Innovative Leadership Factors and Leader Characteristics that Affecting Professional Learning Community of Primary Schools in Bangkok and Its Vicinity

Juladis Khanthap[1,*]

[1]Department of Educational Administration, Suryadhep Teachers College, Rangsit University, Pathumthani, Thailand

*Correspondence: Department of Educational Administration, Suryadhep Teachers college, Rangsit University, Pathumthani 12000, Thailand. Tel: 66-873-858-888. E-mail: juladis.k@rsu.ac.th

Abstract

This research aimed to investigate the innovative leadership factors and leader characteristics of school administrators in affecting teachers' involvement in the professional learning community of primary education schools in Bangkok and its vicinity of Thailand. Hence, the researcher would shed light on a linear structural relationship model to examine the impacts of innovative leadership factors and leader characteristics of primary school administrators on teachers' involvement in the professional learning community. A quantitative approach survey design was employed in this research. A total of 840 respondents responded to questionnaires in a proportional of two teachers to one school administrator from 280 primary schools. The respondents participated in a survey utilizing a multi-stage sampling technique. The researcher planned to test whether the identified innovative leadership factors and leader characteristics are fitting with empirical data as the key research output. The findings indicated that there was a total of five innovative leadership factors and three leader characteristics in a professional learning community model. The linear structural relationship model was supported to the empirical data, with χ^2 = 42.321, df = 31, χ^2/df = 1.3652, CFI = 0.998, TLI = 0.997, RMSEA = 0.021, and SRMR = 0.01, p = 0.0845. In conclusion, the linear structural relationship model for primary school administrators has a goodness of fit with the attained data. Finally, the findings of this research have successfully proposed a linear structural relationship model that would be guidelines for a primary school administrator to develop his capabilities to promote a professional learning community.

Keywords: innovative leadership factors, leader characteristics, linear structural relationship model, primary school, professional learning community

1. Introduction

In the current educational world's dynamic nature is seen in the rapidly changing and competitive organization in which the capacity of the leader to get used to the changes and transformation has considerable value (Alharbi, 2021). It can be regarded that digitalization, the technological revolution, and the determination toward globalization meaning that innovation is regarded as an essential factor for the schools to accomplish a competitive advantage and confront the challenges that are correlated to uncertainty, therefore making sure their success in the arena of education (Ariratana, Tang, & Sirisooksilp, 2019). Pradithhaen, Ariratana, and Tuksino (2016) defined innovative leadership as a different leadership style to stimulate teachers so that they will produce creative ideas, products, services, and solutions. They stated that innovative leadership can be measured by referring to the impacts of school administrators on the work process of teachers for constructing the innovation in order to accomplish the goals that lead to changes in improving school values. Besides, Pradithhaen et al identified five innovative leadership factors, namely strategic management, creative thinking, creation of a learning environment, work participation, and risk management.

On the other hand, Ariratana et al. (2019) identified six innovative leadership factors consisting of transformational vision, creative thinking, innovative organizational climate, risk management, morality and accountability, and team

working and participation. Ariratana et al. emphasized that Thai school administrators must use innovation for constructing, solving problems, and developing the school by practicing a higher level of competency and sustainability leadership to lead their schools and achieve the school goals successfully. According to Richardson (2014), a new breed of educational leader has to fully understand the fundamental challenges to traditional teaching and learning that the new interconnected, networked world is creating. As a result, the characteristics of a strong school leader is able to think outside the box and come up with ways to make things happen in spite of challenges.

In short, leader characteristics consist of effective communication, effective listening, and actual participation to find effective solutions that benefit all parties involved.

Leclear (2015) defined a professional learning community as a collegial group of teachers and school administrators who work and learn together in their commitment to improving student achievement. Therefore, Leclear clarified one important point that teachers must be supported by school administrators in the professional learning community in order to encourage them to be more committed and effective in their ongoing learning and classroom practice. In addition, Somprach, Tang, and Popoonsak (2017) utilized a professional learning community model consisting of five components, namely shared norms and values, collective focus on student learning, collaboration, reflective dialogue, and derivatized practice confirmed that the professional learning community is a powerful staff development tool.

In this research, the researcher conceptualized the three latent variables, namely innovative leadership factors, leader characteristics, and professional learning community in a linear structural relationship model. Figure 1 elucidates the conceptual framework of the linear structural relationship model.
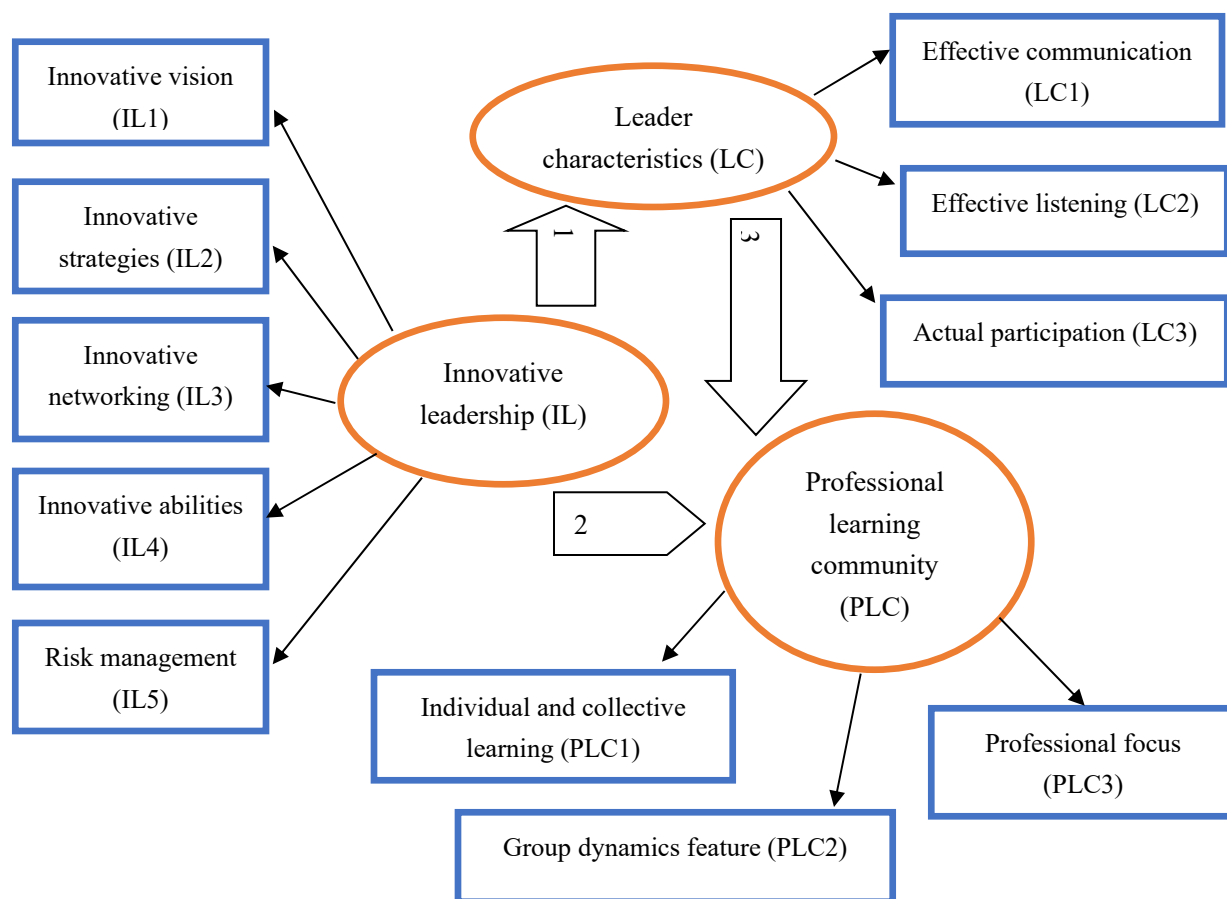

Figure 1. Conceptual Framework

The innovative leadership factors consisted of innovative vision (IL1), innovative strategies (IL2), innovative networking (IL3), innovative abilities (IL4), and risk management (IL5). All the five innovative leadership factors were adapted from Ariratana et al. (2019). The innovative vision factor means a clear vision based on a holistic point

of view to nurturing teachers' ownership and commitment to adapting to new pedagogies. The innovative strategies factor refers to modeling new behavior that facilitates culture shift, supporting innovation modeling learning through action research and supporting the process, involving teachers in the innovative use of technology, promoting information and communication technology across the school curriculum and student-centered learning, creating a positive learning environment, and promoting a learning community using information technology. The innovative networking factor is defined as innovative leadership which promotes collaboration, challenges professional learning, encourages teachers and community networking, and creates diverse teams to address strategic issues. The innovative abilities factor is referred to as the cognitive understanding of the leader on how to think creatively, display optimism, create a positive culture to encourage teachers to decide on new initiatives freely, and support the innovative thinking and actions of teachers. The risk management factor means the leader can manage uncertainty issues and believes in change, risk-taking, experimenting, supporting teachers to become co-learners, and supporting risk-taking.

On the other hand, the researcher adapted Tang's (2020) definition regarding leader characteristics that include effective communication (LC1), effective listening (LC2), and active participation (LC3). Effective communication is the leader's ability to have a conversation with teachers in an engaging way that is focused, consistent, and offers value. Effective communication is important for school administrators to communicate with teachers while expressing their needs and understanding tasks or duties given to them. Effective listening refers to communication that is heard completely and effectively interpreted into meaningful messages. Effective listening requires knowledge of the subject being discussed and attention to the school administrator. Therefore, effective listening skills demand that a school administrator hears the message in full so that an applicable interpretation of the data is feasible. The actual participation factor means leaders are always open to inputs, suggestions, and advice from their colleagues and subordinates. Leaders acknowledge that feedback from the workforce brings better results.

The professional learning community variable was defined according to the definition provided by Borman (2012), namely individual and collective learning (PLC1), group dynamics feature (PLC2), and professional focus (PLC3). The individual and collective learning factor is defined as teachers in the professional learning community who focus on student learning as the end result and on teaching as the means to achieve it. The group dynamics feature factor refers to each professional learning community which consists of a group of collaborative teams that share the common purpose of improving instruction and learning. The professional focus factor means all teachers and school administrators, are instrumental in the development of the school's mission and vision statements. The school's mission and goals are co-constructed from the beliefs and knowledge of the entire teachers concerning how it can best serve the students.

2. Literature Review

Mumford, Scott, Gaddis, and Strange (2002) recognized the importance of innovative leadership to make the shift from the 20th-century traditional view of organizational practices which discouraged teacher innovative behavior to the 21st-century view of valuing innovative thinking as a potentially powerful factor on organizational performance. Praditthaen et al. (2016) defined the professional learning community variable as teachers' collectivistic practice to promote their professional development and further improve their students' quality development. Leader characteristics are the inner or personal qualities that constitute effective leadership, as defined by Thawinkarn, Tang, and Ariratana (2018).

Praditthaen et al. (2016) developed a structural model of innovative leadership associated with the professional learning community in schools under the secondary educational service area office 25, Thailand. They used a questionnaire as a research instrument to collect quantitative data from 380 samples, encompassing 17 school administrators and 363 teachers survey. Their research findings demonstrated that the model of relationship between innovative leadership and professional learning community were found to be consistent with empirical data, with $\chi2=$ 25.016, df = 18, $\chi2/df$ = 1.3898, p-value = 0.1245, RMSEA = 0.032, SRMR = 0.019, CFI = 0.996, TLI = 0.993. In addition, they also found out that both total and direct impacts of innovative leadership on the professional learning community were positive at 0.941, with statistical significance at 0.01 level. Following this line of reasoning, they concluded that innovative leadership factors could explain the variance of the professional learning community at 88.6 percent.

Ariratana et al. (2019) explored the effect of innovative leadership of school administrators from 317 samples from 56 basic secondary schools in Thailand on creating competency in high-performance schools using a survey questionnaire. They found that secondary school administrators were highly implementing innovative leadership

practices and had high levels of performance in three major competencies, namely constructing highly efficient performance, self-adaptation for change, and maintaining intelligent staff. In addition, they found that there were five out of the six innovative leadership factors were significant, positive, and 'substantial to very strong' or 'very strong' correlated with school administrators' competencies in managing high-performance schools, the r values ranged from 0.68 to 85 at the significant level of 0.05. On top of that, they also found that there were four innovative leadership factors had had a linear relationship with school administrators' competencies in managing high-performance school, thereby qualifying these innovative leadership factors to be the predictors for the latter. The four predictors were innovative organizational climate, risk management, morality and accountability, and transformational vision, that accounted for 80.0 percent of variation for developing secondary school administrators' competencies in managing high-performance schools.

Somprach, et al. (2017) studied the essential leadership styles of school principals in encouraging teachers' participation in professional learning communities in secondary schools in the northeastern region of Thailand. They employed a quantitative survey design to 731 respondents to identify the relationships between the nine leadership styles and teachers' participation in the professional learning communities. Their findings showed that there were significant relationships between the nine leadership styles and teachers' participation in professional learning community at a significance level of 0.05. Moreover, their findings also indicated that there were four significant predictors, namely learning, transformational, collaborative, and invitational leadership styles, which contributed 55.6 percent of the variance in teachers' participation in the professional learning community. Therefore, they concluded that essential leadership styles can guide school principals in encouraging teachers' participation in the professional learning community, which in turn improves students' learning achievement.

3. Method

3.1 Research Design

The researcher constructed a survey research design to obtain quantitative data because the researcher intended to generate deeper, and ultimately the research findings would be more reliable, actionable, and useful research intuitions, as emphasized by Lavrakas (2008). This research design enables the researcher to test the structural construction between experimental examination by path coefficients or deterioration between the innovative leadership factors, leader characteristics, and professional learning community.

3.2 Population and Samples

The research population was comprised of school administrators and teachers from eight provinces, located in Bangkok and its vicinity. The researcher employed a multistage sampling technique to the target group of 1050 school administrators and teachers from 350 schools to select the samples according to school size. The 350 primary schools consisted of 98 small-sized schools, 188 medium-sized schools, 54 large-sized schools, and 10 extra-large-sized schools. The unit of analysis was school, and three respondents were selected in a proportional of two teachers to one school administrator from each school. Table 1 displays the distribution of samples.

Table 1. Distribution of Samples

No.	Province	Population according to school size				Sample group according to school size				School	Sample
		Small	Medium	Large	Extra large	Small	Medium	Large	Extra large		
1.	P1	5	13	16	3	3	7	9	2	21	63
2.	P2	14	25	19	4	8	20	11	2	41	123
3.	P3	1	24	5	2	0	14	3	1	18	54
4.	P4	14	35	14	0	8	20	8	0	36	108
5.	P5	29	52	19	2	17	30	11	1	59	177
6.	P6	14	41	8	4	8	23	5	2	38	114
7.	P7	51	62	5	3	29	35	3	2	69	207
8.	P8	43	69	7	1	25	39	4	0	68	204
	Total	171	321	93	19	98	188	54	10	350	1050

3.3 Data Analysis

The Structural Equation Model (SEM) was employed in this research aiming to fit the linear structural relationship

model. SEM is a combination of factor analysis and regression or path analysis. Factor loading is basically the correlation coefficient for the variable and factor. The researcher used factor loading to show the variance explained by the variable on that particular factor, namely innovative leadership factors, leader characteristics, and professional learning community. In the SEM approach, as a rule of thumb, 0.7 or higher factor loading represents that the factor extracts sufficient variance from that variable (Gay, Mills, & Airasian, 2011).

4. Results

A total of 840 out of 1050 distributed questionnaires have been successfully collected, giving a response rate of 80 percent. Table 2 shows the identification of variable levels based on the mean score proposed by Glass and Hopkin (1996).

Table 2. Interpretation of Variable Level Based on the Mean Score Range

Mean score range	Interpretation
4.50 – 5.00	Highest
3.50 – 4.49	High
2.50 – 3.49	Medium
1.50 – 2.49	Low
1.00 – 1.49	Lowest

4.1 Findings of Innovative Leadership Factors, Leader Characteristics, and Professional Learning Community

Table 3 shows the mean scores and standard deviations of innovative leadership factors, namely innovative vision (IL1), innovative strategies (IL2), innovative networking (IL3), innovative abilities (IL4), and risk management (IL5) from 840 respondents' perceptions. As indicated in Table 3, the mean score for all the five innovative leadership factors ranged from 3.822 to 3.904. The average mean score of overall innovative leadership factors was 3.866. Moreover, the finding of the research revealed that all the innovative leadership factors were at a high level. Considering the first three orders, found that the highest level was in the factor of innovative strategies ($\bar{x}$ = 3.904, SD = 0.678), the second order was innovative vision ($\bar{x}$ = 3.902, SD = 0.665), and the third order was innovative abilities ($\bar{x}$ = 3.868, SD = 0.636). This is followed by risk management ($\bar{x}$ = 3.852, SD = 0.662). The innovative leadership factor with the lowest level of mean score value was innovative networking ($\bar{x}$ = 3.822, SD = 0.731).

Table 3. Innovative Leadership Factors

Innovative leadership factors	$\bar{x}$	SD	Interpretation
Innovative vision (IL1)	3.902	0.665	High
Innovative strategies (IL2)	3.904	0.678	High
Innovative networking (IL3)	3.822	0.731	High
Innovative abilities (IL4)	3.868	0.636	High
Risk management	3.852	0.662	High
Overall	3.866	0.552	High

Table 4 illustrates the mean scores and standard deviations of leader characteristics, namely effective communication (LC1), effective listening (LC2), and actual participation (LC3) from 840 respondents' perceptions. As indicated in Table 4, the mean score for all the three leader characteristics ranged from 3.814 to 3.886. The average mean score of leader characteristics was 3.847. The findings of this research revealed that all the leader characteristics were at a high level. The highest level was effective communication ($\bar{x}$ = 3.886, SD = 0.621). This is followed by actual participation ($\bar{x}$ = 3.837, SD = 0.662). The characteristic with the lowest the mean score was effective listening ($\bar{x}$ = 3.814, SD = 0.679). The overall mean score for leader characteristics was at high level too ($\bar{x}$ = 3.847, SD = 0.559).

Table 4. Leader Characteristics

Leader characteristics	$\bar{x}$	SD	Interpretation
Effective communication (LC1)	3.886	0.621	High
Effective listening (LC2)	3.814	0.679	High
Actual participation (LC3)	3.837	0.662	High
Overall	3.847	0.559	High

Table 5 demonstrates the mean scores and standard deviations of the professional learning community in three aspects, namely individual and collective learning (PLC1), group dynamics feature (PLC2), and professional focus (PLC3) from 840 respondents' perceptions. As presented in Table 5, the mean score for all three aspects of the professional learning community from respondents' perceptions ranged from 3.867 to 3.997. The average mean score of the professional learning community was 3.922.

Table 5. Professional Learning Community

Professional learning community	$\bar{x}$	SD	Interpretation
Individual and collective learning (PLC1)	3.997	0.577	High
Group dynamics feature (PLC2)	3.896	0.663	High
Professional focus (PLC3)	3.867	0.638	High
Overall	3.922	0.508	High

4.2 Findings of Factor Loading and Validity of Observable Variables in the Structural Relationship Model

The researcher used factor loading for each input variable in order to measure precisely every variable in the relationship model. As indicated in Table 6, factor loading values of input variables ranged from 0.629 to 0.847 and were statistically significant at 0.01. The findings indicate that all the observable variables extracted sufficient variance from the particular variable except the innovative strategies factor (IL2) ($\beta = 0.679$) and group dynamics feature (PLC2) ($\beta = 0.629$). This is because all the factor loading values are more than 0.7 as a rule of thumb in the SEM approach. Moreover, the co-variance with observable variables was from 39.60 to 71.70 percent. The observable variable with the highest factor loading was innovative networking (IL3). This is followed by innovative abilities (IL4), risk management (IL5), actual participation (LC3), professional focus (PLC3), innovative vision (IL1), effective listening (LC2), individual and collective learning (PLC1), effective communication (LC1), and innovative strategies (IL2). The observable variable that had the lowest factor loading was the group dynamic feature (PLC2). It can be concluded all the observable variables were found to be the important constructs of each latent variable.

Table 6. Factor Loading and Validity of Observable Variables in the Relationship Model

Latent variables	Observable variable	Element weight matrix			
		β	SE	t	R^2
Innovative leadership factors	IL1	0.755**	0.0009	99.000	0.570
	IL2	0.679**	0.048	19.039	0.461
	IL3	0.847**	0.041	26.027	0.717
	IL4	0.843**	0.041	25.854	0.711
	IL5	0.834**	0.043	25.774	0.696
Leader characteristics	LC1	0.718**	0.0009	99.000	0.516
	LC2	0.753**	0.053	21.495	0.567
	LC3	0.832**	0.051	24.080	0.692
Professional learning community	PLC1	0.726**	0.0009	99.000	0.527
	PLC2	0.629**	0.053	17.415	0.396
	PLC3	0.796**	0.051	22.367	0.634

$p<0.01$

4.3 Findings of Goodness-of-fix Indexes for Structural Relationship Model

The researcher examined the structural relationship model of innovative leadership factors, leader characteristics, and professional learning community and whether it is acceptable or not in SEM depending on the fit indices in accordance with to rule of thumb by Ullman (2001). The goodness-of-fit findings exposed that the structural relationship model fits between the attained values of collected data and the expected values under the professional learning community model as follow χ^2 = 42.321, df = 31, χ^2/df = 1.3652, CFI = 0.998, TLI = 0.997, RMSEA = 0.021, and SRMR = 0.01. These tests were employed to determine how associated real values are fitting to the expected values in the structural relationship model. The researchers referred to the following specialists' rules of thumb and their recommended cut-off values for evaluating fit indices in SEM as elucidated in Table 7.

Table 7. Interpretation of Goodness-of-fit Indexes for Structural Relationship Model

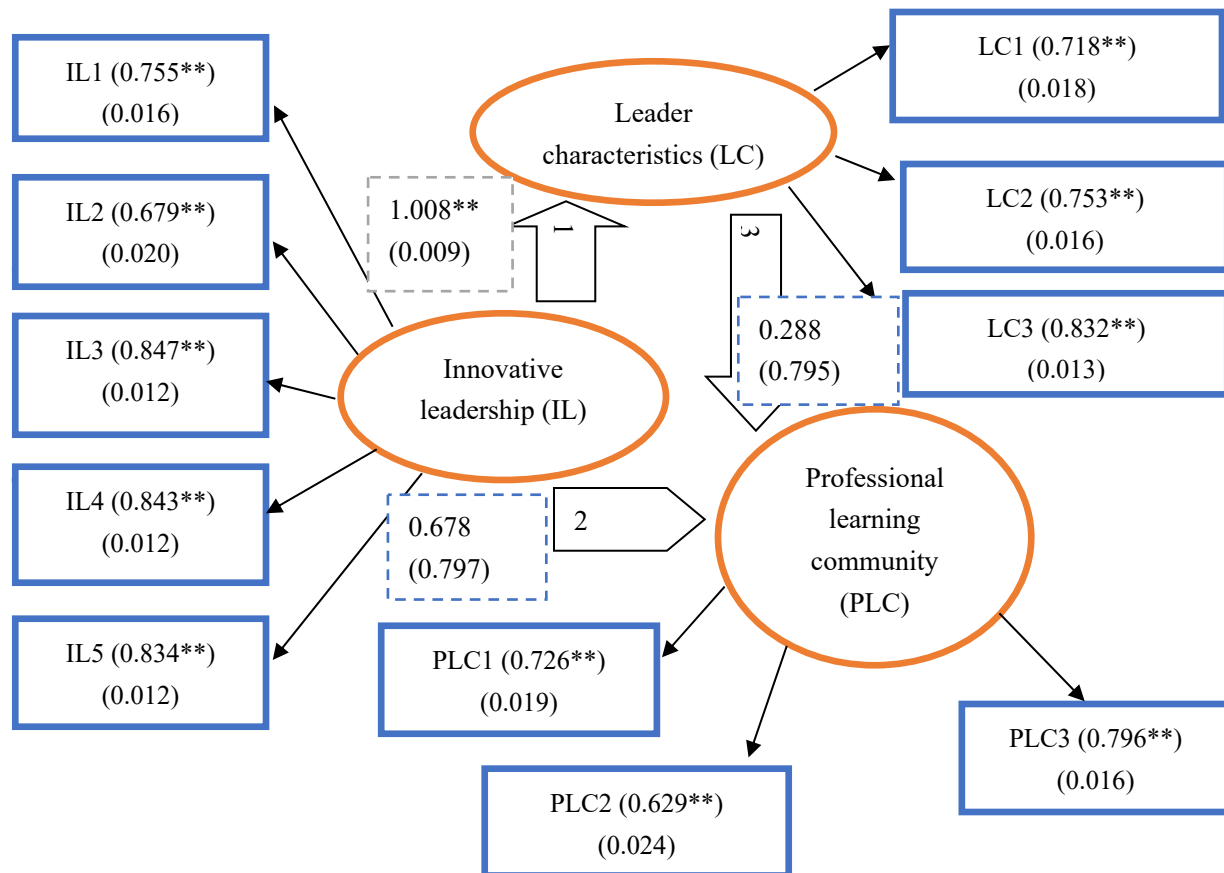| Goodness-of fit Indexes	Real values	Rules of thumb or cut-off values	Experts	Interpretation
χ^2/df	1.3652	<2	Ullman (2001)	Pass
		<5	Schumacker and Lomax (2004)	
CFI	0.998	≥ 0.95	Hu and Bentler (1999)	Pass
TLI	0.997	≥ 0.95	Hu and Bentler (1999)	Pass
RMSEA	0.021	<0.06	Hu and Bentler (1999)	Pass
		<0.07	Steiger (2007)	
SRMR	0.01	<0.05	Byrne (1998)	Pass
			Diamantopoulos and Siguaw (2000)	

Figure 2. Structural Relationship Model

Following this line of reasoning, it is finalized that the structural relationship model is approved with the empirical data. Hence, the measurement model was accepted according to the above rules of thumb and cut-off values. Therefore, the researcher established precise and significant paths of the structural relationship model of innovative leadership factors, leader characteristics, and professional learning community as demonstrated in Figure 2. The correlation between innovative leadership factors, leader characteristics, and professional learning can be assessed in the standard component score (β) which is statistically significant at 0.01.

5. Discussion

A linear structural relationship model of innovative leadership, leader characteristics, and professional learning community was projected and verified its goodness-of-fit. The findings indicated that all eight factors have a solid, positive, and significant influence on the professional learning community practices. On top of that, the measurement model revealed that the highest prediction impact is the innovative networking factor. The second highest prediction impact is innovative abilities. This is followed by risk management, actual participation, professional focus, innovative vision, effective listening, individual and collective learning, effective communication, and innovative strategies. However, the least capacity of prediction impact is the group dynamic feature. The findings of this research are consistent with findings from Praditthaen et al. (2016). Praditthaen et al. found that their linear structural relationship model between innovative leadership and professional learning was also consistent with empirical data. Therefore, teachers' participation in professional learning community practices is supported through the identified innovative leadership factors and leader characteristics. Hence, the goodness-of-fit findings can assist school administrators to predict future trends and patterns while school administrators are practicing the professional learning community model.

The findings of factor loading of identified innovative leadership factors and leader characteristics in the professional learning community model imply that all the observable variables are important constructs to encourage teachers' participation in the professional learning community. Following this line of reasoning, the researcher concluded that all the innovative leadership factors and leader characteristics appear to be in parallel with past research findings (Ariratana et al., 2019; Somprach et al., 2017). Finally, the researcher would like to suggest to the Thailand Ministry of Education that the linear structural relationship model of innovative leadership factors, leader characteristics, and professional learning community can be included in educational administrators' preparation training program.

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