

# AN EXPLORATION OF THE RELATIONSHIP BETWEEN PRINCIPAL CHANGE LEADERSHIP COMPETENCIES AND TEACHER CHANGE BELIEFS

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## ABSTRACT

*The purpose of the study was twofold: a) to examine the causal relationship of principal change leadership competencies (PCLC) and teacher change beliefs (TCB); b) to investigate the moderating effects of demographic factors on the above relationship. PCLC was operationalised using Principal Change Leadership Competencies Scale while TCB was measured using Teacher Change Beliefs Scale. A total of 936 teachers from 47 High Performing Secondary School in Malaysia completed the survey. Structural equation modelling was applied to test the models whereas invariance analysis was conducted to examine the demographic moderators. The result demonstrated that PCLC was significantly related to TCB (.81). In other words, in any school change, PCLC operates as a significant predictor for TCB. As changes in TCB are greatly influenced by PCLC, with TCB being the critical factor which leads teachers to embrace change, school principals need to competently strengthen teacher self-influences through the mechanism of personal agency – the belief system. Besides, the results of the study also revealed that the moderating effects of gender, age, year of experience and location of school were statistically significant. Hence, the above demographic factors should take into consideration in the causal relationship of PCLC and TCB in any school change.*

**Keywords:** *Principal change leadership competencies, teacher change beliefs, school change, moderating effects, structural equation modelling*

## **INTRODUCTION**

Research on education has found that future effectiveness of all schools depends on the ability of school leaders managing change (Fullan, 2007; Hallinger & Leithwood, 1996). As instructional leaders, school principals are at the centre of any school change. In the process of maximizing change efforts, they play a vital role in influencing teacher change beliefs, which are closely link to the development of teacher attitudes toward change. Indeed, school principals have a strategic role in determining the organization's strategies, plans and day-to-day management practices. Hence, they need to equip themselves with relevant competencies because over time, these strategies, plans and management practices come to influence teacher beliefs toward school change (Oreg & Berson, 2011).

Meanwhile, numerous studies have revealed that the teacher is the single most important factor in the change process (Fullan, 2007; Hall & Hord, 2010). As front-line implementers in the change process, teachers are the real source of, and the vehicles for, school change. They are closest to the students and more aware of the needs of the students in the learning process. Thus, they are expected to play an important role in improving quality in schools by establishing an environment that encourages students to learn better in any school change.

Malaysian education system is entering an intensive period of change with the launching of the Malaysia Education Blueprint 2013-2025 in September 2013. Considering principal change leadership competencies and teacher change beliefs are among the most significant predictors to transform the education system to be effective, there is a pressing need for research to be conducted on the concerned relationship, and the influence of demographic factors between these two variables.

## **PRINCIPAL CHANGE LEADERSHIP COMPETENCIES**

The variable principal change leadership competencies (PCLC) in this study refer to principals' knowledge, skills, abilities and related behaviours in managing school change. Most importantly, these competencies display excellent performance (Crawford, 2003; Duffy, 2009) in influencing teachers to work toward the achievement of the change goal. School principals are at the heart of the change processes as they are the one to initiate, implement, evaluate and sustain the change. They align and exhibit change leadership competencies to turn change goals into reality. Hence, PCLC are manifested in actions, structures and processes that enhance or impede change. These, in turn, strengthen the linkage between the principals' behaviours and their effectiveness in impeding change.

Successful school principals are those whose competencies are in place to influence and involve teachers to work through the change process. Levin (2001, May) highlighted the importance of the school principals to possess competencies to

lead change effectively. Kursunoglu and Tanriogen (2009) also addressed the same view in their study that principals must have relevant skills to implement successful school change. This is particularly true as school change involves complex processes. To achieve successful outcome, each process demands specific leadership competencies to make change a success. Hence, the widely held view is that school principals as change agents need a substantial repertoire of competencies to draw on so as to best lead change in school.

In local, Tai (2013) developed the Principal Change Leadership Competency Model to identify critical PCLC that facilitate changes in Malaysian secondary schools. Four important domains of competencies were identified based on four phases of change namely, a) *Goal Framing*; b) *Capacity Building*; c) *Defusing Resistance and Conflict*; and d) *Institutionalizing*. The first phase of the change – *Goal Framing*, emphasizes the importance of constructing a goal to direct the change effort before attempting any change. The core competencies for *Goal Framing* include, i) Developing an attainable goal for the school; ii) Presenting the rationale of the need for change; and iii) Having a clear direction of how to achieve the goal (Tai, 2013). Obviously, *Goal Framing* matches with the notion of ‘*Purpose*,’ ‘*Visioning Strategies*,’ and ‘*Setting Directions*’ suggested by Hallinger and Heck (1999), Conger and Kanungo (1998), and Leithwood (1996), respectively. Taken together, identifies direction and purpose of the change is viewed as the first step in the strategic planning of any school change. A clear and well-formulated change goal gives all teachers the feeling that the school is carrying out a meaningful task and eventually helps them make sense and commit to their work.

*Capacity Building* is the second phase of the school change process (Tai, 2013). School principals need to examine the readiness and capacity of the teachers to meet change requirements which include i) Seeking ways to develop staff’s competencies in teaching and learning; ii) Providing training and coaching among the staff; and iii) Ensuring staff are able to perform the new task’ (Tai, 2013). Indeed, Hallinger and Heck (1999), Conger and Kanungo (1998), and Leithwood (1996) also emphasized the importance of capacity building in ‘*People*,’ ‘*Efficacy-Building Strategies*,’ and ‘*Developing People*,’ respectively. Hence, it is suggested that school principals need to find ways to provide professional development to enable teachers to acquire necessary skills and knowledge so as to handle the change effectively.

The third phase of change is *Defusing Resistance and Conflict* (Tai, 2013). According to Deloite and Touches (1996), resistance to change is the number one reason why organization change initiatives fail. In fact, the heart of managing change is managing people (Fullan, 1993). Thus, the competence of ‘*Defusing Resistance and Conflict*’ is critical to turn change goal into reality. The associated significant competencies for *Defusing resistance and conflict* include i) Anticipating the resistance behavior that threatens the change efforts; ii) Making individuals who resist change feel confident, and iii) Managing change conflict effectively by seeking an agreement from every party (Tai, 2013).

In comparison with Hallinger and Heck (1999), Conger and Kanungo (1998), and Leithwood (1996), instead of *Defusing Resistance and Conflict*, their models more emphasize on the initiatives to facilitate and coordinate the multitude of activities necessary to create the desired state of the organization. These associated with creating the right structures, processes, routines, delegating authority, mobilizing resources, establish coordination mechanisms, reviewing change progress, and monitoring to ensure realization of change goals which are manifested in ‘*Structures and Social System*,’ ‘*Context Changing Strategies*,’ ‘*Redesigning the Organization*’ addressed by them respectively. Although all these initiatives may ensure the smoothness of the implementation of change and sustain its momentum, the larger point is that resistance to change and conflicts often exist among teachers in the process of change which will jeopardize change initiatives and change outcomes (Tai, 2013).

*Institutionalizing* is the fourth phase of the school change process (Tai, 2013). Lewin (1958), Kotter (1996), Nilakant and Ramanarayan (2006), and Hayes (2010) stressed the importance of sustaining the achievements of the change or making the change stick. Without these, the benefits would be lost such as the organization slipping back into the old ways of working. The associated significant competencies identified for *Institutionalizing* include i) Analyzing objectively the final change outcomes; ii) Creating opportunities for sharing best practices among the departments; and iii) Ensuring staff members continually contribute to changes that were made (Tai, 2013). In short, at its best, attention needs to be given by school principals to consolidate a change and hold on to gains. Comparatively, the present model applied in this study addressed attention to this perspective than those suggested by Hallinger and Heck (1999), Conger and Kanungo (1998), and Leithwood (1996).

## TEACHER CHANGE BELIEFS

Belief is viewed as a person’s subjective probability judgments of a relation between the object of the belief and some related attribute (Fishbein & Ajzen, 2010). In other words, belief is an individual’s conception about a specific behaviour or an object. The present study measured the variable Teacher Change Beliefs (TCB) by using Teacher Change Beliefs Scale (Tai, Omar Abdull Kareem, Muhamad Sahari Nordin & Khuan, 2015). It encompasses three components namely: (a) *Discrepancy*; (b) *Efficacy*, and (c) *Principal Support* that determine the degree of buy-in by school teachers. *Discrepancy* is viewed as the belief that a change is needed as there is a gap between the present state and the desired future state in the organization (Tai et al., 2015). According to Pare, Sicotte, Poba-Nzaou (2010), a discrepancy helps legitimize the need for change otherwise the motive for a change may be perceived as arbitrary (Armenakis, Bernerth, Pitts, & Walker, 2007). For Kotter (1996), to create a sense of urgency in any change, the first step is to be able to communicate the need for change in clear and dramatic terms so that people will be more likely to embrace it.

In the educational setting, Hallinger and Heck (2002) highlighted that leaders need to help their staff to understand change goals that can undergird a sense of purpose or vision. Levin (2001 May) also highlighted that if teachers do not feel that change is needed through a clear justification of a change goal, most probably they will not direct their initiatives towards school change. Indeed, *Discrepancy* is one of the main factors to resist change as it will affect how teachers evaluate the change cognitively. Clearly, only by offering a compelling vision of the future (Ford, 1992), the school principal can probably reduce the uncertainty among teachers and hence yield less variability in responses toward change.

*Efficacy* refers to the belief that the teachers have the required skills and ability to handle the change and perform the new task confidently (Tai et al., 2015). In the process of change, teachers must feel that they have requisite knowledge and a degree of skills required to make the efforts successful. The more the teachers are confident about their knowledge and skills, the greater will be the likelihood that change can be handled more effectively (Tai et al., 2015). If they do not possess the required competencies, most probably they will pose resistance against the change.

Jerald (2007) also concurred that teachers with a high level of efficacy are more open to new ideas and more willing to experiment with new approaches that enable them to create new teaching strategies. Similarly, Cheung (2008) believes that when facing challenging situations, teachers with a high sense of efficacy make greater efforts and show patience to resolve problems. While explaining the role teacher factors play in classroom change and improvement, Fislser and Firestone (2006) found that self-efficacy could mediate the influence on teacher learning and pedagogical change. On top of this, teachers with a high sense of efficacy have been found to be a distinctive and critical predictor of classroom practice in the face of change (Guo, Justice, Kaderavek & Pista, 2010).

*Principal support* is termed as the belief that school leaders support and are committed to the success of a change and will take relevant steps to face any obstacle (Tai et al., 2015). When individuals in an organization feel that their leader has taken optimal steps to help them to solve problems in the change process and provide constructive feed back, they are more likely to have positive evaluations of the change (Bernerth, Armenakis, Field & Walker, 2007). Thus, school principals need to encourage teachers to commit to the change and to motivate them to work hard, and genuinely caring for them (Hughes & Benigni, 2012). Support from the leadership motivates the personnel and they become more committed to their jobs.

## **RELATIONSHIP BETWEEN PCLC AND TCB**

To effectively plan and implement school change, school principals need to influence the beliefs of the teachers for creating the impetus for school change and successful implementation as beliefs are closely linked with the development of teacher attitudes toward change. To evaluate how principal leadership influences

teacher beliefs, Chan (2002) conducted a case study of a secondary school in Hong Kong. Sixteen teachers who had at least four years of teaching experience were selected as informants. Two significant aspects which influenced teacher beliefs were identified: direct leadership and indirect leadership. Direct leadership refers to appointment strategy, empowerment with trust, personal characters of the principal and the school policies. Indirect leadership includes the culture of the school and support from the senior teachers. These themes of the principal leadership acted as input into a transforming process that form, shape and embed teacher beliefs. On the other hand, Ross and Gray (2006) conducted a survey on 3,042 grade 3 and 6 teachers in 205 elementary schools in Ontario and found that principals who demonstrated transformational leadership behaviours increased their likelihood of having significant positive effects on general teacher efficacy. Likewise, Demir (2008) carried out a survey on 218 teachers from 66 elementary schools in the Province of Edirne in Turkey reported that the transformational leadership behaviours of principals explained 35% of the variance of general teacher efficacy and 49% of the variance of personal teacher efficacy.

In their study, Seijts and Roberts (2011) emphasized that the success of any change initiative depends on the leader's ability to build support for the initiated change. If the individuals believe *Principal Support* for the change is inadequate it will influence whether the change initiative will be embraced. In other words, individuals are more likely to have positive evaluations of the change when they feel that their leaders properly addressed their concerns and support for the change. Conversely, insufficient support from the leaders will lead to negative perception of change initiatives as top management are responsible for providing the proper means to work through the change process. Besides, according to Fullan (2007), effective school leaders foster a supportive and healthy environment that will enhance teacher beliefs and enable them to possess the ability to successfully instruct their students in classroom learning. Clearly, teacher change beliefs would be enhanced when a supportive culture is present.

## METHODOLOGY

### Population and Sampling Procedure

The study population comprised 13,900 High Performing Secondary Schools (HPSS) teachers in Malaysia. HPSS and the concerned teachers were the sites and study population chosen for the study as they are "information rich" and of central importance to the purpose of the study. As planned change are intentional acts designed to disrupt the status quo and move the organization towards a more effective state (Hayes, 2010), the probability of HPSS principals leading change is far higher than principals in mediocre or low performing schools. As a result, teachers in HPSS experienced school change more often than their counterparts in mediocre or low performing schools. Hence, by focusing on HPSS, the researchers

can more accurately evaluate the relationship between the above two variables. Eventually, a total of 47 HPSS in Malaysia were selected randomly for the survey and 20 teachers from each school were chosen as sample. In other words, a total number of 940 respondents were identified for the survey.

## Survey instrument

*Principal Change Leadership Competencies Scale* (Tai, 2013) was applied to examine PCLC. It consists of four main domains namely, *Goal Framing*, *Capacity Building*, *Defusing Resistance and Conflict*, and *Institutionalizing* with construct reliability of .76, .76, .74 and .74, respectively. The PCLCS was featured as good convergent validity as all the items satisfied the cut off value of .70, ranging from .80 to .90, the squared multiple correlations greater than 0.5 and the average variance extracted value all surpassed 50% (Hair, Anderson, Tatham & Black, 2006). In addition, PCLCS also holds discriminant validity as the average variance extracted value of the factors was above 0.50 and composite reliability index was greater than 0.70 (Tai, 2013).

On the other hand, TCB was assessed using *Teacher Change Beliefs Scale* (TCBS) (Tai et al., 2015), adapted from *Organizational Change Recipient Beliefs Scale* (Armenakis et al., 2007) and *Readiness for Organizational Change Scale* (Holt, Armenakis, Field & Harris, 2007). TCBS encompasses three domains: *Discrepancy*, *Efficacy*, and *Principal Support* and each of these have three items. All the three items surpassed the cut off value of .70, ranging from .74 to .91. As the composite reliability index for each domain was .82, .68, .74, respectively, it holds convergent validity. Furthermore, as the average variance extracted value of the factors was above 0.50, the TCBS thus was provided evidence for discriminant validity (Tai et al., 2015).

## Data Analysis

A total of 940 sets of questionnaires were distributed. Of these, 938 sets of questionnaire were returned. In other words, the response rate was very high i.e. 99.78%. With more than 25% obvious errors, two sets of questionnaires thus had excluded from further analysis. Simply put, 936 sets of questionnaires were retained for the final analysis.

The main purpose of using SEM to assess the model is to find the most parsimonious model which is well fitting and valid (Hair et al., 2006). Whether the model is considered valid is dependent on goodness of fit (GOF) indices. GOF indices indicate how well the model reflects the data. This study adopted three categories of model fit: absolute, incremental, and parsimonious (Bollen & Long, 1993; Hair et al., 2006). The first category of absolute values comprised of normed chi-square ( $\chi^2/df$ ), the second category of incremental values included Comparative Fix Index

(CFI) and Tucker-Lewis Fix Index (TFI) whereas the third category of parsimonious fit index consisted the Root Mean Square Error of Approximation (RMSEA). The thresholds for the GOF indices applied in the study were  $<5.0$ ,  $.90$  or greater and  $<.06$  for the above three categories, respectively (Byrne, 2001; Kline, 2011).

To examine the relationship between PCLC and TCB, a full Structural Equation Modelling (SEM) hypothesized structural model was constructed. To test the moderating effects of the demographic factors, multi-group structural equation was conducted (Byrne, 2001). For each of the four moderation tests (gender, age, years of experience, and school location), the data set was split into two subgroups. Specifically, the two groups relating to age and years of experience were each re-divided into two groups for data analysis. This was done to account for their respective small sample sizes which prohibited proper SEM parameter estimation. Two runs of the data were required: the constrained and the unconstrained model for each subgroup were tested and compared simultaneously. Differences in the chi-square values between the two models of both of the subgroups were to determine whether the variable has a moderating effect on the relationship between PCLC and TCB. In other words, if the model without any constraints is significantly better than the constrained one, i.e. if the chi-square value between the unconstrained and constrained model differs by more than 3.84, a moderating effect exists (Kline, 2011). Furthermore, to determine which subgroup showed a pronounced effect of the moderator variable, the standardized estimate of the path of interest for both data sets was obtained for comparison.

## **Demographic Characteristics**

Demographic details of the respondents showed that the sample was composed of 75.3% ( $N=705$ ) female and 24.7% male ( $N=231$ ). Most of the respondents aged between 41 to 50 years ( $N=337$ , 36%). Those with 31 to 40 years ( $N=319$ , 34.1%), 21 to 30 years ( $N=157$ , 16.8%) and 51 to 60 years ( $N=122$ , 13%) made up the rest of the respondents in this study. With respect to years of experience, majority of the respondents had worked more than 20 years ( $N=207$ , 22.1%). This was followed by those who had worked between 1 to 5 years ( $N=198$ , 21.2%), 11 to 15 years ( $N=189$ , 20.2%), 6 to 10 years ( $N=181$ , 19.3%) and 16 to 20 years ( $N=161$ , 17.2%). The final sample profile also showed that 71.6% ( $N=670$ ) of the teachers were from urban school whereas 28.4% ( $N=266$ ) were rural school teachers.

## **Findings**

To examine the relationship between PCLC and TCB, a full SEM hypothesized structural model was constructed as shown in Figure 1. The magnitude of factor loadings with normed  $\chi^2=3.969$  ( $<5.0$ ), TFI =  $.960$  ( $>.90$ ), CFI =  $.965$  ( $>.90$ ), and RMSEA =  $.056$  ( $<.06$ ), exceeded the threshold, respectively (Byrne, 2001; Kline, 2005), indicating a good fit. In short, the model was free from offending estimates



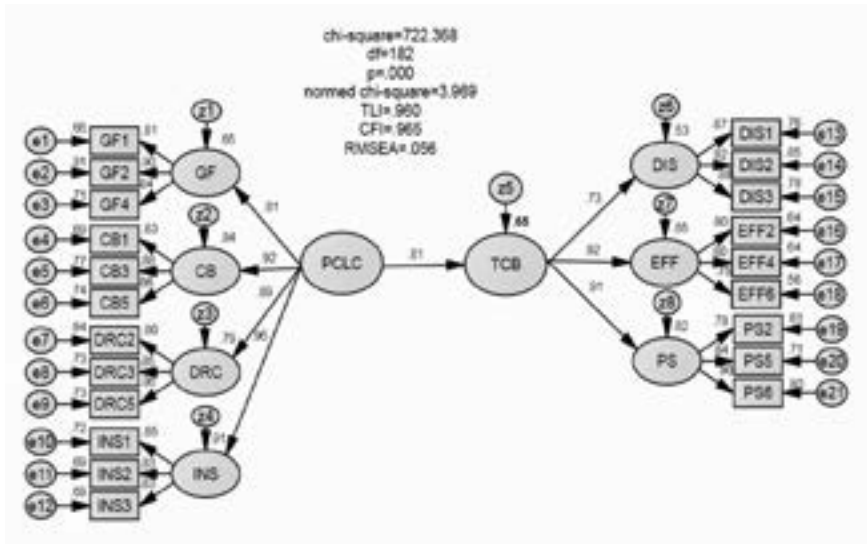


Figure 1. The Structural Model of PCLC and TCB

and the fit statistics suggested that the estimated model reproduces the sample covariance matrix reasonably well.

Importantly, the result of the study revealed that PCLC was significantly influenced TCB as the path loading between these two variables was .81 showing that the relationship between PCLC and TCB was significant at the level of 0.05. In other words, PCLC is an important predictor of TCB. This implies that principals who are equipped themselves with PCLC and if they perform it adequately, it can influence the change beliefs of the teachers significantly. Simply, the impact of PCLC on TCB is very great in the process of school change. Meanwhile, on closer examination between the domains of PCLC and TCB at the four stages of school change, as shown in Table 1, *Discrepancy* was found significant in *Goal Framing* ( $p<0.001$ ) whereas *Efficacy* and *Principal Support* were found significant in *Capacity Building* ( $p<0.001$ ), *Defusing Resistance and Conflict* ( $p<0.001$ ), as well as *Institutionalising*. Clearly, PCLC influence the domains of TCB differently at the different stages of managing school change.

Next, the hypothesized causal structure in the simultaneous tests of the four demographic moderators, as shown in Table 2, turned out a good fit for each subgroup ( $TLI>0.90$ ;  $CFI>0.90$ ;  $RMSEA<0.08$ ;  $\chi^2/df<5.0$ ) indicating their overall acceptability. The model comparison results showed that all the hypothesized causal relationship in the models for each subgroup of each variable was statistically significantly ( $p<0.001$ ), with the chi-square value between the unconstrained and constrained model differed by more than 3.84. Simply put, all the four demographic

**Table 1.** *The p-value of the Sub-dimension of PCLC and TCB and Its Significance for Each Path*

Construct	Path	Sub-dimension	p-value	Result
Discrepancy	<---	Goal Framing	.001	Significant
Efficacy	<---	Goal Framing	.107	Not Significant
Principal Support	<---	Goal Framing	.105	Not Significant
Discrepancy	<---	Capacity Building	.110	Not Significant
Efficacy	<---	Capacity Building	.001	Significant
Principal Support	<---	Capacity Building	.001	Significant
Discrepancy	<---	Defusing Resistance &	.217	Not Significant
Efficacy	<---	Conflict	.001	Significant
Principal Support	<---	Defusing Resistance &	.001	Significant
Discrepancy	<---	Conflict	.203	Not Significant
Efficacy	<---	Defusing Resistance &	.001	Significant
Principal Support	<---	Conflict	.001	Significant
		Institutionalizing		
		Institutionalizing		
		Institutionalizing		

factors of gender, age, years of experience, and school location significantly moderated the path relationship of PCLC and TCB.

Furthermore, results as shown in Table 3 revealed that differences exist between the standardized estimates of the path of interest of the subgroups for the four demographic variables. The result is a clear case of moderation whereby the relationship between PCLC and TCB changes respectively, based on a third demographic factor. For gender, the standardized estimate of the path of interest for female was .83 whereas for male was .71. With a difference of .12, female was found more pronounced than male in moderating the causal relationship of PCLC and TCB. For age groups, the younger group (21-40 years old) with a standardized estimate of .82 was more pronounced than the aged group (41-60 years old) (.80). However, for years of experience, the aged group (>15 years) (.81) moderated more relationship between PCLC and TCB than the younger group (<15 years) (.80) although the difference was only .01. In terms of school location, it was discovered that the moderating effects was more pronounced on teachers in urban (.82) than in rural school (.77).

Table 2. Result of Moderating Effects of the Demographic Factors

Variable	Category	Model	$\chi^2$	$\chi^2$ difference	df	TLI	CFI	RMSEA	$\chi^2/df$	Moderation Result
Gender	Male	CM	405.897	12.51	183	.932	.941	.073	2.218	Significant
		UM	393.387		182	.935	.944	.071	2.161	
	Female	CM	608.159	25.622	183	.958	.964	.057	3.323	Significant
		UM	582.537		182	.961	.966	.056	3.201	
Age	21-40	CM	509.955	14.262	183	.949	.956	.061	2.787	Significant
		UM	495.693		182	.951	.958	.061	2.724	
	41-60	CM	546.391	19.43	183	.950	.956	.066	2.986	Significant
		UM	526.961		182	.952	.959	.064	2.895	
Years of Experience	<15	CM	545.449	20.089	183	.952	.958	.059	2.981	Significant
		UM	525.360		182	.964	.961	.058	2.887	
	>15	CM	537.451	14.710	183	.924	.950	.073	2.937	Significant
		UM	522.741		182	.944	.952	.071	2.872	
School Location	Urban	CM	673.600	15.233	183	.950	.956	.063	3.681	Significant
		UM	658.367		182	.951	.957	.063	3.617	
	Rural	CM	389.467	22.908	183	.947	.954	.065	2.128	Significant
		UM	366.559		182	.953	.959	.062	2.014	

Note. CM=Constrained Model; UM=Unconstrained Model

**Table 3.** *The Standardized Estimates of the Demographic Moderators*

Variable	Category	Estimates	S.E.	C.R.	P	Result
Gender	Male	.71	.092	6.083	***	Significant
	Female	.83	.085	10.667	***	Significant
Age	21-40	.82	.076	8.335	***	Significant
	41-60	.80	.066	9.358	***	Significant
Years of Experience	<15	.80	.066	9.246	***	Significant
	>15	.81	.074	8.653	***	Significant
School Location	Urban	.82	.065	10.490	***	Significant
	Rural	.77	.073	6.766	***	Significant

## DISCUSSION

The result of this study which revealed that PCLC is significantly related to TCB is consistent with the findings of the study conducted by Chan (2002) in a secondary school in Hong Kong that principal leadership has great impact on teacher beliefs. The findings also reconfirmed the conclusion made by Ross and Gray (2006), Demir (2008) that principal leadership acted as input that can modify, enhance and shape teacher beliefs such as *Efficacy*. The findings are also congruent with the findings found by Seijts and Roberts (2011) that the success of any change initiative depends on the leader's competence to build support for the initiated change. Following this logic, if the teachers believe *Principal Support* for the change is adequate, the possibility of the teachers embracing change will be relatively high.

As the Malaysian education system is entering an era of intensive change, and in the face of such result, it is critical for school principals to equip themselves with relevant PCLC so as to implement changes set out in the Blueprint successfully. As leadership is a process of influencing others and the quality of PCLC matters in enhancing TCB, hence, the success or failure of school change depends heavily on the principal's capacity to lead change since they are the instructional leaders. Only if school principals are competent to initiate the change, they would probably able to gain confidence in implementing change which will ultimately maximize school change effectiveness (Hallinger & Heck, 1999).

On the other hand, based on another finding of the study i.e. on closer examination between the domains of PCLC and TCB, school principals may need to influence TCB accordingly to each phase of the change. During the first phase of change – *Goal Framing*, school principals need to influence TCB on *Discrepancy*. Basically, they need to develop an attainable change goal for the school by reviewing the present state and identify a future state based on the needs of the school. Second, they also need to use every possible means to communicate the new vision. Indeed,

once a vision is created, it must be articulated effectively so that it becomes the shared vision of everyone which can help them commit to their work (Premavathy, 2010). No teacher will be fully committed to change unless he or she understands why the change is necessary. Third, school principals need to show the way to achieving the change goal (Tai, 2013). On the whole, *Discrepancy* can be enhanced through the process of reasoning. This will enable the teachers to evaluate the strengths and weaknesses of the potential change, and if they are clear on how to go about it their beliefs may change to favour such change.

At the stage of *Capacity Building*, school principals need to influence TCB on *Efficacy* and *Principal Support*. To enhance teacher efficacy, school principals need to prepare teachers to meet change requirements, for example, through professional development programmes. A deficiency in an organization's capacity may slow down the change (Senge, Klieiner, Roberts, Ross, Roth & Smith, 2007) and vice versa. Bray-Clark and Bates (2003) note that school with high-performance professional development activities have integrated a number of key dimensions that support and reinforce skill development and teacher efficacy. In local context, Tai (2013) emphasizes that once the teachers think that they have the necessary knowledge and skills to handle the change, the possibility that they will pose resistance against the change will be relatively low. Hence it is important to prepare teachers in times of change by identifying the types of professional development programmes necessary for teachers in building mastery (Hazri Jamil, Nordin Abd. Razak, Reena Raju and Abdul Rashid Mohamed, 2010).

Besides, school principals are encouraged to motivate and give support to the teachers in the face of change, for example, devote personal attention so as to make teachers feel confident to perform the new task (*Principal Support*). If school principals fail to do so, it will generate negative emotions such as anger, resent, frustration, anxiety, stresses or fear that Lines (2005), Martin, Jones, & Callan (2006), Oreg (2006) and Piderit (2000) concluded in their studies, respectively. Consequently, the likelihood that teachers go against the change is relatively high.

Along the process of *Defusing Resistance and Conflict*, school principals are encouraged to influence TCB on *Efficacy* and *Principal Support* too. As mentioned earlier, resistance to change and conflicts often exist among teachers in the process of change. One of the reasons teachers resist change is due to the fact that they are unable to perform the new task competently (Tai, 2013). Importantly, low competency and ability will lead to low efficacy. Donnell and Gettinger (2015) argue the importance of self-efficacy in promoting positive attitudes toward school reform and is a key driver of teacher effectiveness. Simply put, those teachers with low efficacy are not inclined to have positive TCB and participate actively in the change process. Hence, school principals need to improve teachers' ability and readiness to succeed in the change. Nilakant and Ramanarayan (2006) and Hayes (2010) highlight the importance of capacity building whereby it promotes

organizational learning, training and development which ultimately will maximize the efficacy of those in the organization.

At the stage of *Defusing Resistance and Conflict*, *Principal Support* is vital because most probably teacher will evaluate the change positively when they believe that the school principal genuinely care for them, even taking positive steps to overcome any obstacles (Chan, 2002). Thus, school principals need to identify resistant behaviours, i.e. the supporters of the change, and the main resistors. In this way, school principals can plan strategically to overcome resistance (Tai, 2013). Besides, they need to have the ability to negotiate with teachers who resist change on the need for change, and helping teachers through their emotional reaction to change. As many schools are plagued with debilitating challenges and these schools' performance is usually hampered by conflicts as well as protracted breakdown in communication, school principals need to manage change conflict effectively by seeking a consensus from the teachers (Msila, 2012). In short, if teachers believe *Principal Support* for the change is adequate, the probability of teachers embracing change will be improved.

Finally, at the fourth phase of the school change process, the *Institutionalising*, school principals also need to influence TCB on *Efficacy* and *Principal Support*. In order to make the change sticks, continuous improvement must be carried out. Unavoidably school principals need to promote continuous professional development among teachers so as to ensure ongoing success as well as teachers are ready for the next evolution. School principals also need to create opportunities for sharing best practices among the departments so that the new ways of working and improved outcomes become the norm of the whole organization while the thinking and attitudes behind them are eventually altered (Tai, 2013). Fullan (2007), Abdul Ghani and Tang (2006) emphasized that developing collaborative work cultures to help teachers deal with school improvement efforts is an important responsibility of the principal. All these will continuously sustain and strengthen teacher efficacy.

Besides, school principals need the competencies to analyse the change outcomes objectively and identify its limitations so as to assess whether the implemented change are having the desired effects. Based on these, they can refine and continuously improve the new state. More specific sets of competence to sustain the achievements of the change include, for example: celebrate and reward the achievement is one of the ways which allows the staff to enjoy the fruits of their hard work and is an opportunity for them to reinforce the new culture further (Anderson & Anderson, 2001). In short, teachers need support from school principals to promote continuous improvement, sustain the achievements and to prepare for the next phase of positive change.

Obviously, at the heart of effective school change is the success of a change leader, the school principal, influencing TCB. As changes in TCB are greatly influenced by

PCLC, and TCB is the critical factor which leads teachers to advance change goals, the best way for school principals to fulfill the role as an effective change agent is to instill positive TCB among teachers and monitor those beliefs constantly. As long as school principals equip themselves with PCLC and apply it adequately, there is no reason to believe that the likelihood of getting buy-in from the teachers to the change cannot be improved. Only with such transformation can teacher beliefs be on par with the school change which ultimately makes change a success. Thus, it is not surprising that Armenakis et al. (2007) suggested that change agents should execute a process to influence the beliefs of the change recipients and monitor those beliefs as a way of assessing progress.

Next, the investigation of the moderating influence of demographic factors in the causal relationship of PCLC and TCB also yielded important insights. Gender is an important moderator whereby female teacher was found to have a more pronounced moderating impact than male teacher. In other words, PCLC was more influential on female than male teachers. The crux of the situation seems to lie in the fact that male and female are believed to differ in being influential and being influenced: male are viewed to be more influential, and female more easily influenced (Eagly & Chvala 1983). This is because the male and the female genders are differently distributed into social roles. It is very common that in most organizations, the positions held by male tend to be higher in status and authority than the positions held by female. Given the legitimate authority inherent in higher status positions, males are expected to have greater power to influence others and to resist being influenced whereas females in lower status are expected to comply with the demands (Carli, 2001). For the most part, it is merely a product of the traditional general roles that help to sustain gender stereotypes. Thus, it is not surprising that there are relatively large gender differences in influence and influence ability, even in the school setting.

Age is another important moderator in the causal relationship of PCLC and TCB. The younger group (21-40 years old) was found more pronounced than the older age group (41-60 years old). Simply put, the younger group was easier to be influenced by PCLC than the older age group. One possibility to frame the analysis is that for most people, change is a source of fear – fear of unknown, fear of uncertainty, fear of discomfort, and fear of added stress (Kotter, 1996). Because change is associated with breaking down existing structures and creating new ones, there is the reluctance to leave one's comfort zone of familiar situations, habits and thinking patterns. The comfort zone is a logical place whereby a person feels at ease and safe. Going out of the comfort zone is uncomfortable and unsafe (Senge et al., 2007). As school change might disrupt the teachers' daily routines, and new roles are not only time-consuming but also ambiguous; therefore, it is likely that the older age group prefers to stay in their familiar situations because they are not able to withstand the uncertainty of doing something out of their routines. Therefore, they simply do not embrace change as easy as the younger group.

Another interesting finding is that in terms of experience, the experienced group (>15 years) (.81) moderated more the relationship between PCLC and TCB than the less experienced group (<15 years) (.80) although the difference between the standardized estimate was only .01. This finding seems to contradict with the above findings that the older age group (41-60 years old) is more difficult to be influenced than the younger group (21- 40 years old) in the same relationship. In fact, this is not the case. To uncover a deeper understanding of these findings, one should be aware that to a large extent, although the experienced group is older, they tend to stay in their familiar situations. But experience and knowledge more than make up for it through helping the experienced group makes better decisions (Senge, Kleiner, Roberts, Ross, Roth & Smith, 2007). Compared with the less experienced group, they are better at evaluating the new environment as well as creating strategies in response to the change. Specifically, their experience and knowledge seem to help enhance their efficacy in the face of change in comparison with those less experienced group. As mentioned earlier, the more the teacher is confident in his or her knowledge and skills to handle the change, the greater the chances of them favouring the change (Tai, 2013). Hence, it is acceptable that the experienced group facilitated more than the less experienced group in the causal relationship of PCLC and TCB.

Another significant finding was that in terms of school location, the moderating effects were more pronounced on teachers in urban (.82) than in rural school (.77). One possible explanation for this is that in general, principals in urban schools were more exposed to professional development programmes than their counterparts in rural schools. As leadership is often discussed in terms of competencies (Bueno & Tubbs, 2005), this implied that leadership can be taught and learned (Intagliata, Ulrich & Smallwood, 2000). In other words, clusters of PCLC can be learned through professional development programmes. School principals, including those from rural areas, need continuous professional development opportunities to support their efforts toward school improvement in school change. If the probability of school principals being exposed to professional development programmes is relatively low, this will certainly impact their respond to the challenges of contemporary school leadership (Dempster, Freakley & Parry, 2002) which including in influencing TCB. In addition, teachers in urban schools have greater accessibility to the information about school reform programmes and its development than teachers in rural schools (Ministry of Education Malaysia, 2013). Hence there is less room for urban school teachers to make negative interpretations of the situation when there is clear information about school change. This then yields less variability in TCB among urban teachers when compared to teachers in rural schools.



## CONCLUSION

As changes in TCB are greatly influenced by PCLC, with TCB being the critical factor which leads teachers to embrace change, school principals need to competently strengthen teacher self-influences through the mechanism of personal agency (the belief system). Only then can they get buy-in from school teachers to the change. Also, certain demographic factors facilitated the relationship between PCLC and TCB significantly. This should be taken into consideration in the design of training programs for teachers as well as in daily interaction with teachers in leading school change. In conclusion, at the heart of effective school change is the success of a change leader, i.e. the school principal, in influencing TCB.

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