be explained by differences between schools. This is a robust level of between-school variance, comparable to the ICC in other two-level models (e.g., Lee & Bryk, 1989).<sup>13</sup> The ICC exhibited in the FUM is adequate to justify the use of multilevel modeling to continue my investigation. Another study of teachers' job

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<sup>12</sup> The mean job satisfaction of all teachers in my sample is zero because I created the job satisfaction composite as a standardized factor score, as explained in chapter 3.

<sup>13</sup> Bryk & Lee (1989) reported an ICC of .19.

satisfaction reported an ICC of .17 in the mean outcome (Shen et al., 2011). The authors explain the meaning of this score as follows:

“Although most of the variation in teacher job satisfaction occurs within schools, there is sufficient variation between schools to conclude that school-level factors can make a difference in teacher job satisfaction. Specifically, 17% of the total variance in teacher job satisfaction lies between schools. The intraclass correlation of the present study is well within the range suggested by previous literature” (Shen et al., 2011, p. 22).

In the school effects literature there tends to be greater variance between individuals, such as students or teachers, than between organizational units, such as classrooms or schools (Raudenbush & Bryk, 2002). My study, then, has a robust ICC with strong precedent in prior literature using HLM methods such as the study by Shen and colleagues (2011).

Reliability ( $\lambda_{0j}$ ) is a measure of the precision with which the two-level model estimates the outcome, teachers' job satisfaction.<sup>14</sup> The equation for calculating the reliability is as follows:  $\lambda_{0j} = \tau_{00} / [\tau_{00} + (\sigma^2 / n_j)]$ . The reliability estimate in my FUM for job satisfaction is .67. This estimate is comparable to the reliability of outcomes in other two-level HLM studies (e.g., Lee, Dedrick & Smith, 1991).<sup>15</sup> Some studies using HLM have reported higher or lower reliabilities than mine. Two HLM studies had reliability as high as .92 in the outcome (Lee & Bryk, 1989;

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<sup>14</sup> The following citation helps to understand the purpose of the reliability score: “Reliabilities estimated with HLM are not the same as those estimated with the classic Cronbach's alpha, although both aim to estimate the degree to which the observed score measures the ‘true score.’ Although Cronbach's alpha is an estimate of internal consistency for a composite measure, the HLM reliability estimate is a function of variability in means across schools and the within-group sample size” (Lee & Smith, 1995, p. 253). See also Bryk & Raudenbush, 2002.

<sup>15</sup> Lee and colleagues report a reliability score of .59 for the mean outcome, but only .06 for the regression slope. They call the first score “reasonably reliable” and the second “much less reliable” (Lee, Dedrick, & Smith, 1991, p. 1991).

Lee et al., 2006). But it is also possible to find HLM studies of teachers' satisfaction and commitment with reliability scores as low as .05 (e.g., Ingersoll & Alsalam, 1997).

Reliability is especially sensitive to changes in the within-school sample size ( $n_j$ ), which tends to be quite low (less than five) in the Schools and Staffing Survey (SASS). For that reason, two-level studies using the SASS dataset often have reported a reliability of less than .40 (e.g., Grodsky & Gamoran, 2003). In cases where the reliability is excessively low, it is not advisable to proceed with a two-level model (Bryk & Raudenbush, 2002). My analytic sample, though drawn from SASS, was specifically designed to increase the within-school sample size in an attempt to improve the reliability of my models. On average, schools in my analytic sample have around eight teachers, and no less than six. The reliability score (.67) of the job satisfaction outcome in my FUM is, therefore, fairly robust and shows that my model predicts the outcome with adequate precision. This reliability estimate is sufficiently high to justify proceeding with a two-level analysis.

### **Comparison model**

The second model examines the effect of control variables such as school and teacher demographics on teachers' job satisfaction, without taking into consideration the effect of the primary independent variables of interest (autonomy, collegiality, and support). It is referred to as a "comparison" model because it allows the researcher to compare the effects of the background variables before and after the primary predictors of interest have been added. In Model 2, all independent variables have been centered around the grand mean.

The constant in Model 2 represents full-time, white, female teachers of mathematics or science, with average earnings, average years of experience, and a bachelor's degree, who worked in public, suburban high schools with little or no poverty, average minority enrollment,

and average size. For categorical variables, the categories have been transformed into dichotomous dummy variables and one category from each variable has been excluded. The predicted mean job satisfaction (or “intercept”) for the constant was .35. The intercept was significantly different from the mean job satisfaction of all teachers in the study, which is not surprising because it represents a smaller population (the constant) than all SASS teachers.

The predictor with the largest impact in Model 2 was teachers’ perceptions of student poverty. This variable measures the average of teachers’ opinions regarding poverty as a school-wide problem. I divided it into four categories for ease of analysis, with “poverty is not a problem” set as the constant.<sup>16</sup> According to the results of Model 2, in schools where student poverty was perceived to be a minor problem, teachers’ job satisfaction was lower by 19% of a standard deviation. In schools where student poverty was perceived as a moderate problem, teachers’ job satisfaction was lower by 38% of a standard deviation. In schools where student poverty was considered to be a major problem, teachers’ job satisfaction was lower by more than half a standard deviation. In schools where teachers considered student poverty to be a problem, teachers were less likely to be satisfied with their jobs than their peers in other schools. This finding is related to prior research showing that teachers in high-poverty schools tend to feel less satisfied with their situation than teachers in schools with little or no poverty (Perie & Baker, 1997), although it is important to note that teachers’ perceptions of poverty is not the same as an actual measurement of students’ socioeconomic status.

In addition to teachers’ average perception of student poverty, Model 2 included several other important predictors. Being a part-time teacher was associated with a 15% increase in

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<sup>16</sup> As has been noted in the previous chapter, the variable “poverty is not a problem at this school” is not the same as the direct measurement of students’ socioeconomic status, which most SASS-based studies indicate using student enrollment in a program of free-and-reduced price lunch (FRPL).

teachers' job satisfaction. Being male or belonging to a racial/ethnic minority were both associated with higher job satisfaction (8% and 6%, respectively). Teachers who worked in middle schools experienced higher job satisfaction (10%) compared to the constant, as did teachers in urban settings (9%). Teachers with a graduate degree were less likely to be satisfied in their jobs than teachers with only a bachelor's degree (7% decrease for a master's degree, and 11% for other graduate degrees). With regard to content area, teachers of early childhood and general elementary were more likely to be satisfied than teachers of mathematics and science (12% increase), as were teachers of "other" subject areas (5%). Special education teachers were slightly less likely to experience job satisfaction than mathematics and science teachers (1% decrease).

There were significant but very small positive effects for teachers with more years of experience and schools with a higher proportion of white, non-Hispanic students (i.e., lower minority enrollment). School sector, school-related earnings, enrollment size, being an English teacher, rural location, and elementary or combined school levels had no measurable impact on teachers' job satisfaction, compared to the constant.

The unexplained within-school variance ( $\sigma^2$ ) in Model 2 remained about the same as in Model 1, at .80. The unexplained between-school variance ( $\tau_{00}$ ) was reduced to .15, but as in the earlier model, it was still significantly different from zero. In comparison to the FUM, Model 2 explained 29% more of the variance that occurs between schools in the outcome, teachers' job satisfaction. The reliability of the outcome dropped slightly to .60, but was still robust.

### **Final model**

The third model included six additional independent variables: individual-level administrative support, classroom autonomy, staff collegiality, and the corresponding school-

level averages. These variables were the primary predictors of interest in my study, especially the school-level averages. At Level 1, the autonomy, collegiality, and support measures were dummy variables representing roughly equal tertiles. The lowest tertile was set as the constant. Each dummy variable was centered around the grand mean. All other Level 1 predictors have also been centered around the grand mean. The constant in Model 3 is the same as in the previous models, but also includes teachers with the lowest levels of autonomy, collegiality, and support at Level 1 (transformed into categorical variables with roughly equal tertiles) and teachers with average levels of autonomy, collegiality, and support at Level 2. The intercept for the constant was .14, which was significantly different from the average job satisfaction of all teachers in all schools (zero). As in Model 2, it is not surprising to find a significant difference since the constant in Model 3 represents a subset of all teachers in the study.

With regard to the control variables (background characteristics of schools and teachers), the coefficients in Model 3 were roughly similar to the coefficients in Model 2. Two variables - possessing a graduate degree, and working in a school where poverty was perceived as a problem - continued to have significant negative impacts on teachers' job satisfaction, although these impacts were lower than in Model 2. Teaching special education also had a negative impact. Teaching "other" subject areas changed from having a positive effect in Model 2 to a negative effect in Model 3. Teaching in a Catholic school was predicted to decrease teachers' job satisfaction by 15% of a standard deviation, though teaching in other types of private schools did not seem to have a significant effect.<sup>17</sup> Part-time status, minority status, gender, and being assigned to early childhood/general elementary did not have any measurable effect on teachers' job satisfaction in Model 3.

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<sup>17</sup> When all private schools were included as a single category, teaching in private schools had a significant negative impact of 9%.



The Level 1 primary predictors of interest (autonomy, collegiality and support) had the greatest impact in Model 3, and this was especially the case with support. Teachers reporting the highest tertile of administrative support were predicted to experience higher job satisfaction of more than one standard deviation over teachers reporting the lowest tertile, all else being equal. Teachers reporting the medium tertile of support were predicted to experience higher job satisfaction by about two-thirds of a standard deviation. Teachers in the highest tertiles of collegiality and autonomy were predicted to experience higher job satisfaction by 51% and 19%, respectively, over teachers in the lowest tertile. Teachers in the medium tertiles of collegiality and autonomy were predicted to experience higher job satisfaction by 33% and 16%, respectively.

The Level 2 predictors of autonomy, collegiality and support also had significant and positive impacts on teachers' job satisfaction. These three predictors represent the school-level averages of the Level 1 predictors. A one-standard-deviation difference in average administrative support had the largest effect size, with teachers experiencing 55% higher job satisfaction. A one-standard-deviation difference in average collegiality was associated with 28% higher job satisfaction. The same difference in average autonomy had a smaller but still noticeable effect, 13% of a standard deviation. These results suggest that working in a school where the majority of teachers feel autonomous, collegial, and supported tends to be a more satisfying experience than working in other schools, all else being equal.

The unexplained within-school variance (.51) in Model 3 has declined significantly compared to the previous model. The unexplained between-school variance (.03) has also declined significantly. With the inclusion of the additional independent variables, Model 3 accounts for 80% of the unexplained between-school variation in Model 2. The reliability of the

model has dropped from .60 to .33 suggesting that the outcome in the final model is less reliable than in the comparison model. While lower than the previous model's estimate, the reliability estimate in Model 3 is still sufficiently high to predict the outcome with accuracy and is comparable to the reliability estimates of other peer-reviewed HLM studies of workplace organization.

### **Summary**

In summary, Chapter 4 presented the findings from my HLM analysis of teachers' job satisfaction. I developed the analysis through three models: an unconditional model, a comparison model, and a final model. The unconditional model demonstrated that about 21% of the variation in the outcome, teachers' job satisfaction, could be accounted for by school-level factors. This finding validated my choice to use HLM methods, since a robust level of between-school variation calls for multi-level techniques.

The comparison model considered the effects of background characteristics of teachers and schools prior to including the primary independent variables. This model showed that several factors had a significant association with teachers' job satisfaction, especially the average perception of poverty as a problem.

The final model included the primary independent variables - autonomy, collegiality, and support. These variables were introduced as both Level 1 perceptions and Level 2 aggregates. The model showed that the primary independent variables had a greater effect on teachers' job satisfaction than any of the control variables, including perception of poverty as a problem. Administrative support had the largest significant effect, followed by collegiality and autonomy. The model also showed that the average perception of autonomy, collegiality, and support had an impact that was in addition to the impact of individuals' perceptions. All else being equal,

teachers experience higher job satisfaction in a school where most teachers perceive a high level of classroom autonomy, staff collegiality, and administrative support.

The next chapter will link these findings to my research questions and explain the implications of my study for research and policy, before concluding with recommendations for future research studies.

## **Chapter 5. Discussion**

The purpose of this chapter is to discuss the results of the HLM analysis presented in Chapter 4. The chapter is divided into four parts: answering the research questions, contributions of my study to research and policy, limitations of my study, and directions for future research.

### **Answering the research questions**

Chapter 1 presented five research questions for examination, as follows:

1. What effects do teacher-level background characteristics (e.g., full-time status, minority status, gender, school-related earnings, years of experience, highest degree earned, and main teaching assignment) have on teachers' job satisfaction?
2. What effects do school-level background characteristics (e.g., school size, minority enrollment, sector, level, locale, and average teachers perceptions of student poverty) have on teachers' job satisfaction?
3. What effects do teacher-level perceptions of classroom autonomy, staff collegiality, and administrative support have on teachers' job satisfaction after controlling for background characteristics of schools and teachers?
4. What effects do school-level perceptions of classroom autonomy, staff collegiality, and administrative support have on teachers' job satisfaction after controlling for background characteristics of schools and teachers?
5. How much of the variation in teachers' job satisfaction can be explained by differences between schools as opposed to differences between teachers?

In the following paragraphs I will explain how the HLM analyses presented in Chapter 4 respond to each of these questions.

### **Question 1**

The first research question examined the effects of teacher-level background characteristics on teachers' job satisfaction. In comparison to full-time teachers, part-time teachers experienced 7% higher job satisfaction. In comparison to teachers with a bachelors' degree, teachers with a master's degree experienced no difference in job satisfaction, but teachers with a graduate degree other than a master's experienced 10% lower job satisfaction. In comparison to math and science teachers, teachers assigned to early elementary or language arts felt no difference in job satisfaction, teachers assigned to special education experienced 6% lower job satisfaction, and those assigned to other subjects experienced 5% lower job satisfaction. Teachers with more years of teaching experience had slightly higher job satisfaction (a 0.2% difference per year), as did teachers earning higher salaries (a 0.2% difference per \$1,000). Teachers' gender and minority status did not have any significant effect on teachers' job satisfaction once all other variables were included in the model.

None of the teacher background characteristics had an effect size greater than 10% of a standard deviation, and most had even smaller coefficients. By comparison, the primary predictors of interest had much larger effect sizes. Several of the teacher background characteristics did not have any significant effect at all, once the primary predictors were taken into consideration. This finding confirms previous research that factors related to school climate and process have a much greater impact on teachers' job satisfaction than background characteristics of teachers (Perie & Baker, 1997; Stockard & Lehman, 2004).

### **Question 2**

The second research question examined the effects of school-level background characteristics on teachers' job satisfaction. While several school characteristics had significant

impacts, perception of poverty and school sector had the largest. I will discuss these in the following paragraphs.

Teachers' perception of school poverty had the most noticeable impact of all the school-level background characteristics. This variable asked teachers if they thought poverty was a problem at their school, on a scale of one to four. While teachers' perception of poverty is not the same as students' actual socioeconomic status, the two variables are correlated, as was demonstrated in Chapter 3 (Pearson's  $R=.596^{***}$ ). The SASS dataset does not contain an adequate measurement of students' socioeconomic status, so it was necessary to use teachers' perception of poverty instead. In my analysis, when teachers perceived that poverty was a serious problem, teachers experienced less job satisfaction (more than 52% less in model 2) in comparison to schools in which poverty was considered "not a problem." The perception of poverty as a moderate or even minor problem also had a significant and sizeable negative effect on teachers' feelings of job satisfaction.

While perception of poverty is not the same as actual poverty, previous research about the effects of actual poverty on teachers' job satisfaction may be related to my findings. Previous research has shown that teachers who work with underprivileged students are more likely to feel dissatisfied with their jobs (Grissom, 2011; Henke et al., 1997; Markow et al., 2008; Perie & Baker, 1997). In addition, teachers are more likely to leave schools with larger numbers of disadvantaged students (Guarino & Santibanez, 2006; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001; Stockard & Lehman, 2004). My findings, that schools in which poverty is perceived to be a problem have a negative effect on teachers' job satisfaction, may be related to research studies such as the ones just mentioned.

In addition to the perception of student poverty, my analysis found interesting effects related to school sector. I found that teachers who work in Catholic schools experienced 14% less job satisfaction than teachers working in public schools after controlling for other variables. This finding contradicts some previous research studies using older datasets (Alt & Peter, 2002; Bryk, Lee, & Holland, 1993; Henke et al., 1997; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997). Prior research has found that Catholic schools have a strong sense of community and mission that tends to increase teachers' feelings of job satisfaction (Bryk & Driscoll, 1988; Bryk, Lee, & Holland, 1993; Hudson, 2006; Lee et al., 1998; Schuttloffel, 2001). But it has also been shown that teachers in small, religious private schools like those in the Catholic sector are frequently dissatisfied with their salaries and experience high rates of turnover (Ingersoll, 2001). In addition, Catholic schools are currently facing extensive challenges that were not as prevalent a generation ago, such as decreased enrollment, less funding from parishes, decreased staff morale, and the absence of professed religious who once represented a large proportion of Catholic school staff (Hamilton, 2008; Harris, 2001; McDonald & Schultz, 2011; O'Keefe, 2003). My study's finding that Catholic schools have a negative impact on teachers' job satisfaction represents an important addition to research on teachers in the Catholic sector because it shows that positive trends in Catholic teachers' job satisfaction may have reversed in recent years.

### **Question 3**

The third research question considered the effects of individual teachers' perceptions of classroom autonomy, staff collegiality, and administrative support on teachers' job satisfaction. While all three variables had significant and substantial coefficients, administrative support had the greatest impact. Prior research has found that teachers' perception of administrative support

is among the most important predictors of the way teachers feel about their jobs (Bogler, 2001; Davis & Wilson, 2000; Heller, Clay, & Perkins, 1993; Ingersoll & Alsalam, 1997; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Price, 2012; Renzulli et al., 2011; Shen et al., 2011). My study confirms prior research showing that teachers' perceptions of autonomy, collegiality, and support are among the most important predictors of teachers' job satisfaction (Cha, 2004; Grissom, 2011; Fairchild et al., 2012; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Price, 2012; Renzulli et al., 2011; Skaalvik & Skaalvik, 2009; Stockard & Lehman, 2004; Tickle et al., 2011). My study results show that teachers' feelings of job satisfaction are more strongly associated with their feelings of autonomy, collegiality, and support than any of the other factors in my analysis.

#### **Question 4**

The fourth research question considered the school-level average of each primary predictor and its effects on teachers' job satisfaction. My study demonstrated that the average perceptions of autonomy, collegiality, and support have an effect on teachers' job satisfaction over and above the effects of individual teachers' perceptions. Teachers who worked in a school where most teachers felt supported by their principals reported higher job satisfaction (more than 50% of a standard deviation). Teachers working in schools with a high average perception of staff collegiality and classroom autonomy also reported substantial gains in their job satisfaction. Similar but smaller effects were predicted for schools with a medium level of average autonomy, collegiality, and support. Even in schools where poverty was considered to be a serious problem, one of the primary independent variables - average administrative support - had a large enough impact to overcome the negative effect of school poverty on the outcome. This finding



reconfirms prior research evidence showing that supportive principal leadership is an effective way to improve teachers' morale, even in hard-to-staff schools (Grissom, 2011).

### **Question 5**

The fifth research question involved a comparison between the school and teacher levels. It was answered by comparing the variance components from each of the three models. The majority of unexplained variance in the outcome occurred at the level of individual teachers. This is not surprising since research on school effects suggests that variability at the individual level is usually much larger than at the organizational level (Raudenbush & Bryk, 2002). But my analysis also showed that there was a sizable amount of between-school variance. In the unconditional model, 21% of the unexplained variance in the outcome occurred at Level 2. This finding reconfirms prior studies of teachers' job satisfaction that found substantial between-school variance in the outcome (Lee, Dedrick, & Smith, 1991; Sentovich, 2004; Shen et al., 2011; Ware & Kitsantas, 2011). The discovery of significant between-school variation shows that teachers' job satisfaction is not only determined by the traits of individual teachers. Rather, it can also be shaped by the characteristics of schools.

### **Contributions of the study**

#### **Contributions to research**

My study confirmed several key findings of previous research. I found that teachers' perception of poverty as a school-wide problem had a substantial negative impact on teachers' job satisfaction. This finding confirms prior research showing that teachers in underprivileged schools often experience lower morale (Grissom, 2011). Second, my study confirmed earlier research showing that factors related to school climate and process have a greater impact on teachers' job satisfaction than other factors related to schools and teachers (Perie & Baker, 1997;

Renzulli et al., 2011). Third, my study reiterated previous research showing that administrative support had the greatest impact of the three independent variables of primary interest (Cha, 2004; Ingersoll, 2001). Finally, my study confirmed prior research showing that teachers' salary and earnings have little impact on their job satisfaction, once other factors are taken into account (Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Stockard & Lehman, 2004).

In contrast to some previous research, my study found no difference in job satisfaction between teachers of a racial/ethnic minority and white teachers. Previous studies have found that minority teachers tend to express less satisfaction with teaching than their non-minority counterparts (Culver et al., 1990; Fairchild et al., 2012; Renzulli et al., 2011). Likewise, my study found no significant difference in job satisfaction with regard to teachers' gender. Prior studies have shown that male teachers often feel less satisfied with their jobs than female teachers (Kim & Loadman, 1994; Sergiovanni, 1967; Weathers, 2006).

My study offers several contributions to research on teachers' job satisfaction. First, my study contributes a more precise construction of the job satisfaction outcome than some previous studies by ensuring that all survey items included in the composite were directly related to the construct (Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Price, 2012; Ware & Kitsantas, 2011). Unrelated survey items such as teachers' efficacy, commitment, or intent to remain in teaching were not used because they pertained to other outcomes. Second, my study proposes a narrow definition of job satisfaction that only considers teachers' attitudes about their immediate workplace, and does not mix in their satisfaction with the teaching profession as a whole. In doing so, I imitate the teacher retention literature's distinction regarding movers and leavers (Ingersoll, 2001; Stockard & Lehman, 2004). I diverge from studies that have combined teachers' satisfaction with a particular school and satisfaction with teaching itself (Lee, Dedrick,

& Smith, 1991; Perie & Baker, 1997; Sentovich, 2004; Skaalvik & Skaalvik, 2011; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011). Third, my study uses HLM techniques to model job satisfaction and its related factors as multi-level constructs, in imitation of several previous studies (Grissom, 2011; Lee, Dedrick, & Smith, 1991; Price, 2012; Shen et al., 2011). My study enhances the multilevel conception of teachers' job satisfaction by incorporating into the dependent variable survey items related to both individual and group satisfaction, and by modeling the effects of group-level perceptions over and above the effects of individuals' perceptions. Fourth, my study brings to bear the most recent national data available by employing the 2007-08 SASS dataset. Much of the research on teachers' job satisfaction has been conducted using older datasets such as the 1980-81 High School and Beyond survey (Bryk & Driscoll, 1988; Lee, Dedrick, & Smith, 1991) or the 1993-94 SASS panel (Ingersoll & Alsalam, 1997; Perie & Baker, 1997). Significant changes in schools and teachers over the last 30 years invite a fresh look at the effect of job factors on teachers' attitudes about work.

A fifth and final contribution to research on teachers' job satisfaction is the design of my analytic sample. Several HLM studies of teachers' job-related attitudes have used SASS, but none of them has adequately addressed the dataset's inherent problem of within-school sample size (Cha, 2008; Fairchild et al., 2012; Grodsky & Gamoran, 2003; Ingersoll & Alsalam, 1997; Price, 2012; Renzulli et al., 2011; Tickle, 2011; Ware & Kitsantas, 2011). Two studies (Grodsky & Gamoran, 2003; Ingersoll & Alsalam, 1997) have acknowledged the problem, but they did not solve it. In my dissertation I demonstrated that, in spite of SASS's limited within-school sample size, it is possible to use the dataset in a multilevel model if one restricts the analytic sample to schools with more respondents. By limiting my sample to only those schools with six or more respondents, I was able to find a greater proportion of between-school variance than prior HLM

studies using SASS to study the social organization of schools (Cha, 2008; Fairchild et al., 2012; Grodsky & Gamoran, 2003; Ingersoll & Alsalam, 1997; Price, 2012; Renzulli et al., 2011; Tickle, 2011; Ware & Kitsantas, 2011). I recommend that future researchers using HLM methods with the SASS dataset should consider restricting their sample size in this way so as to improve the level of between-school variance in the outcome. Limiting the analytic sample in this way did have consequences for the representativeness of the data. As I explained in Chapter 3, teachers in my study were more likely to work in large schools, high schools, public schools, and suburban schools, and they were more likely to a graduate degree, earn more, and have more years of experience, as compared to all teachers in SASS. The impact on representativeness must be taken into consideration when considering my study results.

### **Contributions to policy**

My study makes several valuable contributions to teacher-related policy. According to my study results, some policy interventions are not likely to have much effect on teachers' job satisfaction. Since differences in salary had almost no effect on the outcome in my study, it is not likely that changing teachers' salaries will do much to improve their job satisfaction. While earning a master's degree had no significant impact in my study, teachers earning another graduate degree experienced significantly less job satisfaction. The tendency to increase degree requirements for teachers should be tempered by these findings about the relationship between advanced degrees and job satisfaction. Furthermore, when introducing policies aimed at improving teachers' job satisfaction, it should not be necessary to differentiate based on teachers' gender, race or ethnicity, since my study found no significant satisfaction differences in these areas.

By contrast, my study suggests that reforms aimed at improving school climate are likely to raise teachers' job satisfaction. When teachers experience greater support from their administrators, more collegiality with their colleagues, and broader autonomy in their own classrooms, they feel more satisfied with their jobs. Policy makers concerned about raising teachers' sense of job satisfaction should therefore promote policies fostering support, collegiality, and autonomy. My findings suggest that improving teachers' workplace attitudes requires a holistic approach, addressing the social organization of the school, rather than merely reforming individual, extrinsic elements such as salary or benefits (Rosenholtz & Simpson, 1990; Ingersoll & Alsalam, 1997). In particular, policy makers would do well to note that administrative support had the greatest impact of the three intrinsic factors. Any approach to changing the quality of teachers' workplaces must necessarily begin with changes to the principals' leadership style.

Teachers' perceptions of poverty as a problem were the largest predictor of job satisfaction after the three primary predictors. Policy makers who are concerned about addressing low levels of job satisfaction among teachers should therefore focus on teachers working in underprivileged schools since it is there that morale seems to be lowest (Grissom, 2011). On the one hand, policy interventions could be tailored toward improving the working conditions and school climate of teachers in underprivileged schools. On the other hand, policy makers could consider addressing teachers' perceptions of poverty as a problem. As Grissom (2011) has pointed out, working with a supportive principal and cooperative colleagues can often compensate for the negative effects of working in a school where poverty is perceived to be a problem. By improving the climate and working conditions among teachers, policy makers could

raise teachers' job satisfaction even in schools where poverty was problematic. This finding gives direction to school policy aimed at improving teachers' job satisfaction in hard-to-staff schools.

Finally, my study found that working in a Catholic school has a significant negative effect on teachers' sense of job satisfaction, all else being equal. Studies based on older datasets found high levels of job satisfaction among Catholic school teachers, but my study, which used data from 2007-08, found the opposite results (Lee, Dedrick, & Smith, 1991; Bryk, Lee, & Holland, 1993; Alt & Peter, 2000). This finding may indicate an important change over time, and should be taken into consideration by those responsible for overseeing teachers in the Catholic sector.

### **Limitations of the study**

My dissertation, though valuable, has a number of limitations. To begin with, it does not use qualitative methods, even though these have certain advantages when it comes to the study of teachers' attitudes about work. I chose to use quantitative techniques instead. This choice allowed me to use a large-scale dataset with widely generalizable results and association with a long tradition of quantitative research into teachers' workplace conditions and job attitudes. But my choice also involved inherent drawbacks, the greatest of which was loss of precision in my measurements. Constructs such as satisfaction, autonomy, collegiality, and administrative support are not easily quantified. They are subjective human impressions, and a few questions on a standardized survey can hardly do justice to the richness and complexity of their meanings and relationships. A more comprehensive study of teachers' attitudes toward work should be accompanied by a qualitative component that involved more sophisticated survey instruments and in-depth interviews than the ones available in SASS. It is to be hoped that future research will include this component, which my study lacks.

While job satisfaction is assumed to be related to other important outcomes, as previously noted, my dissertation does not attempt to model these relationships. For example, multiple studies have shown that job satisfaction is an important predictor of job commitment and ultimately of job retention (Ingersoll, 2001; Perrachione et al., 2008; Skaalvik & Skaalvik, 2009; Stockard & Lehman, 2004). Exploring these effects, while important, does not come within the scope of my analysis. The SASS dataset does not contain any information about actual retention. The companion to SASS, the Teacher Follow-up Survey (TFS), does contain information about retention and attrition, but its sample size is too small to permit a two-level HLM study. While SASS does contain some survey items related to teachers' job commitment, they are not sufficiently precise or well-defined to permit an analysis of job commitment and its relationship to job satisfaction.

Another limitation is the inadequacy of self-reported data on SASS. My study relies primarily on data reported by teachers about their working conditions. Yet it has been demonstrated that teachers' responses to SASS questions about working conditions are significantly different from other respondents' answers about the same conditions such as administrators (Choy et al., 1998; Keefe, 2008). This difference calls into question the reliability of self-reported data on SASS. Other researchers have also commented on the limitation of self-reported data as a measure of school-level constructs. For example, Shen and colleagues (2011) used similar measurements of teachers' autonomy, collegiality, and support (which they called "school process"). When remarking on the limitations of their study, they write, "school process is based on subjective data (i.e., self-reported perceptions)... we suggest that large-scale assessments such as SASS may consider a fact-based data collection system" (Shen et al., 2011,

p. 25). A future study using more objective measures of schools' and teachers' workplace organization would be preferable to the SASS measurements used in my study.

The findings of my study are limited with regard to causal inference. The non-experimental nature of the SASS data collection limits the researcher's ability to draw strong causal conclusions (Schneider et al., 2005). Teachers in my study were not randomly sampled to participate in schools with different characteristics such as sector, classroom autonomy, or administrative support. Without a randomized control trial it is impossible to eliminate the possibility that other factors not controlled for here tended to influence teachers' satisfaction with their jobs.

My HLM regression model does not include any interaction effects between the predictor variables, nor does it consider slopes as outcomes. It is possible that the combination of certain factors creates an effect that is unique from the effect of each factor taken by itself. For example, the intersection of experience and gender might influence job satisfaction in a way not represented in my model. Perhaps female teachers with more years of experience experience job satisfaction differently than male teachers with more years of experience. My study cannot say. My HLM analysis also looks at intercepts as outcomes, but it does not consider another valuable aspect of HLM analysis, slopes as outcomes. This would have been an interesting topic. For example, another HLM study of teachers' attitudes about work (Lee, Dedrick, & Smith, 1991) looked at the slope of teachers' control on their sense of efficacy and found that it was steeper in schools with strong principals (i.e., control had a larger effect on efficacy when the principal exercised effective leadership). In an early stage of my dissertation I explored possible slopes-as-outcomes but I felt that their inclusion detracted from the main purpose of my study. I also found



no significant predictors for the slopes-as-outcomes which I tested, so there was no compelling reason to include them in my study.

### **Directions for future research**

For future research it would be valuable to consider how classroom autonomy, administrative support, and staff collegiality differ in elementary schools versus high schools. Previous studies have tended to focus on either one level or the other (Lee, Dedrick, & Smith, 1991; Weathers, 2006). It is likely that elementary schools have a type of social organization that is distinctly different from high schools. With fewer students, less departmentalization of faculty, and more student time spent with a single teacher, it is to be expected that elementary schools would have a greater sense of collegiality among faculty. It is not clear, however, how much classroom autonomy or administrative support the teachers in elementary schools might have in comparison to middle or high school teachers.

One variable which was distinctly lacking from my analysis was a measure of teachers' influence on school-wide policy. This indicator has been a valuable part of previous research into teachers' attitudes about the workplace (Ingersoll, 1996; Ingersoll, 2003). A future study might trace the impact of teachers' policy influence on teachers' job satisfaction. It is to be hoped that future panels of SASS may facilitate such study by reinstating this variable at the level of the teacher questionnaire.

Given the importance of principals' leadership style on teachers' job satisfaction, it would be interesting to conduct a more in-depth study of principals' actions and attitudes at work and their relation to teachers' job satisfaction. In particular, it would be of great interest to find out whether the factors are associated with teachers' job satisfaction also have the same impact on principals' job satisfaction.

Future research might build on my findings regarding Catholic school effects on teachers' job satisfaction. My study found that teachers in Catholic schools experience significantly less job satisfaction than teachers in public schools, once other variables are taken into account. The finding is notable because it represents a shift from previous research on this topic (Bryk, Lee, & Holland, 1993; Alt & Peter, 2002). Ingersoll (2001) has shown that small religious schools, like those in the Catholic sector, have high rates of turnover, which may be associated with low job satisfaction. Future research might examine what factors, unique to Catholic schools, could be causing this decline in teachers' job satisfaction. For example, a future study might examine what differences among Catholic schools are associated with lower job satisfaction. It would also be valuable to see a qualitative study on teachers in Catholic schools employing richer data-gathering techniques than those in the SASS questionnaire.

Another promising area for future research is the relationship between teachers' job satisfaction and actual turnover. Exploring this topic would require the use of data on teacher retention, which can be linked to the SASS survey using the TFS dataset. Demonstrating the relationship between teachers' satisfaction and turnover is a vital step in further research towards improving retention. If there is little or no connection between the phenomena, then policies aimed at improving teachers' sense of job satisfaction will do little to improve their commitment to remaining on the job. Some valuable research has already been conducted in this area (Cha, 2008; Ingersoll, 2001; Ingersoll & Smith, 2004; Perrachione et al., 2008; Stockard & Lehman, 2004) but more needs to be done.

## **Conclusion**

Addressing concerns about job satisfaction among American teachers requires attention on the part of education leaders, policy makers, and researchers because of the central role that

teachers play in our educational system. My dissertation has attempted to shed some light on these concerns and to propose solutions. The results of my analysis suggest that even small improvements to teachers' feelings of classroom autonomy, staff collegiality, and administrative support can be powerful tools for improving teachers' satisfaction with work. Improvements such as these will hopefully make teachers' workplaces more intrinsically rewarding places to work. Organizational restructuring that promotes a greater sense of collegiality among teachers, greater autonomy over classroom activities, and stronger bonds of support between teachers and principals, are likely to create schools in which teachers feel more satisfied with their work. Furthermore, according to the theory of spillover expounded by Judge and others (Judge & Watanabe, 1994; Tait, Padgett, & Baldwin, 1989), improving teachers' satisfaction at work is likely to have positive outcomes for their overall satisfaction with life, as well.

## Appendix A. SASS questionnaire

This appendix includes pages 32-35 from the 2007-08 Schools and Staffing Survey (SASS) public school teacher questionnaire. Most of the key variables in my study were created using survey items from these pages.

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<b>VII SCHOOL CLIMATE AND TEACHER ATTITUDES</b>					
<b>54. How much actual control do you have IN YOUR CLASSROOM at this school over the following areas of your planning and teaching?</b>					
🍏 <i>Mark (X) one box on each line.</i>					
		<b>No control</b>	<b>Minor control</b>	<b>Moderate control</b>	<b>A great deal of control</b>
a. Selecting textbooks and other instructional materials	0280	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. Selecting content, topics, and skills to be taught	0281	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. Selecting teaching techniques	0282	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. Evaluating and grading students	0283	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. Disciplining students	0284	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f. Determining the amount of homework to be assigned	0285	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
<b>YOUR COMMENTS</b>					
<div style="border: 1px solid black; height: 30px;"></div>					

## 55. To what extent do you agree or disagree with each of the following statements?

🍏 Mark (X) one box on each line.

		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. The school administration's behavior toward the staff is supportive and encouraging.	0286	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. I am satisfied with my teaching salary.	0287	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. The level of student misbehavior in this school (such as noise, horseplay or fighting in the halls, cafeteria, or student lounge) interferes with my teaching.	0288	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. I receive a great deal of support from parents for the work I do.	0289	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. Necessary materials such as textbooks, supplies, and copy machines are available as needed by the staff.	0290	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f. Routine duties and paperwork interfere with my job of teaching.	0291	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
g. My principal enforces school rules for student conduct and backs me up when I need it.	0292	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
h. Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes.	0293	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
i. Most of my colleagues share my beliefs and values about what the central mission of the school should be.	0294	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
j. The principal knows what kind of school he or she wants and has communicated it to the staff.	0295	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
k. There is a great deal of cooperative effort among the staff members.	0296	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
l. In this school, staff members are recognized for a job well done.	0297	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
m. I worry about the security of my job because of the performance of my students on state and/or local tests.	0298	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
n. State or district content standards have had a positive influence on my satisfaction with teaching.	0299	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
o. I am given the support I need to teach students with special needs.	0300	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
p. The amount of student tardiness and class cutting in this school interferes with my teaching.	0301	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
q. I am generally satisfied with being a teacher at this school.	0302	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

FORM SASS-4A



56. To what extent is each of the following a problem in this school?

		🍏 Mark (X) one box on each line.			
		Serious problem	Moderate problem	Minor problem	Not a problem
a. Student tardiness	0303	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. Student absenteeism	0304	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. Student class cutting	0305	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. Teacher absenteeism	0306	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. Students dropping out	0307	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f. Student apathy	0308	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
g. Lack of parental involvement	0309	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
h. Poverty	0310	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
i. Students come to school unprepared to learn	0311	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
j. Poor student health	0312	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

57. To what extent do you agree or disagree with each of the following statements?

		🍏 Mark (X) one box on each line.			
		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. The stress and disappointments involved in teaching at this school aren't really worth it.	0313	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. The teachers at this school like being here; I would describe us as a satisfied group.	0314	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. I like the way things are run at this school.	0315	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. If I could get a higher paying job I'd leave teaching as soon as possible.	0316	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. I think about transferring to another school.	0317	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f. I don't seem to have as much enthusiasm now as I did when I began teaching.	0318	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
g. I think about staying home from school because I'm just too tired to go.	0319	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>



**58a. If you could go back to your college days and start over again, would you become a teacher or not?**

● *Mark (X) only one box.*

0320

- 1 ☐ Certainly would become a teacher
- 2 ☐ Probably would become a teacher
- 3 ☐ Chances about even for and against
- 4 ☐ Probably would not become a teacher
- 5 ☐ Certainly would not become a teacher

**b. How long do you plan to remain in teaching?**

● *Mark (X) only one box.*

0321

- 1 ☐ As long as I am able
- 2 ☐ Until I am eligible for retirement benefits from this job
- 3 ☐ Until I am eligible for retirement benefits from a previous job
- 4 ☐ Until I am eligible for Social Security benefits
- 5 ☐ Until a specific life event occurs (e.g., parenthood, marriage)
- 6 ☐ Until a more desirable job opportunity comes along
- 7 ☐ Definitely plan to leave as soon as I can
- 8 ☐ Undecided at this time

**59a. Has a student FROM THIS SCHOOL ever threatened to injure you?**

0322

- 1 ☐ Yes
- 2 ☐ No → *GO TO item 60a on page 36.*

**b. Has a student FROM THIS SCHOOL threatened to injure you IN THE PAST 12 MONTHS?**

0323

- 1 ☐ Yes
- 2 ☐ No → *GO TO item 60a on page 36.*

**c. In the past 12 months, how many times has a student FROM THIS SCHOOL threatened to injure you?**

0324

Times



## **Appendix B. Constructing the composites**

My dissertation includes four composite variables that were created using factor analysis from a larger set of SASS questionnaire items. In the following paragraphs I describe the basis in prior literature for the construction of these composites. First I discuss the dependent variable, teachers' job satisfaction. Then I discuss the primary independent variables, teachers' perceptions of classroom autonomy, staff collegiality, and administrative support. I conclude with a discussion of a fifth variable, teachers' influence over school policy, which has been frequently included in previous relevant literature but is absent from my dissertation.

### **Teachers' job satisfaction**

Teachers' job satisfaction has been the topic of many studies in the quantitative and sociological tradition of educational research, but not all of these studies have measured it in the same way. Some have used a single survey item, while others have built a composite using a combination of multiple survey items. Many studies have used the same survey items to measure the same or similar constructs. Frequently, however, they have not applied the same name to the constructed variables, even though they are derived from identical survey items. For example, Perie & Baker (1997) refer to the survey item "How long do you intend to remain in teaching" as a measure of job satisfaction, while Ingersoll and Alsalam (1997) call this variable "job commitment." Fairchild (2012) and Rosenholtz (1989) use the same four survey items to construct their dependent variables, but the former calls the construct "satisfaction" whereas the latter calls it "commitment." Sometimes two studies have used the same name for composites made up of very different survey items. For example, Perrachione (2008) and Skaalvik and Skaalvik (2011) both have composite measures called "job satisfaction" composed of very different survey items.



In creating my composite measures of teachers' job satisfaction I took into consideration how previous studies had measured theirs. Twenty-four studies provided the empirical basis for the construction and definition of my composite variable. In the following paragraphs I will describe the theoretical basis of the job satisfaction composite. Tables 11 and 12 summarize the survey items used by previous studies to define the construct teachers' job satisfaction. Table 11 lists studies which used large-scale datasets other than the Schools and Staffing Survey (SASS). Table 12 lists studies that used the same dataset as mine (SASS). The first row includes the name of the studies' composite variable. The other rows list survey items used to construct the composite in each study. The column at the far right indicates the survey items used in my dissertation, after having been informed by the previous studies.

Table 11. Studies that influenced the definition of job satisfaction (dataset ≠ SASS)

	Rosenholtz, 1989	Rosenholtz & Simpson, 1990	Talbert & McLaughlin, 1994	Bryk & Driscoll, 1988	Lee, Dedrick & Smith, 1991	Kim & Loadman, 1994	Perrachione et al., 2008	Horne, 2010	Skaalvik & Skaalvik, 2011	Present study
Composite name:	1	1	1	2	2	3	3	3	3	3
Survey items included in the composite:										
I am generally satisfied with being a teacher at this school						x	x	x		x
The stress and disappointments involved in teaching at this school aren't really worth it	x	x								x
I think about transferring to another school	x	x								x
I like the way things are run at this school	x	x								x
The teachers at this school like being here; I would describe us as a satisfied group	x	x								x
I sometimes feel it is a waste of my time to try to do my best as a teacher				x	x		x			
I look forward to work every day			x	x	x				x	
How much of the time do you feel satisfied with your job in this school?			x	x	x					
To what extent do you feel successful in providing the kind of education you would like to?				x	x					
My success or failure in teaching students is due primarily to factors beyond my control				x						
I enjoy working as a teacher	x	x							x	
Working as a teacher is extremely rewarding									x	

Composite name: 1= "Commitment," 2 = "Efficacy," 3 = "Job satisfaction"

Table 12. Studies that influenced the definition of job satisfaction (dataset = SASS)

	Price & Collett, 2010	Price, 2012	Henke et al., 1997	Perie & Baker, 1997	Stockard & Lehman, 2004	Sentovich, 2004	Cha, 2008	Keefe, 2008	Skinner, 2008	Leslie, 2009	Tickle, 2011	Renzulli et al., 2011	Shen et al., 2011	Price, 2012	Fairchild et al., 2012	Calimeris, 2012	Present study
Composite name:	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Survey items included in the composite:																	
I am generally satisfied with being a teacher at this school						x	x	x	x	x	x	x	x	x		x	x
The stress and disappointments involved in teaching at this school aren't worth it	x	x							x	x			x		x		x
I think about transferring to another school	x	x								x			x		x		x
I like the way things are run at this school										x			x	x	x		x
The teachers at this school like being here; I would describe us as a satisfied group															x		x
If you could go back to your college days would you choose teaching as a career?	x	x	x	x	x	x			x			x					
How long do you plan to remain in teaching?		x		x	x	x						x					
If I could get a higher paying job I'd leave teaching as soon as possible	x	x								x			x				
I think about staying home from school because I'm just too tired to go										x			x				
I don't seem to have as much enthusiasm now as I did when I began teaching									x	x			x				
I sometimes feel it is a waste of my time to try to do my best as a teacher				x	x	x	x		x	x		x	x	x			
Composite includes other SASS items as well														x			

Composite name: 1= "Commitment," 3= "Job satisfaction"

Tables 11 and 12 display the survey items which each study used to define its outcome. The tables list twenty-four studies. One study (Price, 2012) is listed twice because it included two composites – commitment and job satisfaction – which were both relevant to my job satisfaction composite. In terms of their data sources, there were two types of studies: those using the Schools and Staffing Survey (SASS), and those not using SASS. My composite variable shows the greatest similarity to studies using SASS, which is not surprising since survey items are almost always identical across SASS panels. My composite is less similar to the composites used in studies with datasources other than SASS. These studies sometimes used items similar to but distinct from SASS.

The wording of certain survey items is often remarkably similar even in studies that did not use SASS as their data source. Specifically, seven of the survey items in Table 11 are identical to items in Table 12.<sup>18</sup> This similarity may arise from the fact that SASS has influenced the construction of survey instruments since its initiation in 1988. It may be that non-SASS researchers modeled some of their survey questions on the SASS teacher questionnaire. The wording of SASS itself was based on prior NCES surveys such as High School and Beyond and NELS:88. The SASS instrument may also have drawn on the survey instrument written by Rosenholtz (1989).

For the most part, the listed studies used the same name, “teachers’ job satisfaction,” for their various composites. Five studies (Price, 2012; Price & Collett, 2010; Rosenholtz, 1989; Rosenholtz & Simpson, 1990; Talbot & McLaughlin, 1994) named their composites “teachers’

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<sup>18</sup> I am generally satisfied with being a teacher at this school; The stress and disappointments involved in teaching at this school aren’t worth it; I think about transferring to another school; I like the way things are run at this school; The teachers at this school like being here; I would describe us as a satisfied group; How long do you plan to remain in teaching; and I sometimes feel it is a waste of my time to try to do my best as a teacher.

job commitment,” and two studies (Bryk & Driscoll, 1988; Lee, Dedrick, & Smith, 1991) named their composites “teachers’ efficacy and satisfaction.” Nevertheless, in spite of the variation in names, these seven studies used many of the same survey items as the studies which named their composite “job satisfaction.” For this reason, I included them in the comparison tables and I incorporated their work in the construction of my own job satisfaction composite.

Most of the studies listed in Tables 11 and 12 used exploratory factor analysis (usually principal components analysis) to create the composite measure from two or more survey items. The alpha scores were robust (higher than .60) for these studies’ measures, showing that the measures were internally consistent and reliable. Several studies (Calimeris, 2012; Henke et al., 1997; Horne, 2010; Keefe, 2008; Kim & Loadman, 1994; Perrachione et al., 2008; Tickle, 2011) did not create a composite, but used a single survey item to measure teachers’ job satisfaction.

I chose to include five survey items in my composite measure of job satisfaction, as indicated by Tables 11 and 12. I chose these five items because they fit well conceptually with the definition of the construct, they had been used frequently by previous studies as a measure of job satisfaction, and they had high factor loadings in the factor analysis process. In addition, these five survey items specified characteristics “at this school,” which provided a narrow definition of job satisfaction.

The most frequently repeated survey item across the composites is general satisfaction with teaching. The SASS questionnaire asked teachers to rate their agreement with the statement, “I am generally satisfied with being a teacher at this school.” Thirteen of the twenty-five listed studies used the general satisfaction item. As Cha (2008) has pointed out, this question first appeared on the 1999-2000 SASS panel, so studies prior to that time did not incorporate it into their analysis. Other frequently used items include, “The stress and disappointments involved in

teaching at this school aren't really worth it" (eight studies), "I think about transferring to another school" (seven studies), and "I like the way things are run at this school" (six studies). All of these items were incorporated into my final composite.

I did not use some survey items which were frequently employed by previous studies in their definitions of the outcome. For example, one frequently used item which I did not include in my composite was teachers' agreement with the statement, "I sometimes feel it is a waste of my time to try to do my best as a teacher." Twelve studies used this item as part of their job satisfaction composite. But the item does not include the specification "at this school," and is likely associated with general commitment to the teaching profession rather than satisfaction with a particular teaching job. Furthermore, this item was eliminated from the 2007-08 SASS teacher questionnaire, and was not available for analysis in my study. I rejected other frequently used survey items, such as "how long do you plan to remain in teaching" or "would you become a teacher again" because I considered them to be measures of job commitment, not job satisfaction. Other authors have also taken this approach (Cha, 2008; Ingersoll & Alsalam, 1997). In addition, these items did not load on my composite variable in the exploratory factor analysis.

Only three studies used the item "The teachers at this school like being here; I would describe us as a satisfied group." Conceptually, it is somewhat different from the other items, since it refers to group rather than individual satisfaction. Nevertheless, I felt that it tapped an important aspect of overall job satisfaction, and it had sufficient prior usage to warrant its inclusion in my composite.

A common thread can be found in the specification "at this school." All five of the survey items included in my final composite relate to characteristics of a specific school as opposed to

satisfaction with teaching in general. For example, four of the survey items in Table 12 that are used in my study's composite include the words "at this school." The fifth survey item implicitly refers to the characteristics of "this school" when it says, "I think about transferring to another school." The other survey items in Tables 11 and 12 do not focus so clearly on the characteristics of the teachers' current school, but refer more broadly to teaching in general. These survey items have typically been included in composite measures of job commitment rather than job satisfaction. The specification of a particular school is important since research has shown that teachers' attitudes and decisions about working at their current school can diverge greatly from their attitudes and decisions about the profession itself (Ingersoll, 2001). Put another way, low satisfaction with a particular school does not necessarily indicate low satisfaction with teaching itself. Furthermore, it is likely that satisfaction with a particular school is more heavily influenced by factors related to that school than by general teaching factors. In defining my dependent variable I wished to measure teachers' attitudes about teaching at their current school rather than about teaching in general.

One study's composite (Price, 2012) included several SASS items which did not appear in any other studies' composite measures. Among these was the item "I am satisfied with my teaching salary." I considered incorporating this item into my composite, but I found that it did not load well on the proposed factor. The authors of another study (Perie & Baker, 1997) also considered including this item, but eventually rejected it for the same reason I did. According to the authors, "a fourth item, 'I am satisfied with my teaching salary,' was included in the initial analyses but was later dropped because it was found to be unrelated to the other three items and a poor predictor of teacher satisfaction for all teachers" (Perie & Baker, 1997, p. 97).

It is interesting to note that nearly all of the composite measures listed in Tables 11 and 12 include some survey items which do not relate well to job satisfaction. Some of them may be related to similar outcomes such as teachers' dissatisfaction, efficacy, or commitment to remain in teaching. For example, six studies' job satisfaction composites include the survey item, "If you could go back to your college days would you choose teaching as a career." But conceptually and empirically, this item is not really related to job satisfaction. Likewise, four of the listed studies include the item "how long do you plan to stay in teaching" in their final composite of job satisfaction. But plans to leave teaching or stay in teaching are more related to retention and turnover than to job satisfaction. It is not uncommon for satisfied teachers to leave the profession for reasons such as income, health, family planning or relocation. Another example is the question "Would you choose teaching again?" This survey item is used eleven times in Tables 11 and 12 as a measure of job satisfaction, even though it is more appropriate as a measure of job commitment. The survey item "I sometimes feel it is a waste of time to do my best as a teacher" is used in eleven studies of teachers' job satisfaction, but it has also frequently been used in studies of teachers' job commitment. All of these items are certainly related to job satisfaction, so the overlap is not surprising. But they do not fit well conceptually with my definition of job satisfaction, and I excluded them from my composite for that reason.

One study stands out for the misspecification of its outcome variable. Perie and Baker (1997) chose to call their composite measure "teachers' job satisfaction." Yet the three items they employed in creating the composite (would you be a teacher again, how long do you plan to stay, teaching is a waste of time) seem more related to teachers' job commitment or intent to remain in teaching. Perie and Baker (1997) would have had a stronger study if they had chosen



to rename their dependent variable, or if they had incorporated other survey items more directly related to job satisfaction.

In summary, job satisfaction is defined as an affective response on the part of teachers to their particular workplace and specific job-related activities. Job satisfaction refers to teachers' attitudes about work at a particular school, and does not include their attitudes about the teaching profession in general. It should not be confused with the related constructs of commitment, efficacy, or intent to remain in teaching. There is broad precedent in previous quantitative analyses for the use of five survey items from the SASS teacher questionnaire in constructing the composite measure of teachers' job satisfaction. These survey items are the ones used in my composite.

### **Primary independent variables**

The purpose of this section is to review the research literature regarding the primary predictors of interest in my study: classroom autonomy, staff collegiality, and administrative support. The purpose is also to describe the construction of the three independent variables. As demonstrated in an earlier section, the relevant literature suggests that organizational aspects intrinsic to a particular school tend to have a greater influence on teachers' job satisfaction than any other factors. Three factors in particular - classroom autonomy, staff collegiality, and administrative support – stand out as leading predictors of teachers' job satisfaction (Ingersoll & Alsalam, 1997; Lee, Bryk, & Smith, 1993; Lee, Dedrick, & Smith, 1991; Perie & Baker, 1997; Renzulli et al., 2011; Sentovich, 2004; Shen et al., 2011; Ware & Kitsantas, 2011). I chose to include these three factors as the primary independent variables in my study. In the next few pages I will explain how previous studies have chosen to measure them.

Teachers' sense of autonomy over their workplace has frequently been defined using survey items from the SASS dataset. Since the first administration of SASS in 1987-88 the teacher questionnaire has included the same bank of questions related to classroom autonomy, and the phrasing of the questions has not changed over the six times the SASS survey has been administered. It is likely that the questions were designed with the intention that they would be reduced to a single composite using factor analysis, and that is how researchers have consistently used them. Table 13 summarizes thirteen studies which have defined classroom autonomy using SASS survey items. As demonstrated in Table 13, each of the thirteen studies has included a composite measure of teachers' sense of autonomy in the classroom. Most of the studies combined all six items using principal components analysis (PCA). Fairchild and colleagues (2012) used only four of the items. Following the tradition set by previous authors, my study combines all six items into a single composite.

Table 13. Studies that influenced the classroom autonomy composite

	Lee, Dedrick, & Smith, 1991	Lee & Smith, 1996	Stockard & Lehman, 2004	Smith & Rowley, 2005	Weathers, 2006	Leslie, 2009	Shen et al., 2011	Ware & Kitsantas, 2007	Ware & Kitsantas, 2011	Ingersoll, 1994	Ingersoll, 1996	Ingersoll & Alsalam, 1997	Perie & Baker, 1997	Ingersoll, 2003	Renzulli, 2011	Fairchild et al., 2012	Present study
Name of composite variable	1	1	1	1	1	1	1	2	2	3	3	3	3	3	3	3	3
Survey items included in the composite <sup>19</sup> :																	
Control over selecting textbooks and other instructional materials	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x
Control over selecting content, topics, and skills to be taught	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Control over selecting teaching techniques	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Control over evaluating and grading students		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Control over disciplining students	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x
Control over determining the amount of homework to be assigned	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Study also included a separate composite measuring teachers' influence over school policy	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	

Name of Composite Variable: 1 = "Control," 2 = "Efficacy for Classroom Management," 3 = "Autonomy"

<sup>19</sup> Two of the studies listed here do not use SASS, but another NCES survey. Lee, Dedrick, & Smith (1991) used the High School and Beyond dataset. Lee & Smith (1996) used the National Educational Longitudinal Survey of 1988 (NELS:88). Nevertheless, the questions on these are virtually identical to the same questions on SASS, and the respondents were teachers.

As demonstrated in Table 13, different studies have named the same construct in different ways. Of the thirteen studies in the table, six called the composite measure “control” while the other seven called it “autonomy.” The composite measures are virtually identical except for the name. The naming difference reflects a shift in emphasis regarding aspects of the same phenomenon. “Control” emphasizes the agency of the teacher within the classroom sphere, without reference to outside agents. “Autonomy” emphasizes the teacher’s classroom agency in relationship to the administration, which is also seen as having some agency over classroom activity. I chose to name my composite variable “autonomy” because this name has the stronger tradition in prior literature on the topic (Ingersoll, 2003). I also chose this name in order to avoid any confusion with the term “control variable,” which I use in my analysis to refer to background characteristics of schools and teachers.

Staff collegiality has frequently been measured using similar survey items from large-scale NCES datasets. Table 14 summarizes how 17 studies used related survey items to construct similar composite measures. Two survey items appear in almost every study in the table. These items represent teachers’ agreement with the statements, “there is a great deal of cooperative effort among the staff members” and “most of my colleagues share my beliefs and values about what the central mission of the school should be.” A third survey item, “rules for student behavior are consistently enforced by teachers in this school, even for students not in their classes,” is used by ten studies, with another three studies using a similar item with different wording. These three items represent a shared consensus and continuity among prior studies about the collegiality composite, and provide a core definition for understanding how the construct has been used by different authors. I selected all three items for data reduction in my own composite. As shown in Table 14, there are also several other survey items which have been

used by two or more studies. Many of these items appear on the SASS teacher questionnaire. I did not include them in my own composite because they did not have the same level of prior agreement as the three items mentioned above, and also because my own initial factor analysis did not support their inclusion in the final composite.

Table 14. Studies that influenced the staff collegiality composite

	Bryk & Driscoll 1988	Lee Dedrick & Smith 1991	Bryk, Lee, & Holland, 1993	Talbert & McLaughlin, 1994	Shouse, 1996	Louis, Marks & Kruse 1996	Grodsky & Gamoran 2002	Weathers, 2006	Lee & Smith, 1996	Perie & Baker, 1997	Ingersoll, 1996	Ingersoll, 2003	Price, 2012	Smith & Rowley, 2005	Stockard & Lehman, 2004	Renzulli, 2011	Leslie, 2009	Shen et al., 2011	Present Study
Name of composite variable	1	1	1	1	1	1	1	1	2	2	3	3	4	5	6	6	7	7	7
There is a great deal of cooperative effort among the staff members.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Most of my colleagues share my beliefs and values about what the central mission of the school should be.	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x
Rules for student behavior are consistently enforced by teachers in this school, even for students not in their classes.	x	x*	x	x*	x	x*	x	x					x	x	x	x	x	x	x
Goals and priorities for the school are clear.	x*		x*	x*	x*	x	x		x										
I make a conscious effort to coordinate the content of my courses with that of other teachers.	x*		x*		x*	x	x						x	x			x	x	
Teachers participate in making most of the important decisions in this school.							x								x				
The teachers at this school like being here; I would describe us as a satisfied group													x				x	x	
The school administration's behavior toward the staff is supportive and encouraging.	x*		x*		x*								x						
My principal enforces school rules for student conduct and backs me up when I need it.	x*		x*		x*								x						
In this school, staff members are recognized for a job well done.									x										
The principal knows what kind of school he or she wants and has communicated it to the staff.	x*		x*		x*				x									x	
Other survey items	x	x		x	x	x	x		x					x	x				

Name of composite variable: 1 = Community (Professional/School/Teacher); 2 = Staff Cooperation; 3 = Faculty Conflict; 4 = Teacher Cohesion; 5=Collaborative atmosphere; 6 = Coworker Support; 7 = Staff Collegiality. Items used: x = item used to construct DV; \* = wording differs slightly.

As demonstrated in Table 14, prior research using these SASS survey items has not agreed on a common name for the construct. The most frequently used name is “community,” although most of the studies prefaced this term with a modifier such as “professional community” (Louis, Marks & Kruse, 1996; Weathers, 2006), “school community” (Bryk & Driscoll, 1988), or “shared responsibility for learning” (Lee & Smith, 1996). The same construct has also been referred to as “conflict” or “absence of conflict” (Ingersoll, 2003; Weathers, 2006). Other names from the prior literature include “cooperation,” “cohesion,” and “coworker support.” Only two other studies in my review of the literature have used the term “collegiality” (Leslie, 2009; Shen et al., 2011). I chose the name “collegiality” because I felt it best captured the aspect of teachers’ interaction signified by the three survey items in question. In spite of the different names used by prior authors, Table 14 demonstrates that these authors focused on a single construct, or different aspects of a single construct, as reflected in the repeated use of the same three survey items across studies. By using these same items in the construction of my composite, my study builds upon the work done by these authors.

Administrative support is the final composite in my study. Several studies in the sociological tradition have measured administrative support using large-scale datasets and quantitative techniques. Fifteen of these studies used related survey items to define teachers’ attitudes about their administrators. These studies, and the items they combined for their final composite, are summarized in Table 15.

The most frequently used survey item in Table 15 was a question asking teachers their level of agreement on a four-point scale with the following statement: “The principal knows what kind of school he/she wants and has communicated it to staff.” Eleven of the fifteen studies incorporated this item into their composite. Three other items were also frequently used,

measuring whether administrators were supportive and encouraging, recognized staff, and backed staff up when they needed it. I chose these four items for inclusion in factor analysis since they had the strongest consensus among prior studies. A fifth item, “The principal lets staff members know what is expected of them,” also was frequently used in prior research on the topic, but this item was removed from the 2007-08 SASS survey and could not be included.

Although they combined the same or similar survey items via factor analysis, previous authors have not agreed on how to name the resulting composite measure. As shown in Table 15, several names have been used for this construct. The most frequently used was the term “support,” preceded by a modifier such as “administrative support” (Leslie, 2009; Perie & Baker, 1997; Shen et al., 2011; Tickle et al., 2011) or “supervisor support” (Fairchild, 2012). I chose this name for my measure because I felt it most nearly approximated the meaning of the underlying construct as measured by the four survey items.



Table 15. Studies that influenced the administrative support composite

	Lee, Dedrick, & Smith, 1991	Stockard & Lehman, 2004	Weathers, 2006	Lee & Smith, 1996	Ingersoll, 1994	Ingersoll, 1996	Ingersoll, 2003	Leslie, 2009	Renzulli, 2011	Shen et al., 2011	Perie & Baker, 1997	Smith & Rowley, 2005	Leslie, 2009	Shen et al., 2011	Tickle, 2011	Fairchild et al., 2012	Present study
Name of composite variable <sup>20</sup>	1	1	1	2	3	3	3	4	4	4	5	5	5	5	5	5	5
The principal knows what kind of school he/she wants and has communicated it to staff.	x	x		x	x	x	x	x	x	x		x			x	x	x
The school administration's behavior toward the staff is supportive and encouraging.		x	x		x	x	x				x	x	x	x	x	x	x
In this school, staff members are recognized for a job well done.		x	x	x	x	x	x					x	x	x	x	x	x
My principal enforces school rules for student conduct and backs me up when I need it.		x	x		x	x	x					x	x	x	x	x	x
The principal lets staff members know what is expected of them.	x	x	x		x	x		x	x	x		x			x	x	
Teachers in this school are evaluated fairly.		x			x	x											
The principal does a poor job of getting resources for this school.	x	x			x	x											
My principal talks with me frequently about instructional practices.		x	x		x	x						x					
I have to follow rules in this school that conflict with my best professional judgment.					x	x											
Goals and priorities for this school are clear.	x	x		x	x	x											
I am given the support I need to teach students with special needs.													x	x			
Other items	x			x													

Name of composite: 1 = Leadership; 2 = Conflict; 3 = Cooperation; 4 = Communication; 5 = Support

<sup>20</sup> Two studies, Leslie (2009) and Shen et al. (2011) appear twice because they split the five survey items into two composite factors, one emphasizing administrators' communication and the other emphasizing administrators' supportiveness.

Teachers' influence over school policy is a fourth variable which many studies of teacher job satisfaction have included in addition to measures of classroom autonomy, staff collegiality, and administrative support (Ingersoll, 2001; Perie & Baker, 1997; Sentovich, 2004; Stockard & Lehman, 2004; Ware & Kitsantas, 2007). As has been demonstrated in Chapter 2, teachers' influence over school policies and decision-making is an important predictor of teachers' overall job satisfaction (Bogler & Nir, 2012; Ingersoll, 2001; Kreiss & Brockoff, 1984; Leslie, 2009; Pearson & Moomaw, 2005; Perie & Baker, 1997; Schneider, 1984; Skinner, 2008; Stockard & Lehman, 2004). Nevertheless, I did not include this variable as one of the predictors in my study model. The reasons for this exclusion were two-fold: teacher-level measurements of the influence variable are not available in the 2007-08 SASS, and the administrator-level measures which are available have been found to be unreliable. I will explain these reasons in the following paragraphs.

From its inception in 1988 until 2004, the Schools and Staffing Survey teacher questionnaire included a bank of questions measuring teachers' influence over school policy. On the 2003-04 SASS questionnaire, teachers were asked the following question: "How much actual influence do you think teachers have over school policy at this school in each of the following areas?" (SASS 03-04, public school teacher survey, Item 61). The question then listed seven areas of influence: setting performance standards for students, establishing curriculum, determining the content of in-service professional development programs, evaluating teachers, hiring new full-time teachers, setting discipline policy, and deciding how the school budget will be spent. Answers were coded on a four-point scale ranging from "no influence" to "a great deal of influence." Previous versions of the survey used essentially the same survey items, though the Likert-scale was adjusted from five to four points over time (SASS 1993-94; SASS 1999-2000).

Many studies of teachers' job attitudes have used these seven survey items to construct a composite measure of teachers' influence over school policy (Fairchild et al., 2012; Ingersoll, 1994; Ingersoll, 1996; Ingersoll, 2003; Ingersoll & Alsalam, 1997; Lee, Dedrick, & Smith, 1991; Lee & Smith, 1996; Leslie, 2009; Perie & Baker, 1997; Renzulli, 2011; Shen et al., 2011; Smith & Rowley, 2005; Stockard & Lehman, 2004; Ware & Kitsantas, 2007; Ware & Kitsantas, 2011; Weathers, 2006). Most of these studies have done so in tandem with a related measure, teachers' autonomy and control over classroom affairs. Perhaps the most extensive treatment of these two constructs using SASS data was carried out by Richard Ingersoll (Ingersoll, 2001; Ingersoll, 2003).

Beginning with the 2007-08 panel, however, the SASS teacher questionnaire no longer included the seven questions related to teachers' influence. It is not clear why the items were removed, although it is likely part of a larger reconsideration of the survey instrument that was carried out during the 2007-08 administration (Tourkin et al., 2010). Since the items were unavailable, it was not possible to include them in my model. An alternative presented itself. The same seven questions, with almost identical wording, appeared on the principal questionnaire of the 2007-08 SASS. Like teachers, principals were asked to rate their perception of teachers' influence over school-wide decision-making. In theory, it would be possible to use the administrator data to construct a school-level measure of teacher influence. This variable could then be used as a Level 2 predictor in my HLM model, similar to the school-level aggregates of teachers' autonomy, collegiality, and support. After some consideration I chose not to include the administrator variables as part of my study. As outlined in the following paragraphs, information from the administrator survey is not considered a valid measure of teachers' attitudes about their workplace environment.

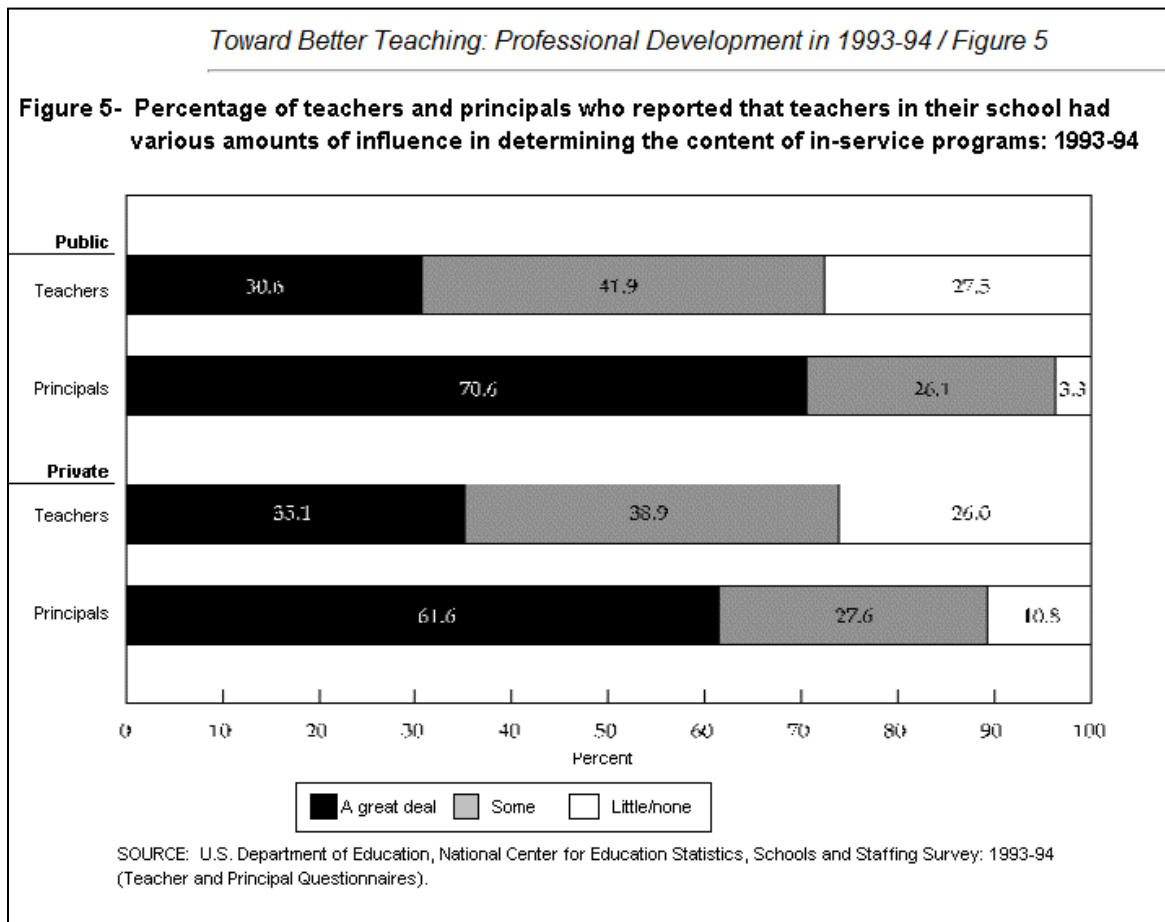
Ingersoll (2003) observed that the measures of teacher influence were recorded in two different places in the SASS survey, on the teacher survey and on the principal survey. Ingersoll (2003) found that principals tended to report higher levels of teacher influence than teachers themselves reported. This finding suggested that principals overestimated the amount of influence felt by teachers. In addition, Ingersoll (2003) found that teachers' responses were better predictors of school outcomes related to these seven areas, especially retention. As a result, Ingersoll chose to discard principals' responses and to rely only on the answers given by teachers.

Other researchers using the SASS dataset have drawn the same conclusion with regard to principals' measures of teacher influence (Choy et al., 1998; Keefe, 2008). Choy and colleagues wrote that

“Principals were far more likely than teachers to think that teachers had a great deal of influence in determining the content of in-service programs... While this might reflect real differences of opinion, it might also be related to the way in which the questionnaires were designed, because principals and teachers were asked the same question in different contexts” (Choy et al., 1998, p. 20).

The incongruence was especially noticeable in public schools (see Figure 5). In his dissertation using SASS data, Keefe (2008) found similar results and ended up rejecting the principal-based measures in favor of teacher-based measures. The measures of teacher influence on the administrator survey are not reliable because they do not agree with the outcomes of the same measures as reported on the teacher survey.

Figure 4. Comparison of teachers' and principals' opinions about teachers' influence over school policy



Source: Choy et al., 1995, p. 20.

Although I did not have access to teachers' reported opinion about influence, I found similar results in my analysis of the available 2007-08 SASS data. I created a composite of teachers' influence based on administrators' responses. I found that this variable had no significant impact on teachers' job satisfaction. I also found it had a negative correlation to teachers' reports about classroom control, trust in leadership, and shared responsibility. I concluded that these results reflected the inadequacy of the data rather than the reality of teachers' influence in schools.

Another set of questions on the principal survey demonstrates the lack of reliable information in the principal-level dataset. Items 30a-30d on the principal questionnaire asked respondents to rate teachers' teaching ability as "outstanding," "good," "fair," or "unsatisfactory." The item responses were of such poor data quality that the items were not included in the final dataset, and their publication has been suppressed by NCES. According to the user's manual of the 2007-08 SASS dataset,

"Substantial inconsistencies were found between the counts of teachers provided in item 30 by principals and the teacher count data provided on the corresponding school's questionnaire. In addition, many respondents erroneously reported more tenured fair and unsatisfactory teachers than the corresponding total number of teachers for these two categories" (Tourkin et al., 2010, p. 241).

In summary, my dissertation uses composite measures of autonomy, collegiality, and support that are constructed based on a careful review of similar composites used in other studies of teachers' job satisfaction. My study does not include a composite measure of teachers' influence on school policy because the teacher responses about school-wide influence were not included in the dataset, and because the available administrator responses about this topic were not considered reliable. The absence of the influence factor is an important difference from previous studies of teachers' job satisfaction, and represents a limitation of my study.

## **Appendix C. Annotated Bibliography**

The purpose of this appendix is to give a brief description of each of the 74 sources which made up my literature review. The appendix provides key information about the sample, methods, and findings of each study.

### **Adera & Bullock (2010)**

- Type of study: journal article
- Sample: Teachers serving students with emotional and behavioral disorders (E/BD).
- Data collection: Electronic survey (156 teachers) and focus groups (20 teachers).
- Method: Mixed methods. Crosstabs; focus groups.
- Most important finding: stress leads to dissatisfaction.
- Significant factors: “job stressors within (e.g., diverse skills and abilities among students, challenging and out-of-control behaviors, inconsistencies in school expectations) and outside the classroom (e.g., ambiguity of roles and responsibilities, lack of collaboration, and lack of parental involvement) were the main determinants of dissatisfaction among teachers of students with E/BD” p. 12.
- Non-significant factors: Teacher qualifications.
- Limitations of study: convenience sample; lack of statistical controls.

### **Bishay (1996)**

- Type of study: journal article
- Sample: Convenience sample in one highly selective school
- Data collection: survey (50 respondents), ESM (12 respondents)
- Method: frequencies, t-tests, crosstabs, and ANOVAs.
- Most important finding: gender differences.
- Significant factors: responsibility levels, gender, subject, age, years of teaching experience, and activity.
- Non-significant factors: pay incentives, greater freedom to teach
- Limitations of study: convenience sample; lack of statistical control.

### **Bogler (2001)**

- Type of study: journal article
- Sample: K-12 teachers in northern Israel
- Data collection: survey (745 respondents)
- Method: Path analysis
- Most important finding: “The most salient finding was that teachers’ occupation perceptions strongly affected their satisfaction... Their perceptions of occupational

prestige, self-esteem, autonomy at work, and professional self-development contribute the most to job satisfaction” (p. 676)

- Significant factors: principals’ transformational leadership, participative decision-making, gender, Jewish religion
- Limitations of study: Limited generalizability of sample

#### **Bogler (2002)**

- Type of study: journal article
- Sample: K-12 teachers in northern Israel
- Data collection: survey (745 respondents)
- Method: discriminant analysis
- Most important finding: occupational perceptions (perceptions of occupational prestige, self-esteem, autonomy at work, and professional self-development)
- Significant factors: principals’ transformational leadership, participative decision-making
- Non-significant factors: weak association between individual and school characteristics and teacher job satisfaction.
- Limitations of study: Limited generalizability of sample

#### **Bogler & Nir (2012)**

- Type of study: journal article
- Sample: 2,565 teachers affiliated with 153 Israeli elementary schools.
- Data collection: Survey
- Method: quantitative
- Most important finding: teacher empowerment
- Significant factors: self-efficacy, earned status & respect, organizational support
- Limitations of study: Limited generalizability of sample

#### **Brunetti (2001)**

- Type of study: journal article
- Sample: high school teachers
- Data collection: Survey and interview data
- Method: mixed. frequencies, crosstabs.
- Most important finding: teachers had a high level of satisfaction despite difficult working conditions. Working with students was the most important factor.
- Significant factors: After working with students, other important motivators included passion for the subject, excitement of the classroom, autonomy, and collegiality.
- Limitations of study: Lack of statistical controls

#### **Bryk & Driscoll (1989)**



- Type of study: journal article
- Sample: High School & Beyond dataset: teachers in 357 schools
- Data collection: Survey
- Method: Regression analysis
- Most important finding: Communal organization of school improves teacher morale
- Significant factors: school social class; small school size; school selectivity; parental support; efficacy.
- Limitations of study: Poor conceptualization of dependent and independent variables.

**Bryk, Lee, & Holland (1993)**

- Type of study: book
- Sample: High School & Beyond dataset: teachers in 357 schools
- Data collection: Survey
- Method: Regression analysis
- Most important finding: Communal organization of school improves teacher morale
- Significant factors: school social class; small school size; school selectivity; parental support; efficacy.
- Limitations of study: Poor conceptualization of dependent and independent variables.

**Butt et al. (2005)**

- Type of study: journal article
- Sample: primary and secondary school teachers in United Kingdom
- Data collection: survey and interview (evaluation of TSW Pathfinder project)
- Method: mixed
- Most important finding: internal factors more relevant than external factors
- Significant factors: workload
- Limitations of study: Small sample size, limited generalizability of sample

**Caprara et al. (2003)**

- Type of study: journal article
- Sample: 2,688 teachers in 103 junior high schools in Italy
- Data collection: survey
- Method: Multilevel structural equation modeling
- Most important finding: self- and collective-efficacy beliefs
- Significant factors: principal, colleagues, staff, students, and families
- Limitations of study: limited generalizability of sample

**Caprara et al. (2006)**

- Type of study: journal article
- Sample: 2,184 teachers in 75 Italian junior high schools
- Data collection: survey
- Method: Structural equation modeling
- Most important finding: teachers' personal efficacy beliefs affected their job satisfaction
- Significant factors: self-efficacy
- Limitations of study: Lack of statistical controls; limited generalizability

#### **Cha (2008)**

- Type of study: conference presentation & dissertation
- Sample: restricted sample of 1,563 K-12 public, full-time teachers (stayers & leavers)
- Data collection: Schools & Staffing Survey and Teacher Follow-up Survey
- Method: Structural equation modeling
- Most important finding: Working conditions are most significant predictor
- Significant factors: Working conditions include: administrator, colleagues, influence over school policy, control in the classroom, problems at school such as student behavior
- Non-significant factors: Professional development, salary
- Limitations of study: No qualitative analysis.

#### **Conley & Levinson (1993)**

- Type of study: journal article
- Sample: Uses data from a state-sponsored career ladder program
- Data collection: survey
- Method: frequencies and crosstabs
- Most important finding: Effect of experience moderates effects of other 2 variables.
- Significant factors: Participation in work redesign (collaborative decision-making); years of experience; higher starting salary.
- Limitations of study: lack of statistical controls; convenience sample.

#### **Convey (2010)**

- Type of study: conference presentation
- Sample: 716 teachers in Catholic schools in 3 dioceses (Atlanta, Biloxi, and Cheyenne).
- Data collection: survey
- Method: frequencies and crosstabs
- Most important finding: school's academic philosophy and its environment were important predictors of the teachers' satisfaction
- Significant factors: Sense of efficacy, Catholic sector
- Limitations of study: Limited generalizability, lack of statistical controls

#### **Culver, Wolfle, & Cross (1990)**

- Type of study: journal article
- Sample: 512 beginning teachers
- Data collection: survey
- Method: frequencies and crosstabs
- Most important finding: influences leading to satisfaction differ across racial groups
- Significant factors: race, gender, other teacher demographics
- Limitations of study: lack of statistical controls

#### **Davis & Wilson (2000)**

- Type of study: journal article
- Sample: 660 teachers, 44 principals in public elementary schools in eastern Washington
- Data collection: survey
- Method: Pearson correlations
- Most important finding: principal's empowering behaviors (PEB) most important predictor of teachers' job satisfaction
- Significant factors: motivation, stress also impact teachers' job satisfaction
- Limitations of study: lack of statistical controls

#### **Ellis & Bernhardt (1992)**

- Type of study: journal article
- Sample: 207 teachers in Fairfield County, Connecticut
- Data collection: Job Diagnostic Survey (JDS)
- Method: frequencies, crosstabs
- Most important finding: "Teachers who perceived a high degree of the presence of the core job characteristics were more internally motivated than those teachers who perceived their presence to a lesser degree" (p. 181).
- Significant factors: autonomy, supervision, feedback, female, professional challenge, elementary level, low socioeconomic districts
- Limitations of study: lack of statistical controls

#### **Evans (1997a)**

- Type of study: journal article
- Sample: K-12 school teachers in United Kingdom
- Data collection: this is a conceptual rather than empirical piece.
- Most important finding: a reconceptualization of job satisfaction is suggested, focusing upon a bifurcation into two constituents: job fulfillment and job comfort.
- Significant factors: follows Herzberg theory. Intrinsic factors, leadership significant.

#### **Evans (1997b)**

- Type of study: journal article
- Sample: 18 teachers at one English primary school
- Data collection: four-stage pilot case study including survey and interviews
- Method: purely qualitative
- Most important finding: leadership and individuals' professionalism orientations
- Significant factors: "the context of teachers' working lives represents the realities of the job and has a much greater impact upon job-related attitudes than do factors such as centrally-initiated policy or teachers' conditions of service, including pay" (p. 839).
- Non-significant factors: pay, policy
- Limitations of study: limited generalizability

#### **Evans (2000)**

- Type of study: journal article
- Sample: 19 English primary school teachers, employed in four schools
- Data collection: surveys and interviews over 5 years
- Method: purely qualitative
- Most important finding: most significant factor in determining morale levels amongst education professionals: attitudes to change
- Significant factors: morale, motivation
- Limitations of study: limited generalizability

#### **Evans (2001)**

- Type of study: journal article
- Sample: 19 English primary school teachers, employed in four schools; 20 tutors and 36 students in a university
- Data collection: surveys and interviews
- Method: purely qualitative
- Most important finding: leadership influences job satisfaction directly and indirectly
- Significant factors: leadership; equity and justice, pedagogy, organizational efficiency, interpersonal relations, collegiality and self-conception and self-image
- Limitations of study: limited generalizability

#### **Fairchild et al. (2012)**

- Type of study: journal article
- Sample: 8,665 teachers in 1,992 schools. Sample was restricted to full-time, White or Black teachers (non-Hispanic) in urban public schools.
- Data collection: 2003-04 Schools and Staffing Survey (SASS)
- Method: Ordinary least squares (OLS) regression
- Most important finding: teachers' work-related attitudes explain a greater amount of the variance related to job satisfaction than demographics

- Significant factors: supervisor support, autonomy, influence, procedural justice, student behavior, high stress, gender, high school level
- Non-significant factors: race, relational demography

#### **Fraser, Draper & Taylor (1998)**

- Type of study: journal article
- Sample: teachers with 5, 10 and 15 years of experience
- Data collection: survey
- Method: correlations, t-tests
- Most important finding: teachers are very much in agreement about how they rate different facets of teaching in terms of satisfaction
- Significant factors: influence, recognition, experience, gender, school level, work-life balance, promotion

#### **Gius (2012)**

- Type of study: journal article
- Sample: public school teachers
- Most important finding: union status effects teachers' job satisfaction
- Full article not available. Abstract only.

#### **Grissom (2011)**

- Type of study: journal article
- Sample: 30,690 teachers in 6,290 schools
- Data collection: 2003-04 Schools & Staffing Survey; 2004-05 Teacher Follow-up Survey
- Method: OLS regression
- Most important finding: principal's effectiveness
- Significant factors: school SES, working conditions, school level, school size
- Non-significant factors: all teacher demographics
- Limitations of study: does not employ multi-level regression model

#### **Guarino & Santibanez (2006)**

- Type of study: journal article
- Method: Comprehensive literature review on teacher retention and dissatisfaction
- Most important finding: Dissatisfaction a leading cause of voluntary turnover
- Significant factors: pay, administrative support, and student discipline problems were most frequently cited sources of dissatisfaction among departing teachers
- Limitations of study: focuses on teachers who left the profession

#### **Haser & Nasser (2003)**

- Type of study: report
- Sample: one elementary school in Fairfax County, VA
- Data collection: interviews
- Method: qualitative
- Most important finding: flexible scheduling reduces stress and leads to job satisfaction
- Significant factors: year-round schedule with lots of mini-breaks
- Limitations of study: lack of generalizability

#### **Heller, Clay, & Perkins (1993)**

- Type of study: journal article
- Sample: 339 teachers in public schools
- Data collection: survey
- Method: frequencies, crosstabs
- Most important finding: high level of dissatisfaction
- Significant factors: pay, coworkers
- Non-significant factors: principal leadership
- Limitations of study: lack of statistical controls

#### **Heller, Rex, & Cline (1992)**

- Type of study: journal article
- Sample: 331 teachers in public schools
- Data collection: Job Satisfaction Survey (JSS)
- Method: multiple regression analysis
- Most important finding: meeting students' academic needs accounts for about 28 percent of unique variance in job satisfaction

#### **Henke et al. (1997)**

- Type of study: NCES report
- Sample: about 40,000 teachers
- Data collection: Schools & Staffing Survey
- Method: frequencies, crosstabs
- Most important finding: most teachers report high levels of satisfaction
- Significant factors: supervisor support, pay, autonomy, influence, procedural justice, student behavior, high stress, gender, high school level
- Limitations of study: lack of statistical controls

#### **Hoover & Aakhus (1998)**

- Type of study: conference presentation
- Sample: 86 teachers in rural North Dakota (includes stayers and leavers)

- Data collection: survey
- Method: t-tests, frequencies, crosstabs
- Most important finding: Job satisfaction appeared to be predicted largely by employment related factors, including burnout and satisfaction with the professional development opportunities
- Significant factors: professional development
- Non-significant factors: town size
- Limitations of study: lack of statistical controls

### **Horne (2010)**

- Type of study: dissertation
- Sample: convenience sample of 418 new teachers recently graduated from NC State
- Data collection: survey (only 127 respondents)
- Method: structural equation modeling
- Most important finding: significant correlations between satisfaction, commitment, and intention to remain in teaching
- Significant factors: mentoring support, colleague support, administrative support, availability of resources, classroom control, student behavior, teaching assignment, balancing multiple roles, and parental contact
- Non-significant factors: performing multiple roles
- Limitations of study: poor fit of the SEM model (low chi squared fit statistic)

### **Huysman (2008)**

- Type of study: journal article
- Sample: 89 teachers in one small, rural Florida school district
- Data collection: mixed methods study: Minnesota Satisfaction Questionnaire (MSQ) and interviews
- Method: frequencies; qualitative description
- Most important finding: the majority of rural school teachers rated their overall general job satisfaction as "high."
- Significant factors: collective bargaining; lack of respect and appreciation

### **Ingersoll (2001)**

- Type of study: journal article
- Sample: former teachers were surveyed about their reasons for dissatisfaction
- Data collection: Schools & Staffing Survey, Teacher Follow-up Survey
- Method: frequencies, crosstabs
- Most important finding: Dissatisfaction was a leading cause of teachers' turnover after retirement and childrearing

- Significant factors: most frequently cited reasons for dissatisfaction were low salaries, little administrative support, poor student discipline and motivation, and the lack of influence over decision-making at the school
- Non-significant factors: large class sizes, intrusions on classroom time, lack of planning time, lack of community support, and interference with teaching
- Limitations of study: lack of statistical controls; sample limited to former teachers

#### **Jones (1997)**

- Type of study: journal article
- Full article unavailable; only reviewed abstract.
- Most important finding: Teacher participation in decision-making improves satisfaction

#### **Jorde-Bloom (1986)**

- Type of study: journal article
- Sample: early childhood educators
- Data collection: NA
- Method: this is a conceptual not empirical piece.
- Most important finding: conceptual framework for understanding how the many facets of job satisfaction interrelate. The model uses a social-ecological perspective of human behavior which stresses the dynamic interactive nature of person-environment variables.
- Significant factors:
- Non-significant factors:

#### **Keefe (2008)**

- Type of study: dissertation
- Sample: subsample of SASS: charter school teachers
- Data collection: Schools & Staffing Survey
- Method: OLS regression
- Most important finding: autonomy improves job satisfaction
- Significant factors: teachers' sense of autonomy – measured as classroom control and school-wide policy influence – had a significant, positive, and large impact on teachers' job satisfaction
- Non-significant factors: Other characteristics of schools and teachers were included as background controls in Keefe's study, but they had little or no significant impact on the outcome
- Limitations of study: low R squared

#### **Kim & Loadman (1994)**

- Type of study: report



- Sample: 2,000 teachers selected from the Database for Preservice Teacher Education, a database created using the graduation lists of ten prominent colleges of education
- Data collection: survey
- Method: OLS regression
- Most important finding: professional autonomy, positive interactions with colleagues, and positive interactions with students
- Significant factors: opportunities for professional challenge and advancement, salary and benefits, and general work conditions such as class size, workload, and hours
- Limitations of study: did not include any controls for background characteristics of teachers, schools, or students

#### **Klassen & Chiu (2010)**

- Type of study: journal article
- Sample: convenience sample of 1,430 teachers from western Canada
- Data collection: survey
- Method: OLS regression with teacher job satisfaction as the outcome variable
- Most important finding: self-efficacy, stress
- Significant factors: teachers' years of experience, gender, teaching level
- Limitations of study: lacks sufficient statistical controls

#### **Klassen, Chiu, & Bong (2010)**

- Type of study: journal article
- Sample: 500 elementary and middle school teachers from Canada, South Korea, and USA
- Data collection: Collective Teacher Efficacy Belief Scale (CTEBS)
- Method: Path analysis
- Most important finding: cultural context influences how motivation beliefs are understood and expressed in diverse settings
- Significant factors: collective efficacy, stress
- Non-significant factors: no stress effect for Korean teachers
- Limitations of study: lack of statistical controls

#### **Kniveton (1991)**

- Type of study: journal article
- Sample: 155 teachers in United Kingdom
- Data collection: survey and interview
- Method: mixed methods: frequencies and qualitative
- Most important finding: class size
- Significant factors: technology, teaching aids, class size, student involvement, lack of influence, pay, supervisors

**Kreis & Brockoff (1986)**

- Type of study: journal article
- Sample: public and Catholic school teachers
- Data collection: survey
- Method: frequencies, correlations
- Most important finding: autonomy
- Significant factors: teachers' perceived autonomy within the classroom, autonomy outside the classroom but within the school, and overall sense of autonomy within their teaching positions, Catholic vs. public

**Lam & Yan (2011)**

- Type of study: journal article
- Sample: eleven beginning teachers in Hong Kong
- Data collection: two interviews
- Method: qualitative
- Most important finding: school factors impact job satisfaction
- Significant factors: School factors, such as volume of non-teaching workload, equitability in the distribution of work, and professional autonomy
- Limitations of study: small sample size

**Landers, Alter, & Servilio (2008)**

- Type of study: journal article
- Sample: 540 teachers in K-12 schools in 2 districts in northeast US
- Data collection: survey
- Method: ANOVA
- Most important finding: student behavior
- Significant factors: school level
- Non-significant factors: demographic variables
- Limitations of study: lack of statistical controls

**Lee, Dedrick, & Smith (1991)**

- Type of study: journal article
- Sample: 354 high schools, with about 8,500 teachers
- Data collection: High School & Beyond NCES dataset
- Method: HLM regression analysis
- Most important finding: factors related to school social organization had the greatest effect
- Significant factors: efficacy, supervisor supporter, colleagues, control
- Non-significant factors: pay
- Limitations of study: only high school teachers

**Leslie (2009)**

- Type of study: dissertation
- Sample: all SASS teachers
- Data collection: 2003-04 Schools and Staffing Survey
- Method: HLM regression
- Most important finding: 17% of the variance in the outcome exists between schools rather than within schools
- Significant factors: most important predictor of job satisfaction was school process, which included measures of workplace conditions, administrative support, classroom autonomy, influence over school policy, and staff collegiality
- Non-significant factors: background characteristics of teachers, schools, and principals

**Lester (1987)**

- Type of study: journal article
- Sample: randomly selected elementary, junior high school, and high school teachers
- Data collection: Teacher Job Satisfaction Questionnaire
- Method: factor analysis
- Most important finding: questionnaire shows validity

**Littrell, Billingsley, & Cross (1994)**

- Type of study: journal article
- Sample: 698 teachers in Virginia (385 special and 313 general education)
- Data collection: survey
- Method: frequencies
- Most important finding: Work-related variables were better predictors than demographic variables
- Significant factors: administrator support, stress

**Liu (2005)**

- Type of study: conference presentation
- Sample: 486 first-year and second-year, K-12 public school teachers in 3 states
- Data collection: survey
- Method: GLS regression analysis
- Most important finding: “new teachers who report that the hiring process gave them a comprehensive and accurate preview of their jobs also report being more satisfied with their jobs” (p. 40)
- Significant factors: information-rich job previews; school SES; charter school;
- Non-significant factors: school size, level, locale; teacher demographics

**Liu & Meyer (2005)**

- Type of study: journal article
- Sample: 6,279 teachers from public and private schools
- Data collection: Schools and Staffing Survey and Teacher Follow-Up Survey
- Method: HLM regression analysis
- Most important finding: student discipline problems
- Significant factors: private sector, salary, minority teacher

**Liu & Ramsey (2008)**

- Type of study: journal article
- Sample: 4,952 teachers (current and former)
- Data collection: Schools & Staffing Survey 1999–2000; Teacher Follow-up Survey
- Method: HLM regression analysis
- Most important finding: teachers were least satisfied with work conditions and compensation
- Significant factors: administration, pay, conditions, minority teachers, experience, student interaction
- Non-significant factors: gender

**Ma & MacMillan (1999)**

- Sample: 2,202 teachers in New Brunswick elementary schools
- Data collection: survey
- Method: multiple regression
- Most important finding: administration control
- Significant factors: teaching competence, organization culture, gender, workplace conditions

**Markow et al. (2006)**

- Type of study: report
- Sample: 1,001 public school teachers
- Data collection: telephone interviews; focus groups
- Method: descriptive frequencies
- Most important finding: Teacher career satisfaction is high (56%)
- Significant factors: lack of support by colleagues and principal, influence on school policy, parental support
- Limitations of study: lack of statistical controls

**Markow & Cooper (2008)**

- Type of study: report

- Sample: 1,000 public school teachers
- Data collection: telephone interviews; focus groups
- Method: descriptive frequencies
- Most important finding: Teacher career satisfaction is at a 20-year high: a majority of teachers (62%) are very satisfied with their careers
- Significant factors: salary, experience, urban locale, experience, high expectations, self-efficacy
- Non-significant factors: school level
- Limitations of study: lack of statistical controls

#### **Markow & Pieters (2009)**

- Type of study: report
- Sample: 1,003 public school teachers
- Data collection: telephone interviews; focus groups
- Method: descriptive frequencies
- Most important finding: satisfaction has dropped significantly
- Significant factors: collaboration with coworkers, preparation, quality of students, urban locale, experience, high expectations, self-efficacy
- Non-significant factors: school level
- Limitations of study: lack of statistical controls

#### **Markow & Pieters (2012)**

- Type of study: report
- Sample: 1,001 public school teachers
- Data collection: telephone interviews; focus groups
- Method: descriptive frequencies
- Most important finding: Teacher job satisfaction has dropped 15 points since 2009, to 44% - the lowest level in over 20 years
- Significant factors: job security, salary, parental engagement
- Limitations of study: lack of statistical controls

#### **Marlow et al. (1996)**

- Type of study: report
- Sample: 212 teachers in K-12 schools in 7 states
- Data collection: survey
- Method: frequencies
- Most important finding: 44% of teachers consider leaving
- Significant factors: student discipline & attitudes, stress, lack of parental engagement, difficult working conditions, low salary.
- Non-significant factors: professional prestige

- Limitations of study: lack of statistical controls

### **Mau, Ellsworth, & Hawley (2008)**

- Type of study: journal article
- Sample: 451 current and aspiring teachers after 10 years
- Data collection: survey
- Method: frequencies
- Most important finding: those who persisted with being teachers were more satisfied than non-teachers
- Significant factors: beginning teachers, licensure, race, SES, parents' education, self-efficacy

### **Mercer & Evans (1991)**

- Type of study: journal article
- Sample: teachers in United Kingdom
- Data collection: --
- Method: this is a conceptual piece, not an empirical piece
- Most important finding: to halt the teacher exodus we must improve teacher job satisfaction
- Significant factors: conformity of job to teacher's self-image; predictability of job relationships; comparability of job and other roles

### **Mertler (2002)**

- Type of study: journal article
- Sample: convenience sample of 710 middle and high-school teachers
- Data collection: Teacher Motivation and Job Satisfaction Survey
- Method: frequencies, t-tests, chi-square analysis
- Most important finding: Males reported a higher level of job satisfaction than females
- Significant factors: males, beginning teachers, age, suburban locale
- Non-significant factors: none
- Limitations of study: lack of statistical controls

### **Pearson & Moomaw (2005)**

- Type of study: journal article
- Sample: 171 teachers in K-12 Florida public schools
- Data collection: survey (Teacher Autonomy Scale)
- Method: correlations, MANOVA
- Most important finding: autonomy
- Significant factors: stress, professionalism, empowerment
- Non-significant factors: school level

- Limitations of study: no controls for demographic variables of schools & teachers

### **Perie & Baker (1997)**

- Type of study: NCES report
- Sample: 47,109 teachers in 8,767 schools
- Data collection: 1993-94 Schools & Staffing Survey
- Method: OLS regression
- Most important finding: Intrinsic variables have a greater effect than extrinsic variables.
- Significant factors: Administrative support and leadership, student behavior and school atmosphere, and teacher autonomy are working conditions associated with teacher satisfaction.
- Non-significant factors: Salary & benefits
- Limitations of study: does not use multilevel modeling

### **Perrachione et al. (2008)**

- Type of study: journal article
- Sample: 201 teachers in Missouri public elementary schools
- Data collection: survey
- Method: multiple linear regression and qualitative analysis
- Most important finding: retention was determined by teacher satisfaction with the profession and not with work-related duties.
- Significant factors: three intrinsic motivators (personal teaching efficacy, working with students, and job satisfaction) were perceived to significantly influence satisfaction
- Non-significant factors: two extrinsic motivators (low salary and role overload) did not have any effect.
- Limitations of study: Limited statistical controls

### **Price (2012)**

- Type of study: journal article
- Sample: 11,600 teachers in elementary schools
- Data collection: 2003-04 Schools and Staffing Survey
- Method: Structural equation modeling
- Most important finding: Principal's leadership
- Significant factors: cohesion, power sharing, shared expectations with colleagues, charter school
- Non-significant factors: minority student enrollment, special education students, urban location, school size
- Limitations of study: Conceptualization of dependent variable

### **Renzulli, Parrott, & Beattie (2011)**

- Type of study: journal article
- Sample: about 31,000 teachers in about 7,000 schools
- Data collection: 1999-2000 Schools and Staffing Survey and TFS
- Method: HLM regression
- Most important finding: teachers' sense of autonomy was a leading predictor of their sense of job satisfaction
- Significant factors: charter school, coworker support, administrator expectations, student behavior and quality, job security, and hours worked
- Non-significant factors: teacher's race
- Limitations of study: conceptualization of the outcome, job satisfaction

#### **Reyes & Shin (1995)**

- Type of study: journal article
- Sample: 854 teachers
- Data collection: survey
- Method: correlation and multiple regression
- Most important finding: satisfaction was causally prioritized to teacher commitment
- Significant factors: career ladder

#### **Schneider (1984)**

- Type of study: journal article
- Sample: 266 high school teachers in Wisconsin
- Data collection: survey
- Method: frequencies
- Most important finding: involvement in the decision-making process
- Significant factors: levels of involvement, teacher's interest and expertise in decision issues

#### **Sentovich (2004)**

- Type of study: dissertation
- Sample: all teachers in SASS
- Data collection: 2003-04 Schools and Staffing Survey
- Method: HLM regression
- Most important finding: administrative support was the most significant predictor of teachers' job satisfaction
- Significant factors: collegiality, classroom autonomy, and student behavior
- Non-significant factors: salary, school sector, charter school
- Limitations of study: low reliability of outcome, lack of between-school variation

#### **Sergiovanni (1967)**



- Type of study: journal article
- Sample: K-12 teachers
- Data collection: survey
- Method: quantitative
- Most important finding: confirms Herzberg theory
- Significant factors: Achievement, recognition, responsibility, interpersonal relations (students), interpersonal relations (peers), supervision, school policy and administration

#### **Shann (1998)**

- Type of study: journal article
- Sample: 92 teachers in 4 urban middle schools
- Data collection: interviews and questionnaires
- Method: qualitative
- Most important finding: teacher-pupil relationships
- Significant factors: parent-teacher relationships, coworker relationships, curriculum, student achievement, involvement in decision-making

#### **Shen et al. (2012)**

- Type of study: journal article
- Sample: about 41,000 teachers in 8,000 schools
- Data collection: 2003-04 Schools & Staffing Survey
- Method: HLM regression
- Most important finding: working conditions, administrative support, and staff collegiality
- Significant factors: autonomy, school influence, and student behavior
- Non-significant factors: background characteristics of teachers, schools, and principals

#### **Skaalvik & Skaalvik (2009)**

- Type of study: journal article
- Sample: 563 teachers from 28 elementary schools and middle schools in Norway
- Data collection: survey
- Method: structural equation modeling
- Most important finding: school context directly related to job satisfaction
- Significant factors: supervisory support, time pressure, relations to parents, and autonomy
- Non-significant factors: gender, school size, experience
- Limitations of study: examined only a few school context variables

#### **Skaalvik & Skaalvik (2012)**

- Type of study: journal article
- Sample: 2,569 teachers in 127 elementary schools and middle schools in Norway

- Data collection: survey
- Method: structural equation modeling
- Most important finding: school context variables were related to job satisfaction
- Significant factors: value consonance; supervisory support; relations with colleagues; relations with parents; time pressure; discipline problems
- Non-significant factors: feeling of belonging

### **Skinner (2008)**

- Type of study: dissertation
- Sample: subsample of SASS: full SASS sample
- Data collection: 2003-04 Schools & Staffing Survey
- Method: logistic regression
- Most important finding: teachers' sense of autonomy in the classroom and in the school was the most important predictor of their job satisfaction
- Significant factors: autonomy, school influence, administrative support and collegiality
- Non-significant factors: gender, race, salary
- Limitations of study: low R squared

### **Stempien & Loeb (2002)**

- Type of study: journal article
- Sample: 116 teachers in 8 schools
- Data collection: survey
- Method: ANOVA
- Most important finding: Teachers of students in special education programs were found to be the most dissatisfied.
- Significant factors: age, experience, teaching special education, student behavior
- Limitations of study: low response rate on survey; convenience sample

### **Stockard & Lehman (2004)**

- Type of study: journal article
- Sample: to first-year teachers in public schools
- Data collection: 1994-95 Teacher Follow-up Survey
- Method: path analysis
- Most important finding: teachers' perceptions of efficacy, administrative support and management
- Significant factors: support, management, control over work, effective principal
- Non-significant factors: weakest relationships with satisfaction occurred with demographic and background variables: age, school level, school region, salary, orderly school

### **Taylor & Tashakkori (1995)**

- Type of study: journal article
- Sample: 9,987 teachers
- Data collection: 1990 National Educational Longitudinal Study (NELS)
- Method: OLS regression
- Most important finding: principal leadership
- Significant factors: sense of efficacy, decision participation, school climate, student discipline, faculty collegiality, lack of obstacles to teaching, and faculty communications
- Non-significant factors: gender, experience
- NELS is not a random sample of teachers, but of students.

### **Thompson et al. (1997)**

- Type of study: journal article
- Sample: 330 articles published in Educational Administration Quarterly
- Data collection: --
- Method: meta-analysis
- Most important finding: Tends to confirm the Situational Model of job satisfaction.
- Significant factors: Low effect size for most studies. Nearly three fourths of these effect sizes were less than .30, that is, less than moderate in magnitude. Role ambiguity and role conflict had largest relationships.

### **Tickle, Chang, & Kim (2011)**

- Type of study: journal article
- Sample: 35,000 full-time public school teachers with regular or standard certification
- Data collection: 2003-04 Schools & Staffing Survey
- Method: path analysis
- Most important finding: administrative support was the most significant predictor of teachers' job satisfaction
- Significant factors: teaching experience, student behavior, and satisfaction with their salary

### **Verdugo et al. (1997)**

- Type of study: journal article
- Sample: National Education Association teacher members
- Data collection: national survey
- Method:
- Most important finding: bureaucracy, legitimacy, and community as predictors of teachers' job satisfaction
- Significant factors: job satisfaction is also related to student achievement

**Viel-Ruma et al. (2010)**

- Type of study: journal article
- Sample: 70 teachers in one district
- Data collection: 3 surveys
- Method: multiple regression and MANOVA
- Most important finding: teacher self-efficacy had a direct effect on job satisfaction
- Significant factors: collective efficacy
- Non-significant factors: teaching level (elementary, middle, and high), teaching setting (self-contained, resource, or inclusion), and certification type (highly qualified, not highly qualified, or emergency).
- Limitations of study: small sample size

**Watson et al. (2010)**

- Type of study: journal article
- Sample: 53 beginning teachers in K-8 schools
- Data collection: Five Factor Wellness Inventory and Perceived Stress Scale-10
- Method: regression analysis
- Most important finding: stress was most significant predictor of job satisfaction
- Significant factors: holistic wellness and perceived stress
- Non-significant factors: no within-group differences in job satisfaction
- Limitations of study: lack of statistical controls

**Winter, Brenner, & Petrosko (2006)**

- Sample: 578 public school teachers
- Data collection: Job Diagnostic Survey
- Method: HLM regression
- Most important finding: four job factors explained 46% of the variance in overall teacher job satisfaction
- Significant factors: autonomy, experienced meaningfulness of the work, responsibility for the job, knowledge of results from the job

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« Amis, dit-il, pour Athos c'est trop; pour le comte de La Fère, c'est trop peu. Gardez ce brevet, il est à vous; hélas, mon Dieu! vous l'avez acheté assez cher. »

- Alexandre Dumas, *Les trois mousquetaires*, Chapitre LXVII