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Ted Kaniuka et Miriam Chitiga

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An Examination of Teacher Experience and Perception of Leadership Effort on Commitment to Stay Using Mediation Analysis

Ted Kaniuka, *Fayetteville State University*

Miriam Chitiga, *Warner University*

Abstract

This study approaches the idea of teachers' commitment to stay at their job by considering their perceptions of efforts by leadership to support working conditions in schools. Data from 85,000 teachers from the 2016 school year in North Carolina were used in the mediation analysis. Results show that administrative effort had a direct effect on teachers' commitment to stay. This effort was mediated by how teachers view the working conditions in their schools, and new and veteran teachers view the impact of administrative effort on their commitment to stay in a similar manner. Policy implications are discussed, along with suggestions for unpacking these data to reveal a more discreet understanding of the internal dynamics of schools.

Résumé

Cette étude porte sur l'engagement des enseignants à rester à leur poste en fonction de leurs perceptions des efforts déployés par le leadership pour maintenir de bonnes conditions de travail dans les écoles. Les données de 85 000 enseignants de l'année scolaire 2016 en Caroline du Nord ont été utilisées dans une analyse de médiation. Les résultats montrent que l'effort administratif a eu un effet direct sur l'engagement des enseignants à rester. Toutefois, l'impact de cet effort administratif dépendait de la manière dont les enseignants percevaient les conditions de travail dans leurs écoles, ainsi que de la manière dont les nouveaux et anciens enseignants percevaient cet impact sur leur engagement. Cette étude évalue aussi les implications de cet état des choses pour la

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formulation de politiques et propose des pistes pour interpréter les données afin d'en arriver à une compréhension plus fine de la dynamique interne des écoles.

Keywords / Mots clés : school leadership, teacher attrition, school working conditions, leadership effort, teacher empowerment / leadership scolaire, attrition des enseignants, conditions de travail dans les écoles, effort de leadership, responsabilisation des enseignants

Introduction

Teacher attrition and associated shortages have long plagued American education (see Olstad & Beal, 1984), and researchers have offered a variety of explanations for this phenomenon (see Darling-Hammond & Carver-Thomas, 2016; Flynt & Morton, 2009; Sutchter & Darling-Hammond, 2011). Teacher working conditions (New Teacher Center, 2017) have long been seen as critical in teacher retention (Berry & Fuller, 2007; Berry, Smylie, & Fuller, 2008; Geiger & Pivovarov, 2018; Reitman & Karge, 2019). Recently, attention on administrative behaviors has yielded the insight that school leaders affect attrition (Boyd, Grossman, Ing, Lankford, Loeb, & Wyckoff, 2011; Burkhauser, 2017).

Supporting the need to examine these phenomena more deeply, Barnett Berry (2008) argued that while research suggests a relation between teacher working conditions and teacher and student outcomes, little is known about the causal connections among the independent, mediating, and dependent variables. While using the idea of attrition is practical and easily quantified, 65 percent of teachers who leave fail to return to teaching (Warner-Griffen, Noel, & Tadler, 2016). As an alternative, however, focusing on teacher commitment to stay offers insight into what school administrators have done to engender a teacher's desire to remain at their current school. Given that school leaders in large part determine the roles and degree of empowerment of teachers, this article uses data from the 2016 administration of the North Carolina Teacher Working Conditions Survey (NCTWCS) to examine how teachers perceive that the effort of school administrators impacts their working conditions and how this perception affects teacher-indicated commitment to stay in their current school. Furthermore, this article examines how individual teachers indicated a commitment to stay, adopting a more proactive perspective rather than focusing on attrition.

Teacher working conditions

Since 2002, North Carolina has administered a bi-annual teacher working conditions (TWC) survey that was originally designed to assist state policymakers in addressing the predicted teacher shortage and help them better understand how working conditions are related to student performance. Since the implementation of the NCTWCS, and similar surveys in other states, a significant body of research has been amassed that suggests teacher working conditions can affect school performance and teacher career decisions (Geiger & Pivovarov, 2018; Hanushek, Kain, Rivkin, & Branch, 2007; Ingersoll, Dougherty, & Sirinides, 2017; Steele, Hamilton, & Stecher, 2010). Further, recent reports continue to emphasize the need to focus on working

conditions to ameliorate teacher turnover amid the difficulty, particularly in North Carolina, in hiring replacement and new teachers (Berry, Bastian, Darling-Hammond, & Kini, 2021; Hincliff, 2019; Learning Policy Institute, 2017).

The focus on teacher turnover stems from its reportedly detrimental effects on student achievement (Banerjee, Stearns, Moller, & Mickelson, 2017; Ronfeldt, Loeb, & Wyckoff, 2013) and the costs associated with the declines in human capital (Muller, Dodd, & Fiala, 2014; Synar & Maiden, 2012). Indeed, experienced (effective) teachers leaving has both academic and economic consequences for schools (Hanushek, Rivkin, & Schiman, 2016). These costs are not distributed equally across institutions. Schools with more economically disadvantaged and racially diverse student populations bear disproportionate rates of turnover and frequently serve as training experiences for new teachers, which often negatively impacts school improvement efforts (Carver-Thomas & Darling-Hammond, 2019; Goldhaber, Quince, & Theobald, 2019). As such, school districts and state leadership have emphasized the need to reduce turnover and increase teacher commitment.

Assessing the role of school leadership on teacher working conditions is particularly relevant as the role of school principals has been found to influence teacher turnover (Kraft, Marinell, & Shen-Wei Yee, 2016; Learning Policy Institute, 2017). Furthermore, as is the case in North Carolina where high-poverty school districts have difficulty in recruiting and retaining teachers, studies have found that the role of the school principal is key in addressing such critical issues (Brown & Wynn, 2009; Grissom, 2011; Simon & Johnson, 2015). Developing a deeper understanding of how teachers perceive the leadership effort of principals may provide critical insights that make it possible to better address teacher commitment to stay.

Teacher experience, commitment, and leadership

It has been posited that as teachers gain years of experience, they view the role and significance of school leadership differently. It has been suggested that the manifestation of these differing teacher perspectives is reflected in the concerns of experienced and inexperienced teachers about classroom management and interacting with parents (Martin & Baldwin, 1994; Melnick & Meister, 2008), where sources of self-efficacy are found (Tschannen-Moran & Hoy, 2007), and how teachers view and experience professional development (Coenders & Verhoef, 2019). William Firestone and James Penuel (1993) investigated teachers' commitment to stay and concluded that if principals develop school cultures where collaboration, feedback, and participation in decision-making are present, these conditions could enhance a teacher's commitment to stay. They also claimed that incentives and other monetary support failed to meaningfully affect teacher commitment.

Role of the administrator

It has been argued that principals serve to create a school environment that is conducive to conditions supportive of teacher leadership and creating a sense of empowerment within teachers (Youngs & King, 2002). If perceived administrative effort impacts teachers' commitment to stay, then significant advances can be made to reduce attrition and associated costs (see Adnot, Dee, Katz, & Wyckoff, 2017). Indeed,

results from the 2016 NCTWCS report that when teachers were asked about the most important factor they considered in their decision to stay at their current school, 24.68 percent of new teachers and 31.44 percent of experienced teachers stated that it was school leadership (North Carolina Teacher Working Conditions Survey Data, 2016).

Donald Boyd, Pam Grossman, Marsha Ing, Hamilton Lankford, Susanna Loeb, and James Wyckoff (2011) examined the relationship between principal behavior and teacher career decisions (e.g., remaining in current position or making a change), and they found that principal behavior accounted for a significant amount of the variance in teacher career decision-making. This is not unexpected, Virginia Davidhizar Birky, Marc Shelton, and Scot Headley (2006) commented that teacher leaders are usually ineffective unless they have the support of principals. Prior research also indicates that teacher self-efficacy is impacted by principal leadership and such differences are stratified across years of experience, with less experience being associated with greater principal influence (Tschannenn-Moran & Hoy, 2007; Walker & Slear, 2011). Further research indicates that principal perspectives, experience, and backgrounds influence how supported new teachers feel (Youngs, 2007) and principal leadership affects how teachers view their professional life, school climate, and overall satisfaction (Shepherd-Jones & Salisbury-Glennon, 2018).

Continuing this line of research, Susan Burkhauser (2017) clearly states that principal behavior significantly influences how teachers perceive their working environments. Burkhauser further asserts that teachers' perceptions of their working conditions are dependent on who is principal. The relationship of leadership on teachers' commitment to stay may not be a clear and direct path; rather, it may indirectly influence teachers via elements of their working conditions. Supporting this assertion, Robby Anzil Firdaus, Dian Purnamasari, and Stefy Falentino Akuba (2019) found that leadership did not have a direct impact on commitment to stay; leadership influence was mediated by teacher workload. To further emphasize the importance of leadership and teacher perceptions, Jafeth E. Sanchez, Jeffrey M. Paul, and Bill W. Thornton (2020) presented that in schools where teachers perceived their principal effectively demonstrating leadership, they perceived the school climate more positively. Finally, Jihyun Kim (2019) discovered that early career turnover was influenced by principal behavior, especially concerning how teachers perceived the principal's support regarding student discipline.

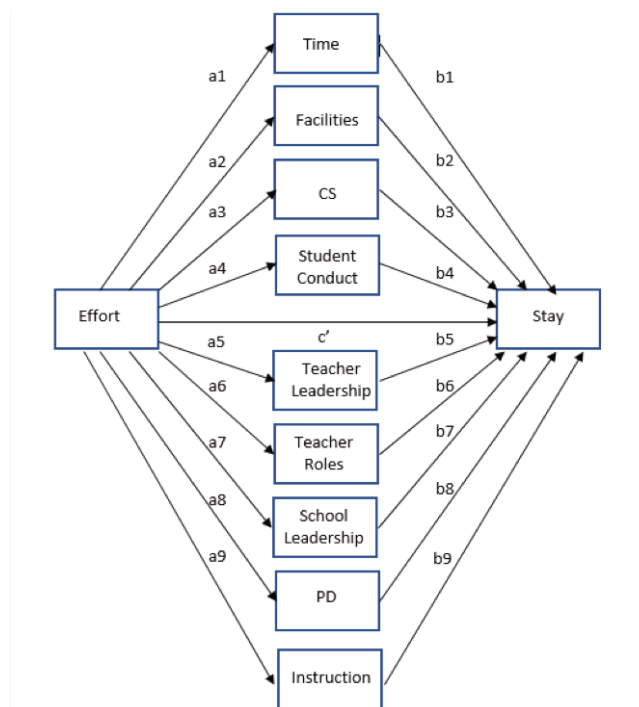
This study uses extant literature to frame an analysis of how teachers perceive the effort made by principals regarding their working conditions. If teachers perceive principals as being supportive—demonstrating an effort to support teachers as manifested in the working conditions as defined in North Carolina—it may impact their commitment to stay in a school.

Theory of change

The design of this model (see Figure 1) is based on the theory of change (Collins, 2006), which posits that teacher perceptions of their working conditions influence their commitment to the organization. Commitment to an organization has been measured in various ways since the topic was first investigated in earnest in the 1990s. Commitment, in contrast to turnover, is being examined in this study. This

allows for an understanding of how proactive administrative behavior (effort) can instill a stronger commitment to the mission and overall purpose of a school. This can ultimately reduce turnover and simultaneously create more supportive and effective working environments. Given the current data on higher turnover rates for novice teachers, it is hypothesized that these inexperienced teachers may view administrative effort differently and that differences in perception between new and experienced teachers may be associated with differences in their commitment to stay.

Figure 1: Regression model of how administrator effort is mediated by working conditions on teachers' commitment to stay



Notes: CS: community support, PD: professional development, c': the direct effect of "Efforts" onto commitment to "Stay," a_i, b_i : the indirect effects of "Effort" onto "Stay" through the mediators

Methods

In an attempt to provide insight on the developmental nature of the relationships among administrator effort, teacher working conditions, and commitment to stay, this study used a mediation design (Hayes, 2018; Selig & Little, 2012), including an investigation of the direct and indirect effects of mediating variables (Selig & Preacher, 2009). The mediation analysis allowed the researcher to probe the direct and indirect hypothesized effects of teachers' perceptions of the effort principals exerted on retaining them, as mediated by teacher working conditions. The dichotomous outcome variable was analyzed using the process macro (Hayes, 2021).

Research questions

The following research questions (RQs) were used to guide the development of the model used to analyze the data:

RQ 1: To what extent is teacher-perceived principal effort related to a commitment to stay at their current school, and is it mediated by teacher working conditions?

RQ 2: To what extent is teacher-perceived principal effort related to a commitment to stay at their current school, and is it mediated by teacher working conditions when considering teaching experience?

Data and variables

Survey data

The NCTWC staff provided raw teacher working conditions bi-annual survey data for the 2016 year. According to The New Teacher Center (2016), the organization that administers and coordinates research and design activities for the TWC survey, the purpose of the survey is “to report educators’ perceptions about the presence of teaching and learning conditions organized into constructs” (p. 1). The TWC survey has gone through several revisions since 2002, including the addition of new questions and constructs. It was decided that nine conditions (see Table 1) would be used for the basis of this study, as they have been cited in the research as areas that effect teacher attrition both in North Carolina and nationally (Learning Policy Institute, 2018).

Table 1: Model components, main predictor, and mediator teacher working conditions constructs

| Conditions | Description | Number of elements* |
|--|---|---------------------|
| Predictors | | |
| <i>Administrator effort</i> | Administrative effort to address the core elements of all teacher working conditions. | 9 |
| Mediators | | |
| <i>Use of time</i> | Available time to plan, collaborate, provide instruction, and eliminate barriers in order to maximize instructional time during the school day. | 7 |
| <i>Facilities and resources</i> | Availability of instructional, technology, office, communication, and school resources to teachers. | 10 |
| <i>Community support and involvement</i> | Community and parent/guardian communication and influence in the school. | 8 |
| <i>Managing student conduct</i> | Policies and practices to address student conduct issues and ensure a safe school environment. | 7 |
| <i>Teacher leadership</i> | Teacher involvement in decisions that impact classroom and school practices. | 7 |
| <i>Teacher role</i> | The roles teachers assume in the school, for example, making curriculum decisions, hiring, budget, and school improvement. | 7 |
| <i>School leadership</i> | The ability of school leadership to create trusting, supportive environments and address teacher concerns. | 10 |
| <i>Professional development</i> | The availability and quality of learning opportunities for educators to enhance their teaching. | 13 |
| <i>Instructional improvement</i> | The instructional climate of the building, including the use of assessments, efficacy, and commitment, to student achievement. | 10 |

Table 1 (continued)

| Conditions | Description | Number of elements* |
|-----------------------|--|---------------------|
| Outcome | | |
| <i>Intent to stay</i> | Teacher-indicated intent to stay in current position and school. | 1 |

Note: *Elements are the questions teachers are asked that define each condition.

Table 1 displays the definitions of the variables used in the model. Administrative effort is a construct in the TWC survey, but it was broken out as the main effect under investigation because it captures the perception of the effort principals make through the eyes of teachers.

The technical aspects of the instruments are readily available from the NCTWC website (Academic Development Institute, 2021). Consistent with Richard Ingersoll, Patrick Dougherty, and Philip Sirinides (2017), rates of agreement (RA) were calculated, where strongly agree and agree responses were compiled for each teacher on the TWC elements (questions). Once this was done, a mean score was calculated for each teacher across the constructs, resulting in over 84,000 cases. When considering model development, correlations were run among possible independent variables and the sole dependent variable. Initially, variables such as student proficiency and growth; school wealth; and local teacher supplemental salary, years of experience, and grade span were considered as possible model components. These were selected based on previous studies that use NCTWCS data (see Hirsch & Church, 2009; Kaniuka & Kaniuka, 2019; Ladd 2011). The results of the analysis eliminated all covariates except the targeted teacher working condition constructs as being significantly correlated with commitment to stay.

The variables used in the study are summarized in Table 2, along with the coding/measurement of each.

Table 2: Summary table of the predictor, moderator, and outcome variables

| Variable | Description | Scale |
|----------------------------|--|-------------------------|
| Predictor | | |
| Effort | The mean of strongly agree and agree responses for each teacher on, "The school leadership makes a sustained effort to address teacher concerns about ..." | Continuous, 0–100 |
| Mediators | | |
| Teacher working conditions | The mean of strongly agree and agree responses for each teacher on each of the nine TWC constructs. | Continuous, 0–100 |
| Outcome | | |
| Intent to stay | The indicated intent to stay in the current position and school. Two outcome variables were developed for teachers with 0–3 and 4+ years of experience. | Binary, 1 stay, 0 leave |

Results

Summary statistics are reported in Table 3. Approximately 81.2 percent of the more experienced teachers in the sample indicated that they intended to stay at their cur-

rent school in their present role, while the least experienced teachers reported a slightly lower commitment to stay of 78.8 percent. New teachers and experienced teachers reported similar perceptions of administrative effort: 81.7 percent and 83.2 percent, respectively.

Table 3: Summary statistics for model variables across teacher experience

| Variable | New teachers (n = 13,904) | | Experienced teachers (n = 68,328) | |
|---------------------------|------------------------------|-------|--------------------------------------|-------|
| | Mean | SD | Mean | SD |
| Predictor | | | | |
| Administrator effort | 0.817 | 0.288 | 0.832 | 0.283 |
| Mediators | | | | |
| Time | 0.669 | 0.294 | 0.685 | 0.301 |
| Facilities | 0.813 | 0.219 | 0.831 | 0.214 |
| Community support | 0.797 | 0.266 | 0.853 | 0.231 |
| Student conduct | 0.765 | 0.285 | 0.796 | 0.279 |
| Teacher leadership | 0.849 | 0.257 | 0.839 | 0.298 |
| Teacher role | 0.629 | 0.294 | 0.638 | 0.303 |
| School leadership | 0.843 | 0.239 | 0.838 | 0.25 |
| Professional development | 0.796 | 0.265 | 0.796 | 0.271 |
| Instructional improvement | 0.831 | 0.197 | 0.819 | 0.193 |
| Outcome | | | | |
| Intention to stay | 0.788 | 0.409 | 0.812 | 0.391 |

Two models were run for each teacher group. The results for the model diagnostics are reported in Table 4. The full models were significant improvements over the intercept-only model.

Table 4: Model diagnostics for novice and experienced teachers

| Model | Log likelihoods | | df | p | McFadden | CoxSnell | Nagelkirk |
|-----------------|-----------------|---------|----|-------|----------|----------|-----------|
| | Intercept | Full | | | | | |
| New teacher | 12418.22 | 1829.14 | 10 | <.001 | 0.128 | 0.123 | 0.192 |
| Veteran teacher | 58825.65 | 6701.61 | 10 | <.001 | 0.102 | 0.934 | 0.152 |

Table 5 reports the estimates for all three paths. The *a* path estimates show how administrative effort regresses onto the various teacher working condition measures. In all cases, administrative effort is a significant predictor of each condition for both sets of teachers. For each condition, a one-unit increase in the reported level of administrative effort is predicted to increase satisfaction with teacher-reported working conditions. The *b* and *c* path estimates are the direct effects of the predictor variables onto the outcome of a stated intent to stay. Confidence intervals that do not have a zero within the interval communicate that the estimated predictors are significantly different from zero. The estimates for “facilities” and “professional development” both have zero in the interval, indicating they are not significantly different from zero.

For “effort predicting commitment to stay,” the confidence interval does not have a one in the interval, again indicating that the estimated log odds are significantly different from zero. The estimates reported in Table 5 for both groups are similar, with the greatest differences evidenced on how new and experienced teachers viewed the effect of administrative effort onto the roles teachers engaged in and teacher leadership activities they practiced. With respect to the *b* paths, there is slightly more variation in the estimated log odds, with the greatest differences presenting for time, community support, administrative leadership, and school improvement. No clear pattern is observed regarding how these differences are distributed; that is, no pattern was observed across groups, implying that experience may have little to do with how teachers see their working conditions. In all, these differences appear to be minor conditions, including satisfaction with administrative effort.

Table 5: Direct effects of teacher working conditions on stated intent to stay

| Effects* | Path | New teachers | | Experienced teachers | |
|-----------------------|-------|--------------|-----------------|----------------------|----------------|
| | | B(SE) | 95% CI | B(SE) | 95% CI |
| Effort →Time | a_1 | 0.505(.007) | [0.489,0.519] | 0.517(.004) | [0.51,0.524] |
| Effort →Facilities | a_2 | 0.385(.006) | [0.371,0.398] | 0.364(.003) | [0.357,0.371] |
| Effort →CS | a_3 | 0.481(.008) | [0.464,0.497] | 0.414(.004) | [0.407,0.422] |
| Effort →Stud. cond | a_4 | 0.574(.008) | [0.559,0.591] | 0.579(.003) | [0.573,0.588] |
| Effort →Teacher ldr | a_5 | 0.611(.008) | [0.595,0.626] | 0.715(.004) | [0.705,0.719] |
| Effort →Teacher Role | a_6 | 0.498(.008) | [0.484,0.514] | 0.578(.003) | [0.572,0.585] |
| Effort →Sch. ldrshp | a_7 | 0.622(.006) | [0.608,0.635] | 0.687(.003) | [0.681,0.693] |
| Effort →PD | a_8 | 0.577(.008) | [0.562,0.592] | 0.585(.004) | [0.577,0.592] |
| Effort →Instructional | a_9 | 0.359(.007) | [0.345,0.372] | 0.353(.003) | [0.347,0.358] |
| Time →Stay | b_1 | 0.837(.094) | [0.653,1.021] | 0.545(.042) | [0.462,0.627] |
| Facilities→Stay | b_2 | 0.074(0.125) | [-0.171,0.321] | 0.002(.057) | [-0.11,0.114] |
| CS →Stay | b_3 | 0.506(.101) | [0.307,0.706] | 0.703(.051) | [0.605,0.801] |
| Stud. cond. →Stay | b_4 | 0.467(.102) | [0.265,0.668] | 0.491(.046) | [0.399,0.581] |
| Teacher ldr. →Stay | b_5 | 0.401(.124) | [0.157,0.645] | 0.403(.054) | [0.296,0.511] |
| Teacher role →Stay | b_6 | 0.239(.094) | [0.055,0.424] | 0.165(.044) | [0.077,0.252] |
| Sch. ldrshp. →Stay | b_7 | 1.674(.151) | [1.379,1.968] | 1.035(.068) | [0.9,1.169] |
| PD →stay | b_8 | -0.097(.121) | [-0.355,0.141] | 0.059(0.054) | [-0.046,0.164] |
| Instructional →Stay | b_9 | -0.403(.152) | [-0.699,-0.106] | -0.127(0.69) | [-0.263,0.009] |
| Effort →Stay | c' | 0.191(.117) | [-0.039,0.422] | 0.242(0.056) | [0.131,0.352] |

Note: *The *b* and *c* path estimates are log odds.

To calculate the indirect effects reported in Table 6, the coefficients for the a and b paths were multiplied, and once this was done, these products were converted to odds ratios as per Hayes (personal communication November 13, 2019), while the estimates for the c path (direct effect) were simply converted to odds ratios by exponentiating the estimates. As seen in Table 5, the direct effect and indirect effects are reported in odds ratios as per the process explained above. Odds ratios can be considered an effect size measure where any odds ratio smaller than 1.68 is considered small (Chen, Cohen, & Chen, 2010). Therefore, when interpreting the estimated values, the confidence interval indicates if the estimated ratios are significantly different from zero, while the odds ratio communicates the effect or practical significance of the paths. A cursory examination reveals that the odds ratios do not vary much across the two groups; therefore, it might be assumed that the way new and more experienced teachers perceive the effects of administrative effort as being mediated by teacher working conditions is similar. An important difference is that perceived administrator effort by new teachers was not a significant predictor to stay; this contrasts with more experienced teachers, who saw administrator effort as a significant predictor to stay. To determine if that is in fact true, the direct and indirect effects were tested using a nonlinear test of hypothesis (HO), and there was no difference in the estimates across the two teacher groups. The results of these tests are reported in Table 7.

Table 6: Direct and indirect effects of administrator effort through teacher working conditions on commitment to stay

| Effects* | Path | New teachers | | Experienced teachers | |
|-------------------------------|----------|--------------|---------------------|----------------------|---------------|
| | | OR(SE) | 95% CI ² | OR(SE) | 95% CI** |
| Direct | | | | | |
| Effort → Stay | c' | 1.211(.118) | [0.968,1.515] | 1.274(.056) | [1.141,1.422] |
| Indirect | | | | | |
| Effort → Time → Stay | a_1b_1 | 1.526(.047) | [1.389,1.669] | 1.325(.021) | [1.269,1.383] |
| Effort → Facilitates → Stay | a_2b_2 | 1.029(.048) | [0.936,1.131] | 1.001(.021) | [0.961,1.043] |
| Effort → CS → Stay | a_3b_3 | 1.276(.049) | [1.159,1.405] | 1.338(.027) | [1.285,1.394] |
| Effort → Stud. cond. → Stay | a_4b_4 | 1.308(.059) | [1.165,1.469] | 1.329(.039) | [1.261,1.401] |
| Effort → Teacher ldr. → Stay | a_5b_5 | 1.278(.072) | [1.101,1.484] | 1.333(.026) | [1.235,1.439] |
| Effort → Teacher role → Stay | a_6b_6 | 1.127(.047) | [1.028,1.236] | 1.1(.025) | [1.046,1.157] |
| Effort → Sch. ldrshp. → Stay | a_7b_7 | 2.83(.094) | [2.354,3.403] | 2.037(.047) | [1.857,2.234] |
| Effort → PD → Stay | a_8b_8 | 0.946(.07) | [0.824,1.085] | 1.035(.031) | [0.973,1.101] |
| Effort → Instructional → Stay | a_9b_9 | 0.865(.054) | [0.778,0.963] | 0.956(.024) | [0.911,1.003] |

Notes: *The estimated coefficients reported as odd ratios. **The confidence intervals with a 1 in the range indicates a nonsignificant predictor.

Table 7: Test of differences in estimated coefficients for new and experienced teachers

| Effects* | Path | χ^2 | p |
|-------------------------------|----------|----------|-------|
| Direct | | | |
| Effort → Stay | c' | 0.16 | 0.692 |
| Indirect | | | |
| Effort → Time → Stay | a_1b_1 | 7.23 | 0.007 |
| Effort → Facilities → Stay | a_2b_2 | 0.28 | 0.597 |
| Effort → CS → Stay | a_3b_3 | 0.8 | 0.37 |
| Effort → Stud. cond. → Stay | a_4b_4 | 0.06 | 0.801 |
| Effort → Teacher ldr. → Stay | a_5b_5 | 0.24 | 0.621 |
| Effort → Teacher role → Stay | a_6b_6 | 0.21 | 0.649 |
| Effort → Sch. ldrshp. → Stay | a_7b_7 | 9.78 | 0.002 |
| Effort → PD → Stay | a_8b_8 | 1.38 | 0.239 |
| Effort → Instructional → Stay | a_9b_9 | 2.8 | 0.094 |

Note: *Nonsignificant result implies no difference in estimated coefficients.

As clearly seen in Table 7, two of the ten paths were found to be statistically different for the two groups of teachers: administrative effort mediated by time onto intent to stay and administrative effort mediated by administrative leadership onto intent to stay. As a point of clarification, *administrative effort* is the perceived effort administrators make to improve working conditions and *administrative leadership* is defined as observable administrative actions and behaviors.

Less experienced teachers have a 52.6 percent increase in the odds of stating they want to stay, compared to 32.5 percent for experienced teachers for the indirect effect of effort through time. Less experienced teachers may see the effort of administrators on how they use time or how they protect time as more important. As less experienced teachers have more to learn and master, time must be allocated to a wider and more diverse set of activities than more experienced teachers who may, as a result, be less sensitive to how administrators facilitate workloads and demands on time. For example, new teachers are learning curriculum, developing pedagogy, and honing classroom management skills. More experienced teachers, however, may need to devote less time to these efforts, making them less dependent on administrative effort.

Although it is obvious that the mediated effect of administrative effort through school administrative leadership is viewed as the most influential causal path to both groups of teachers, the difference between the odds ratios is highly significant and the magnitude of the difference is 0.793 (see Table 6). In relation to this to effect size, according to Henian Chen, Patricia Cohen, and Sophia Chen (2010), this difference, while significant, is small. As the estimated direct effect of administrator effort for less experienced teachers was insignificant, the interaction of how these newer teachers perceive the work of leadership and the amount of effort administrators make to provide leadership appears to be of great importance. It can be posited that new teachers are more dependent on school administration in a number of ways, including but not limited to being granted a higher career license level. Also, school administration is required to interact more with new teachers (e.g., observa-

tions, professional growth plans), and this different relationship could account for the differing perspectives.

Discussion

Teacher working conditions matter, and understanding how teachers perceive the working climate of a school has immediate and prolonged effects on student performance and longer-term effects on teacher turnover (Kaniuka & Kaniuka, 2019). As the current analysis shows, it is no surprise that as teachers perceive administrators exerting more effort to support the nine conditions that define work in North Carolina schools, teachers report a higher likelihood of staying in their current role and school. Importantly, this study supports previous studies (Hirsch & Church, 2009; Hirsch, Emerick, Church, & Fuller, 2007; Hirsch, 2005; Kaniuka & Kaniuka, 2019; Ladd, 2011), as it shows that understanding the dynamics of how teachers perceive their working conditions and general school culture can and does influence the operation of schools.

Policy implications

The results of the NCTWCS can be seen as a meaningful policy tool if policymakers examine the ramifications of such efforts to improve schools in a more complex manner than simply studying the relationships of the elements of working conditions onto some outcomes. The investigation of the internal dynamics of a school's climate can yield insightful inroads into how the work of school administrators translates into improved commitment to stay. It is interesting that both new and more experienced teachers see the conditions in which they work in similar ways, albeit with some differences. The effect of the perceived effort of school administration on teacher working conditions has been shown as important and meaningful to teachers, regardless of their level of experience.

The literature reviewing employee turnover in other organizations (Hom, Lee, Shaw, & Hausknecht, 2017) shows that turnover is inevitable, despite changes in working conditions, and endemic. In the case of schools, factors that are not captured in this survey may also influence teachers' decisions to leave (see Bonhomme, Jolivet, & Leuven, 2016). Helen F. Ladd (2011) stated that "... policymakers would do well to pay far more attention to working conditions than they have to date and to provide a strong rationale for periodic surveys of teachers" (p. 36). Recent research into the area of how school administration can and does influence teacher attrition shows that state and local school districts can positively affect school environments and teacher attrition by implementing policies and procedures (see Burkhauser, 2017; Kraft, Marinell, & Shen-Wei Yee, 2016).

This study shows that although new and more experienced teachers perceive the work of school administrators similarly, there are important differences. For novice teachers, for example, the perceived effort of school leadership does map onto leadership activities. That relationship, however, did not have a significant path in predicting commitment to stay; further, the influence of leadership effort is mediated differently through the various working conditions. This is markedly different than what was found for more experienced teachers, as leadership effort had a significant

direct effect on commitment to stay. The path defined by the effort of school leaders as mediated by the actual leadership behaviors and activities conducted by school principals was found to be significant for both groups. The effect size for this path is weak to moderate (Chen et al., 2010), with this path being more influential on the decision to stay for new teachers (see Table 7). The differing magnitude of the effect does suggest that leadership may need to differentiate tactics and approaches for teachers according to their experience.

This study shows that new teachers see the use of time differently than more experienced teachers. A policy protecting the time of new teachers is one potential avenue to improving their commitment to stay. Indeed, according to the 2016 NCTWCS, 15.1 percent of new teachers say that the use of time influenced their decision to stay, while 14.86 percent of more experienced teachers stated that this was the most critical reason to stay (North Carolina Teacher Working Conditions Survey Data, 2016). This is not to say that the use of time is more important¹ to newer teachers, but rather that it may be instructive to differentiate the responsibilities and associated duties that could impact their use of time. This may explain why instructional improvement efforts were perceived differently between the two groups, with more experienced teachers possibly seeing a larger hypothesized causal effect on intent to stay. In summary, in most paths, the perceived effort of school leadership when mediated by the working conditions of North Carolina teachers was found to be significant, with very small to weak-to-moderate effects on teachers' decisions to stay.

Conclusion

The importance of the voice of the teacher is reflected in the 2010 revision of the school executive annual evaluation instrument used in North Carolina (North Carolina Department of Public Instruction, 2013). The intent is clear, as the revised evaluation manual clearly states that the principal "Utilizes data from the NC Teacher Working Conditions Survey in developing the framework for continual improvement in the School Improvement Plan" (p. 12). It is, therefore, incumbent on school and district-level administrators to have a strong sense of teacher satisfaction as an important component of school improvement planning. This sentiment is reflected in the work of Ann Podolsky, Tara Kini, Joseph Bishop, and Linda Darling-Hammond (2016), who discuss how federal resources at the state and local levels can address the teacher shortage and associated attrition. Notable recommendations include improving teacher working conditions and supporting principal development to improve how school administrators work with teachers and create a positive school climate. In contrast to the studies examining attrition, this article looked at intent to stay, a more proactive perspective.

The results of this study communicate the perceptions of North Carolina teachers, which may not be generalizable to other states. It is important to note that as of 2019, 16 states use some type of working conditions survey to assess teacher perceptions of the school environment. These data have been used to illustrate the relation of working conditions to school performance, retention, and leadership (Ingersoll et al., 2017). Despite the many differences across the states, generalizable

relationships were developed that may be useful to other leaders and researchers in those states. Certainly, the context of education in North Carolina is unique; however, there are commonalities in the relationships in these 16 states, such as the links between these conditions and leadership and student behaviors (Ingersoll et al., 2017).

Obviously, attrition and intent to stay are related; however, once attrition has occurred, only a portion of teachers return, costing schools time and money (Barnes, Crowe, & Schaefer, 2007). Commitment to stay is different; if we understand how the effort of administrators is perceived and ultimately examine the finer elements that define their effort, school and district leaders can better design training for school administrators to support teachers. Educational policymakers can develop policies that provide an institutional perspective that recognizes the complex internal dynamics of schools. In 2010 in North Carolina, the evaluation of school administrators was modified to include how principals engaged in utilizing teacher working conditions results to improve schools, clearly reflecting the perceived importance of utilizing these survey results for school improvement. A recent study found that the effect of this policy on teacher attrition and job satisfaction was small and inconsistent (Kaniuka, 2020). How teacher working conditions can stem the tide of teacher attrition remains unclear and understudied; however, this study suggests that educational leaders must continue to examine the working conditions of teachers and the behaviors of principals in an effort to retain teachers by focusing on their commitment to stay.

Note

1. A chi square test revealed no significant difference $\chi^2 = 0.427$, $p = .513$.

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