

Teacher Job Satisfaction in Chile

[ Student Name Removed ]

Date

Course

**Abstract**

This study centers on a secondary analysis of OECD TALIS 2013 data of Chilean seventh and eighth grade teachers and schools to test for the influence of teacher background and school-related factors such as school type, violence, location and professional development on teacher job satisfaction through Hierarchical Linear Modeling (HLM). This study found school type, violence, location and mentoring system to influence teacher job satisfaction when adjusting for teacher background and other school-related factors and are consistent with previous literature, especially in confirming that workplace factors are substantially more associated with teacher job satisfaction than are teacher background factors (Perie and Walker, 1997). Implications of this research support initiatives currently undertaken by the Chilean education reform in improving the teaching profession, specifically through the New Teacher Policy.

*Keywords:* TALIS, teachers, teacher job satisfaction

### **Introduction**

On June 1<sup>st</sup>, 2015 Chilean teachers began the first day of what would be a two-month strike against the New Teacher Policy that was introduced as part of the Education Reform proposed by President Michelle Bachellet. This was not the first time the Chilean government experienced a massive national strike and protest against its educational policies and constitution. In fact, students and teachers began to express their dissatisfaction and disapproval of public education in the country as early as 2006 for reasons related to perpetuating social and educational inequities in the decentralized system. According to the Organisation for Economic Co-operation and Development (OECD), Chile is one of the most inequitable societies among OECD-member countries with a Gini coefficient of 0.5 (OECD, 2014). This is greatly reflected in the education system, especially between public and private schools (Gobierno de Chile, 2016).

The objective of the New Teacher Policy is to strengthen, professionalize and add value to teaching and school leadership, which are considered central elements to a quality education system (MINEDUC, 2016b). The two focal areas of the policy are to strengthen initial teacher training and the development of a new teaching profession that includes an induction and exit stage for new teachers and in-service professional training processes. Furthermore, it includes a teaching system that ensures stability and defines professional development trajectories, both for promoting and retiring teachers through evaluation and remuneration processes (MINEDUC, 2016b).

Having succeeded in getting President Bachellet's government to make changes to the teaching profession through the new education reform, the focus of the 2015 teacher protests were now mainly due to disagreement with salary and evaluation processes stipulated in the New

Teacher Policy (Terra Chile, 2015). Although this may seem that Chilean teachers may be dissatisfied with the government's plan, it is not the case when it comes to their job satisfaction. Findings from the 2013 OECD Teaching and Learning International Survey (TALIS) show that compared to the average of country-participants, Chilean teachers are more satisfied with their job. This is even despite having fewer years of teaching experience, a higher proportion of hours in the classroom and a greater number of students per course compared to the country average (MINDEDUC, 2016a).

In light of these findings and given the current socio-political context in Chile, the purpose of this paper is to explore some of the factors related to Chilean teacher job satisfaction. More specifically, both intrinsic (teacher background) and extrinsic (school context) factors are examined to determine the extent to which they influence teacher job satisfaction). To what extent *d* and to what extent related? To what extent *a*

### **Literature Review**

Most of the research on teacher job satisfaction focuses on North American or European countries. Therefore, the literature provided in this paper focuses on key findings on the influence of intrinsic or teacher-related factors and extrinsic or school-related factors on job satisfaction in these contexts.

One study on teacher satisfaction in America shows that there are differences in satisfaction for elementary and secondary teachers between public and private schools, with private schools having higher concentrations of teachers who are satisfied with their job; however, the association between these is fairly weak (Perie & Baker, 1997). This same study also found that teaching in private schools, elementary schools and schools with low percentages of minority students, yielded higher levels of teacher satisfaction when controlling for other

background variables. Furthermore, school-related factors such as location, cooperative and supportive environment and school violence also influence teacher job satisfaction, and illustrate that workplace factors are substantially more associated with teacher job satisfaction than are background factors. Moreover, when including workplace and salary compensation, variation in teacher satisfaction increases to approximately 22 percent, compared to only school characteristics and teacher background.

In line with Perie and Baker (1997), Kim and Loadman (1994) found that job satisfaction and pay satisfaction were significantly related. In addition, they found opportunities for professional advancement, professional challenge, professional autonomy, working conditions and interaction with colleagues and students to predict teacher job satisfaction. In Norway, supervisory support, relations with colleagues and parents were found to be significant predictors of teachers' feeling of belonging, which were also significantly related to job satisfaction (Skaalvik and Skaalvik, 2011).

When it comes to intrinsic factors related to teachers, teacher self-efficacy has shown to be associated with job satisfaction in Italian junior high schools (Caprara et. al, 2006) and Candian schools (Klassen and Chiu, 2010). More specifically, when teachers believe in their abilities, they have higher levels of job satisfaction, and likely this increases the morale of the whole school as resulting from aggregated teachers' job satisfaction; In essence, teacher self-efficacy can help sustain work satisfaction (Caprara et. al, 2006). Similarly, Pearson and Moomaw (2005) found there to be an association between job satisfaction and high degree of professionalism and empowerment for teachers in Florida.

As cited in Perachione et. al (2008), when considering demographic variables such as age, gender, education and years teaching they have been positively related to job satisfaction;

however, in their study on k-5 Missouri public elementary school teachers, they found these variables to be insignificantly related to job satisfaction. Therefore, findings of the influence of these factors on teacher job satisfaction are inconclusive. Moreover, the authors found satisfaction with teaching compared to satisfaction with the "job of teaching" to be a more reliable predictor of teacher retention.

Many studies have found that teachers who are satisfied with their job tend to remain in the profession (Bobbitt et al., 1991; Cockburn, 2000; Cohn, 1992; McLaughlin, Pfeifer, Swanson-Owens, & Yee, 1986; Meek, 1998). This is especially relevant to the Chilean teaching profession, since findings from a study on Chilean teachers found that among the reasons teachers leave the profession, job satisfaction was the main factor for staying with teachers who are more satisfied having a 28% less chance of leaving (Mizala et al., 2000).

One area of research that has yet to be explored is the influence of teacher professional development and mentoring on teacher job satisfaction. Some studies show mentoring to have benefits such as boosting confidence of beginner teachers and increasing their job satisfaction. In addition, some suggest that mentoring is important and effective in terms of supporting the professional development of teachers (Hobson et. al., 2009). However, little is known to what extent activities such as these have on teachers and schools.

Based on the literature presented on job satisfaction, and since a growing literature shows that job satisfaction has an influence on teacher retention, implications of this research could shed light on possible strengths and weaknesses of the Chilean education system, as analyzed from an international perspective, that could promote or impede teacher job satisfaction and ultimately teacher retention.

### **Research Questions**

- (1) To what extent does teacher job satisfaction vary across schools?
- (2) To what extent are the effects of teacher background on job satisfaction different among schools?
- (3) To what extent do school-related factors (such as school type, climate, professional development and mentoring system) influence teacher job satisfaction, holding constant teacher background?

### **Methods**

#### **Instrument**

In order to answer the research questions posited in this paper, I perform a secondary analysis of the OECD 2013 TALIS dataset using the Statistical Package for the Social Sciences (SPSS) 23. The use of TALIS data as the quantitative method for this research was chosen because it is a method by which information such as demographics, knowledge and attitudes can be collected in a systematic manner and generalized to a given population (Groves et al., 2009). It is also the most feasible method in terms of large sample size, short time and low cost.

TALIS is an important international survey that provides teachers and school leaders the opportunity to share information regarding six areas: learning environment, appraisal and feedback, teaching practices and classroom environment, development and support, school leadership and self-efficacy and job satisfaction (OECD, 2016). TALIS was the first international survey of teachers that provides cross-country analyses that help countries identify similar policy challenges faced by others around the world. TALIS 2013 was the second survey developed and administered by the OECD. The first survey administered by the organization was in 2008 and included 24 participating countries.

The 2013 survey was administered online and on paper to 34 countries with 170,000 teachers and 10,000 principals participating. The target population for the core survey was lower secondary (ISCED Level 2) teachers and principals. However, countries were also given the option to administer the survey to primary educators (ISCED Level 1) and upper secondary educators (ISCED Level 3). A two-stage stratified cluster sampling procedure was performed which resulted in 200 schools and 20 teachers per school in each participating country being surveyed (OECD, 2016).

Analysis for this study focused on items reported both on teacher and principal questionnaires and therefore as a preliminary procedure, the two datasets for Chile were merged on the school identification (IDSCHOOL) variable. Since the focus of the research is on school-related factors on teacher job satisfaction, Hierarchical Linear Modeling (HLM) was the primary method used for analysis. Moreover, since TALIS nests teacher data within schools it allows for HLM analysis (Heck, Thomas and Tabata, 2013).

### **Sample**

The original dataset used for this analysis consisted of 178 schools and 1,676 7<sup>th</sup> and 8<sup>th</sup> grade teachers in Chile. To determine the final sample for this study, a pre-analysis of the data was first conducted as an important initial step to determine omitted, invalid and system-wide missing cases. Consequently, only 588 teachers in 126 schools remained in the final sample, accounting for only 35% of teachers and 71% of schools from the original dataset. As noted by research analysts, secondary analysis of national databases is often complicated due to the amount of missing cases (Strayhorn, 2009). Despite this major limitation, these variables were kept in the analysis since they were central to the main research questions and subsequent analysis (Mertler and Vannatta, 2013). Moreover, since the sample-size for schools is greater



than 50, biased estimates of the standard errors at this level is less likely (O'Dwyer and Parker, 2014, p. 7). I explain in more detail below how I examined missing cases and also discuss the limitations in the discussion section of this paper.

### Variables

All variables used for the analysis can be found in Table 1 below. Information in the table provides a description of each variable.

**Dependent Variable.** The outcome variable under study is teacher job satisfaction (TJOBSATS). TJOBSATS is comprised of a complex scale resulting from confirmatory factor analysis (CFA), which was created from using separate statements about teacher satisfaction from the teacher questionnaire. Moreover, it was standardized on an international metric using equally weighted samples and rescaled to have a scale midpoint of 10 and standard deviation of 2 (OECD, 2013, p. 45). This variable shows to have a moderate, positive skew and originally underwent a squareroot transformation. However, after comparing final output results it was determined to keep the original as the transformation did not result in a normal-distributed variable nor were there significant differences in results when comparing final models.

**Level-1 Variables.** Teacher Background (intrinsic) variables that have been found to influence job satisfaction (teacher self-efficacy, age, gender, education level, years teaching) were included as the primary covariates for Level-1 modeling (Caprara et. al, 2006; Klassen and Chiu, 2010; Perachione et. al, 2008). Teacher gender, which was renamed as *EdLevel\_recode* and recoded as a dichotomous variable (0 = Male, 1 = Female); teacher's age was grand-mean centered and renamed *gm\_TAge*; total years of teaching experience was grand-mean centered and renamed *gm\_teachtotexp*; teacher education level was renamed *TEdLevel* (0 = High School, 1 =

Technical/Professional Degree, 2 = Bachelor's/Master's Degree, 3 = Doctorate Degree); and teacher self-efficacy was grand-mean centered and renamed *gm\_TSELEFFS*.

Since inequity is a prevalent issue within Chilean education, I include teacher reporting of student SES, *ClassSES* (0 = None, 1 = 1 to 10%, 2 = 11 to 30%, 3 = 31 to 60%, 4 = More than 60%) to determine its effect on teacher satisfaction. I also included number of hours taught per week, which was grand-mean centered and renamed *gm\_HrsTeaching*, since according to TALIS, Chilean teachers spend more hours on teaching compared to the average of country-participants. To determine the influence of professional development on teacher job satisfaction (Hobson et. al., 2009), I also include, completed teacher training program, *TTraining\_recode* (0 = No, 1 = Yes); and teacher reporting on effective professional development in the school, which was grand-mean centered and renamed *gm\_TEFFPROS*. As can be seen, all continuous variables were grand-mean centered in accordance with recommendations from Heck et. al (2009) since centering continuous predictors on their grand means helps with interpreting intercepts and variances in multilevel modeling, which indicates a mean of zero while maintaining the original standard deviation.

**Level-2 Variables.** The school-background variables, school type, location, supportive environment (school climate of mutual respect), school violence, which have shown to influence teacher job satisfaction (Perie & Baker, 1997) were the primary variables for level-2 analysis. School type was recoded as a dichotomous variable and named *Public\_School* (0 = Private, 1 = Public). Mentoring system in school was also included in the analysis since some studies have shown it to increase teacher job satisfaction (Hobson et. al., 2009), therefore, it was recoded as a dichotomous variable and named *School\_MentorSys* (0 = No, 1 = Yes). School location was renamed *SchLocation\_recode* (0 = rural/village area to 4 large city); the variable, violence

prevalent in school, was recoded and grand-mean centered into *gm\_SchViolence*; school lacks pedagogical personnel, *LackPers* and school lacks resources *LackRsc* were recoded into dichotomous variables (0 = not a problem, 1 = a problem); and school climate of mutual respect was grand-mean centered and renamed *gm\_schClimate*.

**Table 1. Definitions and Descriptive Statistics of Teacher and School Variables (N = 588)**

| Variable                           | Definition and metrics  | Mean   | SD     | Min   | Max    |
|------------------------------------|---|--------|--------|-------|--------|
| Dependent Variable                 |   |        |        |       |        |
| Teacher Job Satisfaction           | Teacher satisfaction with job   | 12.443 | 1.792  | 5.755 | 14.937 |
| Level 1: Teacher Variables         |   |        |        |       |        |
| Gender                             | Male = 0, Female = 1  | .61    |        | .00   | 1.00   |
| Age                                | The age of the teacher at the time of the survey. This variable will be grand-mean centered.  | 40.92  | 11.853 | 21.00 | 73.00  |
| Years of Experience                | Total number of years of teaching experience. This variable will be grand-mean centered.  | 15.06  | 11.688 | 0.00  | 54.00  |
| Educational Degree                 | Type of education attained:<br>0 = High School<br>1 = Technical/Professional Degree<br>2 = Bachelor's/Master's Degree<br>3 = Doctorate Degree | 1.84   | .393   | 0.00  | 3.00   |
| Teacher Training Completion        | Completed teacher training programme:<br>No = 0, Yes = 1  | .92    |        | .00   | 1.00   |
| Total Teaching Hours               | Total hours (60 minutes) spent teaching. This variable will be grand-mean centered.   | 31.05  | 20.288 | 1.00  | 95.00  |
| Teaching Composition of Class      | Number of books in the home:<br>0 = None<br>1 = 1 to 10%<br>2 = 11 to 30%<br>3 = 31 to 60%<br>4 = More than 60%                               | 1.972  | 1.399  | 0.00  | 4.00   |
| Teacher Self-Efficacy              | Teacher belief in skills. This variable will be grand-mean centered.  | 13.039 | 1.745  | 7.809 | 15.433 |
| Effective Professional Development | Teacher report on effective professional development. This variable will be grand-mean centered.  | 8.678  | 2.371  | 5.237 | 14.834 |
| Level 2: School Variables          |   |        |        |       |        |
| School Location                    | School Location<br>0 = Rural/Village (0 to 3,000)<br>1 = Small town (3,001 to 15,000)   | 2.522  | 1.293  | 0.00  | 4.00   |

|                               |   |        |       |       |        |
|-------------------------------|---|--------|-------|-------|--------|
|                               | 2 = Town (15,001 to 100,000)<br>3 = City (100,001 to 1m)<br>4 = Large City (More than 1m)               |        |       |       |        |
| School Type                   | Type of School<br>Private = 0, Public = 1   | .318   |       | 0.00  | 1.00   |
| Mentoring System Access       | Mentoring system in place<br>No = 0, Yes = 1  | .292   |       | 0.00  | 1.00   |
| Lack of Pedagogical Personnel | Index Scale indicating lack of<br>pedagogical personnel in school<br>0 = Not a problem<br>1 = A problem | .654   | .476  | 0.00  | 1.00   |
| Lack of Material Resources    | Index Scale indicating lack of material<br>resources in school<br>0 = Not a problem<br>1 = A problem    | .502   | .5    | 0.00  | 1.00   |
| School Violence               | School delinquency and violence.<br>This variable will be grand-mean<br>centered.                       | 6.038  | 2.333 | 2.9   | 16.792 |
| School Climate                | School climate – mutual respect. This<br>variable will be grand-mean centered.                          | 13.883 | 2.845 | 4.678 | 17.291 |

### Pre-Analysis Data Screening

As previously stated, a pre-analysis of the final dataset was conducted to examine issues related to missing data, outliers, multicollinearity, normality and homoscedascity since they greatly influence results (Mertler & Vannata, 2013).

First, in the pre-analysis missing cases were removed using the default listwise deletion method in SPSS 23, since this tends to be the general rule for data that are missing completely at random (MCAR) (Strayhorn, 2009). However, when examining the variable selection it was noted that each of the school-related variables had approximately 15 to 22% of missing responses and the teacher-level variable for teacher perception of effective professional development had approximately 43.2% responses missing which accounted for 724 cases (teachers). This therefore illustrates that the default listwise deletion method is problematic for this study since missing cases exceed the 5% threshold (Mertler and Vannatta, 2013). Moreover, as I indicated in the methods section, the final dataset used for the analysis contained 588

teachers nested in 126 schools, roughly 35% of teachers and 71% of schools of the original dataset. Since the variable for teacher perception of effective professional development (*TEFFPROS*) had the most missing cases, it was further examined to determine if patterns existed in the missing data (Mertler and Vannatta, 2013). It was recoded into 0 (teachers who responded) and 1 (teachers who did not respond) and then underwent an independent samples t test to determine if there were significant mean differences in teacher job satisfaction between the two groups. The independent t-test was found to be statistically significant ( $t = 5.036$ ,  $df = 1,539$ ,  $p < .001$ ), therefore there were significant difference between teachers who responded versus those who did not on their job satisfaction as a teacher (See Table 3 in Appendix A). In other words, this indicates that the teachers who did not respond possess different job satisfaction compared to those who did respond, therefore indicating that a pattern exists in the missing responses. Future analysis could explore these patterns and then follow one of several solutions to account for missing cases (see Strayhorn, 2009, p. 114).

Second, an Ordinary Least Squares Regression (OLS) was performed to test Mahalanobis distance for outliers, which resulted in five cases being removed from the analysis. In addition, collinearity diagnostics were run as part of the OLS, which both tolerance and VIF statistics did not show any issues of multicollinearity. Third, histograms and normality plots with tests were analyzed to check the assumption of normality, which indicated nonnormal distributions for all variables. However, many of the distributions were not too extreme. After conducting transformations using the square root, logarithm and inverse on a few skewed variables, I decided to keep the originals as the transformation either did not result in normal-distributed variables or did not show to have major differences in final results. As a final step, all variables

were renamed and recoded to appropriately reflect the research questions posited in this paper. I explain this in more detail below.

### Model Dimensions

In contrast to Ordinary Least Squares (OLS) Regression, HLM has become a popular way to analyze data with statistical dependency, which produces unbiased estimates of the standard errors associated with the regression coefficients when data are nested. This allows for group characteristics to be included in models of individual outcomes (O'Dwyer and Parker, 2014, p. 2). Therefore, since the focus of the research is on both teacher- and school-level factors as they relate to the individual outcome of teacher job satisfaction, HLM was the most appropriate method for this analysis.

For the HLM analysis, three models were developed: Model A, a non-predictive null model; Model B, a teacher-level model; and, Model C, a school-level model, where  $\varepsilon_{ij}$  represents the variation in teacher job satisfaction,  $\mu_{0j}$  is the variation in school teacher job satisfaction,  $\beta_{0j}$  is school mean teacher job satisfaction and  $Y_{ij}$  is teacher job satisfaction. The equations for each model are listed below:

#### Model A: Null-Model:

$$Y_{ij} = \gamma_{00} + \mu_{0j} + \varepsilon_{ij}$$

#### Model B: Level-1 Model (Teacher Level):

$$Y_{ij} = \beta_{0j} + \beta_{1j}TSEX\_recode_{it} + \beta_{2j}gm\_TAge_{it} + \beta_{3j}gm\_teachtotexp_{it} + \beta_{4j}TEdLevel_{it} + \beta_{5j}TTraining\_recode_{it} + \beta_{6j}gm\_HrsTeaching_{it} + \beta_{7j}ClassSES_{it} + \beta_{8j}gm\_TSELEFFS_{it} + \beta_{9j}gm\_TEFFPROS_{it} + \varepsilon_{ij}$$

#### Model C: Level-2 Model (School Level):

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Public\_School_j + \gamma_{02}School\_MentorSys_j + \gamma_{03}SchLocation_j + \gamma_{04}gm\_SchViolence_j + \gamma_{05}SchPedPers_j + \gamma_{06}SchRscs_j + \gamma_{07}gm\_schClimate_j + \mu_{0j} + \varepsilon_{ij}$$

### Results

As previously stated, HLM was the method of choice for answering the research questions and consisted of three models (See Table 2): Model A, the null model, which does not contain predictors and determines the amount of variance in teacher job satisfaction that lies between schools; Model B, or the level-1 model, that determines within-group influence on teacher job satisfaction; and Model C, or the level-2 model that determines the between group influence on teacher job satisfaction. These models followed the three-step multilevel model process outlined by Heck, Thomas and Tabata (2009).

Model A, the level-1 null model, helps answer the question, "*Does teacher job satisfaction vary between schools;*" and shows that the average teacher job satisfaction between schools to be 12.22 ( $p < .001$ ). Furthermore, the Wald Z is 4.626 ( $p < .001$ ), which indicates that the intercepts vary significantly across schools. The intraclass correlation (ICC) is .107, which indicates that 10.7 percent of total variability in teacher job satisfaction is determined between schools. Because most researchers indicate an acceptable variability to continue analysis as above 5% (Heck et al., 2009), the results indicated a multilevel model analysis was warranted to determine the variability within and between schools.

Model B answers the research question, "*Are the effects of teacher background on job satisfaction different among schools?*" and shows the average mean for teacher job satisfaction is 12.719 ( $p < .001$ ), holding constant teacher background variables. Teacher gender, having completed a teacher training program, education level, class SES of students, teaching experience and hours teaching in the classroom showed to not have an influence on teacher job satisfaction within schools, while adjusting for all other variables in the model ( $p > .05$ ). However, for every one-unit increase in teacher age above the grand mean, job satisfaction increases by .03 ( $p < .01$ ) when holding all other variables constant. This holds true for teacher

self-efficacy with an increase in job satisfaction of .275 ( $p < .001$ ) and teachers' perceptions on effective professional development with an increase in job satisfaction of .093 ( $p < .001$ ).

When comparing Model B with Model A, we see that teacher background accounts for approximately 5.8 percent of within school variability in teacher job satisfaction and 8 percent of between-school variability in teacher job satisfaction. Furthermore, Wald Z tests show that even after controlling for teacher background, there is still a significant amount of variability to be explained within schools (Wald  $Z = 17.488$ ,  $p < .001$ ) and between schools (Wald  $Z = 2.828$ ,  $p < .01$ ). This indicates that future research could consider other predictors (e.g. salary, evaluation processes, student actual SES, student behavior, etc) within schools and between schools. This is also reflected in the ICC for Model 2, which is .104. In other words, even after adjusting for teacher background there was only a .3% decrease in the ICC; therefore, now there is 10.4% of variability in teacher job satisfaction between schools.

Model C answers the question, *"To what extent do school-related factors (such as school type, climate, professional personnel and mentoring system) influence teacher job satisfaction, holding constant teacher background?"*. Moreover, Model C shows that the average school teacher job satisfaction is 13.594 for a private school with a mentoring program, when all other school-related variables (e.g. location, climate, violence, professional personnel, and resources) and teacher background and their respective grand means are zero ( $p < .001$ ). When examining school type, we see that it does have a significant influence on teacher job satisfaction ( $p < .01$ ), with an increase in job satisfaction of .539 for private school teachers. Therefore, private school teachers are slightly more satisfied with their jobs compared to public school teachers, when adjusting for teacher background and school-related issues (e.g. location, climate, violence, professional personnel and resources). Moreover, for schools that have a mentoring system in



place, we see that it does have a significant influence on teacher job satisfaction ( $p < .05$ ), with teachers from schools without a mentoring system being less satisfied by .356, when adjusting for teacher background and school-related variables.

When looking at other school-factors such as school location, violence, climate, professional development and resources, we find that school location ( $p < .01$ ), professional development ( $p < .001$ ) and school violence ( $p < .05$ ) have an influence on teacher job satisfaction, whereas school climate and resources do not ( $p > .05$ ). More specifically, we see that for a one-unit change in school location, teacher job satisfaction falls by .186, holding all other variables constant. Similarly, for every one-unit increase in school violence, teacher job satisfaction falls by .073, when holding all other variables in the model constant.

**Table 2. Two-Level Hierarchical Model Estimating Chilean Teacher Job Satisfaction**

|                                    | Model A            | Model B                    |                          | Model C                    |                          |
|------------------------------------|--------------------|----------------------------|--------------------------|----------------------------|--------------------------|
|                                    |                    | Unstandardized Coefficient | Standardized Coefficient | Unstandardized Coefficient | Standardized Coefficient |
| <b>Intercept</b>                   | 12.221***<br>(.06) | 12.719***<br>(.379)        | -                        | 13.594***<br>(.502)        | -                        |
| <b>Level 1: Teacher Variables</b>  |                    |                            |                          |                            |                          |
| Gender                             | -                  | .074<br>(.125)             |                          | .039<br>(.138)             |                          |
| Age                                | -                  | .031**<br>(.011)           | .203                     | .032*<br>(.012)            | .203                     |
| Years of Experience                | -                  | -.021<br>(.012)            |                          | -.019<br>(.013)            |                          |
| Educational Degree                 | -                  | -.095<br>(.156)            |                          | -.127<br>(.177)            |                          |
| Teacher Training Completion        | -                  | -.031<br>(.238)            |                          | -.23<br>(.268)             |                          |
| Total Teaching Hours               | -                  | .003<br>(.003)             |                          | .004<br>(.003)             |                          |
| Teaching Composition of Class      | -                  | -.069<br>(.051)            |                          | -.015<br>(.058)            |                          |
| Teacher Self-Efficacy              | -                  | .275***<br>(.036)          | .268                     | .292***<br>(.04)           | .268                     |
| Effective Professional Development | -                  | .093***<br>(.026)          | .123                     | .067*<br>(.03)             | .123                     |
| <b>Level 2: School Variables</b>   |                    |                            |                          |                            |                          |
| School Type                        | -                  | -                          | -                        | .539**<br>(.184)           | .141                     |
| Mentoring System Access            | -                  | -                          | -                        | -.356*<br>(.174)           | -.09                     |
| School Location                    | -                  | -                          | -                        | -.186**<br>(.063)          | -.134                    |
| Lack of Pedagogical Personnel      | -                  | -                          | -                        | -.541***<br>(.159)         | -.144                    |
| Lack of Material Resources         | -                  | -                          | -                        | -.027<br>(.149)            |                          |
| School Violence                    | -                  | -                          | -                        | -.073*<br>(.032)           | -.095                    |
| School Climate                     | -                  | -                          | -                        | .035<br>(.026)             |                          |

|  |      |      |      |
|--|------|------|------|
| Intraclass Correlation                       | .107 | .104 | .005 |
| % of Level-1 Variance explained by the Model | -    | .058 | .035 |
| % of Level-2 Variance explained by the Model | -    | .08  | .956 |

When comparing changes in variation from Model A to Model C, we see that teacher background at level 1 and school-related factors at level-2 (e.g. school type, mentoring program, location, climate, violence, professional development, and resources) drastically reduce the variance at the school level from .323 to .014. This illustrates that level 2 variance accounts for approximately 95.6% of total variance between schools. Furthermore, level 2 variance accounts for 3.5% of total variance within schools. Wald Z tests show that even after controlling for teacher background and school factors, there is still a significant amount of variability to be explained within schools (Wald Z = 15.526,  $p < .001$ ) but not between schools (Wald Z = .192,  $p > .05$ ).

### Discussion and Implications

Consistent with previous findings, teacher self-efficacy was found to influence teacher job satisfaction both when controlling for teacher background and school-related factors (Caprara et. al, 2006; Klassen and Chiu, 2010). Similarly, teacher demographics such as level of education, years of teaching experience and gender were found to be insignificant in influencing teacher job satisfaction both when adjusting for teacher background and school-related factors (Perachione et. al, 2008).

When it comes to school-related factors, type of school, violence, school location and school lacking pedagogical personnel showed to influence teacher job satisfaction when adjusting for teacher background and other school-related factors and are consistent with

previous literature, especially in confirming that workplace factors are substantially more associated with teacher job satisfaction than are background factors (Perie and Walker, 1997).

Two other findings this study shows are the influence of teachers' reporting on effective professional development and the prevalence of mentoring systems in schools on teacher job satisfaction. In essence, when schools have a mentoring system in place and teachers' perceive school professional development as being effective, the more satisfied teachers tend to be with their job.

Implications of this research show a need for the New Teacher Policy to focus on improving public schools and address violence and lack of pedagogical personnel in order to improve teacher job satisfaction and, consequently, teacher retention. This research also highlights the benefits effective professional development and mentoring systems can have on improving teacher job satisfaction. Future research should examine components of the New Teacher Policy of the Chilean Education Reform to determine the extent to which policy initiatives in the country coincide with teacher needs, both through international and national tools.

### **Limitations**

There were several limitations to this research that should be considered in future analysis.

The first limitation of this study regards the issue of bias due to missing data. As discussed in the methods section, approximately 65% of teachers and 29% of schools were not considered in the final dataset because of missing cases. This exceeds the threshold of 5 to 10% of missing cases (Metler and Vannatta, 2013). However, as noted by many research analysts the issue regarding missing data is quite common to secondary analysis of national datasets

(Strayhorn, 2009). It is suggested that future analysis examine common patterns of missing data, particularly the variable related to teacher perception of effective professional development (TEFFDEVP) since it showed to have significant differences between teachers that responded and those who did not.

Second, TALIS questionnaires do not include items related to teacher attitudes, perceptions nor satisfaction related to salary compensation. As research shows salary to be a factor in teacher job satisfaction (Perie and Baker, 1997; Kim and Loadman, 1994), future TALIS instruments could include this item and/or research could be developed in the national context to determine the extent to which salary influences job satisfaction. This would allow to accurately depict national reality, as can be seen by national teacher protests, and serve as a tool to influence policy decisions in the country.

Third, since TALIS is an observational, non-experimental study, it does not allow for causal inferences (OECD, 2013). A better instrument to measure such an influence would be the 2005 and/or 2009 Chilean Teacher Longitudinal Survey. However, data from these surveys are not yet available for public use. Future research could compare and contrast findings from both the 2008 and 2013 TALIS and 2005 and 2009 Teacher Longitudinal Survey to determine if the international context, or the influence of such large international organizations such as the OECD on national educational policies, successfully depicts national successes, failures and needs. Such research could also analyze other national and international actors that push for teacher policy changes in the country, such as Teach For All.

**Comment [AJB1]:**

REVISION:

Awesome! This is an excellent revision!  
There are no remaining issues that I can see  
with the assignment.

Final grade on midterm: 100% A+

### References

- Bobbitt, S. A., Faupel, E., & Burns, S. (1991). *Characteristics of stayers, movers, and leavers: Results from the teacher follow-up survey, 1988–89. Issue brief*. Washington, DC: National Center for Education Statistics.
- Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of school psychology, 44*(6), 473-490.
- Cockburn, A. D. (2000). Elementary teachers' needs: Issues of retention and recruitment. *Teaching and Teacher Education, 16*, 223–238.
- Cohn, M. M. (1992). How teachers perceive teaching: Change over two decades, 1964–1984. In A. Lieberman (Ed.), *The changing contexts of teaching* (pp.110–137). Chicago: The University of Chicago Press.
- Gobierno de Chile. (2016). Reforma educacional. Retrieved from: <http://reformaeducacional.gob.cl>

- Groves et al. (2009). *Survey Methodology*. John Wiley and Sons.
- Heck, R. H., Thomas, S. L., & Tabata, L. N. (2013). *Multilevel and Longitudinal Modeling with IBM SPSS* (2nd ed.). New York, NY: Routledge. 978-0415817110
- Hobson, A. J., Ashby, P., Malderez, A., & Tomlinson, P. D. (2009). Mentoring beginning teachers: What we know and what we don't. *Teaching and teacher education*, 25(1), 207-216.
- Kim, I., & Loadman, W. E. (1994). Predicting Teacher Job Satisfaction.
- Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of educational Psychology*, 102(3), 741.
- McLaughlin, M. W., Pfeifer, R. S., Swanson-Owens, D., & Yee, S. (1986). Why teachers won't teach. *Phi Delta Kappan*, 67, 420-426.
- Meek, A. (1998). America's teachers: Much to celebrate. *Educational Leadership*, 55, 12-17.
- Mertler, C., & Vannatta, R. (2013). *Advanced and multivariate statistical methods: Practical application and interpretation* (5th ed.). Glendale, CA: Pyrczak Publishing.
- Mizala, A., Romaguera, P., Gonzáles, P. Guzmán, A. (2000) Los maestros en Chile: carreras e incentivos. Centro de Economía Aplicada, Departamento de Ingeniería Industrial, Universidad de Chile.
- Ministerio de Educación, Chile. (2016a). Docentes en Chile: Resultados de la encuesta TALIS 2013. Santiago: MINEDUC. Retrieved from <http://centroestudios.mineduc.cl>
- Ministerio de Educación, Chile. (2016b). Política nacional docente. Santiago: MINEDUC. Retrieved from <http://www.politicanacionaldocente.cl>

- O'Dwyer, L. M., & Parker, C. E. (2014). A primer for analyzing nested data: multilevel modeling in SPSS using an example from a REL study. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands.
- OECD. (2013). TALIS user guide for the international database. Retrieved from <http://www.oecd.org/edu/school/talis.htm>
- OECD. (2014). Income inequality (indicator). doi: 10.1787/459aa7f1-en (Accessed on 05 October 2014).
- OECD. (2016). TALIS: The OECD Teaching and Learning International Survey. Retrieved from <http://www.oecd.org/edu/school/talis.htm>
- Pearson, L. C., & Moomaw, W. (2005). The relationship between teacher autonomy and stress, work satisfaction, empowerment, and professionalism. *Educational research quarterly*, 29(1), 37.
- Perie, M., & Baker, D. P. (1997). Job satisfaction among America's teachers: Effects of workplace conditions, background characteristics, and teacher compensation. Statistical Analysis Report.
- Perrachione, B. A., Petersen, G. J., & Rosser, V. J. (2008). Why do they stay? Elementary teachers' perceptions of job satisfaction and retention. *The Professional Educator*, 32(2), 1.
- Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and teacher education*, 27(6), 1029-1038.



- Strayhorn, T. L. (2009). Accessing and analyzing national databases. In T. J. Kowalski & T. J. Lasley (Eds.), *Handbook of data-based decision making in education* (pp. 105-122). New York, NY: Routledge.
- Terra Chile. (2015). Profesores chilenos iniciarán huelga indefinida el 1 de junio. *Terra Chile*. Retrieved from [noticias.terra.cl](http://noticias.terra.cl)

**Appendix A:** SPSS Output with Syntax

Appendix removed