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# Examining the Relationship of Teacher Perception of Accountability and Assessment Policies on Teacher Turnover During NCLB

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**Abstract:** The purpose of this study is to determine the relationship between teachers' perception of their work, their intent to leave their current position, and their realized turnover at the height of the federal accountability policy era in the United States. The study uses a framework of teacher de-professionalization and demoralization operationalized by teacher responses to the Schools and Staffing Surveys and Teacher Follow-up Surveys from the National Center for Education Statistics. We tested the relationship of de-professionalization and demoralization to turnover with two competing structural equation models for teachers who cited accountability policies as a factor in their employment decision, and those who did not. We find that teacher worry and stress associated with demoralization is a significant predictor of intent to leave in both groups of teachers. However, teacher worry and stress is only a significant predictor of teachers

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leaving the profession and moving schools in teachers who cite accountability policies as a factor in their employment decision. These findings demonstrate a relationship between teachers' perceptions of accountability policies, perception of their working conditions, and turnover. These results have important implications for policy makers and educational leaders as the U.S. transitions from the No Child Left Behind era to the implementation of the Every Student Succeeds Act.
**Keywords**: Accountability; Teacher Attitudes; Teacher Morale; Teacher Employment

**Examinar la relación de la percepción de los docentes sobre las políticas de rendición de cuentas y evaluación sobre la rotación de docentes durante NCLB**
**Resumen:** El propósito de este estudio es determinar la relación entre la percepción de los maestros sobre su trabajo, su intención de abandonar su posición actual y su rotación realizada en el apogeo de la era de la política de rendición de cuentas federal en los Estados Unidos. El estudio utiliza un marco de desprofesionalización y desmoralización de docentes operacionalizado por las respuestas de los docentes a las Escuelas y las Encuestas de dotación de personal y las encuestas de seguimiento de docentes del Centro Nacional de Estadísticas de Educación. Pusimos a prueba la relación de desprofesionalización y desmoralización con la rotación con dos modelos de ecuaciones estructurales competitivos para los docentes que citaron las políticas de rendición de cuentas como un factor en su decisión de empleo, y los que no lo hicieron. Encontramos que la preocupación y el estrés de los maestros asociados con la desmoralización es un predictor significativo de la intención de irse en ambos grupos de maestros. Sin embargo, la preocupación y el estrés de los maestros son solo un predictor significativo de que los maestros abandonan la profesión y cambian de escuela a los maestros que citan las políticas de rendición de cuentas como un factor en su decisión de empleo. Estos hallazgos demuestran una relación entre las percepciones de los docentes sobre las políticas de responsabilidad, la percepción de sus condiciones de trabajo y la rotación. Estos resultados tienen implicaciones importantes para los encargados de formular políticas y los líderes educativos, ya que los Estados Unidos hacen la transición de la era *No Child Left Behind* (NCLB) a la implementación de la *Every Child SucceedsAct* (ESSA).
**Palabras-clave:** rendición de cuentas; Actitudes del maestro; Moral del maestro; Empleo docente

**Examinando a relação da percepção do professor sobre as políticas de prestação de contas e avaliação na rotatividade de professores durante a NCLB**
**Resumo:** O objetivo deste estudo é determinar a relação entre a percepção dos professores sobre seu trabalho, sua intenção de deixar sua posição atual e sua rotatividade percebida no auge da era da política de prestação de contas federal nos Estados Unidos. O estudo utiliza um quadro de desprofissionalização e desmoralização docente, operacionalizado pelas respostas dos professores às Pesquisas de Escolas e Pessoal e Pesquisas de Acompanhamento de Professores do Centro Nacional de Estatísticas da Educação. Nós testamos a relação de des-profissionalização e desmoralização com a rotatividade de dois modelos de equações estruturais concorrentes para professores que citaram políticas de prestação de contas como um fator em sua decisão de emprego, e aqueles que não o fizeram. Descobrimos que a preocupação do professor e o estresse associado à desmoralização são um preditor significativo da intenção de deixar os dois grupos de professores. No entanto, a preocupação e o estresse do professor são apenas um

preditor significativo de que os professores deixem a profissão e mudem as escolas para professores que citam políticas de prestação de contas como um fator em sua decisão de emprego. Essas descobertas demonstram uma relação entre as percepções dos professores sobre as políticas de prestação de contas, a percepção de suas condições de trabalho e a rotatividade. Esses resultados têm importantes implicações para os formuladores de políticas e líderes educacionais, à medida que as transições dos EUA da era *No Child Left Behind* para a implementação do *Every Student Succeeds Act*.
**Palavras-chave:** prestação de contas; Atitudes do professor; Professor Moral; Emprego de professores

## Introduction

The passage of the No Child Left Behind Act of 2001 (NCLB) marked the initiation of a federal accountability era characterized by the diffusion of state-level standards, assessment, and accountability reforms of the 1990s through the 2000s to the national level (Coburn, Hill, & Spillane, 2016). Following NCLB, the American Recovery and Reinvestment Act in 2009 (ARRA), which included the Race to the Top (RTTT) grant program, allowed states to compete for funding to further promote the development of accountability metrics through formalized educator evaluation and data systems. The federal accountability era focused on teachers as a leverage point for educational reform, using federal-level sanctions with NCLB and financial incentives with RTTT to control state-level reforms (Superfine, Gottlieb, & Smylie, 2012). Some provisions of this policy era included the "highly qualified teacher" mandate which shifted teacher qualifications, and the connection of basic skills testing tied to sanctions and funding, which translated into mandatory state standards directing the curriculum. This focus on the teacher as a means to increase student achievement, linked to accountability standards, targeted teachers for improvement and also diminished teachers' autonomy over the technical core of their work (Milner, 2013; Neal & Schanzenbach, 2010; Nichols & Berliner, 2007). The loss of autonomy over their work combined with performance pressure of assessment and accountability policies led teachers to report increased stress and anxiety, longer work hours, and lower morale (Byrd-Black, 2010; Haladyna, Haas, & Allison, 1998; Reback, Rockoff, & Schwartz, 2011; Rentner et al., 2006; Wronowski, 2018). In addition to the de-professionalizing loss of autonomy over the technical core of their work, teachers in the federal era of accountability policy also reported demoralization that is distinct from generalized burnout and low morale that are experienced on an individual level. Santoro (2011a, 2013) describes the condition of the teaching profession post-NCLB as one in which teachers, due to accountability demands, can no longer access the moral rewards of teaching, connect meaningfully with students, meet students' needs, nor improve the overall lives of students. Teacher perception of de-professionalization and demoralization are constructs that represent a specific type of disaffection with teaching in the era of federal accountability policy, and these negative feelings may have led to the unintended consequence of teachers moving from schools labeled as "low-performing" or leaving the profession altogether (Darling-Hammond, 2007).

A significant body of previous research has shown that dissatisfaction with working conditions is an important antecedent to predicting teacher turnover (Horng, 2009; Ingersoll, 2001a, 2001b; Kersaint et al., 2007; Loeb, Darling-Hammond, & Luczak, 2005; Shen, 1997; Sutcher, Darling-Hammond, & Carver-Thomas, 2016). Decreased teacher retention in schools and districts is a problem that has both significant fiscal effects and harmful organizational effects on student achievement (Amrein-Beardsley, 2012; Darling-Hammond, 1997; Darling-Hammond & Berry, 1999;

Ronfeldt, Loeb, & Wyckoff, 2013; Synar & Maiden, 2012). A small number of previous studies have explored the relationship between teachers' perceptions of accountability and assessment policies and turnover. In an examination of the Teacher Follow-Up Surveys of 2011-2012, Podolsky et al. (2016) found that 25% of public school teachers who voluntarily left the teaching profession cited dissatisfaction with school assessment and accountability measures on their teaching and/or curriculum as their primary reason for leaving, and 17% cited dissatisfaction with support for preparing students for assessments. The effects of accountability policies differed across schools with lower performing schools generally experiencing lower levels of teacher retention (Boyd et al., 2008; Clofelder et al., 2004; Feng, Figlio, & Sass, 2018).

This study seeks to extend the empirical work relating post-NCLB accountability and assessment policies to teacher turnover using nationally representative samples of teachers surveyed in the National Center for Educational Statistics Schools and Staffing Surveys and Teacher Follow-up Surveys from 2007-2008 and 2012-2013, toward the end of the NCLB era. Specifically, this study examines whether teacher perceptions of de-professionalization and demoralization predict a teacher's intent to leave their position, and ultimately, their turnover, by asking the following research questions:

1. To what extent do teacher demoralization and de-professionalization predict a teachers' intent and occurrence of leaving their current school?
2. How do models compare for teachers who reported accountability polices as a reason to stay or turnover, and those who did not?

Combining teacher perception data regarding their work, views of accountability and assessment policies with their intent to leave, and observed attrition or mobility into a directional model allows for a deeper description of how teachers' feelings of NCLB might have influenced their stability in the profession. Understanding such potential unintended consequences of accountability policies are needed to inform instructional policymaking and implementation as the United States moves into the implementation phase of the Every Student Succeeds Act (ESSA), which maintains student testing, although to a lesser degree, and expands the options for measures, while keeping formalized teacher evaluation.

## Literature Review

This study is situated within the existing teacher workforce literature, including the literature examining general trends related to teacher staffing and turnover, and the literature describing teacher perceptions of their work. However, this study also considers the effects of accountability and assessment policy on both aspects of the teacher workforce. To properly contextualize this study, the following literature review proceeds in two parts: a review of teacher staffing issues including the role of turnover in the teacher workforce, and a discussion of teacher perception of their work in the federal accountability policy era using a de-professionalization and demoralization framework.

### The Teacher Workforce and Teacher Turnover

Two processes contribute to stability or instability within the teacher workforce; recruitment focuses teachers' entry into the profession while retention focuses on teachers' stability in their current teaching assignment at their current school. Decreased teacher retention can be a result of teacher mobility, a teacher moving to a different school, or a result of teacher attrition, a teacher leaving the profession. Ingersoll, Merrill, and Stuckey (2014) utilized the Schools and Staffing Survey (SASS) data spanning 25-year period from 1987 to 2012 to identify trends in changes of the overall

teacher workforce. Based on their analysis, the teacher workforce within the US has become larger, older as well as younger in age, more female, more racially and ethnically diverse, more consistent in academic ability, and less stable. The overall demographic trend showing that the teacher workforce is becoming both bimodal in age has implications for those studying teacher recruitment and retention. The age distribution of teachers has become bimodal since the 2007-2008 SASS survey, showing the largest numbers of teachers at the ages of 30 and 60, although the number of older teachers decreased from 2008 to 2012 (Ingersoll, Merrill, & Stuckey, 2014). In the 1990s there was a significant emphasis on a predicted shortage of teachers due to the retirement of "baby-boomers" (Darling-Hammond, 1997; National Commission on Teaching and America's Future, 1996). However, these data suggest that the teacher workforce does not face a supply-side shortage or recruitment problem, rather, the teacher workforce has an attrition problem that has resulted in the modal level of experience shifting from 15 years in 1987-1988 to less than 6 years in 2011-2012. Recent nationally representative data also shows that the composition of the teacher workforce with regards to experience continues to differ between school contexts with Title I schools and schools serving higher percentages of students of color having teacher corps with less experience than non-Title I schools and schools who serve a majority white student population, which continues to position teacher turnover as an equity issue in the US (Carver-Thomas & Darling-Hammond, 2017).

In the late 1990s, nearly 50% of all teachers left the profession within their first five years of teaching, never reaching a high experience level (Ingersoll, 2001b). More recently, approximately 17% of teachers who began teaching in 2007-2008 left the profession by 2011-2012, and approximately 10% of these early career teachers moved schools in each of the five years included in the Beginning Teacher Longitudinal Survey administered by the National Center for Education Statistics (see Gray & Taie, 2015). However, turnover of early career teachers also differs between school contexts with early career teachers leaving at higher rates from schools that serve a higher percentage of students of color (Carver-Thomas & Darling-Hammond, 2017). The pattern of attrition of early career teachers who are replaced by first year teachers has been referred to the "revolving door" of teaching and is likely to increase if the current rates of retirement and turnover persist (Ingersoll, 2002, 2004). Additionally, teacher attrition is not driven by the "predictable" attrition of teachers who reach retirement age; the most recent examinations of the Teacher Follow-Up surveys reveal that more than 50% of teachers who left the profession left voluntarily before reaching retirement (Podolsky et al., 2016; Sutcher, Darling-Hammond, & Carver-Thomas, 2016).

**Teacher demographics and turnover.** Previous empirical work has shown that teacher retention has varied based on individual teacher demographics, education, and certification. Reviews of early work on the retention of teachers of color showed a clear pattern; teachers of color were retained at higher levels than white teachers (Allen, 2005; Borman & Dowling, 2008; Guarino et al., 2004, 2006; Ingersoll, 2001; Shin, 1995). This trend was consistent for Hispanic and Black teachers of both genders (Adams, 1996; Kirby et al., 1999; Murnane & Olsen, 1989; Murnane, Singer, & Willett, 1989). However, more recent research conducted by Ingersoll and May (2011a, 2011b) has shown a shift in the turnover rates of teachers who identify as a race other than white with 2004-2005 SASS data showing the highest annual level of attrition of teachers of color in a two-decade period. The number of teachers of color entering the profession has been almost double the increase in the number of white teachers from 1988 to 2012, and has outpaced the increase in number of students of color in the US, however, an examination of SASS data from 2003-2004 shows that almost 48,000 teachers who identify as a race other than white entered the teaching workforce in that year, but more than 56,000 teachers who identify as a race other than white left the teaching workforce at the end of the same year (Ingersoll & May, 2011a, 2011b). While large numbers of teachers of color leave the profession, these teachers do not have the same mobility pattern as white

teachers. White teachers are more likely to move away from urban schools serving large numbers of students of color and poverty and into suburban schools with predominantly white, middle-class students (Ingersoll & May, 2011a, 2011b). Teachers of color are more likely to move into schools with similar demographics to the schools they left, resulting in no net losses for urban, high-needs schools as an overall category (Ingersoll & May, 2011a, 2011b). Teacher education and route to certification have also been previously shown to have a relationship to turnover. In an examination of SASS data, Redding and Smith (2016) found that the number of teachers entering teaching through alternative pathways has been steadily increasing, with teachers using these pathways making up 25% of the total teaching force by the 2011-2012 SASS administration. Using the 2007-2008 SASS administration data, these authors also found that alternatively certified teachers were significantly more likely to turnover as compared to traditionally certified teachers. The rate of turnover of alternatively certified teachers increased from 1999-2000 to 2007-2008 while the rate of traditionally certified teachers decreased during the same time-period (Redding & Smith, 2016). Boyd et al. (2011) also found that alternatively certified teachers from both local New York state alternative certification programs and from the Teach for America (TFA) program were significantly more likely to turnover as compared to traditionally certified, "college recommended" (CR) teachers from New York university programs. Overall, the background of teachers as well as their training leading into the profession have helped to predict their commitment to the profession and a particular school.

**Teacher work perceptions and turnover.** Consistent across backgrounds and training, teachers with positive work perceptions are more likely to stay compared to those with negative perceptions. Foremost, across the teacher retention literature, teachers who perceive that they have more autonomy over their work and higher levels of administrative support are less likely to move to another school or leave the profession (Borman & Dowling, 2008; Guarino et al., 2006; Podolsky et al., 2016Urick, 2016). For example, when organizational characteristics such as principal leadership and teacher autonomy were included in models of mathematics and science teacher turnover, many of the demographic variables, such as poverty rate and locale, that previously predicted turnover, were no longer significant (Ingersoll & May, 2012).

This administrator support and inclusion of teachers in decisions is important to help reduce external pressures and other job burdens that teachers might face. Principals, through increasing teacher autonomy as well as their communication of a vision, teacher support and management, influence teacher satisfaction and their decisions to stay (Grissom, 2011 Urick, 2016). Principal effectiveness in these areas helps to moderate negative job pressures for teachers. For example, Ingersoll (2001a, 2001b) and Shen (1997) found that teacher influence over their work and school factors including discipline policies led to higher teacher retention. A reduction in routine paperwork and administrative duties that interfere with teaching, along with leadership support influenced teachers to stay (e.g. Ingersoll, Merrill, & May, 2016; Kersaint et al., 2007; Ladd, 2011; Patterson, 2002; Tye & O'Brien, 2002). Additionally, scholars have found that teachers were more likely to report that their school had a turnover problem if they perceived that school conditions, including physical conditions, were poor (Buckley, Schneider & Shang, 2004; Loen, Darling-Hammond, & Luczak, 2005). Finally, assessment of teachers and students is an important factor in teachers' overall working conditions and feelings toward their job (Ingersoll, Merrill, & May, 2016; Kersaint et al., 2007). Low school accountability ratings, perception of paperwork burden and stress associated with accountability, and diminished autonomy over their work during the federal accountability era have all been shown to have a positive relationship with teacher turnover (Clotfelder et al., 2004; Feng, Figlio, & Sass, 2018; Hanushek & Rivkin, 2010; Ingersoll, Merrill, & May, 2016; Kersaint et al., 2007). The finding that teacher perceptions of their work have a relationship with turnover in

schools that received low-performance ratings or sanctions adds an important facet of understanding to the research of teacher turnover issues in the federal accountability era. Specifically, this finding is a first step in understanding the overall mechanism of accountability-related turnover. This study builds on this understanding by examining a more descriptive framework for teachers' perception of their work in the NCLB policy period.

**Teacher Perception of De-professionalization and Demoralization Framework**

Teacher perceptions of their work have frequently been linked to turnover, and empirical work has also linked accountability effects to teacher turnover. However, teacher turnover is a complex and multifaceted issue that is also connected to teacher personal preferences and school-level factors. Therefore, it is useful to provide a framework to assist in disentangling some of these factors to further examine teacher turnover in a model that also includes teacher perception of accountability and assessment policies and perception of their work during the era of federal accountability policy. We propose that the unintended consequences of accountability and assessment policies on teachers' perception of their work can be organized into a de-professionalization and demoralization framework.

**Teacher perception of de-professionalization.** Teacher professionalization is broadly important for maintaining high standards of quality and keeping the integrity of the mission of teachers intact (Benveniste, 1986; Carter Andrews, Bartell, & Ruchmond, 2016; Gentry, Baker, Lamb, & Pate, 2016; Heid & Leak, 1991; Nelson, 1949, 2009; Popkewitz, 1994). It has also been hypothesized that professionalization will help to attract the best and brightest to teaching, will improve teacher motivation, job satisfaction, teacher retention, and will improve overall teacher performance and innovativeness which would, in turn, lead to improved student learning (Heid & Leak, 1991; Ingersoll & Perda, 2008). Previous empirical work has demonstrated a connection between teacher professionalization, particularly autonomy over the technical core of their work, and turnover through the mechanism of improved job satisfaction (Ingersoll, 2001a, 2001b; Ingersoll & Perda, 2008). The mechanisms by which teacher professionalization would improve teacher performance and innovativeness have been explored to a lesser extent, and there is a call for more work in this area. Gentry et al. (2016) describe this mechanism, suggesting that the professionalized teacher is able to use complex student data to make curricular and instructional decisions, leading to both improved student outcomes and, in some cases, instructional innovation. This mechanism suggests that professionalization of the teacher corps would require increasing teacher autonomy over the ways in which they collect and interpret data related to students and how they respond to this data in nuanced ways. However, professionalization is in a state of fluid equilibrium with the interests of the public and with other professions (Bureau & Suqut, 2009; Ingersoll & Collins, 2017). In terms of the teaching profession, this equilibrium shifts towards teacher professionalization when teachers have autonomy over the technical core of their work, specifically curriculum and instruction.

It has been suggested that NCLB contributed to the professionalization and de-professionalization of teaching. NCLB's explicit call for all teachers to be "highly qualified" by demonstrating competency in all subjects that they were assigned to teach suggested that teaching required specialized knowledge and skills that defined teaching as a profession (Ingersoll, 2003; Milner, 2013). However, the accountability mechanism of NCLB tied schools' and teachers' performance ratings to student performance on standardized assessments in a limited number of subject areas. This led to a narrowing of curriculum and instruction and reduced teacher autonomy over the technical core of their work to ensure improvement using a standardized test score criteria, and these effects were more concentrated in schools which were likely to be labeled as failing due to

structural inequities that existed long before the passage of NCLB (Darling-Hammond, 2007; Milner, 2013).

The construct of teacher de-professionalization defined in this study posits that NCLB linked teacher and school evaluation of quality to performance on standardized assessments, and, as a result, curriculum, coursework, and instruction has narrowed to focus on improvement in tested subjects, frequently without input from teachers (Ingersoll & Collins, 2017; Ingersoll & May, 2016; Milner, 2013). While multiple definitions of teacher professionalization and professionalism exist and include a variety of factors such as teacher training and education, teacher pay, and teacher collegiality, this study limits the definition of teacher professionalization to autonomy over the technical core of their primary work in curriculum and instruction. The reason for this limitation is that NCLB focused on teachers' practices in curriculum and instruction as the primary lever for achieving the desired policy outcomes (Superfine, 2005; Superfine, Gottlieb, & Smylie, 2012). NCLB placed an emphasis on standardized test scores in mathematics and reading as the primary measure of school quality, and this emphasis led to a narrowing of curriculum to focus on these subjects, frequently at the expense of time spent on non-tested subjects such as science, social studies, and elective courses (Calwelti, 2006; Hursh, 2007; Jacob, 2005; Koretz, 2008; Nichols & Berliner, 2007; Rothstein, Jacobsen, & Wilder, 2008). In addition to a narrowing of curriculum, schools under threat of sanction under NCLB tended to intensify efforts towards short-term educational strategies to save them from probation or restructuring rather than helping students improve academically in the long-term. For instance, one common strategy used in this regard was to focus on low-level test preparation activities in tested domains rather than providing a rich curricular experience (Malen & Rice, 2016). Enriching instructional practices such as culturally relevant pedagogy and inquiry-based learning were often deleted from pedagogical practices in exchange for a homogenized culture of students as "an army of worksheet filler-outers" (Camp & Oesterreich, 2010). Narrowing of curriculum and dilution of instructional approaches to low-level test preparation frequently ran counter to the professional preferences of teachers and represented diminishing autonomy over the technical core of their work (Powell et al., 2009; Schoen & Fusarelli, 2008; Stillings, 2005). The perceived changes to the technical core of their work and autonomy over that work was also related to teachers' perception of demoralization which is best characterized as a disconnection from the moral rewards and ethic of the profession (Santoro, 2011a).

**Teacher perception of demoralization.** Previous conceptual and empirical work has sought to describe the effects of accountability and assessment policies on the affective domain of teachers' work. In a conceptual examination of the effect of accountability policy on teachers' feelings about their work, Sahlberg (2010) describes a condition in which teachers experienced a conflict with the outcomes of high-stakes accountability and the values associated with education in a knowledge society. Sahlberg (2010) suggests that teachers hold the motivation to learn, creativity and expression, and student flourishing as key values of their profession, and that the narrowing of curriculum, instruction, and subject offerings because of accountability pressures was in direct conflict with these values. Teachers were left trying to balance their work between the moral purpose of serving students in a holistic, student-centered way while at the same time meeting the requirements for perceived efficiency as demonstrated by increased standardized test scores (Cuban, 2007). In the accountability policy era, teachers increasingly faced a tension between a human capital paradigm of education that is based in social efficiency and global competitiveness and a democratic education paradigm that is based in equity of access through the uncovering and reforming existing power structures (Cuban, 2007; Spring, 2011). This value dissonance has been empirically linked to decreased job satisfaction mediated by a decreased sense of belonging and emotional exhaustion (Skalvik & Skalvik, 2011). Using a qualitative methodology, Santoro (2011b) connected teacher

moral and value dissonance to attrition in high-poverty schools, and she introduced a new category of teacher attrition, principled leavers, to describe teachers who exit the profession due to a moral or value conflict. Based on the previous work describing teachers' affective response to accountability policy pressures, Santoro (2011a) suggests a demoralization framework to characterize the value dissonance teachers describe with relation to their work in the accountability policy era.

The conceptualization of teacher demoralization builds on the work describing the affective response of teachers to the implementation of accountability policies. Demoralization as it is conceptualized in this framework has two facets related to the value dissonance between teachers' perceived purpose of their work and the nature of their work in the accountability policy context. First, administrative paperwork and duties related to accountability and assessment distracted from time spent on teaching and on developing relationships with students (Cuban, 2007; Sahlberg, 2010; Santoro, 2011a, 2011b). Second, teachers experienced worry and stress, both for themselves and their students, related to accountability pressure, and this worry and stress may have had emotional exhaustion as an endpoint (Santoro, 2011a; Skalvik & Skalvik, 2011). Third, a continued experience of student failure on standardized assessments may have led teachers to practice external attribution of those failures to student factors outside of their control, including poverty, poor student health, lack of parental involvement or care, and poor student motivation. This attribution pattern may have increased in teachers who were already experiencing emotional exhaustion related to accountability pressures (Georgiou, Christou, Stavrinides, & Panaoura, 2002; Weiner, 1985).

In this study we propose that teacher perception of de-professionalization, described as a loss of autonomy over curriculum and instruction will be positively related to both teacher's intent to leave and realized turnover. Further, we propose that constructs representing teacher demoralization in the forms of worry, stress, and emotional exhaustion and a negative perception of external student factors related to education will also be positively related to intent to leave and realized turnover. Finally, the relationship between this framework (Figure 1) and teacher perception of accountability and assessment policies will be examined by comparing this model of teacher turnover between teachers who cited accountability and assessment policies as a factor in their turnover decision and teachers who did not. This study makes an important contribution to both the understanding of teacher turnover, broadly, and teacher turnover at the height of NCLB implementation. Teacher turnover continues to be a pressing issue in the field of education for a number of reasons. While some turnover in any organization can be necessary and even useful, too much instability of the teacher corps within certain school contexts or teacher demographic groups can create serious organizational challenges (Holme & Rangel, 2012; Ronfeldt, Loeb, & Wyckoff, 2013). Instability in the teacher corps of a school can reduce institutional history and knowledge and institutional coherence, which can ultimately lead to negative impacts on student achievement (Bryk, Gomez, Grunow, & LeMahieu, 2015; Bryk, Sebring, Allensworth, Luppescu, & Easton, 2009).

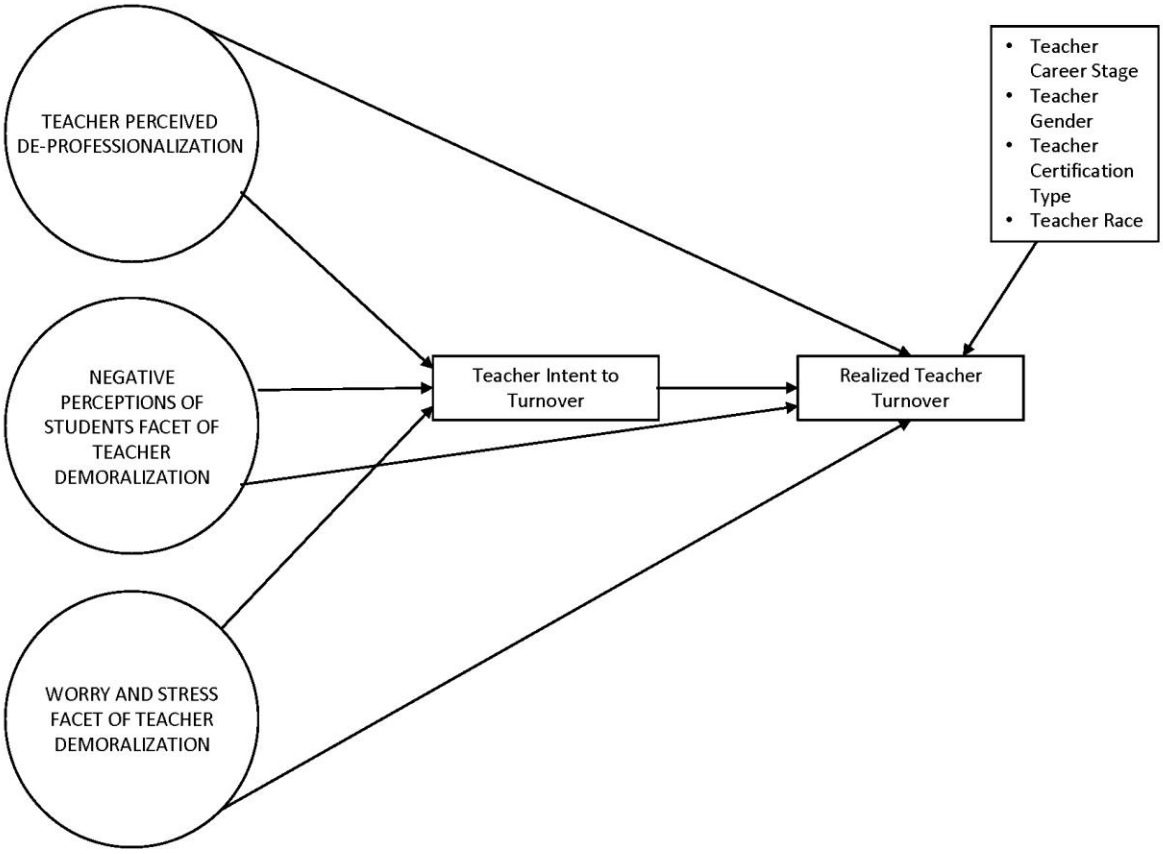


Figure 1. Theoretical Model of the Relationship of Teacher Perception of De-professionalization and Demoralization to Teacher Intent to Turnover and Realized Turnover.

## Method

The broad purpose of this study is to characterize teacher turnover at the height of the accountability policy era in the United States. Specifically, we examine the relationship of teacher perception of de-professionalization and demoralization on their intent to leave the profession or current position and realized turnover. We also examine the differences in these relationships between teachers who cited accountability and assessment policies as a factor for turnover and those who did not. Structural equation modeling (SEM) was used to examine the extent that teacher perceptions of de-professionalization and demoralization influence realized turnover through teachers' intent to leave. SEM integrates the analysis of multiple pathways, or simultaneous OLS regressions, into an omnibus model while also measuring complex constructs, or latent variables, indicated by several survey items (see Alavifar, Karimimalayer & Anuar, 2012; Chin, 1998). SEM provides information about the direct effects of de-professionalization and demoralization on turnover outcomes and allows for evaluation of the complete model between teachers who cited

accountability and assessment policies as a factor in their turnover decision and those who did not (Kline, 2016).

**Sample**

This study is a secondary analysis of the Schools and Staffing Surveys (SASS) and Teacher Follow-up Surveys (TFS) from the 2007-2008/2008-2009 and 2011-2012/2012-2013 administrations collected by the National Center for Education Statistics (NCES). The SASS data are useful for this study because the surveys provide teacher perceptions that correspond with the theorized constructs of de-professionalization and demoralization. Additionally, the TFS includes both teacher-reported intent to leave as well as realized turnover from a portion of all teachers surveyed in the main SASS. The sampling procedures of SASS follow a two-stage, clustered design that is stratified at both the school and teacher levels which yields a nationally representative sample of schools and teachers for the year of the SASS administration (Tourkin et al., 2010). Teachers were stratified by five variables including school sector (traditional public, public charter, or private school), teacher status (leaver, mover, stayer, or unknown), teaching experience (first year, 2 to 4 years, or more than 4 years), teacher grade level (elementary, middle, or secondary), and teacher race/ethnicity (White, non-Hispanic or any race/ethnicity other than White, non-Hispanic) (Graham et al., 2011). For the first stage, schools are selected using the Common Core of Data (CCD) following a stratified sampling frame. For the second stage, up to twenty teachers, with an average between three and eight, were selected per school to participate. Teacher sample weights are provided for both the SASS ("TFNLWGT") and the TFS ("TFSWGT") to adjust the sample estimates to represent the framed target population (Tourkin et al., 2010). The sampling frame for the TFS consists of all teachers who responded to the SASS teacher survey in the previous school year. The sample design objective for the TFS survey is to include teachers in three turnover categories, those who were likely to stay in their current position, those who were likely to move to another teaching position at a different school site, and those who were likely to leave the profession (Graham et al., 2011). NCES has applied a multi-stage imputation procedure to address missing data at all levels for SASS data.

The public school teacher samples for the SASS administrations included (2007-2008 and 2011-2012) in the study range from ~$N$ = 47,600- 51,100 teachers, and the TFS administrations included (2008-2009 and 2012-2013) include teacher samples ranging from ~$N$ = 6,500 – 7,000 teachers. All sample estimates are rounded to maintain confidentiality per NCES requirements for restricted data use. NCES intentionally creates confidentiality edits in TFS data, including missing or blanked data for individual respondents. However, "careful attention is given to preserving the overall distributions and detail of the reported data" (see Graham, et al., 2011, p. 79). Due to the presence of intentional missing data in the TFS records, the resulting data set contained ~2500 individual teacher records. Because the overall distributions and details of responses is preserved, it is not anticipated that the confidentiality edits should affect the analytical process or results of the analysis.

**Variables**

Teacher perception of accountability and assessment policies. The TFS surveys from 2008-2009 and 2012-2013 included three items related to how assessment and accountability policies related to their turnover decision, the decision to leave the profession, move to another teaching position, or stay in their current position. These items were scored on a 5-point Likert scale (see Appendix A), however, an examination of the frequency histograms showed a bimodal response

pattern for each of these items. Therefore, two groups of teachers, those who cited accountability and assessment policies (accountability group) as relevant to their decision of whether to stay in their position, and those who did not see these policies as a reason to stay or turnover (no accountability group), were constructed using a composite score on these three items. Teachers who had a composite score of one were included in the "no accountability" group, and teachers who had a composite score of greater than one were included in the "accountability" group. The pooled 2007-2009/2011-2013 SASS/TFS file was split into two data files each containing cases from only one accountability factor group. The accountability was a factor in whether or not to stay contained ~1100 teacher observations, and the accountability was not a factor in their decision to stay or turnover contained ~1400 teacher observations.

**De-professionalization.** Teacher de-professionalization is characterized as a loss of influence or control over the technical core of their work, specifically influence over curriculum and instructional decisions. Representative SASS items included, "How much actual control do you have in your classroom selecting textbooks and other instructional materials?" and "How much actual control do you have in your classroom selecting teaching techniques?" SASS items included in this construct (see Table 1) were recoded so that the highest Likert scale point represents the lack of influence or control over curriculum and instruction that is predicted to occur when curriculum and instruction practices were narrowed to improve student performance on standardized assessments mandated by NCLB (Cawelti, 2006; Darling-Hammond, 2007; Dever & Carlston, 2009; Hursh, 2007; Malen & Rice, 2016; Milner, 2013; Mintrop & Sunderman, 2009; Powell, Higgins, Aram, & Freed, 2009; Williamson & Morgan, 2009).

**Demoralization.** In this study teacher perception of demoralization is operationalized as having a teacher component (see Table 3) that includes decreased time for instruction due to accountability administrative tasks and worry and stress with emotional exhaustion as an endpoint. Representative items include, "To what extent to you agree or disagree: routine duties and paperwork interfere with my job of teaching?" and, "To what extent to you agree or disagree: The stress and disappointments involved with teaching at this school aren't really worth it?," (Santoro, 2011a, 2011b; Skalvik & Skalvik, 2011; Wronowski, 2018). Demoralization is also operationalized as having a student component that is conceptually related to teacher demoralization (see Table 2). When teachers continually experience poor standardized test scores from students, they may begin to attribute those low scores to student factors outside of their control, including poverty, poor student health, lack of parental involvement or care, and poor student motivation. This attribution pattern may be increased in teachers who are already under increased worry, stress, and emotional exhaustion related to accountability pressures. Representative items for the student component include, "To what extent is student apathy a problem in this school?" and, "To what extent is lack of parent involvement a problem in this school?" (Georgiou, Christou, Stavrinides, & Panaoura, 2002; Weiner, 1985).

Table 1
*Descriptive Statistics of SASS Items Included in Teacher Perception of De-professionalization Latent Variable*

| Question | 07-08/11-12 Item Number | Total Pooled Sample (*n* ~2500) | | Accountability Group (*n*~ 1100) | | No Accountability Group (*n* ~1400) | |
|---|---|---|---|---|---|---|---|
| | | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Influence over Curriculum (1 = A great deal of control; 4 = No control) | | | | | | | |
| Selecting textbooks and instructional materials (P1) | T0280/T0427 | 2.27 | 1.08 | 2.38 | 1.08 | 2.17 | 1.06 |
| Selecting content to be taught (P2) | T0281/T0428 | 2.22 | 1.08 | 2.33 | 1.09 | 2.14 | 1.06 |
| Influence over Instruction (1 = A great deal of control; 4= No control) | | | | | | | |
| Selecting teaching techniques (P4) | T0282/T0429 | 1.44 | 0.71 | 1.54 | 0.79 | 1.36 | 0.64 |
| Evaluating and grading students (P5) | T0283/T0430 | 1.39 | 0.64 | 1.44 | 0.67 | 1.35 | 0.63 |
| Determining the amount of homework to be assigned (P6) | T0285/T0432 | 1.37 | 0.69 | 1.41 | 0.72 | 1.33 | 0.67 |

*Note.* Unweighted descriptive statistics are reported. The TFSWGT was applied as part of the Mplus weight syntax in the analysis.

Table 2
*Descriptive Statistics of SASS Items Included in Teacher Perception of Demoralization Latent Variable*

| Question | 07-08/11-12 Item Number | Total Pooled Sample (*n* ~2500) | | Accountability Group (*n*~ 1100) | | No Accountability Group (*n* ~1400) | |
|---|---|---|---|---|---|---|---|
| | | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| *Negative Perception of Students Facet of Demoralization (1 = not a problem; 4 = serious problem)* | | | | | | | |
| students dropping out (DM2) | T0307/T0459 | 1.61 | 0.86 | 1.73 | 0.95 | 1.51 | 0.77 |
| student apathy (DM3) | T0308/T0460 | 2.55 | 1.05 | 2.79 | 1.04 | 2.53 | 1.02 |
| lack of parent involvement (DM4) | T0309/T0461 | 2.67 | 0.99 | 2.86 | 0.96 | 2.53 | 0.98 |
| poverty (DM5) | T0310/T0462 | 2.73 | 0.99 | 2.91 | 0.96 | 2.60 | 0.98 |
| students come to school unprepared to learn (DM6) | T0311/T0463 | 2.87 | 0.96 | 3.12 | 0.90 | 2.69 | 0.96 |
| poor student health (DM9) | T0312/T0464 | 1.98 | 0.82 | 2.12 | 0.85 | 1.87 | 0.77 |
| *Teacher Facet of Demoralization (recode 1 = strongly disagree; 4 = strongly agree)* | | | | | | | |
| Routine duties and paperwork interfere with my job of teaching (DM1) | T0291/T0440 | 2.84 | 0.91 | 3.03 | 0.87 | 2.70 | 0.92 |
| If you could go back to your college days and start over, would you become a teacher or not (DM8) | T0320/T0472 | 2.20 | 1.26 | 2.51 | 1.33 | 1.96 | 1.16 |
| The stress and disappointments involved with teaching at this school aren't really worth it. (DM12) | T0313/T0465 | 1.98 | 0.94 | 2.26 | 0.97 | 1.75 | 0.85 |
| If I could get a higher paying job, I'd leave teaching as soon as possible (DM13) | T0316/T0468 | 2.10 | 1.15 | 2.33 | 1.09 | 1.92 | 0.99 |
| I think about transferring to another school (DM15) | T0317/T0469 | 2.12 | 1.15 | 2.29 | 1.19 | 1.99 | 1.11 |
| I don't seem to have as much enthusiasm now as when I began teaching (DM16) | T0318/T0470 | 2.41 | 1.10 | 2.74 | 1.08 | 2.15 | 1.05 |
| I think about staying home from school because I'm just too tired to go (DM17) | T0319/T0471 | 1.79 | 0.99 | 2.01 | 1.07 | 1.62 | 0.88 |
| I worry about the security of my job because of the performance of my students on state or local tests (P8) | T0298/T0447 | 2.05 | 0.98 | 2.24 | 1.03 | 1.91 | 0.92 |

*Note.* Unweighted descriptive statistics are reported. The TFSWGT was applied as part of the Mplus weight syntax in the analysis.

**Teacher demographic covariates.** Teacher demographic variables that have been previously shown to have a relationship to turnover were included as covariates on the teacher turnover variable (ATTRIT) that was the outcome variable in the analytic models. There is a well-established U-shaped curve relating teacher career stage and turnover, with most teacher attrition occurring in the first five years of teaching or after reaching retirement experience levels (Ingersoll, 2001b). Categorical dummy-coded variables for teacher experience (Early Career = 0-5 years experience, Mid-career = 6-15 years experience, Late Career = > 15 years experience) were created

from the continuous SASS "TOTEXPER" variable in each data set (Table 3), and the mid-career experience range was the reference category in the analysis. Dichotomous variables were created for teacher gender (male is reference), alternative teacher certification (regular certification is reference), and teacher race/ethnicity (white is reference; teachers who identified as African American, Hispanic, Native American, Asian, or Pacific Islander where collapsed into a single category) (Boyd et al., 2011; Ingersoll & May, 2011a, 2011b; Redding & Smith, 2016).

**Dependent variables**. Teacher turnover (ATTRIT) was used as the distal outcome variable in the analytic models. The ATTRIT variable from the TFS was coded as a three-level categorical variable (see Table 3) with teachers identified as leavers who left the teaching profession, movers who moved to a teaching position in another school, or stayers who stayed teaching in their current school (0 = leaver, 1 = mover, 2 = stayer - reference). To examine the relationship between the de-professionalization and demoralization latent variables and planned and realized turnover, a dichotomous teacher intent to turnover variable was included in the analysis as a proximal outcome and was treated as a nominal mediator (0 = teacher intended to turnover, 1 = teacher did not intend to turnover).

Table 3
*Descriptive Statistics of Teacher Demographic Covariates and Dependent Variables Included in Structural Equation Models*

| | Total Pooled Sample ($n$ ~2500) | | Accountability Group ($n$~ 1100) | | No Accountability Group ($n$ ~1400) | |
|---|---|---|---|---|---|---|
| Variable | Mean | *SD* | Mean | *SD* | Mean | *SD* |
| 1-5 Years Teaching Experience | 0.35 | 0.48 | 0.32 | 0.47 | 0.36 | 0.48 |
| 6-15 Years Teaching Experience (reference) | 0.23 | 0.42 | 0.22 | 0.42 | 0.24 | 0.43 |
| >15 Years Teaching Experience | 0.43 | 0.49 | 0.46 | 0.50 | 0.40 | 0.49 |
| Teacher Holds an Alternative Certification (reference = Regular Certification) | 0.09 | 0.29 | 0.08 | 0.27 | 0.1 | 0.29 |
| Teacher Race/Ethnicity (dichotomous; reference = White) | 0.07 | 0.26 | 0.06 | 0.24 | 0.08 | 0.28 |
| Teacher is Female (reference = male) | 0.73 | 0.45 | 0.72 | 0.45 | 0.73 | 0.44 |
| Teacher Turnover- ATTRIT (reference = stayer) | 0.50 | 0.58 | 0.45 | 0.57 | 0.54 | 0.58 |
| Teacher Intent to Turnover (reference = no intent to turnover) | 1.68 | 0.62 | 0.69 | 0.46 | 0.82 | 0.39 |

*Note.* Unweighted descriptive statistics are reported. The TFSWGT was applied as part of the Mplus weight syntax in the analysis.

## Analytic Procedure

Structural equation modeling (SEM) was applied using the variables outlined above in Mplus software (see procedures in Muthén & Muthén, 2015). Two separate SEM models were analyzed using the variable, accountability/no accountability, to split the sample. The split of the sample based on this variable allows for a comparison of all relationships and paths in the SEM for each group. If it was used as a moderator, we would only see the estimate of this variable on another

variable. Further, the incorporation of a dichotomous moderator in a path with a dichotomous proximal outcome and nominal distal outcome complicates the interpretation of results. In all models, the TFS sample weight was applied ("TFSWGT") because the final population sample was determined by teachers with TFS data. Teacher perception of de-professionalization and demoralization were latent variables as defined by the indicator variables described in Tables 1 and 2. Each indicator was assigned a code (e.g. P1, P2, DM1, DM2) that correspond to the figures presented in the results. Teacher perception of de-professionalization was treated as a single latent variable, and teacher perception of demoralization was treated as two separate latent variables, negative perceptions of students and the teacher worry and stress. This analytical choice was made based on the results of multiple confirmatory factor analysis models, (see Appendices B, C, and D) that indicated that teacher demoralization best fit in a bi-factor CFA model with the two facets of demoralization predicted by an overarching general demoralization latent variable. Teacher intent to turnover was included as a dichotomous proximal outcome in the models, and teacher turnover (ATTRIT) was included as a distal nominal outcome. When an outcome is identified as nominal in Mplus, the last category is used as a reference category; in this model, stayers were used a reference group. The direct effects of de-professionalization and demoralization were calculated for the intent to leave proximal outcome and the distal turnover outcome (see Figure 2). To accommodate a

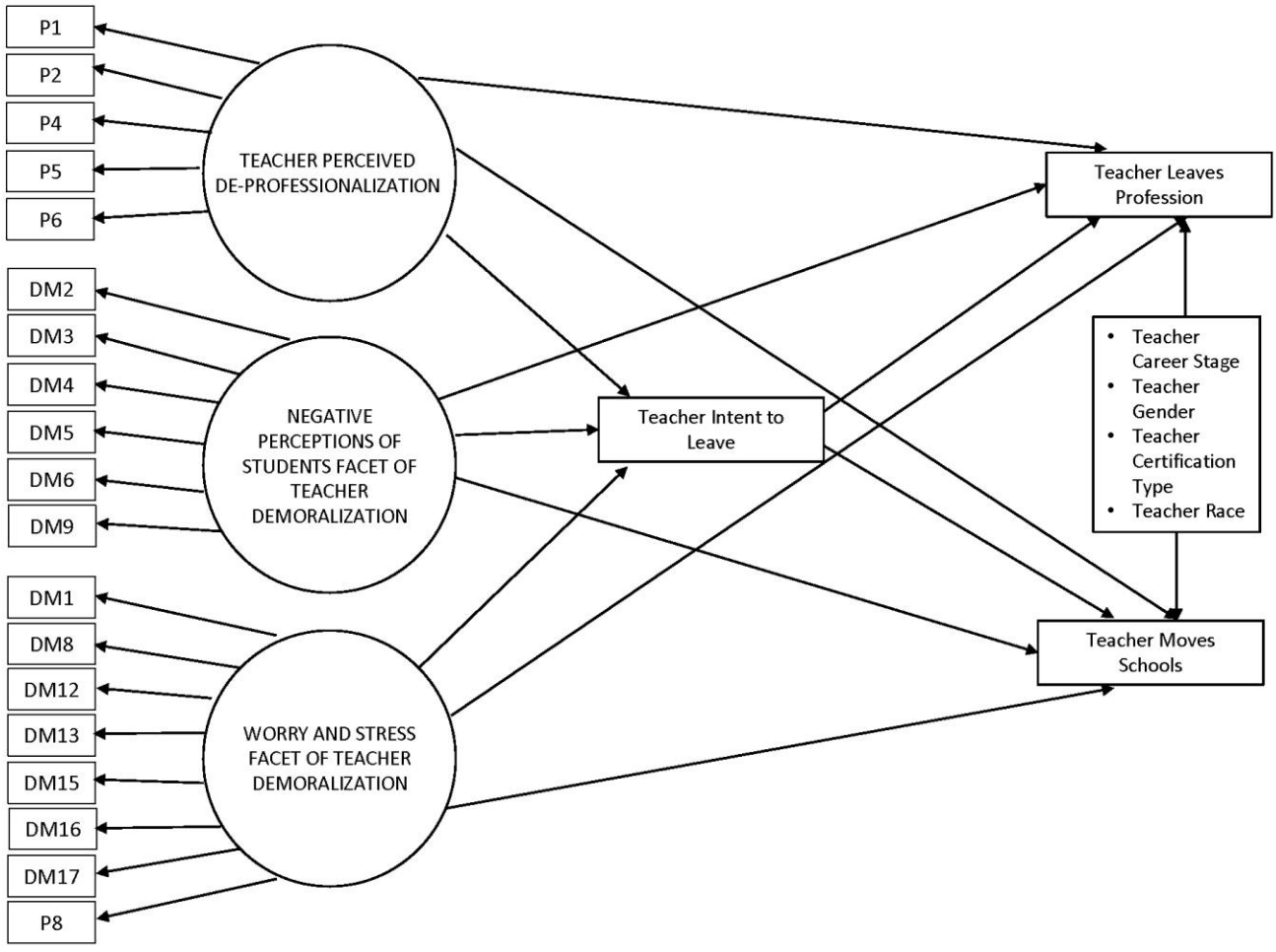


*Figure 2*. Structural Equation Model of the Relationship between Teacher Perception of De-professionalization and Demoralization and Teacher Intent to Turnover and Realized Turnover.

dichotomous proximal outcome and a distal nominal outcome a maximum likelihood (MLR) estimator and expectation maximization (EM) integration was used to integrate across the latent variable-outcomes portions of the model. (see Appendix D).

## Results

### Fit of the Measurement Model

To examine overall fit of the measurement model of the teacher de-professionalization and demoralization framework, the framework was examined using confirmatory factor analysis, and Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Akaike Information Criterion (AIC) values were used to compare different CFA models. Three models of the de-professionalization and demoralization frameworks were compared. The first model constructed was a two-factor model of de-professionalization and demoralization (Appendix B). The fit of this model was less than adequate (CFI = 0.616, RMSEA = 0.046, AIC = 134989.38). To improve fit, based on the theoretical framework of teacher de-professionalization and demoralization, two items related to collegiality were removed from the de-professionalization factor based on their low estimates. This suggests that elements of collegiality may be better conceptualized as elements of professionalism rather than professionalization. One de-professionalization item, worry related to student test performance, was moved to the demoralization factor. In addition, the second model conceptualized teacher demoralization as a bi-factor construct (Appendix C) with a perception of students and teacher worry and stress being subfactors of a general teacher demoralization factor. The fit of this model was adequate and an improvement over the two-factor measurement model (CFI = 0.902, RMSEA = 0.024, AIC = 120745.16). Finally, a three-factor model of teacher de-professionalization and demoralization was assessed (Appendix D). The fit of this model was also adequate (CFI = 0.888, RMSEA = 0.026, AIC = 120745.16), although the fit was slightly less than the bi-factor model. The bi-factor model was tested in initial structural models; however, the models did not converge and did not produce full estimates. As a result, the three-factor model of teacher de-professionalization and demoralization, a simplified model which also had adequate fit, was tested within the full structural models. The SEM model using this simplified measurement model converged and produced full estimates. Therefore, the SEM results presented use this measurement model.

The Path of Teacher De-professionalization and Demoralization, Intent to Leave, and Turnover

**Teachers who cited accountability and assessment as a factor in decision to stay or turnover.** An examination of overall comparative fit statistics (AIC and Bayesian Information Criterion- BIC) shows that a SEM relating teacher de-professionalization and demoralization to teacher turnover with teacher intent to leave as a mediator exhibits better overall fit in the data set containing observations from teachers in the "accountability" group (AIC = 56846.54, BIC = 57297.87) (see Figure 3) compared to the data set containing teachers in the "no accountability" group (AIC = 70661.06, BIC = 71135.58) (see Figure 4). The only significant relationship of the latent de-professionalization and demoralization variables to teacher intent to turnover, with no intent to turnover as a reference, was the relationship of the teacher worry and stress factor to intent to turnover (Standardized Estimate = 0.27, β/Std. Error = 4.55, $p < .001$). This result is similar to the results for the relationships between the latent de-professionalization and demoralization factors and teacher turnover in this model (Figure 3). In the "accountability" teacher group, the worry and stress factor of demoralization was a significant positive predictor of teachers leaving the profession (Standardized Estimate = 0.73, β/ Std. Error = 5.66, $p < .001$) and teachers moving schools

(Standardized Estimate = 0.68, β/ Std. Error = 5.23, $p < .001$) (Figure 3). Intent to leave was not a significant predictor of either teachers leaving the profession or teachers moving schools.

When including teacher perception of de-professionalization and demoralization as predictors, several teacher demographic factors were also significantly related to teacher turnover in the "accountability" teacher group. Late career teachers were significantly more likely to leave the profession compared to mid-career teachers (Standardized Estimate = 0.36, β/ Std. Error = 2.16, $p < .05$). Alternatively certified teachers were significantly more likely to leave the profession (Standardized Estimate = 0.60, β/ Std. Error = 6.49, $p < .001$) and were more likely to move schools (Standardized Estimate = 0.61, β/ Std. Error = 6.67, $p < .001$) compared to teachers holding a regular certification. Teachers who identified as a race other than white were significantly more likely to move schools compared to white teachers (Standardized Estimate = 0.40, β/ Std. Error = 2.91, $p < .01$).

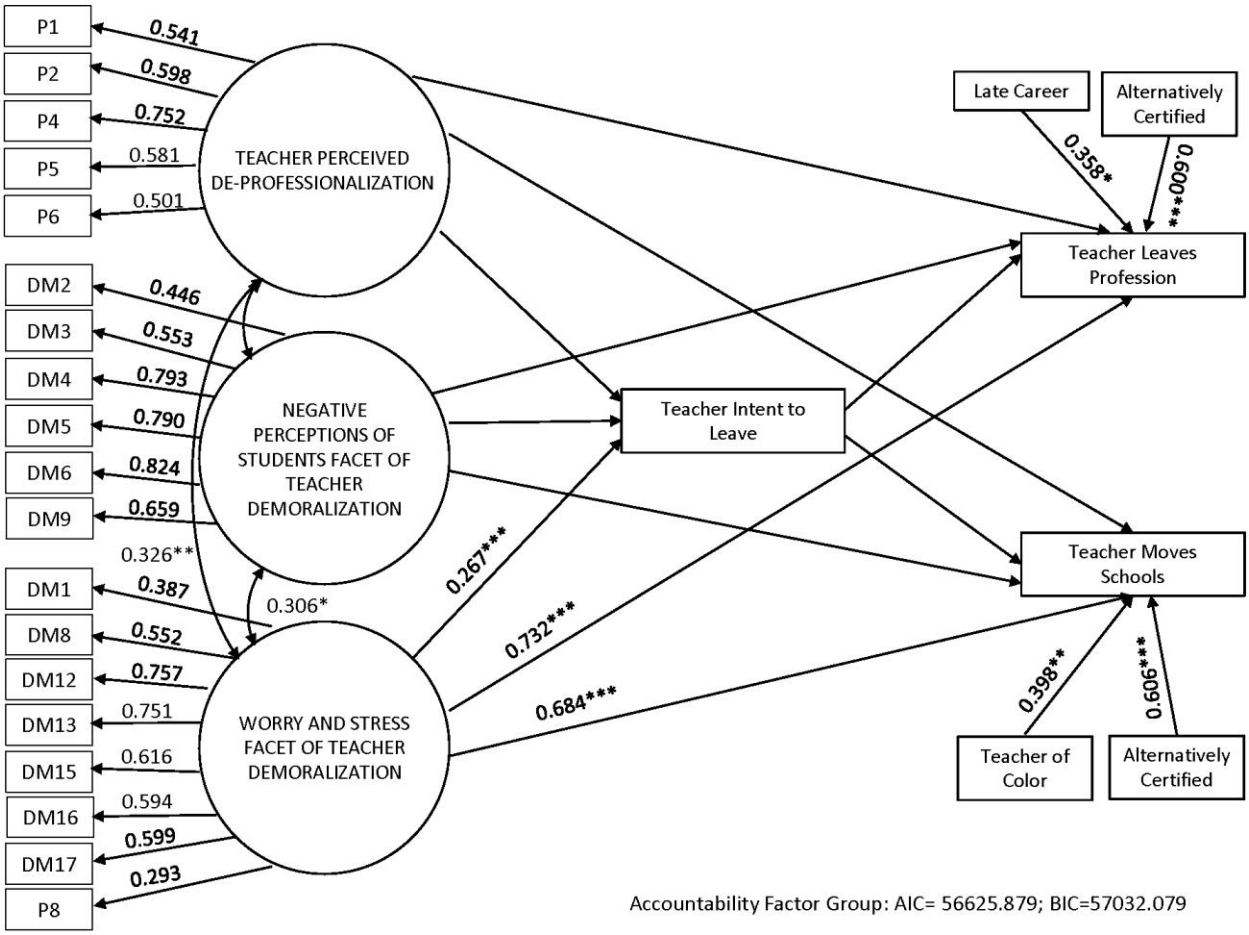


*Figure 3*. Structural Equation Model of the Relationship between Teacher Perception of De-professionalization and Demoralization and Teacher Intent to Leave and Turnover in Teachers who Cited Accountability and Assessment Policies as a Factor in their Decision to Stay or Turnover.
Note: All estimates between latent factors and indicators are significant ($p < .001$). Significant estimates between latent de-professionalization and demoralization factors and between latent factors and intent to leave and turnover are shown with asterisks (* $p < .05$, ** $p < .01$, *** $p < .001$).

**Teachers who did not cite accountability and assessment as a factor in their decision to stay or turnover.** These results can be compared to the model results using data from teachers who did not cite accountability and assessment policies as a factor in their decision to stay or turnover. In contrast to the SEM model in teachers who cited accountability and assessment policies as a factor in their decision, the latent de-professionalization and demoralization variables were not significant predictors of teachers leaving the profession or moving schools in teachers who did not cite accountability and assessment policies as a factor (see Figure 4). However, a similar relationship to teacher worry and stress and intent to leave is observed in both models with worry and stress being a significant predictor of intent to leave (Standardized Estimate = 0.47, β/ Std. Error. = 5.37, $p < .001$). Another similarity between models is that teacher intent to leave is not a significant predictor of turnover in the group of teachers who did not cite accountability policies as a factor in their decision to stay or turnover. Additionally, alternatively certified teachers are more likely to leave the profession (Standardized Estimate = 0.91, β/ Std. Error = 11.52, $p < .001$) and are more likely to move schools (Standardized Estimate = 0.77, β/ Std. Error = 6.68, $p < .001$) compared to teachers holding a regular certification in both teacher groups (see Figure 4).

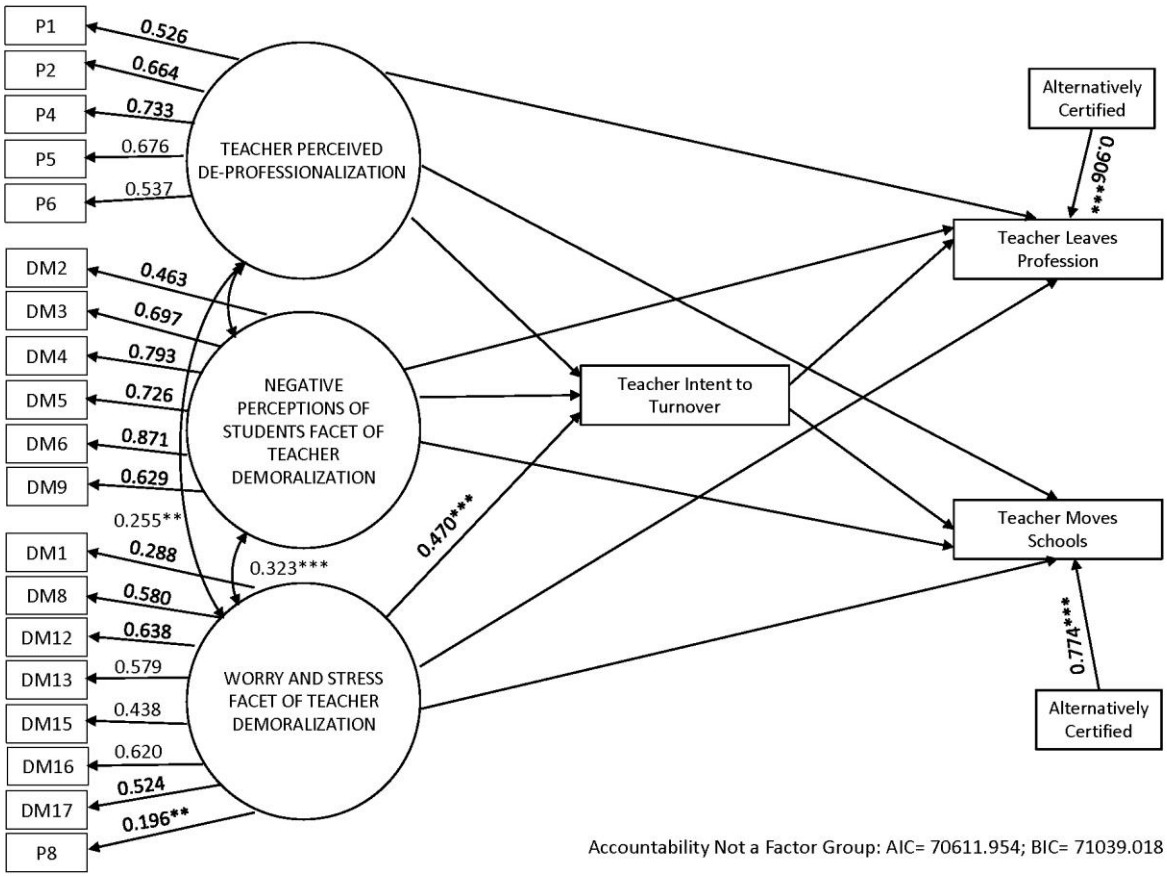


*Figure 4*. Structural Equation Model of the Relationship of Teacher De-professionalization and Demoralization to Teacher Intent to Leave and Teacher Turnover in Teachers Who Did Not Cite Accountability and Assessment Policies as a Factor in their Decision to Stay or Turnover.
*Note:* All estimates are standardized. All estimates between latent factors and indicators and between latent factors are significant ($p < .001$, except P8, $p < .01$). Significant estimates between latent de-professionalization and demoralization factors and intent to leave and turnover are shown with asterisks (* $p < .05$, ** $p < .01$, *** $p < .001$).

## Discussion

As the United States transitions from the federal accountability policy era of NCLB and into ESSA, it becomes even more important to understand teachers' responses to accountability policy, particularly when this transition allows for more flexibility at the state level in the approach to assessment and evaluation. From a policy implementation perspective, implementers' perception of a policy can be as important, if not sometimes more important, to the overall effects of the policy than the explicated policy itself (Bardach, 1977; Pressman & Wildavsky, 1979). The purpose of this study is to provide a framework for understanding the perceptions of teachers as primary accountability and assessment policy implementers. Specifically, this study describes the relationship between teachers' perceptions of accountability and assessment policies, as implemented in their schools at the height of federal accountability, and intent to leave and realized turnover. Policy-related turnover is an important phenomenon to understand given the well-established teacher shortages that are present in the United States' highest-need schooling contexts and overall rate of teacher churn in the United States (Clotfelder, Ladd, Vigdor, & Wheeler, 2007; Hanushek, Kain, & Rivkin, 2004; Imazeki, 2002; Ingersoll, 2001, 2003a, 2003b; Ingersoll, Merrill, & Stuckey, 2014; Jacob, 2007; Lankford, Loeb, & Wyckoff, 2002).

The model relating the teacher perception of de-professionalization and demoralization framework to teacher intent to leave and turnover exhibited an overall better fit in a nationally representative group of teachers who cited accountability and assessment policy implementation as a factor in their decision to stay or turnover compared to a group of teachers who did not. This result suggests that there is a relationship between teachers' perception of accountability and assessment policy implementation and the way in which teachers' perception of their work influences intent to leave and realized turnover. This result echoes the finding of previous research that demonstrates that increased professionalization of teachers as defined by increased autonomy over curriculum and instruction can mitigate some of the teacher turnover experienced by low-performing, NCLB sanctioned schools (Ingersoll, Merrill, and May, 2016).

This study builds on this finding by incorporating an affective component, teacher demoralization, to teachers' perception of accountability and assessment policies and to intent to leave and teacher turnover. Teacher demoralization, with emotional exhaustion as an endpoint, has been previously described in several qualitative studies, and parts of the construct have been assessed quantitively outside of the U.S. accountability and assessment policy context (Santoro, 2011a, 2011b; Skaalvik & Skaalvik, 2010). Previous work has also demonstrated that accountability policies, including NCLB, have had a negative effect on teachers' morale (Byrd-Blake et al., 2010; Finnigan & Gross, 2007; Mausethagen, 2013; Santoro, 2011a, 2011b). However, this study demonstrates that there is a significant relationship between teachers' disaffection and intent to leave their current position. Further, the relationship between teachers' perception of demoralization and both teachers leaving the profession and moving schools, even after the inclusion of teacher demographic factors, is only significant in teachers who cite accountability and assessment policies as a factor in their turnover decision. This result suggests that there is a connection between a negative perception of accountability and assessment policies and teacher turnover that is primarily driven by demoralization, and aligns with previous work that describes a moral, ethical, and affective domain to teacher turnover (Santoro, 2013). Demoralization represents a terminal step in teachers' response to policy in which hopelessness, feelings of diminished control over their work, and emotional exhaustion can only be rectified through exit from their current position or from the profession altogether.

This study also demonstrates that turnover related to perception of accountability and assessment policies differs among teacher demographic groups. For teachers who cited accountability policies as a factor in their turnover decision, late career teachers were more likely than mid-career teachers to leave the profession. However, this relationship between career stage and leaving the profession was not seen in teachers who did not cite accountability policies as a factor in their turnover decision. Veteran teacher attrition is a problematic consequence of accountability and assessment policy implementation given the significant body of research that demonstrates that teaching experience throughout all career stages is positively associated with student achievement gains (Kini & Podolsky, 2016; Ladd & Sorensen, 2016; Papay & Kraft, 2015). Turnover of veteran teachers may particularly harm high-poverty, high-needs schools given that teacher experience has been linked to student achievement in these school contexts (Huang & Moon, 2009; Sass et al., 2012). Turnover of experienced teachers also negatively affects school organizations who lose a valuable resource of teacher leadership and mentorship for inexperienced teachers (Jackson & Bruegmann, 2009; Kini & Podolsky, 2016). However, it is also important to consider that early and mid-career teachers have less turnover in the accountability group compared to late career teachers because accountability, and its effects on their work, are the norms in which they have spent their entire career. In this way, federal accountability policies may have long-term, effects on the teaching profession even where those effects were not necessarily intended or particularly beneficial. In addition to the finding that late career teachers are more likely to leave the profession when they have a negative perception of accountability policies, we also find that teachers of who identify as a race other than white are more like to move schools when they have a negative perception of accountability policies. Previous research has shown that this may not have an overall negative impact on staffing in high-needs schools because teachers who identify as a race other than white are more likely to transfer to other high-needs schools compared to their white peers (Ingersoll & May, 2011a, 2011b). However, this finding warrants additional research to determine if this pattern of mobility is the same when teachers who identify as a race other than white cite accountability and assessment policies as a reason for turnover. This study also provides a starting point for other areas of future research into school contextual factors that contribute to accountability-related teacher turnover.

**Limitations and Future Research**

This study adds to the understanding of teacher turnover during the federal era of accountability by examining the relationship between teachers' perception of de-professionalization and demoralization and intent to leave and realized turnover in groups of teachers who cite accountability and assessment as a factor in their decision to stay or turnover and those who did not. While this model makes important connections between teacher perceptions, particularly perceptions of the affective domain, and turnover decisions, the model is not without limitations. Teacher turnover is often related to school contextual factors including urbanicity, poverty rate, percent students of color, and school leadership (Borman & Dowling, 2008; Boyd et al., 2005; Clotfelder, Ladd, & Vigdor, 2007; Guarino, Santibanez, & Daley, 2006; Ingersoll, 2001; Lankford, Loeb, & Wyckoff, 2002; Loeb, Darling-Hammond, & Luczak, 2005). However, no school contextual factors were included in this study. Future work could use the teacher de-professionalization and demoralization framework as a starting point for building more complex models that include school contextual factors. Another limitation of this study is that it utilizes cross-sectional data from the height of the federal accountability policy era. Stronger conclusions regarding the effects of accountability and assessment policies on changes in teacher perception of their work and related turnover could be drawn through if the teacher perception of de-

professionalization and demoralization framework was applied longitudinally from the pre-accountability policy era through ESSA.

The teacher perception of de-professionalization and demoralization framework as conceptualized here could also be used as a starting point for qualitative work. For example, qualitative studies could provide a rich description of generational differences in the perception of the normative view of the teaching profession compared to its current state. A qualitative approach could also be used to identify other characteristics of teachers who stay in their positions in the accountability; for example, if they favor a technocratic approach to education, or if they are broadly logical, concrete thinkers. Qualitative studies may also better describe the tipping point at which worry and stress related to accountability and assessment lead a teacher to turnover and what leads to the decision to simply move schools versus leaving the profession altogether.

## Conclusion

Turnover in any profession is not patently negative, however, chronic instability in the teacher corps in the United States, particularly in high-need schooling contexts is both an organizational and equity issue. This study lends further evidence for the hypothesis that the accountability and assessment driven reform movement of the past twenty years has had consequences for the teaching profession with regards to teachers' perception of their work and teacher retention. At the height of this policy era, a segment of U.S. teachers' find that accountability and assessment policies are not congruent with their views of their profession—leading to increased worry and stress with turnover as the ultimate outcome. Turnover for this reason would not be considered beneficial using traditional human resources frameworks because these teachers may not be leaving because they are not effective, and they may not be replaced by teachers who are more innovative or a better fit for the organization. Rather, they may be excellent educators who are acting as conscientious objectors (Santoro, 2011b). Therefore, it is important to view this work as a starting point for continuing to understand who these teachers are and how they may be better supported as we transition to the next stage in the accountability policy era.

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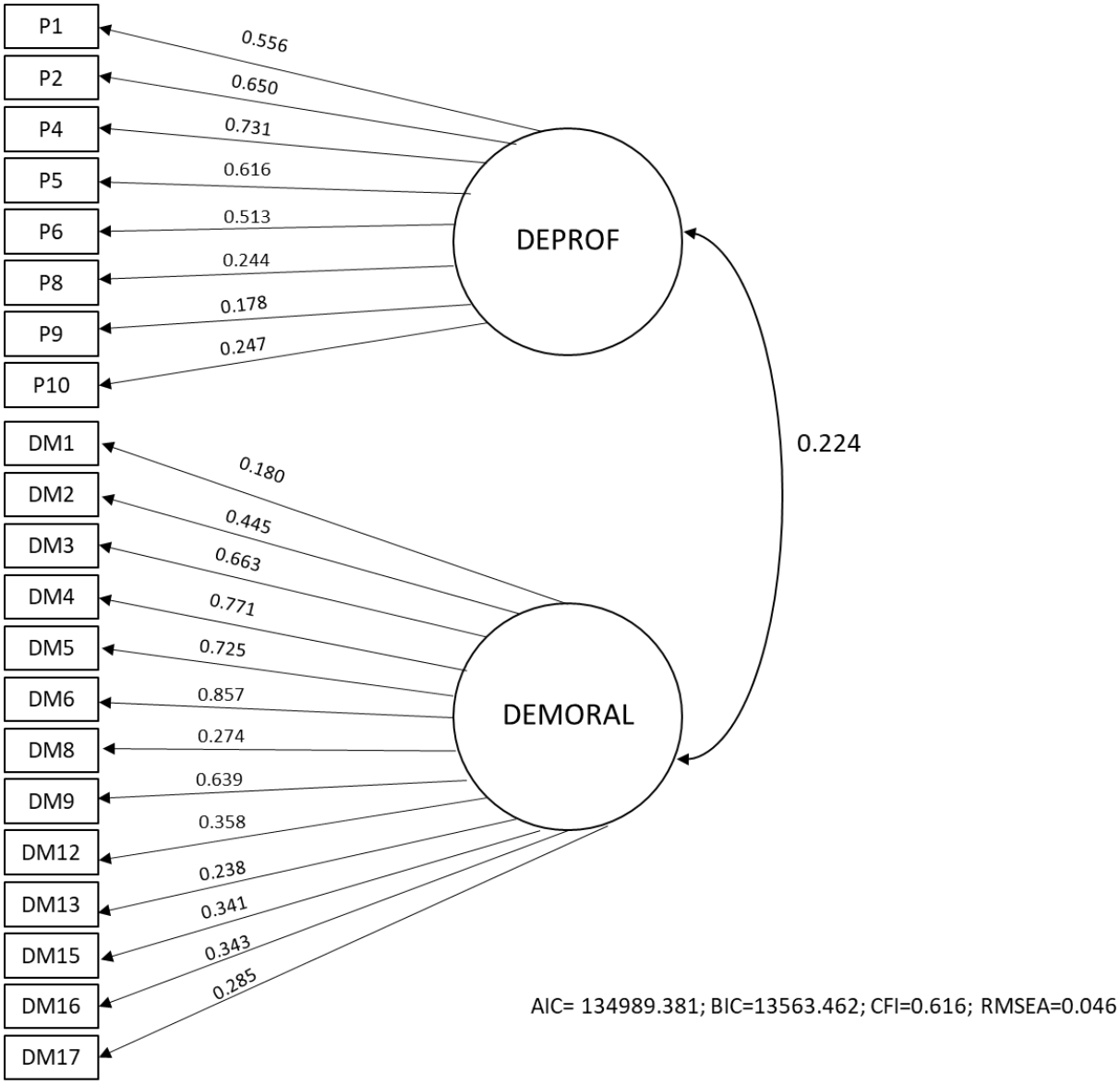
# Appendix A
# Descriptive Statistics of NCES Teacher Follow-up Survey Items Used to Construct Teacher Perception of Accountability and Assessment Policy Groups

Table A-1

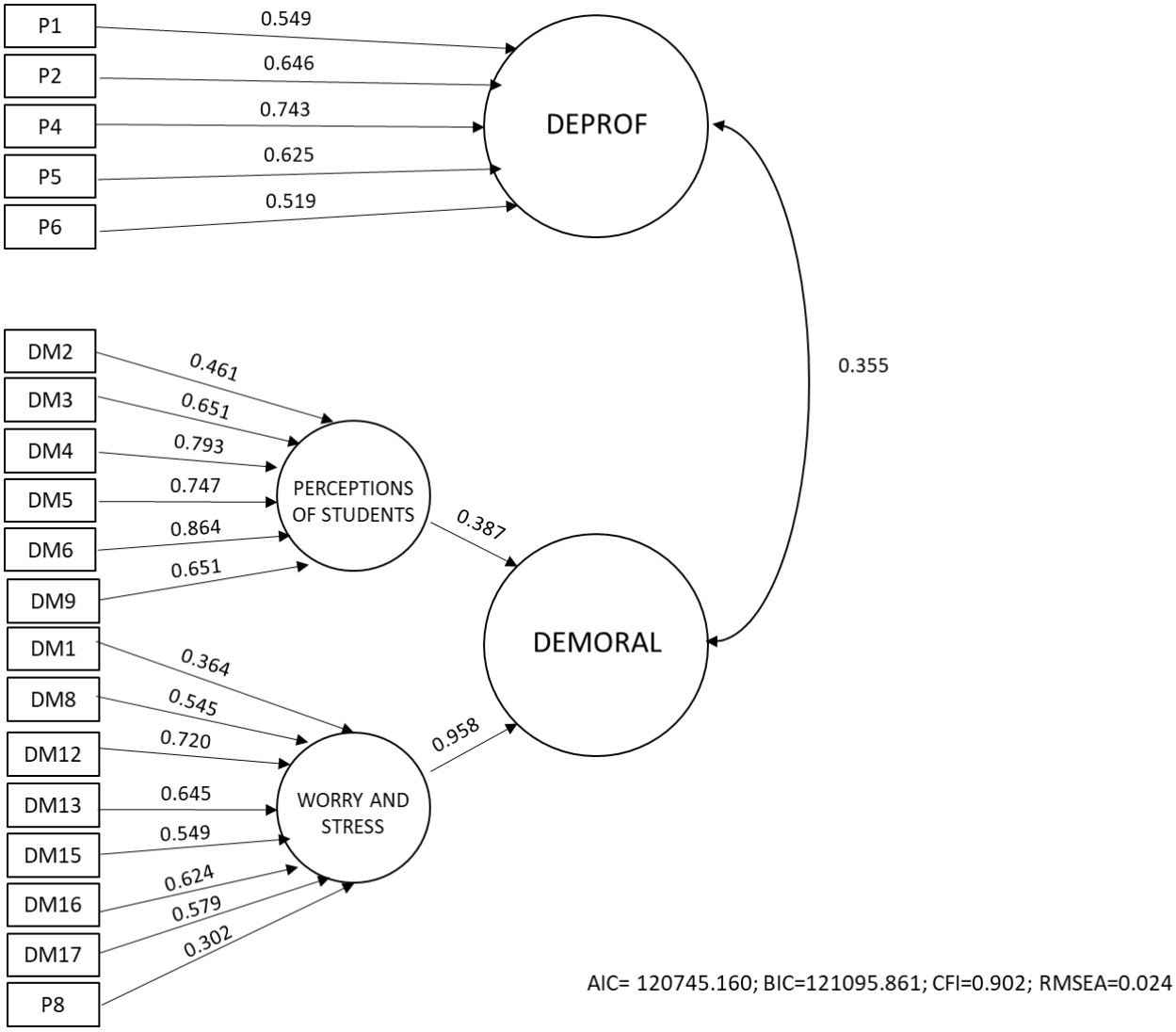
*Descriptive Statistics of NCES Teacher Follow-up Survey Items Used to Construct Teacher Perception of Accountability and Assessment Policy Groups*

| | TFS Item | | | Pooled 08-09/12-13 TFS Sample (*N* = 2550) | |
|---|---|---|---|---|---|
| | 2008-2009 | 2012-2013 | Range | *M* | *SD* |
| *Indicate the level of importance each item played in your decision to leave the position of a K-12 Teacher/leave last year's school* | | | | | |
| Because I was dissatisfied with how student assessments/school accountability measures impacted my teaching or curriculum at last year's school. | LVAIM/ MVAIM | 1721/1245 | 1 = Not at all important; 5 = Extremely important | 1.8625 | 1.31496 |
| Because I was dissatisfied with having some of my compensation, benefits, or rewards tied to the performance of my students at last year's school. | LVARW/ MVARW | 1722/1246 | 1 = Not at all important; 5 = Extremely important | 1.3302 | 0.89684 |
| Because I was dissatisfied with the support I received for preparing my students for student assessments at last year's school. | LVASP/ MVASP | 1723/1247 | 1 = Not at all important; 5 = Extremely important | 1.5151 | 1.0692 |
| Mean Composite of Accountability and Assessment Items | | | | 1.5941 | 0.92149 |

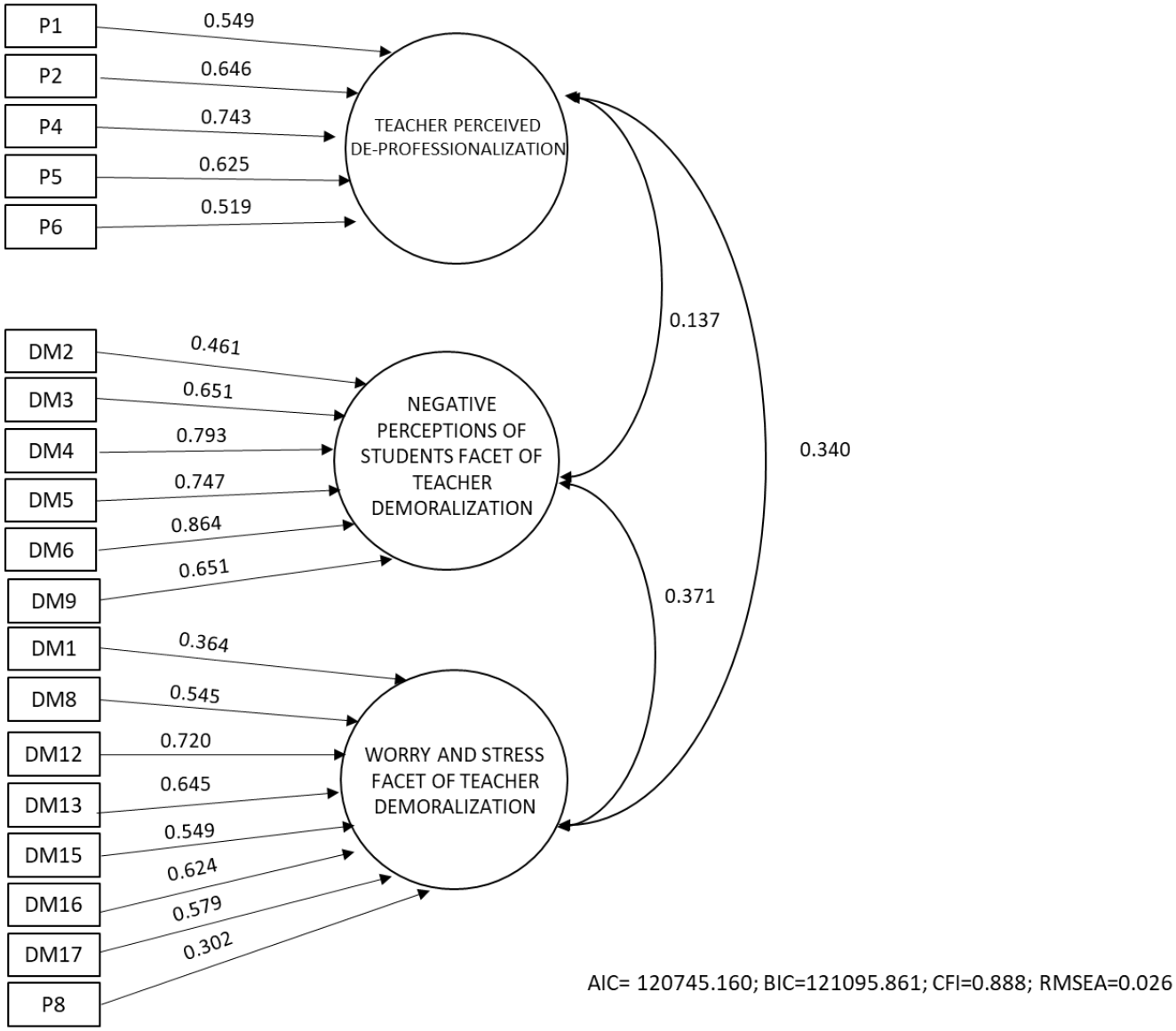
## Appendix B
## Two-Factor Confirmatory Factor Analysis of Teacher De-professionalization and Demoralization



# Appendix C
## Bi-Factor Confirmatory Factor Analysis of Teacher De-professionalization and Demoralization



## Appendix D
## Three-Factor Confirmatory Factor Analysis of Teacher De-professionalization and Demoralization



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