

Teachers' Perceptions of School Leader Empowering Behaviors on Psychological Empowerment: A Moderated Path Analysis

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Abstract

This study examined the joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behavior in predicting the four dimensions of teachers' psychological empowerment, in terms of teachers' sense of meaning, competence, autonomy, and impact. Three hundred four teachers in Singapore participated in this study. Results from moderated path analysis and simple slope tests indicated the presence of an interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of meaning, competence and autonomy, but not impact. Further analysis indicated different types of moderating mechanisms underscored their interactive relationship (i.e. enhancing or substituting mechanisms). Teachers' perceptions of principal's empowering behaviors added more unique variance to teachers' perceptions of immediate supervisor's empowering behaviors in predicting teachers' sense of impact. This study highlighted the dynamic interplay of school leaders' empowering behaviors and teachers' psychological empowerment dimensions and it therefore has important implications for both school leadership and teacher developments.

Introduction

Teachers in the 21st century play critical roles in school reforms and sustained school effectiveness (Dee, Henkin & Duemer, 2003; Wan 2005). The imperative of empowering teachers in school reform efforts to affect positive change at both the classroom and school levels has received an increased empirical interest in recent years. Particularly, scholars and practitioners have observed that the use of teacher empowerment as a management strategy could increase teacher agency through increasing their level of professional autonomy and authority to better exercise their professional expertise and judgement in their work roles (Short & Rinehart, 1992; Somech, 2005; Sweetland & Hoy, 2000; Vecchio, Justin & Pearce, 2010; Wan, 2005). At the same time, when school leaders empower teachers, it also promotes teachers' psychological empowerment in terms of teachers' sense of meaning, competence, autonomy, and impact, which are elements essential for teachers to feel more engaged and committed to the work they do (Dee et al., 2003; Lee & Nie, 2013, 2014). Therefore, in this study, we define teacher empowerment as a process of school leader(s) demonstrating empowering behaviors to enable teachers to experience psychological empowerment by having a sense of meaning, competence, autonomy, and impact.

Past research has found that empowering school leaders are generally more capable in fostering a working condition which facilitates teachers' psychological empowerment (Blase & Blase, 1997; Davis & Wilson, 2000; Sweetland & Hoy, 2000; Vecchio et al., 2010). However, the dynamic interplay between school leaders' empowering behaviors and teachers' psychological empowerment remains largely unclear (Lee & Nie, 2013, 2014). This could

possibly be due to the fact that previous research tended to examine school leaders' empowering behaviors and teachers' psychological empowerment in separate studies (Blase & Blase, 1997; Davis & Wilson, 2000; Vecchio et al., 2010). As a result, the empirical link between school leaders' empowering behaviors and teachers' psychological empowerment is underexplored and poorly understood. Furthermore, although both the principal and teachers' immediate supervisor play instrumental roles in the teacher empowerment process, previous research has not given much empirical attention to examine the joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors to explicate how they might jointly affect teachers' psychological empowerment. As a result, it is unsure whether teachers' perceptions of principal's and immediate supervisor's empowering behaviors might moderate each other's relationship with teachers' psychological empowerment. A more systematic study of their joint relationship could help to clarify the nature of their joint influence (i.e. interactive or additive) on teachers' psychological empowerment to provide more detailed insights on the nuanced mechanisms which may underscore the teacher empowerment process.

Therefore, the present study aimed to (1) examine the joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors to determine whether their joint influence would be interactive or additive on the four dimensions of teachers' psychological empowerment in terms of meaning, competence, autonomy and impact; and (2) in the presence of an interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors, clarify the types of moderating mechanisms which might underscore their interactive relationship in predicting the four dimensions of teachers' psychological empowerment.

Teachers' Perceptions of School Leaders' Empowering Behaviors as Antecedents of Teachers' Psychological Empowerment

A leader's influence is usually manifested in the leader's v when he or she interacts with the followers (Hollander, 1992; Jantzi & Leithwood, 1996; Yukl, 2002). This thus suggests that the effectiveness of school leaders' empowering behaviors is dependent upon how teachers perceive and experience the motivational influence of the school leaders' empowering behaviors in relation to teachers' psychological empowerment (Blase & Blase, 1997; Conger & Kanungo, 1988; Lee & Nie, 2013, 2014). It is therefore necessary to establish the empirical link between school leaders' empowering behaviors and teachers' psychological empowerment to provide a more comprehensive understanding of how school leaders could more effectively empower teachers. However, teacher empowerment studies have tended to examine school leaders' empowering behaviors and teachers' psychological empowerment in separate studies (e.g., Sagnak, 2012; Vecchio et al., 2010) or as a single construct with no clear differentiation between school leaders' empowering behaviors and teachers' psychological empowerment (Bogler & Somech, 2004; Short & Rinehart, 1992, 1993; Wu & Short, 1996), which thus failed to capture the motivational influence of school leaders' empowering behaviors on teachers' psychological empowerment as a relationship.

Though empirically limited so far, a few studies have provided evidence for the positive relationship between school leaders' empowering behaviors and teachers' psychological empowerment. For instance, Blasé and Blasé (1997) found that when school principals were perceived to *demonstrate trust in teachers, develop shared governance structures, listen to individual teacher's input, encourage individual teacher autonomy, promote innovation, creativity and risk-taking, give rewards, provide support and show care for teachers*, teachers'

psychological empowerment was enhanced. In another study, Davis and Wilson (2000) reported that perceived principal empowering behaviors predicted teachers' overall work motivation in the form of psychological empowerment. Specifically, their results indicated that the perceived principal empowering behaviors predicted teachers' sense of autonomy and impact but not meaningfulness and competence (Davis & Wilson, 2000). Lee and Nie (2013) identified seven dimensions of school leaders' empowering behaviors and developed a seven-dimensional School Leader Empowering Behaviors (SLEB) scale in terms of *delegation of authority*, *providing intellectual stimulation*, *giving acknowledgment and recognition*, *articulating a vision*, *fostering collaborative relationships*, *providing individualized concern and support*, and *providing role-modeling*. They found that teachers' perceptions of their principal's and immediate supervisor's empowering behaviors in terms of these seven dimensions were positively correlated with each of the four dimensions of teachers' psychological empowerment (i.e. meaning, competence, autonomy, impact).

Taken together, while previous studies have provided valuable knowledge regarding the empirical link between school leaders' empowering behaviors and teachers' psychological empowerment, it is observed that they have often focused on the influence of the principal's empowering behaviors to the extent that the influence of teachers' immediate supervisor's empowering behaviors is largely neglected in the teacher empowerment process (Heng & Marsh, 2009). As a result, the joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment is empirically underexplored. As such, a more comprehensive understanding of the teacher empowerment process would need to take into account teachers' perceptions of the empowering behaviors of their principal and immediate supervisor as antecedents of teachers' psychological empowerment (Lee & Nie, 2013).

The Study

To provide a more explicit examination of the dynamic relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment, we thus proposed two hypotheses to explicate the exact mechanisms which may underscore the joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting the four dimensions of teachers' psychological empowerment.

Two Hypotheses of Study

Given that teachers' perceptions of their principal's and immediate supervisor's empowering behaviors have been found to be positively associated with teachers' psychological empowerment (Davis & Wilson, 2000; Lee & Nie, 2013), we therefore speculated that an interactive relationship would likely exist between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment. As such, the following was hypothesized.

Hypothesis 1: *An interactive relationship would exist between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting each of the four dimensions of teachers' psychological empowerment in terms of "meaning," "competence," "autonomy," and "impact."*

To elaborate, in the presence of an interactive relationship, it is assumed that the influence of teachers' perceptions of principal's empowering behaviors on teachers' psychological

empowerment would be dependent on the severity or degree of the influence of teachers' perceptions of their immediate supervisor's empowering behaviors, and vice versa (Howell, Dorfman & Kerr, 1986). In fact, from a review of literature on interactive relationships in organizational research, it is found that different types of moderating mechanisms might underscore interactive relationships in organizational phenomena depending on how they may affect the predictor-criterion relationships (Howell et al., 1986). Specific to this study, two types of moderating mechanisms which may likely underscore the interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment were identified: *enhancing* or *substituting*.

Enhancing mechanism. When an enhancing mechanism is found to underscore the interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment, it is assumed that the positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' psychological empowerment would be dependent on the degree of how teachers perceive their immediate supervisor's empowering behaviors, and vice versa (Howell et al., 1986). In other words, when teachers perceive their principal as empowering, the positive relationship between teachers' perceptions of immediate supervisor's empowering behaviors and teachers' psychological empowerment would be enhanced or strengthened. Similarly, when teachers perceive their immediate supervisor as empowering, the positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' psychological empowerment would be enhanced or strengthened. Hence, it is necessary for teachers to perceive both their principal and immediate supervisor as empowering in order to enhance teachers' psychological empowerment. As long as one of the two leaders is perceived as not empowering, it would weaken the positive influence of the other leaders' empowering behaviors on teachers' psychological empowerment.

Substituting mechanism. When a substituting mechanism is found to underscore the interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment, it is assumed that the positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' psychological empowerment would be dependent on the degree of how teachers perceive their immediate supervisor's empowering behaviors, and vice versa (Howell et al., 1986). Under the substituting condition, when teachers perceive one of the two leaders (i.e. either their principal or their immediate supervisor) as less empowering than the other, the influence of the less empowering leader would be substituted by the influence of the more empowering leader for enhancing teachers' psychological empowerment. In other words, the positive relationship between teachers' perceptions of immediate supervisor's empowering behaviors and teachers' psychological empowerment would be strengthened more if teachers perceive their principal to be less empowering than their immediate supervisor. Similarly, the positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' psychological empowerment would be strengthened more if teachers perceive their immediate supervisor to be less empowering than their principal.

However, in the absence of an interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors, it is speculated that an *additive* relationship would likely exist between them in predicting teachers' psychological empowerment. An additive relationship would assume that the positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' psychological empowerment

would *not* be dependent on the degree of how teachers perceive their immediate supervisor's empowering behaviors, and vice versa (Howell et al., 1986). In other words, although teachers' perceptions of principal's and immediate supervisor's empowering behaviors may each have a positive relationship with teachers' psychological empowerment, they would not moderate each other's relationship with teachers' psychological empowerment but would only add predictive power to supplement each other's influence on teachers' psychological empowerment. As such, the following was hypothesized.

Hypothesis 2: *In the absence of an interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors, an additive relationship would exist between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting each of the four dimensions of teachers' psychological empowerment in terms of "meaning," "competence," "autonomy" and "impact."*

Overall, these two hypotheses could be tested systematically by moderated multiple regressions using path analysis and simple slope tests. By clarifying the exact nature of the different moderating mechanisms which might underscore the joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment, this study could thus provide a more detailed understanding of the nuanced mechanisms underlying the teacher empowerment process.

Method

Sample

A convenience sample of 304 full-time teachers from different school districts in Singapore voluntarily participated in this study. Of the participants, 59.6% were teachers from primary schools (student age ranges from seven to 12 years), 36.1% were teachers from secondary schools (student age ranges from 13 to 17 years) and 4.3% were teachers from pre-university institutions (student age ranges from 17-19 years). Of the respondents, 74.7% were female and 25.3% were male. Regarding the races, 68.3% were Chinese, 19.0% were Malays, 9.7% were Indians and 3.0% were other minority races. Regarding teaching experience, 82.9% of the respondents had more than three years of teaching experience and 90.0% had at least a Bachelor degree. The median age range of respondents was 36 to 40 years old which constituted 26.4% of the total number of respondents ranging from 23 to 60 years old. The mean number of years of teaching experience among the respondents was seven-10 years (25.5%). The mean number of years that they had worked in their current school was four to six years (28.3%). The mean number of years that they had worked with their current principal was one to three years (54.7%). The mean number of years they had worked with their current immediate supervisor was one to three years (48.2%).

Measures

School Leader Empowering Behaviors (SLEB). The 21 item seven-factor SLEB scale developed by Lee and Nie (2013) was used to measure teachers' perceptions of school leaders' empowering behaviors (please refer to the Appendix). A common sample item of the SLEB for the principal and immediate supervisor is "My principal/immediate supervisor gives me the authority I need to make decisions that improve work processes and procedures." Through a series of exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), the SLEB was confirmed to be a seven-factor scale but can also be used as a higher-order composite scale (Lee & Nie, 2013). The higher-order composite scale of the SLEB was adopted for the present

study. The 21 items were similar for both the principal's and immediate supervisor's SLEB respectively. Fit indices for the principal's SLEB composite scale: $X^2=423.040$, $df=182$, $p<.001$, $TLI=.955$, $CFI=.965$, $RMSEA=.066$. Fit indices for the immediate supervisor's SLEB composite scale: $X^2=464.117$, $df=182$, $p<.001$, $TLI=.951$, $CFI=.961$, $RMSEA=.072$.

Psychological Empowerment. The 12-item measure developed by Spreitzer (1995) was used as an outcome or criterion variable of school leaders' empowering behaviors (please refer to the Appendix). This scale has been empirically cross-validated in different work contexts (Avolio, Zhu, Koh & Bhatia, 2004; Boudrias, Gaudreau, Savoie & Morin, 2009; Dee et al., 2003; Dewettinck & Ameijde, 2011; Raub & Robert, 2010). In the current study, results of EFA and CFA validated the four sub-scales of psychological empowerment. The fit indices for the four sub-scales were: $X^2=136.717$, $df=48$, $p<.001$, $TLI=.947$, $CFI=.968$, $RMSEA=.078$.

Data Collection

Prior to data collection, ethics approval was sought from the researcher's affiliated institution of study. A cover letter was attached to each questionnaire to explain the objectives of the study. Anonymity and confidentiality of participation were assured and informed consent was obtained from each participant. To standardise all the instrument used in the full questionnaire, a 7-point Likert scale was adopted (1 = Strongly Disagree to 7 = Strongly Agree). Participants were asked to separately rate their respective school principal and their immediate supervisor by responding to the same set of SLEB items in the questionnaire. Participants also responded to demographic items and items measuring teachers' psychological empowerment. Completed questionnaires were collected in sealed envelopes from the participants within three weeks of survey administration.

Control Variable

Previous studies reported that teaching experience and teacher age were related to empowerment (Dee et al., 2003; Edwards, Green & Lyons, 2002; Short & Rinehart, 1992, 1993). In this study, teacher's number of years of teaching experience was found to be strongly correlated with teacher's age ($r = .73$, $p<.01$) and with the other main research variables. As such, the "number of years of teaching experience" was controlled for further analysis in this study.

Analyses and Results

Descriptive Statistics

Means, standard deviations, bivariate correlations and internal consistency reliabilities among the variables of this study are presented in Table 1.

Table 1

Means, Standard Deviations, Bivariate Correlations and Internal Consistency Reliabilities Among the Variables of Study (N=304)

Variable	No. of items	M	SD	Bivariate Correlations					
				1	2	3	4	5	6
1. Teachers' perceptions of principal's empowering behaviors	21	4.97	1.05	(.91)					
2. Teachers' perceptions of immediate supervisor's empowering behaviors	21	5.04	1.04	.640**	(.93)				
3. Psychological empowerment subscale "meaning"	3	5.74	.78	.354**	.337**	(.85)			
4. Psychological empowerment subscale "competence"	3	5.68	.79	.264*	.300**	.499**	(.86)		
5. Psychological empowerment subscale "autonomy"	3	5.28	1.06	.584**	.509**	.423**	.403**	(.92)	
6. Psychological empowerment subscale "impact"	3	3.81	1.39	.598**	.460**	.431**	.252**	.547**	(.90)
7. Number of years of teaching experience	1	-	-	.155**	.180**	.258**	.270**	.147*	.171**

Note. ** Denotes correlation is significant at $p < .01$. Internal consistency reliabilities (α) are shown diagonally in parentheses.

Teachers' Perceptions of Principal's and Immediate Supervisor's Empowering Behaviors as Two Distinct Constructs

Prior to testing the two hypotheses in this study, EFA and CFA were performed to confirm that the sample of teachers in the present study could differentiate between the empowering behaviors of their principal and their immediate supervisor in their ratings. The mean scores of each factor/sub-scale of the seven-dimensional SLEB were used for performing the EFA and CFA. Results from EFA indicated that teachers' ratings of their principal's and immediate supervisor's empowering behaviors existed as two distinct constructs. The seven factors of teachers' perceptions of their immediate supervisor's empowering behaviors accounted for 55.5% of the total variance. The seven factors of teachers' perceptions of their principal's empowering behaviors accounted for an additional 13.0% of the total variance. To further confirm the structure of the two constructs, CFA was performed. Results from CFA indicated that data showed a good fit: $X^2 = 158.628$, $df = 67$, $p < .001$, $TLI = .96$, $CFI = .97$, $RMSEA = .07$.

Generally, results from both EFA and CFA indicated that teachers' perceptions of principal's and immediate supervisor's empowering behaviors were indeed two separate constructs in the present study. Results also suggested that it was appropriate to aggregate the factor mean scores to obtain a composite score for each of the two constructs, as shown in Table 1, for use in the subsequent hypothesis testing. The composite scores for the principal's and immediate

supervisor's SLEB were each scored by computing the mean of the seven sub-scales of the principal's and immediate supervisor's SLEB respectively. As leadership scholars have opined that leadership behaviors in practice are seldom neatly "packaged" into distinct dimensions of behaviors (Costello & Osborne, 2009; Villa, Howell, Dorfman & Daniel, 2003), the use of a composite score/scale rather than the individual dimensions/sub-scales of leaders' empowering behaviors could take into account a fuller representation of the leaders' empowering behaviors as a whole.

Analytic Strategy for Testing of Hypotheses 1 and 2: Moderated Path Analysis and Simple Slope Tests

To test for Hypotheses 1 and 2, moderated path analysis in the form of structural equation modeling (SEM) was chosen to test Hypotheses 1 and 2. It is more advantageous to use path analysis or SEM for our study because path analysis or SEM allows all the variables of study to be simultaneously analyzed as compared to the traditional multiple regression analysis which only allows analyses to be performed separately. Besides, path analysis or SEM also takes into account that the measurement error is not accumulated in a residual error term (Byrne, 2009; Kline, 2005). The statistical softwares used to conduct the moderated path analysis in this study were SPSS and AMOS.

Prior to testing the hypotheses, methodologists' recommendations were followed to standardize¹ all the variables (predictor, criterion and control variables) to minimize the multicollinearity among the variables of study (Aiken & West, 1991). In this study, teachers perceptions of principal's empowering behaviors' as well as teachers perceptions of immediate supervisor's empowering behaviors' served as both predictor variables and moderating variables and were therefore standardized. The interaction term was the product term of the standardized "teachers" perceptions of principal's empowering behaviors' and standardized teachers perceptions of immediate supervisor's empowering behaviors' (Aiken & West, 1991). The controlled variable was the number of years of teaching experience.

In the path analysis, the interaction term was regressed simultaneously as an exogenous variable together with the standardized 'teachers' perceptions of principal's empowering behaviors' and standardized 'teachers' perceptions of immediate supervisor's empowering behaviors'. The three variables were allowed to covary freely with each other. The endogenous variables were the criterion variables, the four dimensions of psychological empowerment. Fit indices such as Chi-square, degree of freedom, TLI, CFI and RMSEA were calculated to determine the model-data fit. Fit indices for the path model were acceptable (Kline, 2005): $\chi^2=11.318$, $df=6$, $p=.079$, TLI=.956, CFI=.993, RMSEA=.054. Standardized estimated coefficients were recorded and the path diagram was plotted as shown in Figure 1.

As the types of exact moderating mechanisms could not be totally demonstrated by the path analysis, the significant interactions were further probed using the techniques outlined by methodologists by graphically representing the interactive relationship by the slopes of the regression lines (Aiken & West, 1991; Villa et al., 2003). In this procedure, the effect² of predictor variable on criterion variable was estimated at 1 standard deviation (SD) below the

¹ Standardizing the variables prior to performing moderated SEM is similar to centering the variables prior to performing moderated multiple regression for minimizing multicollinearity among the variables of study (Aiken & West, 1991; Lau & Nie, 2008).

² The term "effect" in this study refers to non-causal, predictive relationship.

mean (low), at the mean (medium), and 1 *SD* above the mean (high) on the criterion variable. Following methodologists' recommendations when examining the simple slopes of the graphs plotted (Aiken & West, 1991), the resulting family of simple regression lines will be non-parallel when the beta coefficient of the interaction term is significant. On the other hand, the family of simple regression lines will be parallel when the beta coefficient of the interaction term is not significant. When the beta coefficient of the interaction term is not significant, further recommendations were followed by reverting to testing for the presence of additive effects by examining the significance of the main effects of the predictor variable and moderating variable (Finney, Mitchell, Cronkite & Moos, 1984; Villa et al., 2003).

Testing of Hypotheses 1 and 2: Interactive or Additive Relationship Between Teachers' Perceptions of Principal's and Immediate Supervisor's Empowering Behaviors in Predicting the Four Dimensions of Teachers' Psychological Empowerment?

Results from Figure 1³ indicated that an interactive relationship existed between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting only three dimensions of teachers' psychological empowerment, in terms of teachers' sense of meaning, competence and autonomy, but not teachers' sense of impact. Therefore, Hypothesis 1 was partially supported.

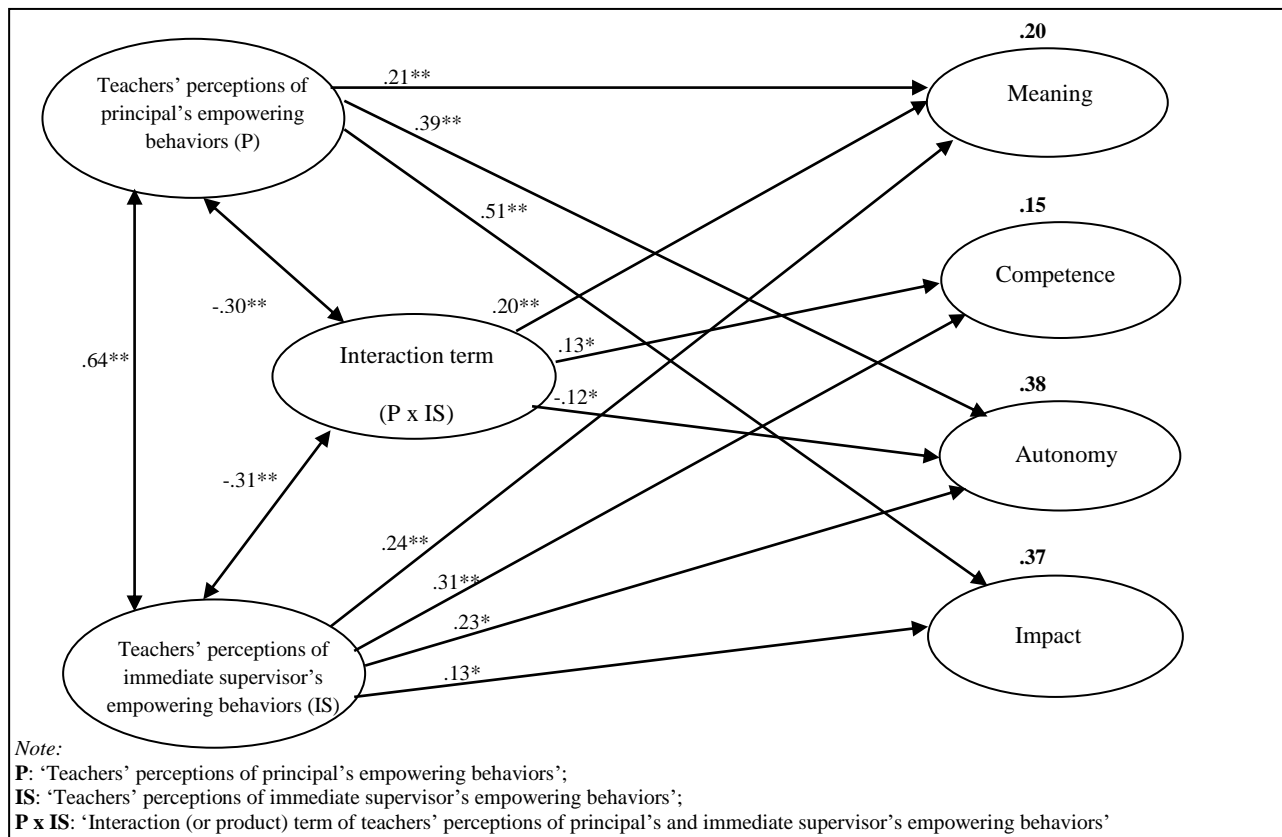


Figure 1. The joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting the four dimensions of teachers' psychological empowerment (meaning, competence, autonomy, impact).

³ A hierarchical multiple regression (HMR) analysis was also conducted as a comparison with moderated path analysis (Cohen & Cohen, 1983). The HMR results showed similar patterns though specific values were slightly different. Therefore, both moderated path analysis and HMR confirmed the consistency of the results.

Teachers' sense of meaning. In terms of the psychological empowerment dimension “meaning,” the simple slope graphs which showed the significant interactive relationship were plotted and are presented as Figures 2a and 2b.

Figure 2a indicated teachers' perceptions of principal's empowering behaviors moderated the relationship between teachers' perceptions of immediate supervisor's empowering behaviors and teachers' sense of meaning. The positive relationship between teachers' perceptions of immediate supervisor's empowering behaviors and teachers' sense of meaning was stronger at higher level than at lower level of teachers' perceptions of principal's empowering behaviors.

Similarly, Figure 2b shows that teachers' perceptions of immediate supervisor's empowering behaviors moderated the relationship between teachers' perceptions of principal's empowering behaviors and teachers' sense of meaning. The positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' sense of meaning was stronger at higher level than at lower level of teachers' perceptions of immediate supervisor's empowering behaviors.

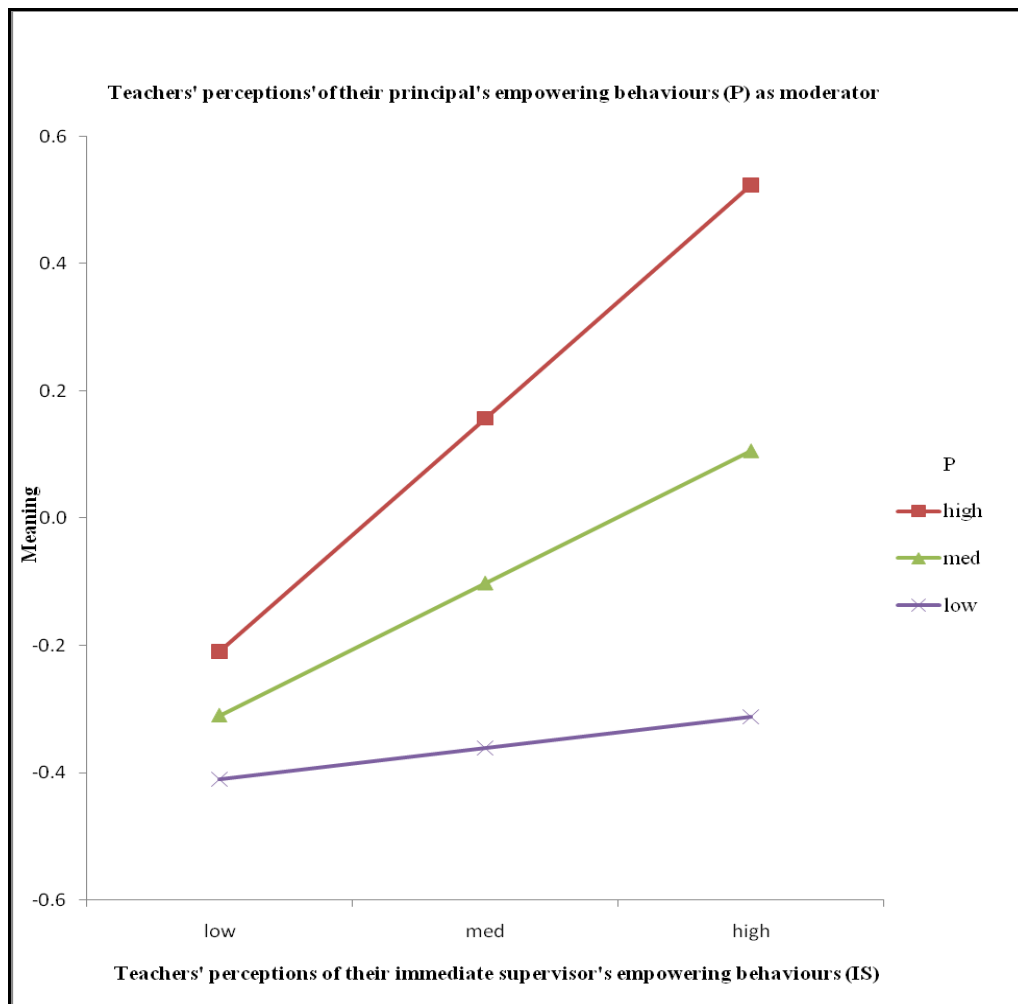


Figure 2a. Teachers' perceptions of principal's empowering behaviors (P) moderated the relationship between teachers' perceptions of immediate supervisor's empowering behaviors (IS) and psychological empowerment sub-scale :meaning.”

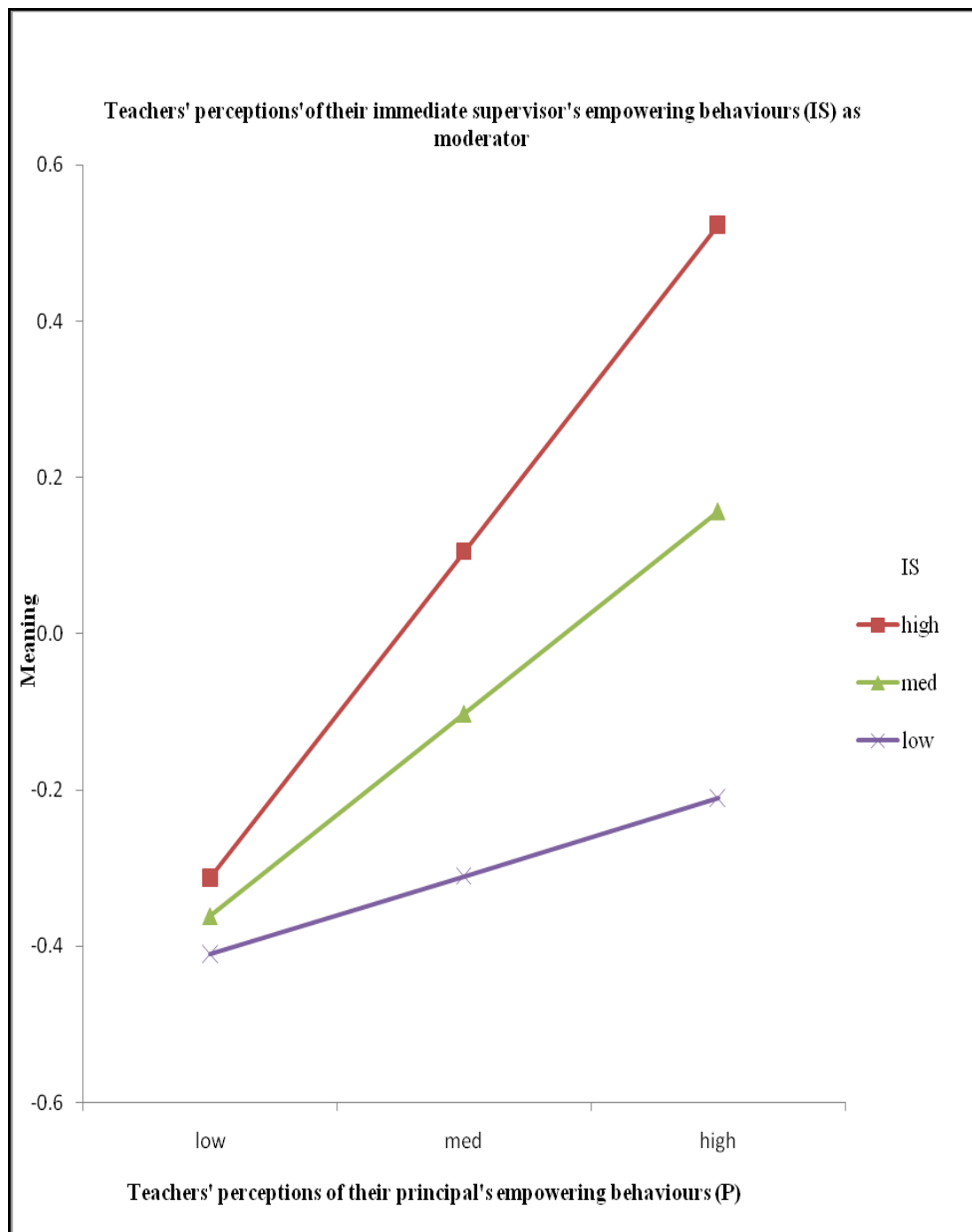


Figure 2b. Teachers' perceptions of immediate supervisor's empowering behaviors (IS) moderated the relationship between teacher's perceptions of principal's empowering behaviors (P) and psychological empowerment sub-scale "meaning."

Teachers' sense of competence. In terms of the psychological empowerment dimension "competence," the simple slope graphs which showed the significant interactive relationship were plotted and are presented as Figures 3a and 3b.

Figure 3a shows that teachers' perceptions of principal's empowering behaviors moderated the relationship between teachers' perceptions of immediate supervisor's empowering behaviors

and teachers' sense of competence. The positive relationship between teachers' perceptions of immediate supervisor's empowering behaviors and teachers' sense of competence was stronger at higher level than at lower level of teachers' perceptions of principal's empowering behaviors.

Figure 3b shows that teachers' perceptions of immediate supervisor's empowering behaviors moderated the relationship between teachers' perceptions of principal's empowering behaviors and teachers' sense of competence. The positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' sense of competence was stronger at higher level than at lower level of teachers' perceptions of immediate supervisor's empowering behaviors. Particularly, at low level of teachers' perceptions of immediate supervisor's empowering behaviors, the positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' sense of competence was greatly weakened.

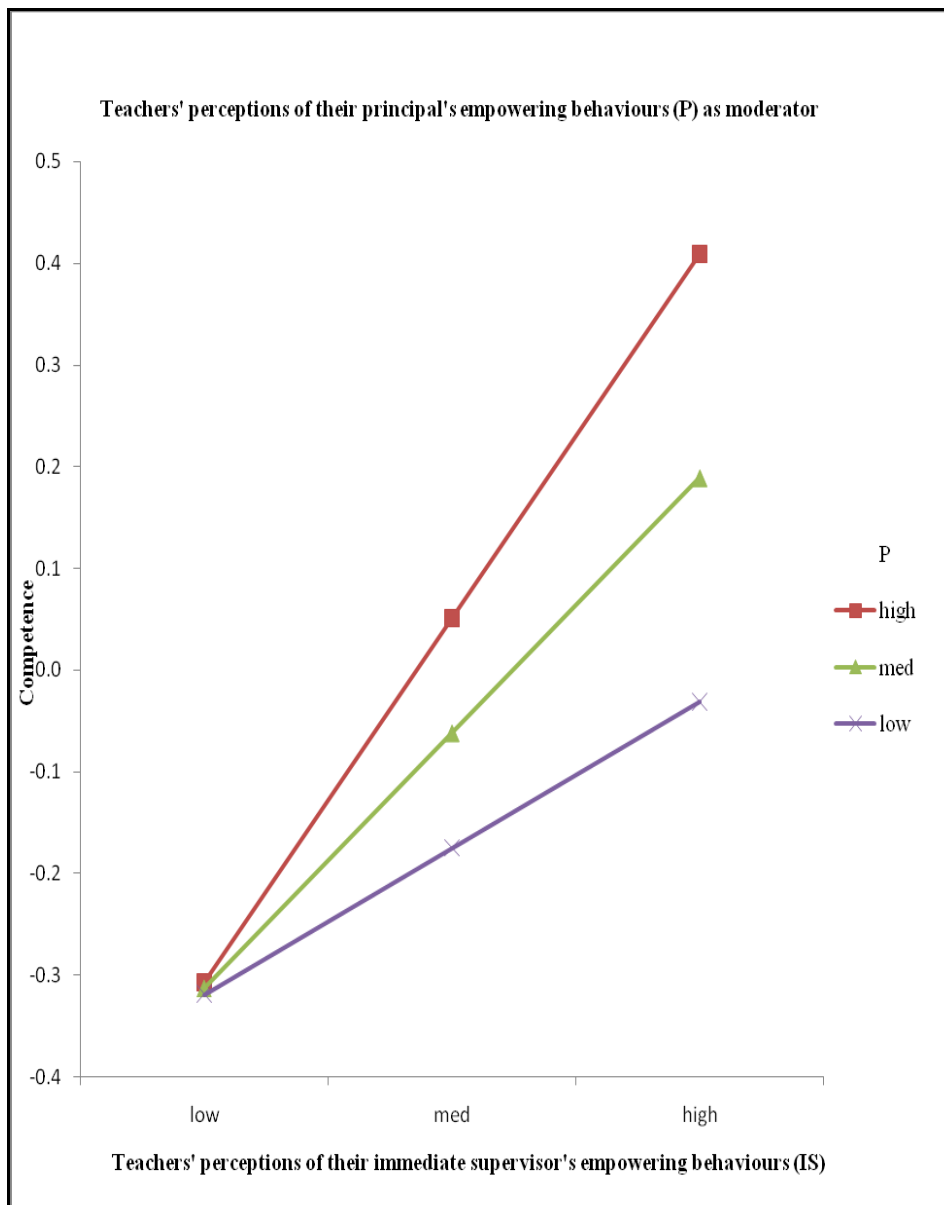


Figure 3a. Teachers' perceptions of principal's empowering behaviors (P) moderated the relationship between teachers' perceptions of immediate supervisor's empowering behaviors (IS) and psychological empowerment dimension "competence."

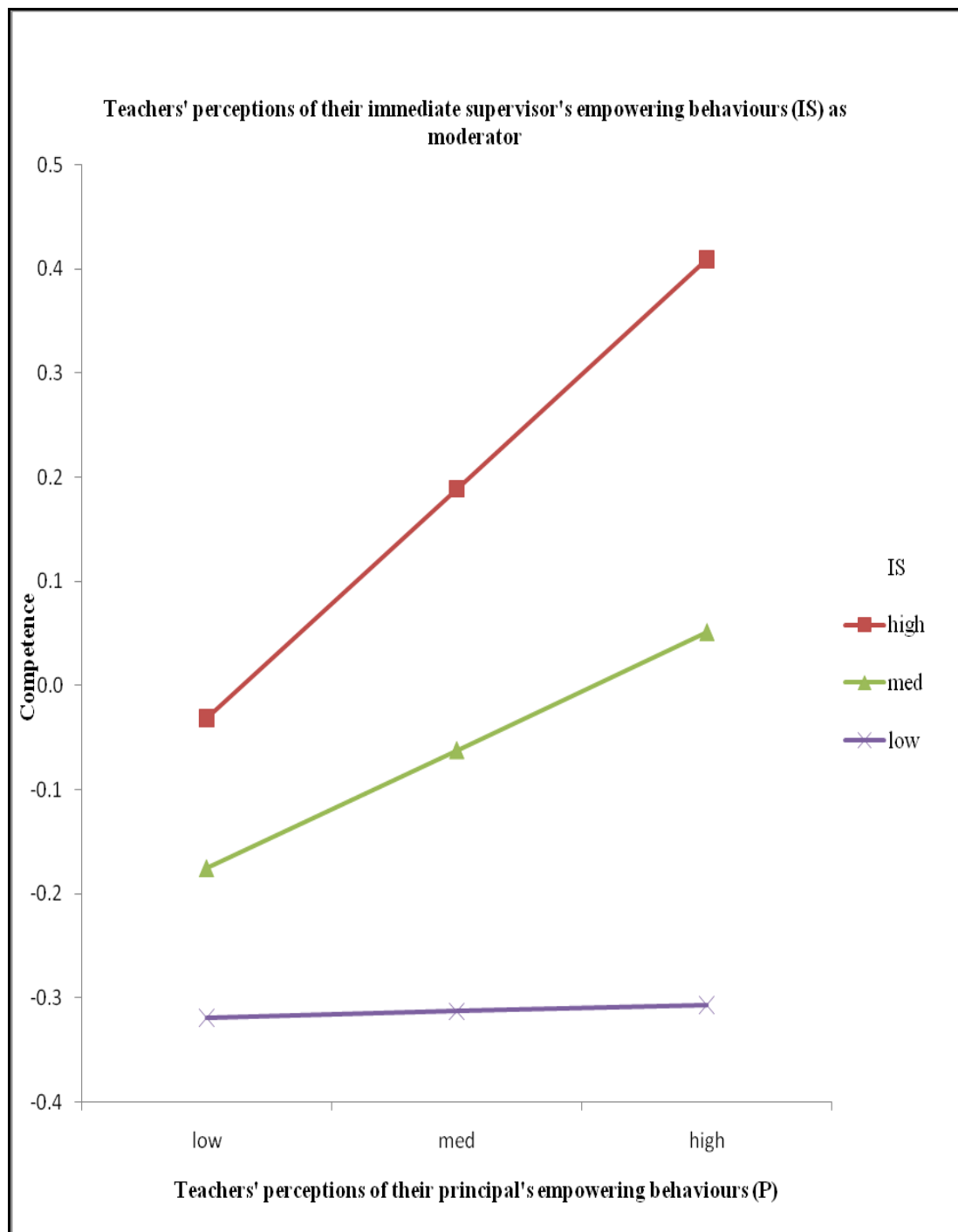


Figure 3b. Teachers' perceptions of immediate supervisor's empowering behaviours (IS) moderated the relationship between teachers' perceptions of principal's empowering behaviours (P) and psychological empowerment dimension "competence."

Teachers' sense of autonomy. In terms of the psychological empowerment dimension "autonomy," the simple slope graphs which showed significant interactive relationship were plotted and are presented as Figures 4a and 4b.

Figure 4a shows that teachers' perceptions of principal's empowering behaviors moderated the relationship between teachers' perceptions of immediate supervisor's empowering behaviors and teachers' sense of autonomy. The positive relationship between teachers' perceptions of immediate supervisor's empowering behaviors and teachers' sense of autonomy was strengthened more when teachers' perceptions of principal's empowering behaviors was at low level than at high level.

Similarly, Figure 4b shows that teachers' perceptions of immediate supervisor's empowering behaviors moderated the relationship between teachers' perceptions of principal's empowering behaviors and teachers' sense of autonomy. The positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' sense of autonomy was strengthened more when teachers' perceptions of immediate supervisor's empowering behaviors was at low level than high level.

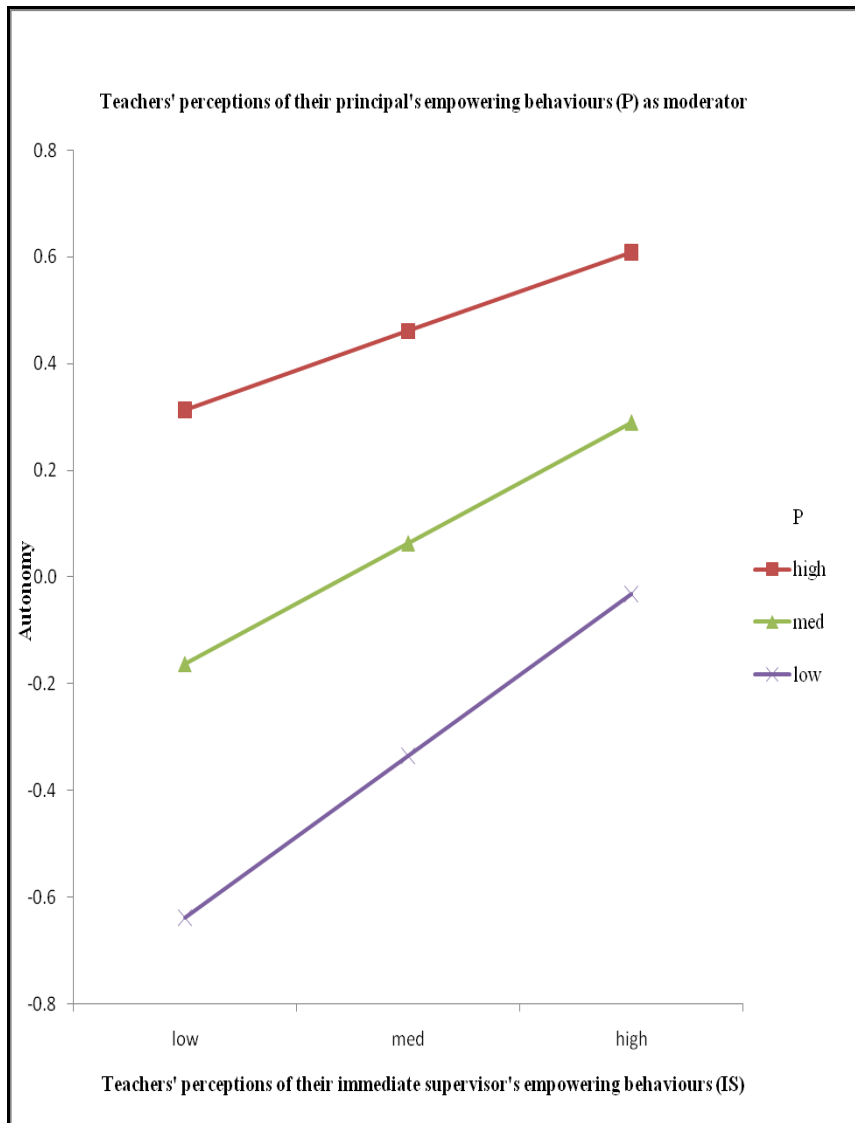


Figure 4a. Teachers' perceptions of principal's empowering behaviors (P) moderated the relationship between teachers' perceptions of immediate supervisor's empowering behaviors (IS) and psychological empowerment dimension "autonomy."

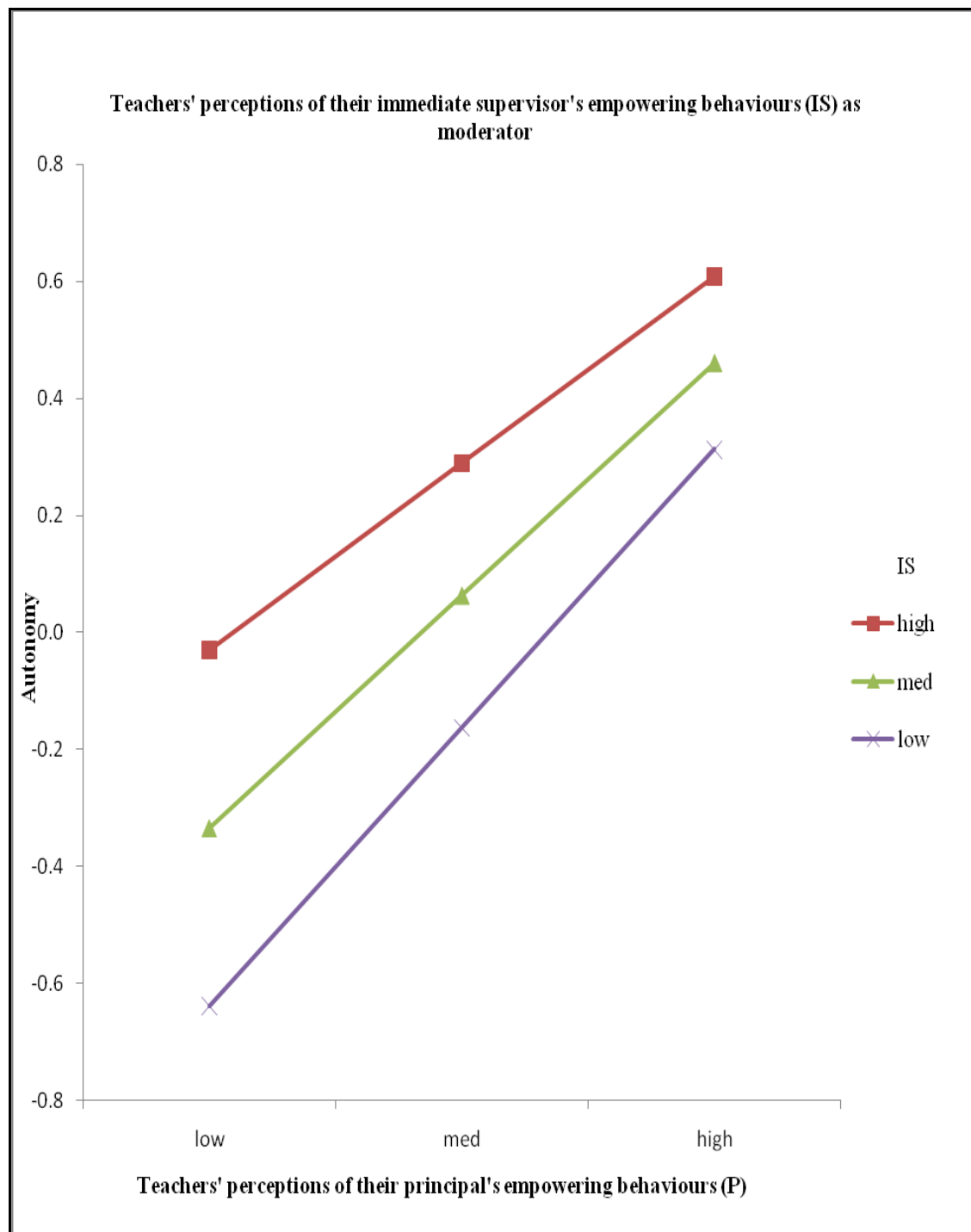


Figure 4b. Teachers' perceptions of immediate supervisor's empowering behaviours (IS) moderated the relationship between teachers' perceptions of principal's empowering behaviors (P) and psychological empowerment dimension "autonomy."

Teachers' sense of impact. As the results from Figure 1 indicated that the relationships between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of impact were non-interactive, a further examination of the main

effects of the relationships between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of impact was conducted.

Results from hierarchical multiple regressions indicated that there was a significant additive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of impact, after controlling for each other. Particularly, teachers' perceptions of principal's empowering behaviors accounted for more additional unique variance ($\Delta R^2 = .144$, $p < .01$) than teachers' perceptions of immediate supervisor's empowering behaviors ($\Delta R^2 = .011$, $p < .05$) in predicting teachers' sense of impact after controlling for each other. Therefore, Hypothesis 2 was supported.

Discussion

The present study examined the joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting the four dimension of teachers' psychological empowerment in terms of "meaning," "competence," "autonomy" and "impact." Overall, the results indicated that an interactive relationship was found between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of meaning, competence and autonomy, but not impact.

Specifically, an enhancing relationship was found between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of meaning and competence, respectively. However, a substituting relationship was found between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of autonomy. An additive relationship was found between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of impact.

Teachers' sense of meaning. In terms of teachers' sense of meaning, our results indicated that teachers' perceptions of immediate supervisor's (or principal's) empowering behaviors acted as an *enhancer* moderator in the relationship between teachers' perceptions of principal's (or immediate supervisor's) empowering behaviors and teachers' sense of meaning. As an enhancer moderator, teachers' perceptions of immediate supervisor's (or principal's) empowering behaviors multiplicatively enhanced the relationship between teachers' perceptions of principal's (or immediate supervisor's) empowering behaviors and teachers' sense of meaning above and beyond the main effects of teachers' perceptions of principal's and immediate supervisor's empowering behaviors, thus representing a positive moderating influence on the relationship (Cole, Bruch & Shamir, 2009; Howell et al., 1986). In this study, this might be because the principal and teachers' immediate supervisor were perceived as active in fostering school goals and shared vision, setting clear directions and communicating organizational policies and decisions to the teachers to encourage them to work collaboratively towards achieving school objectives. With a better understanding of the school's vision, policies, objectives and decisions, it may result in teachers showing more willingness to move in the same direction with their leaders towards achieving school goals and thereby experiencing a higher level of sense of meaning towards their daily work roles (Hallinger & Heck, 2002; Moyer et al., 2005; Yu, Leithwood & Jantzi, 2002).

Teachers' sense of competence. In terms of teachers' sense of competence, our results found that teachers' perceptions of principal's and immediate supervisor's empowering behaviors each acted as an *enhancer* to moderate each other's relationship with teachers' sense of competence (Howell et al., 1986). Particularly when teachers' perceptions of principal's and

immediate supervisor's empowering behaviors were at high level, they enhanced each other's positive relationship with teachers' sense of competence. Surprisingly, when teachers' perceptions of immediate supervisor's empowering behaviors was at a low level, it greatly weakened the positive relationship between teachers' perceptions of principal's empowering behaviors and teachers' sense of competence. This might suggest that teachers' respective immediate supervisors might play a crucial role than the principal in influencing teachers' sense of competence. A possible reason might be due to the fact that teachers usually work more closely with their immediate supervisor than their principal in their daily work practice (Heng & Marsh, 2009; Koh et al., 2011). As a result, teachers are more likely to seek the advice and expertise from their respective immediate supervisors in solving problems related to classroom instruction and student management. Therefore, teachers' perceptions of their immediate supervisor's empowering behaviors, especially in terms of providing on-the-job training, direct coaching and mentorship support might have helped in enhancing teachers' sense of competence at work.

Teachers' sense of autonomy. In terms of teachers' sense of autonomy, our results indicated that the positive relationship between teachers' perceptions of immediate supervisor's or principal's empowering behaviors and teachers' sense of autonomy was strengthened more at lower level than at higher level of teachers' perceptions of immediate supervisor's (or principal's) empowering behaviors. In other words, at lower level of teachers' perceptions of principal's (or immediate supervisor's) empowering behaviors, teachers' perceptions of immediate supervisor's (or principal's) empowering behaviors *substituted* for teachers' perceptions of principal's (or immediate supervisor's) empowering behaviors to predict teachers' sense of autonomy. According to Howell et al. (1986), a substitute reduces and replaces the influence of the predictor variable on the criterion variable. They added that a substitute is identified in the moderated multiple regression by the presence of main effects for both the predictor and the moderator variables, as well as a significant negative interaction term (Howell et al., 1986). In the present study, teachers' perceptions of immediate supervisor's (or principal's) empowering behaviors met the requirements of a substitute moderator by having significant main effects of predictor and moderator as well as a significant negative interaction term. The results suggest that when either the principal or immediate supervisor is more empowering than the other, the influence of the more empowering leader could substitute for the other less empowering leader in enhancing teachers' sense of autonomy. In teacher empowerment practice, this also suggests that the lack of an empowering leader at one level of management might be possible to be substituted for by another more empowering leader at another level of management to influence positively on teachers' sense of autonomy. This further suggests that it might be more beneficial to develop empowering leaders at multiple levels of management. In other words, the substituting mechanism which underscored the interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors may suggest that schools can stand to benefit more from having empowering leaders at different levels of management as a form of contingent support to enable an empowering leader to substitute for a non-empowering leader to support teachers' sense of autonomy.

Teachers' sense of impact. Further examination of the non-interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' sense of impact revealed that their main effects were significant such that each could have a unique influence on teachers' sense of impact but they could also jointly

produce an overall additive influence on teachers' sense of impact (Howell et al., 1986). Their unique influence on teachers' sense of impact might possibly be due to their differential leadership role functions, the principal may tend to promote teachers' sense of impact by acknowledging teachers' collective efforts and contributions to the school at large-scale faculty meetings while teachers' immediate supervisor may tend to promote teachers' sense of impact by acknowledging teachers' individual contributions to their department or classrooms at a more personal level (Chen & Bliese, 2002). Results also indicated that teachers' perceptions of principal's empowering behaviors accounted for more unique variance than teachers' perceptions of immediate supervisor's empowering behaviors in predicting teachers' sense of impact after controlling for each other. This might be due to the positional authority of the principal as head of the school such that a "halo effect" may result from teachers' perceptions based on the social image and status of the principal at the upper-level of the school hierarchy. As such, the principal's open praises and recognition made at large-scale faculty meetings to share the successes of teachers whose teaching has made a difference in their students' learning could have resulted in a stronger influence on teachers' sense of impact as compared to similar behaviors demonstrated by teachers' immediate supervisor at smaller-scale departmental meetings (Cole et al., 2009; Edwards, et al., 2002; Kark & Shamir, 2002; Shamir, House & Arthur, 1993; Shamir, Zakay & Popper, 1998).

General discussion. The interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors was found to be associated with an enhancing mechanism in predicting teachers' sense of meaning and competence, respectively. However, the interactive relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors was found to be associated with a substituting mechanism in predicting teachers' sense of autonomy. This interesting finding might be due to a lower demand for "autonomy" by the Singapore teachers as a result of their collectivistic mindset being in a more culturally collectivistic Singapore society characterized by conformity in pursuit of higher, common goals or might be due to the impact of a high level of accountability in the Singapore education system (Ng & Ho, 2012) associated with an avoidance of uncertainty and risks (Hofstede, 2001) such that teachers may value "meaning" and "competence" more than "autonomy" in performing their professional roles. As a result, this might have caused the teachers in Singapore to value a sense of meaning over autonomy in carrying out their work duties (Fock et al., 2013) and therefore also expect their school leaders' behaviors to cater more to enhance their sense of meaning more than their sense of autonomy. However, these speculations should be further examined and clarified in future research to have a better understanding of whether cultural differences or influence from a highly accountable education system might affect teachers' psychological empowerment dimensions, particularly on teachers' sense of autonomy.

Educational Significance and Implications

First, this study contributes new theoretical perspectives and empirical evidences to the existing teacher empowerment literature by extending on the empirical link between teachers' perceptions of their school leaders' empowering behaviors and teachers' psychological empowerment. Particularly by explicating the dynamic relationships between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment, it can provide more empirical insights for understanding the joint relationship between teachers' perceptions of principal's and immediate supervisor's

empowering behaviors in predicting teachers' psychological empowerment to make contributions to advance teacher empowerment research.

Second, this study clarified the moderating mechanisms underscoring the joint relationship between teachers' perceptions of principal's and immediate supervisor's empowering behaviors in predicting teachers' psychological empowerment. As this is still empirically underexplored and poorly understood, this study can contribute significantly to the theory of teacher empowerment. Particularly, a number of scholars have opined that not detecting moderating effects in organizational research may have detrimental consequences for theory development because hypotheses and models including conditional relationships may be incorrectly discarded (Aguinis, Beaty, Boik & Pierce, 2005; Howell et al., 1986; Villa et al., 2003). However, the present study empirically showed that teachers' perceptions of principal's and immediate supervisor's empowering behaviors interacted by moderating each other's relationship with teachers' sense of meaning, competence and autonomy. As such, this study can provide more detailed insights for future theoretical development and the research design of teacher empowerment.

Third, this study highlighted the importance of developing empowering principals as well as empowering middle-level leaders for more effective facilitation of teacher empowerment in the schools. This suggests a need for increasing school leaders' awareness of the importance of an alignment of empowering leadership behaviors across levels of management is essential for fostering an empowering school climate to facilitate teacher empowerment (O'Reilly, Caldwell, Chatman, Lapiz & Self, 2010). This further suggests that school leadership developers may need to focus more on developing empowering school leaders, especially by incorporating empowering leadership development into both principalship training as well as middle-level leadership training to enhance school leaders' capacity in empowering teachers, particularly in enhancing the four dimensions of teachers' psychological empowerment.

Conclusion

Overall, the present study provided empirical evidence for demonstrating the moderating roles of teachers' perceptions of principal's and immediate supervisor's behaviors in their joint relationship in predicting teachers' psychological empowerment dimensions. To our knowledge so far, this study could possibly be the first to explicitly examine the nuanced mechanisms underscoring the joint relationship (i.e. interactive and additive) between teachers' perceptions of principal's and immediate supervisor's empowering behaviors to clarify the exact nature of their joint relationship in predicting the four dimensions of teachers' psychological empowerment. The empirical findings could contribute to a better understanding of effective school leadership for improving teacher empowerment in school organizations.

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Appendix

Measures and Items Used

School Leader Empowering Behaviors (SLEB) (Lee & Nie, 2013)

My principal/immediate supervisor ...

Sub-Scale 1: Delegation of Authority

Item 1: Gives me the authority to make changes necessary to improve things.

Item 2: Gives me the authority I need to make decisions that improve work processes and procedures.

Item 3: Delegates authority to me that is equal to the level of responsibility that I am assigned.

Sub-Scale 2: Providing Intellectual Stimulation

Item 1: Asks questions that prompt me to think.

Item 2: Stimulates me to rethink the way I do things.

Item 3: Challenges me to re-examine some of the basic assumptions about my work.

Sub-Scale 3: Giving Acknowledgment & Recognition

Item 1: Always gives me positive feedback when I perform well.

Item 2: Gives me special recognition when my work is very good.

Item 3: Personally compliments me when I do outstanding work.

Sub-Scale 4: Articulating a Vision

Item 1: Paints an interesting picture of the future for our school.

Item 2: Is always seeking new opportunities for the school.

Item 3: Inspires staff with his/her plans for the future.

Sub-Scale 5: Fostering Collaborative Relationships

Item 1: Fosters collaboration among staff members.

Item 2: Encourages staff members to be team-players.

Item 3: Gets staff members to work together for the same goal.

Sub-Scale 6: Providing Individualised Concern & Support

Item 1: Treats me as equals.

Item 2: Takes the time to discuss my concerns patiently.

Item 3: Stays in touch with me.

Sub-Scale 7: Providing Role-Modeling

Item 1: Works as hard as anyone in my school.

Item 2: Sets a good example by the way he/she behaves.

Item 3: Leads by example.

Psychological Empowerment (Adapted from Spreitzer, 1995)

Sub-Scale 1: Meaning

Item 1: The work I do is very important to me.

Item 2: My job activities are personally meaningful to me.

Item 3: The work I do is meaningful to me.

Sub-Scale 2: Competence

Item 1: I am confident about my ability to do my job.

Item 2: I am self-assured about my capabilities to perform my work activities.

Item 3: I have mastered the skills necessary for my job.

Sub-Scale 3: Autonomy

Item 1: I have significant autonomy in determining how I do my job.

Item 2: I can decide on my own how to go about doing my work.

Item 3: I have considerable opportunity for independence and freedom in how I do my job.

Sub-Scale: Impact

Item 1: My impact on what happens in my school is large.

Item 2: I have a great deal of control over what happens in my school.

Item 3: I have significant influence over what happens in my school.