

**MEDIATION-MODERATION MODEL OF TRUST IN COLLEAGUES  
AND EMOTIONAL INTELLIGENCE ON THE RELATIONSHIP  
BETWEEN PROFESSIONAL LEARNING COMMUNITIES,  
COLLECTIVE EFFICACY AND JOB SATISFACTION AMONG  
MALAYSIAN PRIMARY SCHOOL TEACHERS**

**NIDHI SINGH**

**FACULTY OF EDUCATION  
UIVERSITI MALAYA  
KUALA LUMPUR**

**2023**

MEDIATION-MODERATION MODEL OF TRUST IN COLLEAGUES AND EMOTIONAL  
INTELLIGENCE ON THE RELATIONSHIP BETWEEN PROFESSIONAL LEARNING  
COMMUNITIES, COLLECTIVE EFFICACY AND JOB SATISFACTION AMONG MALAYSIAN  
PRIMARY SCHOOL TEACHERS

NIDHI SINGH

THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF DOCTOR OF PHILOSOPHY

FACULTY OF EDUCATION  
UNIVERSITI MALAYA  
KUALA LUMPUR

2023

UNIVERSITY OF MALAYA

ORIGINAL LITERARY WORK DECLARATION

Name of Candidate: Nidhi Singh

Registration/Matric No: 17043911/1 | PVA170078

Name of Degree: Doctor of Philosophy

Title of Project Paper/Research Report/Dissertation/Thesis (“this Work”): Mediation-Moderation Model of Trust in Colleagues and Emotional Intelligence on the Relationship between Professional Learning Communities, Collective Efficacy and Job Satisfaction Among Malaysian Primary School Teachers.

Field of Study: Educational Psychology

I do solemnly and sincerely declare that:

- (1) I am the sole author/writer of this Work;
- (2) This Work is original;
- (3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any excerpt or extract from, or reference to or reproduction of any copyright work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this Work;
- (4) I do not have any actual knowledge nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyright work;
- (5) I hereby assign all and every rights in the copyright to this Work to the University of Malaya (“UM”), who henceforth shall be owner of the copyright in this Work and that any reproduction or use in any form or by any means whatsoever is prohibited without the written consent of UM having been first had and obtained;
- (6) I am fully aware that if in the course of making this Work I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by UM.

Candidate’s Signature

Date: 05/03/2024

Subscribed and solemnly declared before,

Witness’s Signature

Date 05/03/2024

Name:

Designation:

**MEDIATION-MODERATION MODEL OF TRUST IN COLLEAGUES AND  
EMOTIONAL INTELLIGENCE ON THE RELATIONSHIP BETWEEN  
PROFESSIONAL LEARNING COMMUNITIES, COLLECTIVE EFFICACY AND  
JOB SATISFACTION AMONG MALAYSIAN PRIMARY SCHOOL TEACHERS**

**ABSTRACT**

In the Malaysian Education Blueprint (2013 - 2025) the government has emphasized the need of improving students' academic outcomes to drive equivalence with international standards. To achieve this goal, it is important to establish, evolve and cultivate professional learning communities at schools, as they directly affect teachers' collective efficacy beliefs and job satisfaction, the two most important factors responsible for students' academic outcomes. However, Malaysian research literature shows a clear gap for the impact of professional learning communities on schools, teachers, and students. Therefore, this study aimed to understand the relationship between these variables. The main research objectives were: (1) to examine the direct relationship between professional learning communities, teachers' collective efficacy, and job satisfaction, (2) to identify the significant mediating role of teachers' trust in colleagues, and (3) to identify the significant moderating effect of teachers' emotional intelligence. The study used Bandura's social cognitive theory to conceptualize the relationship between the variables. In this causal relationship study, questionnaires were used for data collection and a total of 307 primary school teachers participated in the study. The research instruments used for the study included English and Malay versions of the teachers' demographic information, Professional Learning Communities Assessment-R, Collective Teacher Belief Scale, Spector's Job Satisfaction Survey, Omnibus-T Scale, and Wong & Law Emotional

Intelligence Scale. A total of 18 primary schools from the state of Selangor were randomly selected to participate in this study. Descriptive data analysis was performed using the software Statistical Packages for the Social Sciences (SPSS). Thereafter, structural equation modeling (SEM) using SmartPLS was done to study the direct, mediating, and moderating effects between the variables. Study findings confirmed the presence of professional learning communities (Mean = 3.25; SD = 0.42) at primary schools in Selangor, Malaysia. Also, teachers reported moderate to high levels of collective teacher efficacy (Mean = 7.09; SD = 0.94), trust in colleagues (Mean = 5.04; SD = 0.63), and perceived emotional intelligence (Mean = 5.73; SD = 0.61) and overall satisfaction with their job (Mean = 4.54; SD = 0.58). A direct and positive relationship was found between professional learning communities and collective teacher efficacy ( $\beta = 0.25$ ;  $p < 0.01$ ), which was significantly mediated by trust in colleagues ( $\beta = 0.22$ ;  $p < 0.01$ ) and between professional learning communities and teachers' job satisfaction ( $\beta = 0.28$ ;  $p < 0.01$ ), mediated by trust in colleagues ( $\beta = 0.23$ ;  $p < 0.01$ ). Teachers' perceived emotional intelligence significantly but negatively, moderated the relationship between professional learning communities and job satisfaction ( $\beta = -0.08$ ;  $p < 0.05$ ), however, moderating effect for professional learning communities and collective teacher efficacy was insignificant. This study shows that professional learning communities can benefit teachers, policymakers, and schools in achieving desired academic outcomes for Malaysian students. The present study highlights the importance of maintaining trust relationships at schools and the possible benefits of teachers' participation in emotional intelligence programs. Finally, implications of the study and recommendations for future research were presented.

**KESAN PENGANTARAAN-PENYELARASAN KEPERCAYAAN RAKAN  
SEKERJA DAN KECERDASAN EMOSI TERHADAP HUBUNGAN ANTARA  
KOMUNITI PEMBELAJARAN PROFESIONAL, EFIKASI KOLEKTIF DAN  
KEPUASAN KERJA GURU SEKOLAH RENDAH DI MALAYSIA**

**ABSTRAK**

Dalam Pelan Pembangunan Pendidikan Malaysia (2013 - 2025) Kerajaan Malaysia telah menekankan keperluan untuk meningkatkan hasil pembelajaran pelajar sejajar dengan piawaian antarabangsa. Untuk mencapai matlamat ini, adalah penting untuk membentuk, mengembang dan memupuk komuniti pembelajaran profesional di sekolah, kerana ianya secara langsung mempengaruhi kepercayaan efikasi kolektif para guru dan tahap kepuasan bekerja, di mana kedua-dua faktor ini penting dalam mempengaruhi hasil pembelajaran pelajar. Namun begitu, tinjauan hasil kajian lepas di Malaysia menunjukkan jurang yang ketara tentang kesan komuniti pembelajaran profesional dalam kalangan sekolah, guru, dan pelajar. Oleh itu, kajian ini bertujuan untuk memahami hubungan antara pembolehubah-pembolehubah ini. Objektif utama penyelidikan ini adalah: (1) untuk mengkaji hubungan langsung dan signifikan antara komuniti pembelajaran profesional, efikasi kolektif guru, dan kepuasan bekerja, (2) untuk mengenal pasti peranan signifikan mediator kepercayaan guru terhadap rakan sekerja, dan (3) untuk mengenal pasti kesan signifikan moderator kecerdasan emosi guru. Kajian ini menggunakan teori kognitif sosial Bandura untuk mengkonseptualisasikan hubungan antara pembolehubah. Dalam kajian hubungan kasual ini, soal selidik telah digunakan untuk pengumpulan data dan seramai 307 orang guru sekolah rendah telah mengambil bahagian dalam kajian ini. Instrumen kajian ini

termasuklah maklumat demografi guru dalam versi Bahasa Inggeris dan Bahasa Melayu, Penilaian Komuniti Pembelajaran Profesional -R, Skala Kepercayaan Kolektif Guru, Tinjauan Kepuasan Bekerja Spector, Skala Omnibus-T, dan Skala Kecerdasan Emosi Wong & Law. Sebanyak 18 buah sekolah rendah dari negeri Selangor telah dipilih secara rawak untuk mengambil bahagian dalam kajian ini. Analisis data deskriptif telah dilakukan menggunakan perisian Pakej Statistik untuk Sains Sosial (SPSS). Seterusnya, Pemodelan Persamaan Struktural (SEM) menggunakan 'SmartPLS' telah dilakukan untuk mengkaji kesan langsung, mediator, dan moderator antara pembolehubah. Hasil kajian mengesahkan kewujudan komuniti pembelajaran profesional, (Min = 3.25; SP = 0.42) di sekolah rendah di Selangor, Malaysia. Guru-guru juga dilaporkan mempunyai efikasi kolektif guru bertahap sederhana hingga tahap tinggi (Min = 7.09; SP = 0.94), kepercayaan terhadap rakan sekerja (Min = 5.04 & SP = 0.63), dan persepsi kecerdasan emosi (Min = 5.73; SP = 0.61) dan kepuasan pekerjaan keseluruhan mereka (Min = 4.54; SP = 0.58). Hubungan langsung dan positif ditemui antara komuniti pembelajaran profesional dan efikasi kolektif guru ( $\beta = 0.25$ ;  $p < 0.01$ ), di mana hubungan ini telah disumbang oleh mediator iaitu kepercayaan terhadap rakan sekerja ( $\beta = 0.22$ ;  $p < 0.01$ ). Hubungan langsung dan positif juga ditemui antara komuniti pembelajaran profesional dan kepuasan bekerja guru ( $\beta = 0.28$ ;  $p < 0.01$ ), di mana hubungan ini telah disumbang oleh mediator iaitu kepercayaan terhadap rakan sekerja ( $\beta = 0.23$ ;  $p < 0.01$ ). Kecerdasan emosi dari persepsi guru adalah signifikan tetapi mempengaruhi secara negatif hubungan antara komuniti pembelajaran profesional dan kepuasan bekerja ( $\beta = -0.08$ ;  $p < 0.05$ ), bagaimanapun, kesan moderator untuk komuniti pembelajaran profesional dan efikasi kolektif guru adalah kecil. Kajian ini menunjukkan bahawa komuniti pembelajaran profesional dapat memberi manfaat kepada pembuat dasar dan pihak sekolah untuk mencapai hasil akademik yang dikehendaki untuk

pelajar di Malaysia. Kajian ini menekankan kepentingan dalam mengekalkan kepercayaan dalam hubungan di sekolah dan manfaat yang mungkin diperoleh jika terdapat penyertaan para guru dalam program kecerdasan emosi. Akhir sekali, implikasi kajian dan cadangan untuk penyelidikan masa depan telah dibentangkan.

Universiti Malaya



## ACKNOWLEDGEMENT

This thesis is dedicated to my husband, my son, and to all the teachers worldwide who are working continuously and tirelessly to bring a positive and meaningful change in the lives of their students.

First and foremost, I would like to thank God almighty for giving me this opportunity to pursue Ph.D. and be able to complete it.

I want to express my profound gratitude to my supervisor Prof. Dr. Loh Sau Cheong, for her continuous guidance and support throughout this journey. I am deeply thankful to her for showing confidence in me and leading me through this journey. She taught me the importance of following procedures, reasoning, and methods. Her support during my personal challenging times kept me motivated during this Ph.D. journey.

I want to thank Associate Prof. Dr. Fanny Dameaty Hutagalung, Dr. Siaw Yan Li, and Associate Prof. Dr. Hutkemri Zulnaldi for being on the instrument validation committee and sharing their valuable feedback on my research instruments. I sincerely thank Dr. Mahmoud Danaee for his invaluable help in understanding the statistical part of my research.

I would also like to thank the academic staff at the Faculty of Education, UM, for their support in providing all the relevant documents and forms to conduct my study smoothly.

My deepest thanks to my husband for his continuous support, love, and encouragement and to my son, who kept me motivated with his positivity and love throughout. They both have

lived this Ph.D. with me, enduring all my emotional ups and downs. Also, my immense thank and gratitude to my parents, my sister, my parents-in-law, relatives, and friends who have played an important role in this journey.

Universiti Malaya

## TABLE OF CONTENTS

Original Literary Work Declaration Form	ii
Abstract	iii
<i>Abstrak</i>	v
Acknowledgement	viii
Table of Contents	x
List of Figures	xix
List of Tables	xx
List of Symbols and Abbreviations	xxiii
<b>Chapter 1: Introduction</b>	1
1.1. Background of the Study	1
1.2. Rationale of the Study	10
1.3. Statement of the Problem	20
1.4. Purpose of the Study	30
1.5. Research Objectives	30
1.6. Research Questions	32
1.7. Research Hypothesis	34
1.8. Significance of the Study	37
1.9. Definitions of the Terms	41
1.9.1 Professional Learning Communities	41
1.9.2 Collective Teacher Efficacy	42
1.9.3 Job Satisfaction	44
1.9.4 Trust in Colleagues	43

1.9.5 Emotional Intelligence	44
1.9.6. Primary Schools in Selangor, Malaysia	44
1.11 Summary	45
<b>Chapter 2: Literature Review</b>	<b>46</b>
2.1 Introduction	46
2.2 Relevant Theories and Models	46
2.2.1 Professional Learning Communities Model by Hord	46
2.2.2 Collective Teacher Efficacy Model by Goddard, Hoy and Hoy	54
2.2.3 Motivation-Hygiene Theory for Job Satisfaction by Herzberg	60
2.2.4 Trust in Schools -- Hoy & Tschannen-Moran (2003)	63
2.2.5 Ability Model of Emotional Intelligence by Mayer-Salovey-Caruso	66
2.2.6 Summary for Theories and Models	70
2.3 Theoretical Framework of the Study	73
2.4 Professional Learning Communities	78
2.4.1 Factors Supporting the Development and Sustenance of the Professional Learning Communities	80
2.4.2 Latest Research for Relationship of Professional Learning Communities with Collective Teacher Efficacy, Teachers' Job Satisfaction and Faculty Trust in Colleagues	82
2.4.2.1 Professional Learning Communities and	

Collective Teachers' Efficacy	83
2.4.2.2 Professional Learning Communities and Teachers' Job Satisfaction	97
2.4.2.3 Professional Learning Communities and Teachers' Trust in Colleagues	106
2.5 Teachers' Trust in Colleagues	117
2.5.1 Latest Research for Relationship of Teachers' Trust in Colleagues with Collective Teacher Efficacy and Teachers' Job Satisfaction	120
2.5.1.1 Teachers' Trust in Colleagues and Collective Teachers' Efficacy	121
2.5.1.2 Teachers' Trust in Colleagues and Teachers' Job Satisfaction	125
2.5.2 Teachers' Trust in Colleagues as a Mediator	130
2.6 Teachers' Emotional Intelligence	136
2.6.1 Latest Research for Relationship of Teachers' Emotional Intelligence with Collective Teacher Efficacy and Teachers' Job Satisfaction	138
2.6.1.1 Teachers' Emotional Intelligence and Collective Teacher Efficacy	138
2.6.1.2 Teachers' Emotional Intelligence and Teachers' Job Satisfaction	140
2.6.1.3 Teachers' Emotional Intelligence and Professional Learning Communities	146

2.6.2 Emotional Intelligence as Moderator	148
2.7 Conceptual Framework	152
2.8 Summary	156
<b>Chapter 3: Research Methodology</b>	<b>158</b>
3.1 Introduction	158
3.2 Research Design	158
3.3 Location of the Study	160
3.4 Population and Sample of the Study	161
3.4.1 Sample Size Determination	162
3.4.2 Sampling Method	163
3.5 Instruments of the Study	166
3.5.1 Demographic Survey	167
3.5.2 Description of Professional Learning Communities Assessment – Revised by Olivier, Huffman and Hipp	168
3.5.2.1 Description of the Professional Learning Communities Assessment–Revised	169
3.5.2.2 Reliability and Validity of the Professional Learning Communities Assessment—Revised	169
3.5.2.3 General Considerations for the Professional Learning Communities Assessment—Revised	169
3.5.3 Collective Teacher Belief Scale by Tschannen-Moran	170
3.5.3.1 Description of the Collective Teacher Belief Scale	170
3.5.3.2 Reliability and Validity of the Collective Teacher Belief Scale	172

3.5.3.3 General Considerations for the Collective	
Teacher Belief Scale	172
3.5.4 Job Satisfaction Survey by Spector	173
3.5.4.1 Description of the Job Satisfaction Survey	173
3.5.4.2 Reliability and Validity of the Job	
Satisfaction Survey	175
3.5.4.3 General Considerations for the Job	
Satisfaction Survey	175
3.5.5 Omnibus T-Scale -- Faculty Trust in Colleagues	176
3.5.5.1 Description of Omnibus T-Scale -- Faculty	
Trust in Colleagues	176
3.5.5.2 Reliability and Validity Omnibus T-Scale -- Faculty	
Trust in Colleagues	177
3.5.5.3 General Consideration for Omnibus T-Scale –	
Faculty Trust in Colleagues	177
3.5.6 Wong & Law Emotional Intelligence Scale	177
3.5.6.1 Description of the Wong and Law Emotional	
Intelligence Scale	177
3.5.6.2 Reliability and Validity of the Wong and	
Law Emotional Intelligence Scale	178
3.5.6.3 General Considerations for the Wong and	
Law Emotional Intelligence Scale	179
3.5.7 Administration of the Research Instruments	180
3.5.8 Instrument Translation	181
3.6 Validity & Reliability of Instruments	181

3.6.1 Validity	182
3.6.2 Reliability	183
3.6.2.1 Pilot Study	184
3.7 Data Collection Procedure	186
3.8 Ethical Concerns	187
3.8.1 Consent Form	187
3.9 Data Analysis	188
3.10 Summary	197
<b>Chapter 4: Findings</b>	198
4.1 Introduction	198
4.2 Data Preparation	198
4.2.1 Data Coding and Cleaning	199
4.2.2. Handling of Missing Data	199
4.3 Test for Normality	200
4.4 Outlier	201
4.5 Common Method Bias	202
4.6 Multicollinearity Analysis	203
4.7 Demographic Analysis	203
4.8 Descriptive Statistics	206
4.8.1 Descriptive Statistics for Professional Learning Communities	206
4.8.2 Descriptive Statistics for Collective Teacher Efficacy	208
4.8.3 Descriptive Statistics Teachers' Job Satisfaction	208
4.8.4 Descriptive Statistics for Teachers' Trust in Colleagues	209
4.8.5 Descriptive Statistics Teachers' Emotional Intelligence	210



4.9 Structural Equation Modeling Analysis – PLS-SEM	213
4.9.1. Measurement Model Assessment	214
4.9.1.1 Convergent Validity	216
4.9.1.2 Discriminant Validity	221
4.9.1.3 Reliability of the Constructs	225
4.9.2 Structural Model Analysis	228
4.9.2.1 Path Analysis for Research Questions 2 and 3	230
4.9.2.2 Mediation Analysis for Research Questions 4 to 8	234
4.9.2.3 Moderation Analysis for Research Questions 9 to 12	242
4.9.2.4 Predictive Relevance of the Model	247
4.9.3 Final Model	251
4.10 Summary of Research Questions and Hypothesis	252
4.11 Summary	256
<b>Chapter 5: Discussion &amp; Conclusion</b>	<b>257</b>
5.1 Introduction	257
5.2 Summary of the Findings	258
5.3 Discussion	261
5.3.1 Professional Learning Communities	261
5.3.2 Collective Teacher Efficacy	267
5.3.3 Teachers' Job Satisfaction	269
5.3.4 Teachers' Trust in Colleagues	272
5.3.5 Teachers' Emotional Intelligence	274
5.3.6 Relationship between Professional Learning Communities and Collective Teacher Efficacy	276

5.3.7 Relationship between Professional Learning Communities and Teachers' Job Satisfaction	281
5.3.8 Mediating role of Teachers' Trust in Colleagues in the relationship between Professional Learning Communities and Collective Teacher Efficacy	285
5.3.9 Mediating role of Teachers' Trust in Colleagues in the relationship between Professional Learning Communities and Teachers' Job Satisfaction	288
5.3.10 Moderating role of Teachers' Emotional Intelligence in the Relationship between Professional Learning Communities and Collective Teacher Efficacy	291
5.3.11 Moderating role of Teachers' Emotional Intelligence in the Relationship between Professional Learning Communities and Teachers' Job Satisfaction	293
5.4 Implications	296
5.4.1 Theoretical Implications	296
5.4.2 Methodological Implications	300
5.4.3 Practical Implications	301
5.5 Suggestions from the Study	308
5.6 Research Limitations	315
5.7 Recommendations for Future Studies	317
5.8 Conclusion	318
5.8.1 Final Model	321

<b>REFERENCES</b>	326
<b>APPENDICES</b>	355
A1 Consent Form Used in the Study	356
A2 Demographic Survey Used in the Study	357
A3 Professional Learning Communities Assessment – Revised	359
A4 Collective Teacher Belief Scale	364
A4 Spector’s Job Satisfaction Survey	366
A5 Teachers’ Trust in Colleagues Scale	370
A6 Wong and Law Emotional Intelligence Scale	371
A7 Link for Google Forms Used in Study	373
B1 Letter of Permission for Using the PLCA-R in the Study	374
B2 Letter of Permission for Using the CTBS in the Study	375
B3 Letter of Permission for Using the Job Satisfaction Survey in the Study	376
B4 Letter of Permission for Using the Faculty Trust in Colleagues in the Study	377
B5 Letter of Permission for Using the WLEIS in the Study	378
C1 Permission for Data Collection from EPRD	379
C2 Permission for Data Collection from Selangor Education Department	380
D1 Expert 1 Instrument Validation Report	381
D2 Expert 2 Instrument Validation Report	383
D3 Expert 3 Instrument Validation Report	384
E1 Data File	395

## **LIST OF FIGURES**

Figure 1.1 A Priori Model of the Study

Figure 2.1 Professional Learning Communities Model by Hord

Figure 2.2 Development of Collective Teacher Efficacy at Schools.

Figure 2.3 Two-Factor Theory by Herzberg

Figure 2.4 Ability Model of Emotional Intelligence by Mayer-Salovey-Caruso

Figure 2.5 Theoretical Framework of the Study

Figure 2.6 Conceptual Framework of the Study

Figure 3.1 Approach to Data Analysis

Figure 4.1 Initial Measurement Model for the Study

Figure 4.2 Final Measurement Model

Figure 4.3 Path Model

Figure 4.4 Moderating Effect of TEI on PLCs\_\_CTE

Figure 4.5 Moderating Effect of TEI on PLCs\_\_TJS

Figure 4.6 Final Research Model

Figure 5.1 Final Research Model

## LIST OF TABLES

Table 3.1. Sample size table using SmartPLS

Table 3.2 Sample Size from Each Pejabat Pendidikan Daerah (PPDs) in Selangor

Table 3.3 Dimensions, Item Numbers & Scoring of PLCA-R

Table 3.4 Dimensions, Item Numbers & Scoring of CTBS

Table 3.5 Dimensions, Item Numbers & Scoring of JSS

Table 3.6 Interpretation of Job Satisfaction Survey

Table 3.7 Dimensions and Scoring of the Wong & Law Emotional Intelligence Scale

Table 3.8 Summary of Research Instruments

Table 3.9 Cohen's Guidelines for Cronbach Alpha Values

Table 3.10 Cronbach Alpha Values in Pilot Test

Table 3.11 Approach to Data Analysis of the study

Table 4.1 Skewness and Kurtosis for the Variables

Table 4.2 Frequency Distribution of Demographic Characteristics

Table 4.3 Descriptive Statistics for Professional Learning Communities

Table 4.4 Descriptive Statistics for Collective Teacher Efficacy

Table 4.5 Descriptive Statistics for Teachers' Job Satisfaction

Table 4.6 Descriptive Statistics for Teachers' Trust in Colleagues

Table 4.7 Descriptive Statistics for Teachers' Emotional Intelligence

Table 4.8 Outer Loadings for Professional Learning Communities Items

Table 4.9 Outer Loadings for Collective Teacher Efficacy Items

Table 4.10 Outer Loadings for Teachers' Job Satisfaction Items

Table 4.11 Outer Loadings for Teachers' Trust in Colleagues Items

Table 4.12 Outer Loadings for Teachers' Emotional Intelligence Items

Table 4.13 Discriminant Validity of the Constructs

Table 4.14 Reliability and AVE values for the Constructs

Table 4.15 Path Analysis for the Measurement Model

Table 4.16 Inner VIF Values for the Structural Model

Table 4.17 Path Analysis with Direct, Indirect and Total Effects

Table 4.18 Path Analysis for Mediation

Table 4.19 Moderating Effect of Teachers' Emotional Intelligence

Table 4.20 Coefficient of Determination  $R^2$  Values

Table 4.21 Effect Size  $f^2$  Values

Table 4.22 Predictive Relevance for the Endogenous Variables

Table 4.23 Summary for Research Questions & Hypothesis

Universiti Malaya

## LIST OF SYMBOLS & ABBREVIATIONS

AVE	: Average Variance Extracted
$\beta$	: Path coefficient
CTE	: Collective Teacher Efficacy
CTBS	: Collective Teacher Belief Scale
DV	: Dependent variable
EI	: Emotional Intelligence
EPRD	: Education Planning and Research Division
EQ-i	: Emotional Quotient Inventory
$f^2$	: f-square
FTC	: Faculty Trust in Colleagues
H <sub>A</sub>	: Alternative hypothesis
H <sub>0</sub>	: Null hypothesis
IV	: Independent variable
JS	: Job satisfaction
JSS	: Job Satisfaction Survey by Spector
MOE	: Ministry of Education, Malaysia
MV	: Mediating variable
PISA	: Programme for International Student Achievement
PLCs	: Professional Learning Communities
PLCA-R	: Professional Learning Communities Assessment – Revised
PLS	: Partial Least Squares
Q <sup>2</sup>	: Q-squared



R <sup>2</sup>	: R-squared
SD	: Standard deviation
SEM	: Structural Equation Modeling
SPSS	: Statistical Packages for Social Sciences
TEI	: Teachers' Emotional Intelligence
TTC	: Teachers' Trust in Colleagues
TIMSS	: Trend in Mathematics and Science Studies
WLEIS	: Wong and Law Emotional Intelligence Scale

Universiti Malaya

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of the Study

In the Malaysian Education Blueprint (2013-2025), the Ministry of Education (MOE), has expressed commitment to improve teaching standards across all schools within the country. Through the blueprint, the MOE has outlined its plan for making teaching as the profession of choice for teachers, where teachers feel empowered, valued, and in-control of their teaching. The government wants to see teachers as an active participant, who work together with the ministry, schools, colleagues, students and parents toward a common vision and mission of students' holistic development. Another important aim is to ensure an overall academic, emotional, and social growth of the Malaysian students as they thrive and succeed in both academic and non-academic areas, reaching and competing at international standard. The government recognises that teachers are the backbone of the education system, and high standards of student learning, and development are only possible when teachers are committed, engaged, and satisfied with their job. To improve students' and teachers' experience within the education system, the MOE has pledged to introduced educational reforms that includes improvement in education infrastructure, recruitment of more teachers and provisions of continuous professional development for teachers working at various educational institutions across the country.

Previously, the professional development opportunities for teachers in Malaysia were practiced in a top-down approach, where the MOE was in control and used to offer standardised workshops and courses which the teachers were required to attend (Rahman et al., 2021). This one-size fit-all approach was detrimental to teachers' morale, and

professional development was viewed as an extra chore, which teachers often attend without much enthusiasm. However, through the latest blueprint, that government has encouraged teachers to take charge of their professional learning and practice autonomy in designing and planning the context, content, and extent of learning (Weir, 2018). To ensure teachers' continuous professional development, schools and teachers across the country were urged to adopt structured and comprehensive strategies in form of professional learning communities (Tai & Omar, 2021) wherein the teachers are actively engaged in collaborative working, knowledge sharing, peer support activities. With support from research studies from Western, and Asian countries (Abdullah & Ghani, 2014; Bolam et al., 2005; Hord, 1997, Vescio et al., 2008; Yin et al., 2019), the government believes that application of strong and successful professional learning communities (PLCs), along with structural and policy support can help in bringing the desired educational reforms.

Education researchers have argued that professional learning communities (PLCs) are instrumental in introducing education reforms that positively and substantially affect both students'-level and teachers'-level outcomes (Gray & Summers, 2015; Hord, 1997; Hord et al., 2010; Louis & Marks, 1998). In both Western and Asian countries, professional learning communities have successfully helped schools and other educational institutions improve teachers' and students' learning (Lee et al., 2011; Roth, 2014; Shaha & Ellsworth, 2013; Tschannen-Moran & Chen, 2014). Professional learning communities provide teachers opportunities to learn new skills, adopt innovative teaching strategies, and on-job collaboration, which lead to higher levels of teachers' work satisfaction and students' academic and non-academic outcomes (Banerjee et al., 2017; Erdem et al., 2014; Stearns et al., 2014).

Also, professional learning communities help schools maintain high student learning standards, efficient school operations, and teachers' skills enhancements (Gray & Summers, 2015). The main aspect of the professional learning communities (PLCs) is teachers' working together as a team focusing on the learning requirements and limitations of their students. Unlike traditional teaching methods, professional learning communities encourage teachers to practice collaborative work culture and have a shared responsibility toward student learning. Teachers are often engaged in visiting colleagues' classrooms and exchanging feedback and ideas with an intention to improve student outcomes. For example, suppose a student is facing difficulty in mathematics; in that case, the teachers discuss it with colleagues during group meetings, take inputs to plan a lesson suitable for that student's learning needs, or adopt the strategies other teachers use in similar situations.

Apart from directly affecting students' academic outcomes, (Capraro et al., 2016; Roth, 2014), professional learning communities can affect other teachers and school-level factors that are responsible for student learning. The two such important factors are collective teacher efficacy (Hattie, 2015; Olivier & Hipp, 2006) and teachers' job satisfaction (Stearns et al., 2014). Researchers have professed that collective teacher efficacy (CTE) is one of the most critical factors that contributes significantly towards student learning and overall development (Bandura, 2001; Hattie, 2015). Through his meta-analysis of quantitative studies, Hattie (2012) claimed that collective teacher efficacy (CTE), with an effect size of 1.4, is the most significant contributing factor toward students' academic outcomes. He argued that in schools with high collective efficacy, teachers believe that every student is capable to achieve his/her highest potential, irrespective of previous academic, socio-economic, or cultural background. Also, previous studies have shown that teachers with higher job satisfaction are committed toward their students as they have a longer intent to

stay in occupation and show more commitment towards their work (Banerjee et al., 2017; Louis et al., 1996).

It has been observed that in successful schools, professional learning communities (PLCs) help to improve teachers' experiences, learning of new concepts, use of data-driven decision-making, teachers' subject knowledge, and efficient classroom management (Toole & Louis, 2002; Wei et al., 2009). As teachers gain mastery over their subject knowledge, form personal and professional bonds with their colleagues, and engage in knowledge and feedback-sharing activities, they develop high collective efficacy beliefs (Tschannen-Moran et al., 2014). Moreover, teachers' engagement in purposeful collaborative activities, where they analyse the individual learning goals of students and take ownership of their work, helps improve job satisfaction levels (Ritz et al., 2013; Zhang & Yuan, 2020).

As discussed by Bandura's (1997) in his social cognitive theory, collective teacher efficacy (CTE) is a school-level attribute that reflects teachers' collective beliefs in their capability to contribute to students' learning and holistic development. Collective teacher efficacy signifies teachers' beliefs in their capacity as a group to bring meaningful and substantial differences in their student's academic achievements. In schools with high collective efficacy, teachers have a shared vision for school functioning and student learning (Tschannen-Moran & Barr, 2010). Teachers do not work individually, rather they work as a team with colleagues and seek their input on matters related to curriculum planning, tutoring, and self-learning. The focus of such schools is not limited to better learning outcomes for the students, instead teachers' skill enhancement, well-being, and job enrichment are sought-after goals for such schools.

The main characteristic of schools with high collective efficacy beliefs among teachers is collaborative work environment, where teachers show trust in each other's ability to teach and contribute towards students' development (Gray & Summers, 2015). Teachers at such schools are frequently involved in school-level decision-making. They have autonomy in their task but work together for curriculum and lesson planning. Teachers with high perceived collective teacher efficacy often share positive interpersonal relationships with other teaching staff, share their experiences, ask for assistance when needed and enjoy the feeling of belongingness to an efficient group. Previous studies have professed that schools aiming to improve the academic outcome of their students should work to strengthen collective efficacy beliefs of their teachers (Tschannen-Moran, 2004). Providing teachers opportunities for on-job learning, collaboration, knowledge sharing, and active participation in decision-making can help in bringing desired outcomes. Moreover, Ling et al. (2015) have discussed that high collective efficacy beliefs among teachers can help them in adopting, implementing, and sustaining the new education policies as proposed by the Malaysian government.

Professional learning communities provide avenues for job enrichment, skill development, and social engagement for teachers, eventually leading to better job satisfaction among teachers. Also, professional learning communities encourage inclusive, collaborative, and supportive job environments. Under such conditions, teachers feel more empowered to adopt new skills and experiment with teaching strategies. Studies have shown that professional learning communities can help improve teacher job satisfaction (Armstrong, 2012; Toole & Louis, 2002; Wei et al., 2009). At such schools, teachers discuss their classroom experiences, borrow methods used by colleagues, and share learnings from

workshops attended within or outside school. This kind of job environment promotes shared responsibility, pedagogical ownership, and learning opportunities for teachers.

Also, teachers with high levels of job satisfaction stay longer in their workplace and are willing to go above and beyond to contribute towards student learning (Lindahl, 2014; Mokhtar, 2021). When teachers join workforce, many a times they face unprecedented conditions in terms of managing classrooms, adopting new pedagogical methods, and keeping updated with new technologies. Professional learning communities provide a bridging avenue to teachers to stay updated and relevant in the changing educational scenario, who provide valuable contribution towards students' development (Hee et al., 2019). According to Jusoh (2012), various factors that determine job satisfaction among Malaysian teachers fall into three categories namely, organisational, personal and system. Also, professional development falls into the organizational category and lack of it can influence teachers to level job. Hence, professional learning communities are instrumental in bringing positive outcomes for schools by improving collective teacher efficacy and job satisfaction, which further lead to improved students' academic outcomes.

Moreover, successful implementation of professional learning communities (PLCs) depends on several structural and relational factors. The structural factors include school size, availability of resources, and training opportunities for teachers (Hord, 1997; Olivier et al., 2010; Toole & Louis, 2002). Trust among teacher colleagues is one important relational factor that is interrelated with professional learning communities and is essential for their success (Bolam et al., 2005). Trust in colleagues enables teachers to work together and uplift each other. In a high-trust environment, teachers freely share knowledge, visit each other's classrooms, and feel confident in giving and receiving constructive feedback

(Gray & Summers, 2015; Lee et al., 2011). Trust among colleagues is an informal school property that strengthens when teachers get regularly involved in meaningful collaborative work with a shared vision for transforming students' lives (Bozman, 2011; Gray et al., 2016; Tschannen-Moran & Hoy, 1998). Both trust and professional learning communities hold a mutually interdependent relationship and play an essential role in bringing school reforms.

Trust among colleagues is a binding force that can multi-fold the outcomes of professional learning communities (PLCs), leading to higher collective efficacy beliefs and improved student learning (Lee et al., 2011). The collective efficacy beliefs are usually strong in schools with trusting relationships among teachers. In such schools, teachers feel confident in taking control of student learning, and can comfortably collaborate and support their colleagues in the learning process (Lee et al., 2011). Whereas, in a school environment characterized by low trust among the school staff, miscommunication often happens. Introducing reforms at such schools is often complicated, and teachers' engagement with colleagues, students, and parents is superficial.

Trust at schools is related to positive and strong relationship with colleagues, higher teacher commitment, and an enjoyable work environment (Bryk & Schneider, 2003; Goddard et al., 2001; Hoy et al., 2006). Trust helps in improving a school's social capital. It makes the work environment cohesive, where teachers support each other to achieve a common goal of student learning. Trust is a multifaceted component (Zeinabadi & Salehi, 2011; Van Maele & Van Houtte, 2012), and in presence of trust-based relationships with colleagues, teachers have reported improved levels of job satisfaction consistently (Khany & Tazik, 2016; Lindahl, 2014). Also, in a multicultural society like Malaysia, where there are three



main races, Malay, Chinese and Indian, trust is an essential contributing factor towards the success of education system (Choong et al., 2018). Thus, for the implication and sustenance of learning communities it is essential that teachers have a strong interpersonal relationship built on the foundation of trust, where they feel secure and confident in collaborating for work and learning (Khan et al., 2021).

Additionally, a teacher-level attribute, which can influence teachers' active engagement in professional learning communities (PLCs) is their emotional intelligence (EI). “Emotional intelligence is the ability of an individual to access and understand emotions and use this emotional knowledge to promote the emotional and intellectual growth of self and others” (Mayer et al., 2007). Emotionally intelligent people often enjoy successful social and interpersonal relationships and self-growth and achieve great professional and personal success. Previous studies have discussed the significance of emotional intelligence in the professional lives of individuals and its contribution to employees' job satisfaction (Anari, 2012; Goleman, 1996;) and collective efficacy beliefs (Pierce, 2014). Like other work sectors, emotional intelligence is vital to teachers' job satisfaction. It can lead to better work outputs in terms of work commitment, low absenteeism, and risk-taking, eventually leading to high student achievement (Yin et al., 2013).

Teachers with high emotional intelligence can better relate to their students, understanding individual differences responsible for their behaviours and learning variations. Such teachers can manage stressful classroom conditions more efficiently. Also, in multicultural societies like Malaysia, the students present with varied proficiency levels regarding academics, social and interpersonal knowledge. Teachers with high emotional intelligence levels can use these variations positively in preparing individualized learning plans and

goals for these students (Arslan & Yigit, 2016). Teachers with high levels of emotional intelligence (EI) can efficiently acknowledge and understand their emotions and know how to control them. They can comfortably let students know boundaries for classroom discipline, and behaviours that can disrupt class environments and can openly appreciate students for good deeds. Also, emotionally intelligent teachers can assist students' self-development by boosting their self-esteem, self-worth, and academic self-perception (Curci et al., 2014). They work for the comprehensive development of students and promote creative thinking, teamwork, and self-regulated learning in classrooms. Such teachers are open to risk-taking and employ novel methods to enhance students' experiences.

Previous studies have pointed out that emotionally intelligent individuals can better understand themselves and others' feelings and perform better in social settings, which holds true for teachers as well (Valente et al., 2020). Emotionally intelligent individuals exhibit prosocial behaviour, an optimistic attitude, healthy and stable interpersonal relationships, and high achievement motivation in social life. Moreover, emotional intelligence helps teachers maintain positive relationships with peers, school administration, parents, and students. Positive social relations among teachers lead to better collaboration, where they work together to achieve common goals of higher student learning standards (Ignat & Clipa, 2012). Such a supportive and enriching work environment is conclusive to teachers' commitment and motivation, high competency, higher efficacy beliefs, decreased stress and attrition rate, and overall job satisfaction. Also, professional learning communities require social interaction and collaborative work practices by teachers. Therefore, it can be said that emotionally intelligent teachers are active, constructive, and contributing participants in professional learning communities.

## **1.2. Rationale of the Study**

Professional learning communities are essential for educational institutions and policymakers aiming to introduce school reforms. Professional learning communities (PLCs) facilitates teachers' participation in school decision-making and giving them responsibility of day-to-day teaching activities, and student learning. Within these learning communities, teachers work collaboratively towards the shared vision and goal of the schools and support each other in achieving those goals (DuFour, 2009; Hord, 1997). The student-centred outcomes of professional learning communities result from teachers' direct and indirect engagement in activities like shared leadership, continuous learning, collaborative working towards clearly defined school goals, and the availability of physical and relational resources (Hargreaves et al., 2013). Schools with authentic professional learning communities often report higher student academic achievement and teacher commitment toward their job (Stearns et al., 2014).

For decades scholars have studied the contribution of the PLCs model towards teachers' skill and knowledge enhancement, personal and professional life, the relationship among staff members, and improved students' learning outcomes. Professional learning communities significantly improve teachers' willingness to adopt new methods for teaching, work collaboration, and commitment to teaching (Banerjee et al., 2017; DuFour, 2004; Hord, 1997; Vescio et al., 2008). These learning communities provide teachers with a much-needed platform that helps in skill enhancement, discussion of teaching-related issues, and identification of students' unique requirements (DuFour, 2004; Hargreaves et al., 2013).

There are several ways in which professional learning communities are addressed like communities of learning, continuous professional development, teachers' professional development, learning communities (Bolam et al., 2005; Chen et al., 2016; DuFour & Eaker, 2009; Hord et al., 2010; Olivier et al., 2010). However, one of the most serious issues posed in the success of authentic learning communities is to mistake them with one off workshops, selective teachers' training programs or supplying teachers with training materials or other teaching aids. Though there is no consensus among researchers about the definition for professional learning communities but the essence of authentic and successful learning communities are supportive leadership practices at school, teachers active participation in decision making and opportunities for leadership roles, clear and defined vision for schools' goals, collaborative work practices, teachers involvement in knowledge sharing, support to teachers in form of social relations at schools, and provision of physical resources such as, time, teaching aids and space to collaborate and learn (Bolam, 2005; DuFour, 2004; Hord 1997).

For more than two decades, researchers in Western countries have been arguing for the importance of learning communities in improving students, teachers, and school level outcomes (Ackerman, 2011; Banerjee et al., 2017; Bolam, 2005; Capraro et al., 2016; Voelkel & Chrispeels, 2017), however, the concept is relatively new in Malaysian context (Abdullah & Ghani, 2014; Derk, 2019; Hassan, 2021;). Previously in Malaysia, teachers' professional development was offered in top-down approach, with the Ministry of Education being in control. The ministry used to provide occasional opportunities for trainings and workshops, however, inputs from teachers regarding their requirements and needs was often missing (Kabilan & Veratharaju, 2013; Kareem, 2020; Razali et al., 2022).

Acknowledging the need of evolving educational scenario and in an effort to bring Malaysian education system at par with global standards, the MOE has professed in its blueprint 2013-2025, on the importance of teachers' and schools' involvement in planning and implementing professional learning communities at educational institutions across the country (Saad et al., 2017; Tahir & Musah, 2020). This is helpful in implementing the learning communities in their actual form and reaping benefits in the form of high standards of teaching and student learning. However, the Malaysian literature search has shown that most recent studies have mainly focused on the application of professional learning communities (PLCs), factors responsible for it, or their direct impact on student outcomes (Hassan et al., 2019; Kin, 2020; Rauf et al., 2018; Saad, 2019; Tahir & Musah, 2020).

For the success of learning communities, it is crucial that teachers are an active and integral part of them. When teachers-centred benefits of learning communities are tangible, teachers feel more motivated to be a part of these learning communities (Gray et al., 2014; Hargreaves et al., 2013). Though studies in Western countries have discussed that professional learning communities help teachers in developing high collective efficacy beliefs and improved job satisfaction levels (Capraro et al., 2016; Donohoo, 2017; Erdem et al., 2014; Lee et al., 2011; Zhang & Yuan, 2020), the two important antecedents for student learning, these relationships are under explored in Malaysian education context.

Collective teacher efficacy (CTE) has been identified as the most important contributing factors towards students' academic outcomes (Bandura, 1997; Hattie, 2015). Teachers with high collective efficacy take accountability for students' learning, work together in curriculum planning, share students' concerns, and assist each other in professional growth. When a school environment is characterized by high collective teacher efficacy, teachers

share their professional experiences, seek feedback, work collaboratively in lesson planning, and visit peers' classrooms for learning. The teachers can better handle student misbehaviour and work together for students' holistic development (Klassen et al., 2010; Reeves et al., 2017).

Previous studies, in the past two decades, have discussed that high collective teacher efficacy (CTE) enhances teachers' self-efficacy, belief in their teaching abilities, and willingness to adopt new instructional methods and technologies, which brings about significant and positive improvements in students' learning and achievement (Ross et al., 2004; Tschannen-Moran & Barr, 2004;). CTE is a school-level factor and once established it becomes difficult to change it. It can determine the school-level differences in the students' academic outcomes within the same school district. However, researchers have expressed concern over the lack of attention towards collective teacher efficacy in Malaysian academic literature (Saidin et al., 2020).

As Malaysian education sector is undergoing reform, the onus is on teachers to adhere to the suggested and implemented policy changes and adopt new plans. To be successful at this, high levels of collective efficacy beliefs are needed (Ling et al., 2015). However, researchers have expressed concerns that most studies related to collective teacher efficacy have either focused on demographic factors responsible for the development or on direct effects of collective teacher efficacy on variables like student learning or self-efficacy of teachers (Lu & Mustafa, 2021; Saidin et al., 2020). There is a need to conduct extensive studies that can provide evidence for the role of school level factors like professional learning communities (PLCs) in the development of collective efficacy beliefs of teachers.

Also, professional learning communities (PLCs) provide on-job learning opportunities and promote teamwork among teachers. These learning communities enable teachers to visit each other's classrooms, discuss students' needs, and involve in cooperative, data-driven decision-making (DuFour, 2004; Wei et al., 2009), leading to improved teachers' experiences and job satisfaction. The shared and continuous learning aspect of professional learning communities helps reduce job-related stress among teachers leading to higher levels of job satisfaction (Armstrong, 2012; Erdem et al., 2014; Tahir et al., 2013). In schools with properly implemented professional learning communities, teachers actively support each other, experience uplifting professional and personal relations, have autonomy over their work, and participate in knowledge-sharing activities, which helps create positive job experiences (Zhang & Yuan, 2020).

Previous studies regarding teachers' job satisfaction in Malaysia have pointed to low to moderate level of job satisfaction among teachers (Abdullah & Hui, 2014; Shen et al., 2018), which has raised concerns among researchers and educators. Also, Hee et al., (2019) have expressed concerns that classroom conditions, unruly student behaviour, ill-planned education reforms and ever-changing teaching policies are some of the leading causes of low job satisfaction levels among teachers in Malaysia. Also, such conditions adversely affect teachers' commitment toward their work. Researchers from Western and some Asian countries have pointed to the role of professional learning communities (PLCs) in improving job satisfaction levels of teachers (Banerjee et al., 2017; Zhang & Yuan, 2020).

However, there is a concern that when implemented in centrally controlled manner, without considering teachers' specific needs, professional development programs can add to workload of teachers leading to stress and low levels of job satisfaction (Abdullah & Hui,

2014). As professional learning communities are in evolving stage in Malaysia, it is needed to assess how are they affecting job satisfaction levels of the participating teachers. If implemented properly the learning communities can positively affect satisfactions levels among teachers, leading to improvement in teaching standards, commitment towards job and student learning (Armstrong, 2012; Erdem et al., 2014; Stearns et al., 2014).

Furthermore, successful enactment of professional learning communities at schools depends on school's social fabric such as trust among teachers (Hord et al., 2010). Trust is a social attribute of schools and is multidimensional in nature (Tschannen-Moran, 2014; Tschannen-Moran & Hoy, 1998). The various forms of trust in a school are, teachers' trust in colleagues (TTC), trust in school principal, and trust in students and parents (clients). The most and relevant form of trust for professional learning communities is teachers' trust among colleagues because when teachers trust each other, they engage freely in meaningful communication, support learning activities, and share feedback (Lee et al., 2011; Tschannen-Moran, & Gareis, 2017). Professional learning communities facilitate trust-building among teachers as it allows for open communication, teamwork, shared decision-making, and healthy social relations, which are prerequisites for any social or professional relationship (Tschannen-Moran & Hoy, 1998).

PLCs and trust share a strong correlational relationship, where learning communities serve as a building block through which trusting relationships among school staff members are formed. In turn, trust further strengthens the learning communities (Bryk & Schneider, 2002; Kalkan, 2016). Trust is the connective force responsible for the positive, cordial, and supportive relationships among teachers. In schools with high trust relationships, teachers actively support each other, maintain transparent and honest communication, and work



together to ensure high standards of student learning (Tschannen-Moran & Gareis, 2017). Trust among different stakeholders in schools is not only responsible for enriching the work environment, but it also leads to better student learning outcomes.

Moreover, trust can act as a mediator that enhances the direct effect of professional learning communities (PLCs) on job satisfaction levels of teachers and their collective efficacy beliefs (Gray et al., 2017). In the presence of trust, teachers feel secure, confident, and vulnerable. They can rely on their colleagues for help and do not experience apprehension while engaging in teamwork. Teachers' trust among colleagues helps them to learn from each other and support peers in achieving collective school goals. Trust helps strengthen the social relationships among teachers, motivating them to work towards common goals of improved student learning. Trust alone does not significantly affect students' academic outcomes, but it helps strengthen teachers' collective efficacy beliefs, leading to high student outcomes (Adams et al., 2009). Trust among teachers helps create a supportive, transparent, interdependent, and enriching school environment which helps strengthen the collective efficacy beliefs of teachers.

Teaching is a collaborative work, where teacher interdependence on each other is a requisite for school success. In the presence of trusting relationships among staff members, teachers feel more efficacious in their collective efficacy to cause positive and meaningful differences in students' learning (Lee et al., 2011). However, in the absence of a trusting relationship, teachers will primarily be focused on safeguarding their own well-being and success, leading to individual-centric work culture rather than team-centric. Trust in colleagues lead to a positive and supportive work environment which leads to higher job satisfaction (Lindahl, 2014; Trace, 2016). Also, trust is the school's social fabric, which

helps create an enjoyable work environment where teachers support and uplift each other, leading to higher job satisfaction levels (Van Maele & Van Houtte, 2012).

In a multi-cultural society like Malaysia, which is amidst of introducing education reforms, trust among colleagues is an essential factor that can influence the outcomes of learning communities (Choong et al., 2018). Though previous studies have discussed the role of school leadership in building trust and the importance of trust in school success (Musha et al., 2018; Vikaraman et al., 2018) few studies have analysed the relationship between professional learning communities (PLCs) and trust in colleagues (Khan et al., 2021).

Additionally, emotional intelligence is another important factor that can determine individual teachers' level outcomes for professional learning communities. Teachers' emotional intelligence has been found to be a significant contributing factor towards their job satisfaction, increased commitment to work, motivation to teach, and retention at school (D'Amico et al., 2020; Vesely et al., 2013). Teachers with high emotional intelligence have a positive work attitude, maintain healthy social relationships, and are better equipped to handle stressful situations (Ignat & Clipa, 2012). Such teachers are aware of their abilities, have high teaching effectiveness, and are usually more satisfied with their job (Anari, 2012; Ismail et al., 2020; Mohamad & Jais, 2016). People with high levels of emotional intelligence (EI) are more adept in relationship management and hence show higher collective efficacy in group settings (Pierce, 2014). Also, teachers with high emotional intelligence can create positive and constructive learning and working environment at school. Teachers' emotional intelligence (TEI) helps them feel more efficacious in teaching students from different backgrounds, manage their behaviours, and share skills with colleagues, leading to higher collective teacher efficacy (Valente, et.al. 2020).

Also, researchers have reported that teachers face numerous challenges in their day-to-day teaching tasks, which poses issues like high job stress, demotivation to teach and possibilities of quitting the profession (Krishnan & Awang, 2020). Also, to introduce education reforms and for smooth operation of learning and teaching processes at schools, it is important that teachers are in control of their emotions and at the same time can understand and accept others' emotions as well (Ismail et al., 2020). Teachers with control and understanding of their emotions feel more efficacious in their teaching abilities and show commitment to their work (Valente, 2020).

Researchers have expressed concern that not enough studies have explored the importance of emotional intelligence (EI) with respect to teachers in Malaysia (Hassan et al., 2015). Teaching is an emotionally challenging and demanding job as teachers need to manage stressful work conditions, emotional demands of colleagues and students, and need of students from diverse cultural, social, socio-economic backgrounds. Also, emotionally intelligent teachers are more efficient in adopting education reforms and use them for enriching their work experience (Mohamad & Jais, 2016). However, most studies in Malaysia have either focused on the levels of emotional intelligence among students or teachers or their direct effect, but few have attempted to assess how teachers' emotional intelligence can affect the process of teaching (Hassan et al., 2015).

This demonstrates that though learning communities are being actively practiced in Malaysian schools, most studies have focused on how they can impact student learning or the factors responsible for their application (Hassan et al., 2022). Also, collective teacher efficacy has not been given due importance in Malaysian education research literature and

more and more studies are needed that helps in understanding how to strengthen collective efficacy among teachers (Saidin et al., 2020). Moreover, extra work stress arising due to changing education system, along with day-to day challenges of teaching activities and classroom management are responsible for low levels of teachers' job satisfaction (Abdullah & Hui, 2014; Hee et al., 2019).

Therefore, the rationale behind this study was first to assess the direct effect of professional learning communities (PLCs), on teachers' collective efficacy (CTE), and job satisfaction (TJS), the two most important factors affecting student learning. Then the study focused on the mediating effect of teachers' trust in colleagues (TTC) and the moderating effect of teachers' emotional intelligence (TEI) in the proposed relationship. This study focused on the primary school teachers because they serve as the foundation for the education system for any country. Also, previous studies have found that professional learning communities are school-specific (Louis & Marks, 1998), which means at primary schools, the professional learning communities (PLCs) are relevant at the school level, whereas at the middle or high school, they are primarily subject-specific.

Also, in case of primary schools, the structural conditions like proximity of classrooms, school size, and ease of connection make professional learning communities (PLCs) more relevant at school level. Similarly, the variables, collective teacher efficacy and trust, are more relevant when studied within a similar group of people (Bryk & Schneider, 2003). At primary schools, teachers face similar work conditions, share a common staffroom, and the flow of communication and information is easy. The teachers have a feeling of belongingness to the same group, hence easier to establish collective efficacy and trust at the school level in these conditions. Additionally, managing classrooms full of young

students coming from diverse cultural, social, and economic backgrounds poses stressful work conditions that can affect teachers work satisfaction levels. Moreover, teachers' emotional intelligence (TEI) plays an important role in managing the challenges of the primary schools.

Furthermore, primary schools serve as the base for a country's education system. For the purpose of identifying issues and recommending any changes, it is prudent to start from the primary school level. Therefore, this study will focus on primary school teachers, which will help better understand the relationship between the variables. Moreover, focusing on teachers from one type of educational institute will help eliminate the confounding effects of other variables that are irrelevant to the study. Also, the review of literature has shown the scarcity of empirical studies that have explored the outcomes of the professional learning communities (PLCs) in terms of teachers' collective efficacy (CTE) and job satisfaction (TJS) in Malaysian context. Hence using teachers' trust in colleagues (TTC) as mediator, this study aimed to fill in this existing research gap. Also, using teachers' emotional intelligence (TEI) as a moderator in educational settings provides evidence for the need of adding EI training programs for the teachers.

### **1.3 Statement of the Problem**

In the Malaysian Education Blueprint (2013-2025), the Ministry of Education has expressed concerns over the sub-par academic performance of Malaysian students at international standards competitions like PISA and TIMSS. The MOE has discussed that despite an education budget of over 36 billion RM, which is 16% of the total national budget, the students' academic outcomes are below expectations. Also, because of sub-standard teaching practices, more and more parents are opting for private schools (primary

and secondary) for their children (Khor, 2019). In the blueprint, the MOE has outlined a complete plan to improve education standards across country with a special focus on promoting the continuous professional development of teachers. The government has encouraged schools and teachers to actively participate in the professional learning communities, involved in designing, planning, and implementing them as per specific needs (Rahman et al., 2021). However, professional learning communities are a relatively new concept in the Malaysian education scenario (Derk, 2019). When first adopted in the Malaysian education system, learning communities were offered in a centrally designed and controlled, top-down manner, in the form of occasional teachers training workshops or seminars (Ismail et al., 2020; Khalid et al., 2013). This one size fit all approach failed to lead to much desired changes in students' learning outcomes. To address this issue, in the education blueprint (2013-2025), the government has encouraged stakeholders of education, specifically teachers and school administration, to adopt a dynamic culture of learning communities focusing on the specific requirements of teachers and students (Hassan et. al., 2022; Ismail et al., 2022).

Though schools in Malaysia have adopted learning communities to improve students' academic outcomes, not much attention has been given to how learning communities can impact teachers. In a quest to understand learning communities in the Malaysian context, most studies have focused on its direct relationship with student achievement, types, or the responsibility of school leaders in the application of learning communities (Ansawi & Pang, 2017; Rauf et al., 2018; Thien et al., 2021). There needs to be more literature to substantiate the relevance of professional learning communities (PLCs) for teachers, the backbone of the education system. Whereas globally, researchers have focused on how

learning communities can support both teachers and students, and the importance of having a clearly defined goals when adopting learning communities at schools.

Furthermore, the limited approach towards learning communities and implementing them with only student-centred outcomes can be detrimental to both teachers and students. With more than 233,000 teachers in over 7500 primary schools, most studies have explored the state of professional learning communities (PLCs) and not how they are useful for improving teachers-level variables that can significantly determine students' performance. This points out the limited approach of researchers, educators, and policymakers towards learning communities in the Malaysian context (Derk, 2019). In one study, Abdullah and Ghani (2014) asserted that one way to improve the school systems in Malaysia is to adopt and implement professional learning communities across public schools. They suggested that teachers participating in professional learning communities show more willingness for peer classroom visitation and work together with a common school vision and mission. Though public schools in Malaysia have professional learning communities to some extent, researchers have suggested that more initiative and collaboration are required to fully reap their benefits (Ansawi & Pang, 2017; Khan et al., 2021).

Teachers-level factors that can benefit from PLCs are teachers' collective efficacy (CTE), job satisfaction (TJS) and trust in colleagues (TTC). When learning communities focus only on one goal of student learning, without any focus on teachers' improvement, they come across as a burden or extra work, leading to job-related stress and low motivation among teachers to implement them (Abdullah & Hui, 2014; Khalid et al., 2013). This happened when learning communities were administered in a centrally controlled approach by the ministry in Malaysia. On the contrary, when learning communities are formed with

an intention to help both teachers and students, their outcomes are multi-fold, leading to engaged and satisfied teachers and high standards of student learning, a model being adopted in most Western countries (Olivier & Huffman, 2016; Voelkel & Chrispeels, 2017).

Though identified as one of the most crucial factors that contribute towards student academic outcomes, collective teacher efficacy (CTE) is under-explored with reference to Malaysian education set-up (Lu & Mustafa, 2021). CTE determines teachers' attitudes towards their capability to contribute towards learning and development of all students, irrespective of their background. When teachers have high collective efficacy, they strongly believe that each and every student is capable to learn and achieve high academic outcomes, irrespective of their educational, socioeconomic or cultural backgrounds (Schwabsky et al., 2020). Teachers' collective efficacy also influences their self-efficacy, commitment, and school-level differences in student achievement. Also, CTE is relatively permanent in nature, and once established, it is difficult to change the collective efficacy beliefs of teachers in a school (Tschannen-Moran & Barr, 2004). In an education system where teachers are used to working in isolation, collective efficacy is hard to develop, impacting student learning adversely (Eells, 2011; Hattie, 2015).

Most Malaysian studies have focused on the direct relationship between demographic or other variables and collective teacher efficacy. However, researchers in Malaysia have expressed concerns over the lack of attention given to the role collective teacher efficacy in school improvement (Saidin et al., 2020). The problem is though PLCs is considered as an important means to introduce education reforms in Malaysia, there is limited evidence on how it can affect collective teacher efficacy in the Malaysian context. Whereas researchers



in several Western and Asian countries have time and again advocated that professional learning communities are an important source for developing high collective efficacy beliefs among teachers as they provide opportunities for learning from peers, collaborative working, knowledge sharing, skills development, relationship building, and supportive work conditions (Lee et al., 2011; Voelkel, 2019).

As the country's education system is undergoing dynamic changes, teachers' collective efficacy can play a crucial role in the implementation and outcomes of education reforms. Hence, there is a need to study and analyse how different school and teacher-level factors can help in developing high collective efficacy beliefs (Tiong, 2016). Furthermore, globally, there needs to be more consensus among researchers regarding the direction of the relationship between PLCs and CTE. Some scholars have proposed that collective teacher efficacy at school helps establish professional learning communities (Geer & Morrison, 2008; Gray et al., 2014). In contrast, another view argues that professional learning communities encourage teachers' collaboration and provide opportunities for mastery experiences and vicarious learning, which lead to higher collective teacher efficacy beliefs (Moolenaar et al., 2012; Zonoubi et al., 2017). The present study holds the view that professional learning communities can be crucial in developing high collective efficacy beliefs among primary school teachers in Malaysia.

Furthermore, researchers have discussed that low levels of job satisfaction among teachers can adversely affect their commitment to the profession and student learning, leading to higher levels of burnout (Abdullah et al., 2009; Madigan & Kim, 2021). In the presence of low levels of job satisfaction, teachers need to put more effort into creating an enjoyable and meaningful learning environment for their students. Teachers who are unsatisfied with

their job often desire to leave the profession and pursue another career. According to the Teaching and Learning International Survey (TALIS) report, Malaysian teachers are often burdened with tasks unrelated to teaching like classroom management, increased administrative work and participation in unstructured learning activities. This is more profound in the case of primary school teachers as they have to manage students with differing emotional, psychological, developmental, and educational needs (Chan et al., 2015; Hee et al., 2019; Khun-inkeeree et al., 2021).

Researchers have pointed out that superficial or unorganised implementation of professional development programs can add to teachers' workload, leading to job dissatisfaction, less work commitment and leaving of jobs (Abdullah & Hui, 2014). However, when implemented in a structured manner, with a focus on teachers' professional development needs, learning communities can aid in promoting high job satisfaction levels among teachers (Zhang & Yuan, 2020). As professional learning communities facilitate on-job learning, meaningful social interaction, and ownership of teaching, it can lead to higher job satisfaction among teachers.

Often when studying the effects of PLCs on teachers' job satisfaction (TJS), researchers have used single-item or short questionnaires for measuring job satisfaction levels. Though convenient to use, such surveys are not efficient in providing a theoretical basis for job satisfaction (Banerjee et al., 2017). Such studies can superficially provide information about the relationship between the variables, but they cannot provide theoretical evidence and explanation for the relationship. As the Malaysian education system is actively trying to adopt and implement professional learning communities with a special focus on teachers'

needs and involvement, it is essential to analyse its role in improving teachers' job satisfaction levels.

Previous studies have discussed that trust, as the social capital of schools, can significantly affect teachers' involvement in professional learning communities (Tobia & Hord, 2012; Toole & Louis, 2002), collective efficacy (Lee et al., 2011) and level of job satisfaction (Lindahl, 2014). Professional learning communities and teachers' trust share a correlational relationship (Gray et al., 2016), where professional learning communities act as a building block, and trust helps amplify its students' and teachers' level outcomes. Trusting relationships allow teachers to be vulnerable to each other. When teachers trust each other, there is clear and transparent communication, and teachers support colleagues in learning and work in unison toward the school's vision (Tschannen-Moran, 2014).

Trust among teachers has been found to increase teacher collaboration, sharing of ideas, and active participation in decision-making. When schools have a high-trust environment, teachers show higher commitment toward student learning, work together for a common goal, and express firmer beliefs in their teaching ability (Tschannen-Moran & Hoy, 1998). In their study on Hong Kong teachers, Lee et al. (2011) reported that trust among teachers contributes significantly toward their collective efficacy beliefs for instructional strategies. Flood and Angelle (2017) reported that trust and collective efficacy are both necessary for improving teacher leadership leading to an enriching and positive school environment.

Trust at schools affects the overall school culture. When teachers' professional and personal relationships are based on high level of trust, they experience increased level of job commitment, are more likely to stay at a particular school, and enjoy higher levels of

job satisfaction (Bryk & Schenider, 2003). Also, teachers have reported higher levels of job satisfaction when working in schools where they can trust their colleagues and school principal (Trace, 2016). Trust helps fulfil the intrinsic factors associated with work by providing opportunities for maintaining amicable social relations. It improves organisational culture and commitment leading to higher job satisfaction among teachers (Van Maele & Van Houtte, 2012).

Also, researchers like Bryk and Schenider (2003) have professed that it is easy to develop trust in people coming from similar backgrounds. Teachers feel free to refrain from sharing and supporting each other in a school environment marked by low levels of trust among colleagues. They become privy to their own interests and focus more on self-benefit rather than the collective benefit of the school. Such work environments are unfavourable for school progress and students' learning. Moreover, in a multicultural society like Malaysia where teachers come from different backgrounds, trust can play an important role in improving teachers-level outcomes of professional learning communities. Also, in times of educational reforms, trust among teachers help them to work collectively and collaboratively towards a common goal (Musah et al., 2018). However, only a few studies have discussed the role of teachers' trust in colleagues in the success of PLCs in the Malaysian context (Khan et al., 2021). Therefore, this study focused on the role of teachers' trust in colleagues as a mediator for the outcomes of PLCs.

When discussing professional learning communities (PLCs), researchers often discuss the concept itself or the school-level attribute that contributes to student achievement. Few studies have focused on the role of individual teachers' characteristics that can influence their participation in PLCs. One such teacher variable which can affect teachers'

participation in professional learning communities is their emotional intelligence. Previous studies have discussed how teachers' emotional intelligence (TEI) can improve their teaching effectiveness and job satisfaction (Ignat & Clipa, 2012; Yin et al., 2013). Also, teachers' emotional intelligence contributes positively towards students' success and academic outcomes (Curci et al., 2014). Scholars have proposed that emotional intelligence is associated with employee collaboration, success at teamwork, willingness to take a risk, learning new skills work motivation, and job performance (Goleman, 1995).

However, there is a gap in the literature on how teachers' emotional intelligence can affect their participation in professional learning communities thereby affecting student and teachers level outcomes. This study contributes to the existing research literature by providing empirical evidence for the role of teachers' emotional intelligence in the success of PLCs and the need for EI training to further benefit teachers and students. Also, previous organisational studies support that emotional intelligence is a significant moderating factor for job-related outcomes in (Salami, 2010; Yozgat et al., 2013). However, only some studies have tried to analyse the effect of emotional intelligence on teachers' participation in professional learning communities. Teachers' participation in positive behaviour programs to improve their emotional intelligence is associated with increased student achievement. However, such studies are mainly done in western countries (Vesely et al., 2013). In Malaysia, not many studies have focused on the importance of emotional intelligence in academic organisations (Mohamad & Jais, 2016).

Researchers have discussed that teachers in Malaysia often face demanding, emotionally challenging, and exhausting work conditions. They are expected to manage students' misbehaviour, meet the demands of parents and school authorities and perform teaching

activities to the highest standards (Mustafa et al., 2014; Yoke & Patnaik, 2015). Teachers with high emotional intelligence often successfully address such work challenges and experience better job satisfaction. According to Krishnan and Awang (2020), teachers' emotional intelligence is also associated with their efficacy beliefs, enabling them to contribute meaningfully towards students' motivation and learning. However, the authors expressed concerns that teachers in Malaysia lack opportunities for emotional intelligence training.

Though more and more studies in the Western world have highlighted the importance of emotional intelligence for teaching practices to bring positive changes in student learning, there needs to be more such studies in the Malaysian context (Hassan et al., 2015). Here most studies have focused on the levels of teachers' emotional intelligence or its direct relationship with teachers' or students' level variables (Hanafi et al., 2017). Understanding this relationship can help in designing emotional intelligence training programs for teachers, which can help them in carrying out their day-to-day teaching activities. Researchers in Malaysia still need to sufficiently explore how emotional intelligence can influence the outcomes of teachers' involvement in professional learning communities (PLCs).

The present study aimed to provide the much-needed empirically supported evidence to address the dearth in the Malaysian educational literature regarding the application and relevance of professional learning communities at primary schools, or how PLCs can help improve teachers' collective efficacy and job satisfaction. Also, the present study focused on teachers' trust in colleagues as the mediator of this relationship to show the importance of trust for teachers' and students' success. Moreover, using teachers' emotional intelligence

as the moderator, the study has highlighted the need for providing EI training opportunities for teachers. The study discussed the benefits of emotional intelligence in empowering teachers to handle stressful work conditions, building beliefs in their ability to teach and feeling satisfied with their work. This study provides theoretical and practical support for the adoption, implication, and success of professional learning communities by primary schools in Malaysia, which can help the Ministry of Education in raising the learning outcomes of Malaysian students, bringing them at par with the international standards.

#### **1.4 Purpose of the Study**

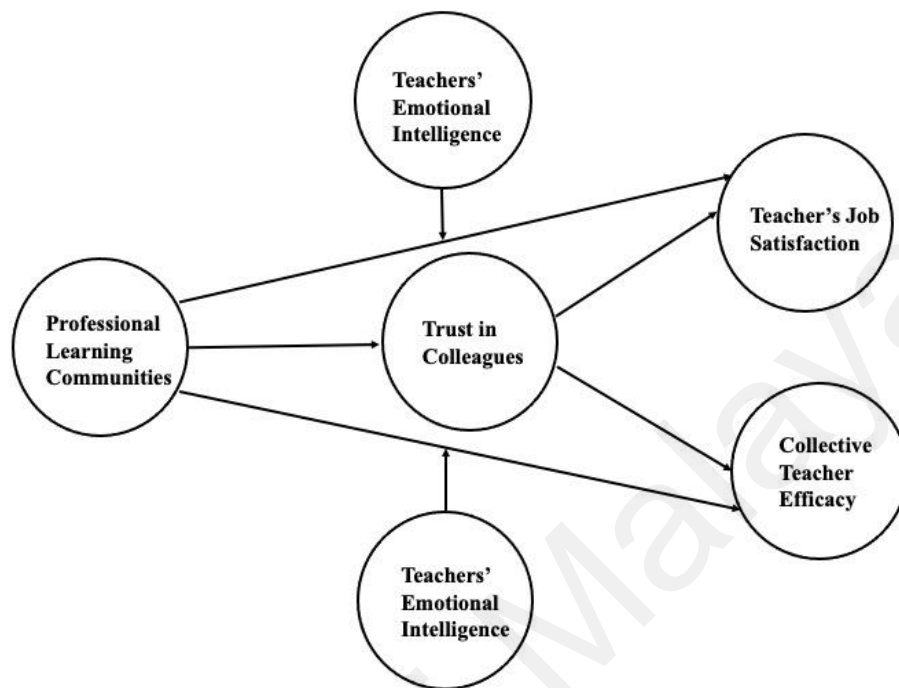
The purpose of this exploratory study was to analyse the relationship between professional learning communities, teachers' collective efficacy, job satisfaction, trust in colleagues, and emotional intelligence among primary school teachers in Selangor, Malaysia. For this purpose, a model was developed using structural equation modeling, that presented the direct effects of professional learning communities on teachers' collective efficacy and job satisfaction, the mediating effect of teachers' trust in colleagues, and the moderating effect of teachers' emotional intelligence.

#### **1.5 Research Objectives**

An a-priori model was developed to show the relationship between the variables professional learning communities (PLCs), teachers' collective efficacy (CTE), job satisfaction (TJS), trust in colleagues (TTC), and emotional intelligence (TEI).

**Figure 1.1**

*A-Priori Model of the Study*



Based on the a-priori model following research objectives were developed:

1. To identify the perceptions of teachers regarding professional learning communities, teachers' collective efficacy, job satisfaction, trust in colleagues and emotional intelligence in public primary schools, Selangor, Malaysia.
2. To identify the significant relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia.
3. To identify the significant relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia.
4. To identify the significant relationship between professional learning communities and teachers' trust in colleagues in public primary schools, Selangor, Malaysia.
5. To identify the significant relationship between teachers' trust in colleagues and collective efficacy in public primary schools, Selangor, Malaysia.



6. To identify the significant relationship between teachers' trust in colleagues and job satisfaction in public primary schools, Selangor, Malaysia.
7. To identify whether teachers' trust in colleagues significantly mediate the relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia.
8. To identify whether teachers' trust in colleagues significantly mediate the relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia.
9. To identify the significant relationship between teachers' emotional intelligence and collective efficacy in public primary schools, Selangor, Malaysia.
10. To identify the significant relationship between teachers' emotional intelligence and job satisfaction in public primary schools, Selangor, Malaysia.
11. To identify the significant moderating effect of teachers' emotional intelligence on the relationship between the professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia.
12. To identify the significant moderating effect of teachers' emotional intelligence on the relationship between the professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia.

## **1.6 Research Questions**

To achieve research objectives, the study aimed to answer the following research questions:

1. What are the teachers' perceptions regarding the following at public primary schools in Selangor, Malaysia:
  - a. professional learning communities
  - b. collective teacher efficacy

- c. teachers' job satisfaction
  - d. trust in colleagues
  - e. emotional intelligence
2. Is there a significant relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia?
  3. Is there a significant relationship between professional learning communities and teachers' job satisfaction at the public primary schools in Selangor, Malaysia?
  4. Is there a significant relationship between professional learning communities and teachers' trust in colleagues in public primary schools, Selangor, Malaysia?
  5. Is there a significant relationship between teachers' trust in colleagues and collective efficacy in public primary schools, Selangor, Malaysia?
  6. Is there a significant relationship between teachers' trust in colleagues and job satisfaction in public primary schools, Selangor, Malaysia?
  7. Does teachers' trust in colleagues significantly mediate the relationship between professional learning communities and collective teacher efficacy at the public primary schools in Selangor, Malaysia?
  8. Does teachers' trust in colleagues significantly mediate the relationship between professional learning communities and teachers' job satisfaction at the public primary schools in Selangor, Malaysia?
  9. Is there a significant relationship between teachers' emotional intelligence and collective efficacy in public primary schools, Selangor, Malaysia?
  10. Is there a significant relationship between teachers' emotional intelligence and job satisfaction in public primary schools, Selangor, Malaysia?

11. Does teachers' emotional intelligence significantly moderate the relationship between professional learning communities and collective teacher efficacy at the public primary schools in Selangor, Malaysia?
12. Does teachers' emotional intelligence significantly moderate the relationship between professional learning communities and teachers' job satisfaction in the public primary schools, Selangor, Malaysia?

### **1.7 Research Hypotheses**

The present study aimed to analyse the relationship between professional learning communities, teachers' collective efficacy, and job satisfaction, with trust in colleagues as the mediator and teachers' emotional intelligence as the moderator. To achieve this goal, the study used the following hypothesis:

H<sub>01</sub>: There is no significant relationship between professional learning communities and collective teacher efficacy in the public primary schools, Selangor, Malaysia.

H<sub>A1</sub>: There is a significant relationship between professional learning communities and collective teacher efficacy in the public primary schools, Selangor, Malaysia.

H<sub>02</sub>: There is no significant relationship between professional learning communities and teachers' job satisfaction in the public primary schools, Selangor, Malaysia.

H<sub>A2</sub>: There is a significant relationship between professional learning communities and teachers' job satisfaction in the public primary schools, Selangor, Malaysia.

H<sub>03</sub>: There is no significant relationship between professional learning communities and teachers' trust in colleagues in the public primary schools, Selangor, Malaysia.

H<sub>A3</sub>: There is a significant relationship between professional learning communities and teachers' trust in colleagues in the public primary schools, Selangor, Malaysia.

H<sub>04</sub>: There is no significant relationship between teachers' trust in colleagues and collective efficacy in the public primary schools, Selangor, Malaysia.

H<sub>A4</sub>: There is a significant relationship between teachers' trust in colleagues and collective efficacy in the public primary schools, Selangor, Malaysia.

H<sub>05</sub>: There is no significant relationship between teachers' trust in colleagues and job satisfaction in the public primary schools, Selangor, Malaysia.

H<sub>A5</sub>: There is a significant relationship between teachers' trust in colleagues and job satisfaction in the public primary schools, Selangor, Malaysia.

H<sub>06</sub>: Teachers' trust in colleagues does not significantly mediate the relationship between professional learning communities and collective teacher efficacy in the public primary schools, Selangor, Malaysia.

H<sub>A6</sub>: Teachers' trust in colleagues significantly mediates the relationship between professional learning communities and collective teacher efficacy in the public primary schools, Selangor, Malaysia.

H<sub>07</sub>: Teachers' trust in colleagues does not significantly mediate the relationship between professional learning communities and teachers' job satisfaction in the public primary schools, Selangor, Malaysia.

H<sub>A7</sub>: Teachers' trust in colleagues significantly mediates the relationship between professional learning communities and teachers' job satisfaction in the public primary schools, Selangor, Malaysia.

H<sub>08</sub>: There is no significant relationship between teachers' emotional intelligence and collective efficacy in the public primary schools, Selangor, Malaysia.

H<sub>A8</sub>: There is a significant relationship between teachers' emotional intelligence and collective efficacy in the public primary schools, Selangor, Malaysia.

H<sub>09</sub>: There is no significant relationship between teachers' emotional intelligence and job satisfaction in the public primary schools, Selangor, Malaysia.

H<sub>A9</sub>: There is a significant relationship between teachers' emotional intelligence and job satisfaction in the public primary schools, Selangor, Malaysia.

H<sub>010</sub>: Teachers' emotional intelligence does not significantly moderate the relationship between professional learning communities and collective teacher efficacy at the public primary schools in Selangor, Malaysia.

H<sub>A10</sub>: Teachers' emotional intelligence significantly moderates the relationship between professional learning communities and collective teacher efficacy at the public primary schools in Selangor, Malaysia.

H<sub>011</sub>: Teachers' emotional intelligence does not significantly moderate the relationship between professional learning communities and teachers' job satisfaction at the public primary schools in Selangor, Malaysia.

H<sub>A11</sub>: Teachers' emotional intelligence significantly moderates the relationship between professional learning communities and teachers' job satisfaction at the public primary schools in Selangor, Malaysia.

### **1.8 Significance of the Study**

Professional learning communities (PLCs) are important for schools, institutes, and organizations that aim to reform the educational system. Professional learning communities lead to higher standards of teaching skills, teacher collaboration, ownership, and commitment toward the job. Under the PLCs framework, teachers feel more confident in adopting new pedagogical methods and willingly take calculative risks with an aim to improve student learning. As Malaysia's Ministry of Education is committed to improving the education system, with an aim to substantially reform teaching quality and experiences, and to bring Malaysian students to par with international standards, it is required to assess the state of the PLCs at primary schools in the country. This study can benefit the policymakers, education leaders, teachers, and parents involved in improving the students' learning outcomes as it explores the state of the PLCs, teachers' collective efficacy and job satisfaction at public primary schools and their role in improving teachers' and students' experiences.

As mentioned in the blueprint, the Ministry of Education is encouraging teachers toward active engagement in maintaining professional learning communities at their respective schools, and be in control of content, concept, and relevance of the professional development. The findings from this study will help the ministry in understanding the applicability and involvement of teachers in PLCs at primary schools. Teachers' perception towards learning communities will help in analysing the progression from

traditional top-down approach of professional development to more cohesive, collaborative, and contemporary application of learning communities.

Furthermore, the study advocates the critical role of learning communities in ensuring strong collective teachers' efficacy and job satisfaction levels at primary schools. Researchers have expressed concerns that not enough attention and importance is being given to developing collective efficacy among teachers in Malaysia (Saidin et al., 2020). The study advocates that policy makers can help in developing strong collective efficacy among teachers by supporting them and schools to maintaining strong and active professional learning communities.

Moreover, the research presents a case for including emotional intelligence training for teachers as part of professional learning communities. Though many researchers have discussed the importance of EI in employees' job performance and work satisfaction, but only a few studies are done in educational settings. This study analyses the benefits of EI for teachers with respect to their job performance, collective efficacy, and participation in PLCs activities. In schools with professional learning communities including EI training programs for teachers can further aid in improving teachers' collective efficacy and job satisfaction levels.

Additionally, the research makes a case before the education policymakers for providing schools and teachers structural, financial, and human resources needed for developing, strengthening, and sustaining PLCs. In Western countries, public schools have successfully adopted professional learning communities and have benefitted in the form of improved student outcomes and teacher retention. However, in Malaysia, the application of

professional learning communities is still at the nascent stage in public schools, and more work is needed to benefit teachers and students from this model (Abdullah & Ghani, 2014; Saad et al., 2017).

The research can be of help to school management in understanding the relationship between learning communities, trust in colleagues, and teachers' collective efficacy and job satisfaction, as they are essential for school success. The study advocates that apart from subject-based training as part of professional development, the schools should aim to build the school environment based on team spirit, collaboration, trust, and mutual respect. The study can help school management understand that trust is an integral factor for improving school culture and teachers' satisfaction with their work.

Also, when adopting and implementing professional learning communities it is essential that schools should have a clear and specific vision and mission in sight. When learning communities are based on only students-specific goals, teachers do not perceive any personal or professional advantage from them. On the other hand, when learning communities have some teachers-specific goals, like alleviating job stress, promoting collaborative work environment, relevant skill enhancement, and contemporary and appropriate soft skills training, it can help in assuring improved levels of teachers' efficacy and work satisfaction.

The present study discusses the importance of trust in teaching and learning activities at school. The school management should try to maintain clear and transparent communication at all levels. The teachers should have opportunities to express their views, feedback and concerns openly and comfortably. Also, teachers should be provided with



professional security where they can share their experiences and learning with colleagues freely. The schools can help teachers by including emotional intelligence training programs as well.

Primary school teachers can benefit from this study as well. The teachers can learn how their personal attributes, like emotional intelligence, could improve their professional contentment, school culture, and student learning. Also, the study shows that by maintaining trust-based relationships at schools, teachers can support each other in achieving personal and professional goals. At times teachers experience professional development programs as an additional work, a compulsion and as hinderance to their normal teaching work. The study shows that teachers can benefit by active participation in learning communities by voicing out their concerns, suggesting programs that they need and designing and implementing them as suitable to their teaching schedule. This will help teachers in developing stronger collective efficacy beliefs and feel more satisfied with their work by fulfilling both intrinsic and extrinsic factors.

In the present education scenario, it is vital to understand the specific needs of individual students, who come from a varied cultural and academic backgrounds. The learning communities promote the culture of collaborative inquiry by teachers and assist them in making data-based decisions for designing curricula that can meet individual child needs. Also, the learning communities help teachers hone their content knowledge, use of new technologies, and application of action research to solve issues at hand. This study professes that strengthening professional learning communities at schools can help improve the teachers' collective efficacy and job satisfaction which further aids in improving students' academic outcomes.

Additionally, the study develops a model for the relationship between PLCs, teachers' collective efficacy, and job satisfaction where trust among colleagues is the mediator and teachers' emotional intelligence is the moderator. The policy makers and public schools in Malaysia can use that model to improve school culture and teaching and learning outcomes. The study will benefit the researcher by enhancing the understanding of the professional learning communities, the factors leading to its successful implementation, its effects on teachers and students, and the role of trust in colleagues and emotional intelligence in this relationship. Also, the researcher gained knowledge of the education system in Malaysia and the processes involved in conducting research.

### **1.9 Definitions of the Terms**

The following section describes the conceptual and operational definitions for the variables being used in the study.

#### **1.9.1. Professional Learning Communities**

**Conceptual Definition:** According to Hord (1997), "the professional learning community of the learners is the one in which teachers in a school and its administrators continuously seek and share learning, and act on their learning." The six characteristics of professional learning communities, as outlined by Hord, are "intentional collective learning, peer supporting peers, shared values and vision, supportive structural conditions, supportive relational conditions, and shared and supportive leadership."

**Operational Definition:** In the study, professional learning communities were defined as "the school system that follows the six basic principles of Hord's model for professional learning communities, which includes shared and supportive leadership, shared values and vision, collective learning and application, shared personal practices, supportive conditions

relationships and supportive conditions structural.” It was measured using the Professional Learning Communities Assessment – Revised (PLCA-R) research instrument developed by Olivier et al. (2010).

### **1.9.2. Collective Teacher Efficacy**

**Conceptual Definition:** Goddard et al. (2000) defined collective teacher efficacy as “an emergent group-level property referring to the perceptions of teachers in a school that the faculty as a whole will have a positive effect on the students.” Also, Tschannen-Moran and Barr (2004) explained that “collective teacher efficacy refers to the collective perception that teachers in a given school make an educational difference to their students over and above the educational impact of their homes and communities.”

**Operational Definition:** In the study, collective teacher efficacy referred to “the belief of individual teachers for the ability of all the teachers at their school to teach all students and maintain a disciplined school environment, irrespective of students' cultural, social, and educational background.” The study measured collective teachers' efficacy in the dimensions of student discipline and instructional strategies using the research instrument Collective Teacher Belief Scale (CTBS) developed by Tschannen-Moran and Barr (2004).

### **1.9.3. Teachers' Job Satisfaction**

**Conceptual Definition:** As per the Herzberg's (1974), “motivation-hygiene theory for job satisfaction, job satisfaction is a cumulative result of both the motivation and hygiene factors. The motivation factors are intrinsic to the job and leads to an increase in the feeling of job satisfaction and hygiene factors are extrinsic to the job and are associated with the feeling of job dissatisfaction”.

**Operational Definition:** The present study defined teachers' job satisfaction as their overall satisfaction with work, resulting from active participation in professional learning communities and school policy. The different dimensions of the job used in this study are “supervision, contingent rewards, operating procedures, co-workers, nature of work, and communication,” and were measured using the Job Satisfaction Survey (JSS) developed by Spector (1985).

#### **1.9.4. Teachers' Trust in Colleagues**

**Conceptual Definition:** Goddard et al. (2001) defined “Trust is an individual's or group's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, reliable, competent, honest and open. In a school context, trust can be in terms of teachers' trust in the principal, trust among colleagues, and trust in clients (students and parents)”.

**Operational Definition:** The present study defined “teachers' trust in colleagues as their belief that they can rely on colleagues for support and information sharing and that their personal and professional well-being will not be compromised.” In the present study Faculty Trust in Colleagues part of Omnibus T-Scale developed by Hoy and Tschannen-Moran (2003) was used to measure teachers’ perception for trust among colleagues.

#### **1.9.5. Teachers' Emotional Intelligence**

**Conceptual Definition:** Mayer et al. (2001) presented the ability model of emotional intelligence and defined it “as the capacity of individuals to process emotional information accurately and efficiently, including that information relevant to the recognition, construction, and regulation of emotion in oneself and others”.

**Operational Definition:** The proposed study used the ability model of emotional intelligence and teachers' emotional intelligence was measured across four dimensions, namely “self-emotions appraisal, others’ emotions appraisal, regulation of emotions, and use of emotions,” as perceived by teachers by using Wong & Law Emotional Intelligence Scale developed by Wong and Law (2002).

#### **1.9.6. Primary Schools in Selangor, Malaysia**

**Conceptual Definition:** “The primary schools in Malaysia are known as Sekolah Kebangsaan and caters to students from grade 1 to grade 6. Based on the medium of instruction, they can be divided into Malay-medium National Schools, National-type Schools (Tamil), and National-type Schools (Malay)”.

**Operational Definition:** The present study followed the government system in identifying the primary schools in Selangor, Malaysia, and included all three types, Malay, Tamil, and Chinese, to make this study comprehensive.

## **1.10 Summary**

The chapter briefly introduces the positive contribution of school-level PLCs toward collective teacher efficacy (CTE) and teachers' job satisfaction (TJS). It discusses how schools can benefit by adopting professional learning communities. Also, it mentions the importance of the teachers' trust in colleagues and emotional intelligence for school success. It is proposed that teachers' trust in colleagues can mediate, and emotional intelligence can moderate the effects of PLCs on teachers' collective efficacy and job satisfaction. This proposition is further supported by past studies in the rationale. Also, in the statement of problem, it is discussed that more studies are needed that focus on primary schools in Malaysia to bridge the existing literature gap. The purpose of this study is outlined clearly, and the research objectives, research questions, and research hypothesis are presented. This study holds a significant place as it contributes to a better understanding of professional learning communities' importance in school success. The significance of the study for teachers, school administrators, parents, policymakers, and the researcher is discussed in the chapter. Apart from PLCs, the study also focuses on the relevance of teachers' trust in colleagues and emotional intelligence in school success. The definitions of terms important to the research are also presented.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The focus of this chapter is to discuss and evaluate theories and models that explain professional learning communities (PLCs), collective teacher efficacy (CTE), teachers' job satisfaction (TJS), teachers' trust in colleagues (TTC) and emotional intelligence (TEI) and based on these, the theoretical and conceptual frameworks for the study were prepared. An analysis and critical discussion of previous studies that have focused on the relationship between PLCs, CTE, TJS, TTC and TEI is presented. Finally, the summary of the chapter discusses main outcomes of the review.

#### **2.2 Relevant Theories and Models**

This section will focus on the theories and models used in this study, to explain the variables and establish the relationship between them by developing theoretical framework for this study. For the professional learning communities, Hord's (1997) model of PLCs, collective teacher efficacy model by Goddard et al. (2000), Motivation-Hygiene theory for job satisfaction by Herzberg (1965, 1974), trust model by Hoy and Tschannen-Moran (2003) and the ability model of Emotional Intelligence by Mayer et al. (1999, 2004, 2016) are presented in the following sections.

##### **2.2.1 Professional Learning Communities Model by Hord**

Hord, (1997), presented a model that defines professional learning communities and its dimensions, which served as the groundwork for the future research, both within the U.S. and internationally. She conducted a review of the previous studies on teachers' learning

communities and professed that school reforms benefit tremendously from professional learning communities, and they are advantageous for teachers and students both. Hord used PLCs definition by Astuto et al. (1993) to develop the model, “the professional community of learners, in which the teachers in a school and its administrators continuously seek and share learning and act on their learning. The goal of their actions is to enhance their effectiveness as professionals for the students’ benefits; thus, this arrangement may also be termed communities of continuous inquiry and improvement.” (Hord, 1993, p. 10)

She mentioned that for successful school reforms, it is not the school that change, it is the people inside the school who change and bring-in the desired changes. According to Hord (1997), essential dimensions of PLCs are supportive and shared leadership (SSL), collective creativity or collective learning and application (CLA), shared values and vision (SVV), shared personal practice (SPP), supportive conditions – relations (SCR), and supportive conditions – structural (SCR).

Supportive and shared leadership of school principal is essential for the success of school-based PLCs. School leaders exhibiting this trait encourage teachers’ active contribution and participation in school decision making, curriculum planning and self and students’ learning. The school leaders are involved in the process of learning without showing domineering attitude, share their authority and aids staff members in reaching learning goals. Supportive and shared leadership is marked by active participation of teachers in schools’ decision making using relevant data.



**Figure 2.1**

*Professional Learning Communities Model by Hord*



Initially, termed as collective creativity by Hord later this dimension was renamed as collective learning and application. It focuses on promoting creativity and collaboration among teachers for adopting innovative ideas for designing and developing lesson plan. Teachers are actively involved in learning activities, knowledge sharing, and collective problem solving. They visit each other's classrooms and share honest and constructive feedback. It helps in bringing teachers out of isolation and promote collaborative teamwork. Teachers feel enable to take risks when required and adopt new technologies and ideas to make learning process interesting for students.

In schools undergoing reform, all the stakeholders follow a vision for students, teachers, and school itself. Under this vision, all students are considered capable to learn and reach high academic standards. It is the duty of the teachers to help them reach their best potential. The schools support teachers in reaching their professional goals, and teachers,

along with other school staff members work hand-in hand for betterment of their students. This vision lays the foundation for determining the elements of teaching, learning and school wide behaviour. Teachers work together for common school goals and visions, which can be different for different schools. For schools already having successful PLCs it can be to maintain the status, and for school in initial stages of PLCs adoption, it will be to progress and establish authentic professional learning communities.

The two types of supportive conditions that affect PLCs at schools are structural and relational conditions. The physical provisions that school authorities provide to teachers for successful participation in PLCs, like physical capacities including time (for meetings), physical proximity (to visit classrooms), space (for conducting meetings and workshops) and conducive school environment, come under structural conditions. Also, the school size, and number of students, teachers, and other support staff in school contribute towards the physical conditions. The relational conditions refer to the social capital of the school. It reflects the professional and social relations between the school staff members, students, and parents. For example, school environment characterized by high level of respect and cordial interactions among colleagues, students, and staff members, it is easier to have successful PLCs.

Within a PLCs framework, teaching is not a solitary task. Teachers share amongst themselves knowledge and skills gained during trainings by engaging in constructive feedback, classroom visitations and peer coaching. The school staff members work in unison towards self and community development, and such practices help in reducing isolation. Also, it leads to building of mutual trust, appreciation, association, and collaboration among the staff members. Hord's model discussed above served as the

building block for many further research (Morrissey, 2000; Stoll et al., 2006). The model was well appreciated by the educators and was used in introducing school reforms in the U.S. and abroad (Hipp & Huffman, 2003).

Though, Hord's model was inspired by earlier studies of Kruse and Louis (1993), it differed by focusing on school staff's learning as integral to developing learning communities at schools. According to Hord, though learning communities are aimed at restructuring schools and improving student learning, its goals cannot be fully achieved without supportive leadership aiding in teachers' learning, empowerment, and autonomy. She maintained that school improvements cannot happen without enriched experiences of its teachers. Hipp & Huffman, (2003) supported the Hord's model and professed that the dimensions of PLCs, work independently as well as collectively. They proposed that there are three phases (initiation, implementation, and institutionalization) through which the schools develop as professional learning communities.

Initiation is the first stage during which the school administration and staff decide on adopting a desired change for school betterment. As the name suggests, during the implementation phase, the school staff members take actions necessary to implement that change in school. Later on, during the institutionalization phase, the change becomes an integral part of school culture, and no conscious effort is required to practice that on day-to-day basis. For example, if a school decides to start using Google classroom for the first time, it will start in the initiation phase by exploring the pros and cons of Google classroom software and procedures required to use it school wide. In the implementation phase, teachers might start using it partially for few lessons and will then share their experiences

and feedbacks. Finally, during the institutionalization phase, Google classroom will become an integral part of day-to-day teaching.

Hord's model successfully explains the benefits of professional learning communities for both students and teachers. For teachers, these learning communities help in developing shared responsibility, where they have higher sense of commitment towards their work and student learning. Teachers are an active and integral participants of professional learning communities and are continuously engaged in learning, sharing, and adopting new skills and knowledge. Teachers actively participate in school level decision making and are more willing to adopt creative pedagogical practices. In the present education scenario, marked by technological advances, it is required that teachers use data from within and outside of schools to evaluate latest trends in education and ascertain how those can be adopted at their schools. Moreover, PLCs help students by encouraging their active participation in education, leading to self-regulated learning, low absenteeism, low achievement gaps and ultimately improved academic outcomes (Hord, 1997). Students are no longer just recipient of education, their inputs are valued and incorporated as teachers try to prepare student-centric teaching plans.

Based on Hord's model, Louis et al. (1996) presented the first model for the PLCs focusing on importance of teachers' collaboration, within and outside of school, as essential component for the development of professional learning communities. They argued that teacher collaboration, as compared to teacher training, is essential for improving student learning. They profess improving school culture and climate is the main driving force in the establishment of successful and sustainable PLCs. Also, they presented five main elements of PLCs, namely reflective dialogue (based on students learning, teaching practices and

other school concerns), de-privatization of practice (teachers adopt variety of roles like mentor, advisor and reviewer), collective focus on student learning (working together to assist all students reach their maximum potential ), collaboration (increases teachers' responsibility towards students, better peer relations and more socialization), and shared norms and values (common moral values followed by all members to improve students' academic, social and emotional development). Apart from this, the model outlines the conditions supporting PLCs at schools, which includes structural conditions (time, physical proximity, communication, teacher empowerment) and human and social resources (openness to innovation, mutual trust and respect, skill set and supportive leadership).

Later, Stoll et al. (2006), based on a review of the past works, presented their model which mainly considered PLCs as a source of capacity building in schools. They defined eight essential characteristics of professional learning communities, which are shared values and vision (focusing on student learning); collective responsibility (puts accountability on nonactive staff members as well); reflective professional inquiry (dialogues focused on improving pedagogy and school culture); collaboration (coming together of teachers to share best practices and concerns), group and individual learning (teacher learning and knowledge sharing in group); mutual respect, support, and trust among staff members (essential skill that allow teachers' to work together ); inclusive membership (inclusion of all academic and non-academic staff of the school); and openness, networks and partnerships (partnerships with institutions and agencies outside of school). They mentioned that the development of PLCs depends on learning opportunities (outside and work-based learning,), human and social resources (distributive leadership, respect, trust and support among colleagues, honest feedbacks), and supportive structures (time, physical space, network building, planning and implementation of activities).

Also, DuFour and Eaker (1998) presented their PLCs model, which was based on three main components namely, student learning, collaborative activities, and result orientation. According to them, the main purpose of the education system is not to teach students but to ensure that all students are learning, which can be achieved by attending to students' learning needs in a timely, directive and intervention-based method. Teacher collaboration targeted at improving pedagogy and student outcome is integral to professional learning communities. Moreover, they professed the importance of results and use of data driven decision making in lesson planning and improving school culture.

The six essential characteristics of PLCs as per them are shared vision, mission and values (all members works towards the common goal of the school, which is improved student learning); collective inquiry (to develop innovative methods for pedagogy and expand their knowledge base); collaborative teams (collaborative working by teachers to support each other in the process of learning, teaching and growing professionally); action orientation and experimentation (teachers are engaged in experimenting and developing pedagogical techniques); continuous improvement (PLCs is an ongoing cycle in which participants are working continuously to enhance learning); and result orientation (teachers measure their success based on their students' academic performance on standardized tests).

Later, based on Hord's model, Olivier et al. (2010) prepared the Professional Learning Communities Assessment – Revised (PLCA-R) questionnaire that can help assess the level of professional learning communities at schools. This questionnaire measures professional learning communities across five dimensions as described by Hord (1997).

### **2.2.2 Collective Teacher Efficacy Model by Goddard, Hoy and Hoy**

Goddard et al. (2000) model of collective teacher efficacy (CTE) is based on the self-efficacy theory of Bandura (1997). According to Bandura (1997), self-efficacy can be defined as, “individuals’ beliefs in one’s capabilities to organize and execute the courses of actions required to produce given attainments.” He proposed that self-efficacy can be used to explain individual differences in feeling, thinking, motivating, and behaving in similar circumstances. Bandura explained that self-efficacy formation takes place through four main processes, which are mastery experiences (previous successes in achieving certain goals), vicarious experiences (learning and modelling from success stories of similar other people), social persuasion (encouragement from other people), and somatic and emotional state (positive moods helps in exerting more efforts towards goals).

Also, Bandura professed that self-efficacy beliefs of individuals changes over the course of life. As individual grow, family, friends, teachers, peers, school, work environment etc. become important for the development of positive or negative self-efficacy. Moreover, individuals can have high positive self-efficacy for one kind of task or ability and low for other. He discussed that high self-efficacy is a crucial factor for favourable work attitude and job success.

Additionally, Bandura argued that teachers’ self-efficacy is crucial for the formation of students’ high self-efficacy beliefs and their learning outcomes. He discussed that teachers with high self-efficacy devotes extra time to classroom activities, and shape classroom environment conclusive to student learning. Such teachers believe that all students have the capability to learn and with efforts even difficult students can be encouraged to participate in school activities. Also, they collaborate with peers in discussing classroom and school

issues, are ready to adopt new teaching technologies and show more commitment towards the job. In the classroom, they help in building self-efficacy of children by setting challenging yet attainable tasks for them, thus creating chances for mastery experiences for students. However, teachers with low self-efficacy beliefs are not capable to provide enriching learning experiences to students, does not put extra effort with difficult students, and are more likely to leave the job.

Later, using the self-efficacy theory of Bandura and its implications for teachers, Goddard et al. (2000) framed the collective teacher efficacy (CTE) model. The model can explain the school level differences in, attitude towards student learning, teacher collaboration, school environment, overall student development and their academic outcomes. According to Goddard et.al. (2000), collective teacher efficacy can be defined as “the collective or shared beliefs of the teachers at a school, in their capabilities to teach students, bring positive changes in their learning and create an atmosphere conducive to education of all students, irrespective of their previous background,”. He professed that it is a group level attribute and affects teachers’ attitude towards their students’ ability to learn and succeed.

Unlike self-efficacy, which is more individual centric, collective efficacy is a group level attribute which refers to belief of teachers in their ability to teach and being meaningful differences in the academic outcomes of their students. For example, in a low achieving school, an individual teacher might have strong belief in his or her personal teaching ability, however, the same teacher can have low levels of belief in the collective ability of all teachers to teach students. Being a group level factor, collective efficacy can account for school level differences in the academic outcome of the students.



The authors based their model on the premise that similar to self-efficacy, the four sources that help in the development of collective teacher efficacy, as a group-level factor in schools, are mastery experiences, vicarious experiences, somatic and emotional state, and social persuasion (Goddard et al., 2000).

**Figure 2.2**

*Development of Collective Teacher Efficacy at Schools.*



The schools gain mastery experiences, when they achieve set-goals, over a period of time. The goals set should be challenging in nature, requiring hard work and consistent effort from teachers, students, leadership, and other staff members. Also, the goals should be group centric and on individual centric. However, frequent achievement of easy goals does not help in bolstering collective teacher efficacy. When the goals set are too easy to achieve, they will not help teachers in feeling confident in their ability to help achieve those goals, teachers will know that anyone can achieve those goals and they do not have any special significance. However, if the goals are challenging enough, once achieved, teachers will experience the boost in their confidence, as they know that they have achieved those

goals only after constant hard work, planning and collaboration. On the other hand, if the goals are too difficult or unachievable, frequent failures will further act to lower the collective efficacy of the group. Also, successful mastery experiences, lead to the development of confidence in teachers and other staff members, for their ability to provide quality learning experiences to all the students and maintaining positive, collaborative work culture at school.

Vicarious experiences refer to learning from the achievements of others. In case of schools, vicarious learning happens at many levels. Teachers learn from the success story of their colleagues; they share knowledge gained at workshops or trainings. Also, when teachers meet colleagues from other schools, share ideas with them and learn their stories of struggle and success it adds to vicarious experiences. Additionally, schools can learn from other similar schools. Struggling schools can adopt success models from other successful schools and share professional best practices.

Social persuasion refers to encouragement from others that enable individuals, groups, or institutions to meet their desired goals. In school scenario, social persuasion takes place in everyday activities and when done correctly can lead to the development of high collective teacher efficacy and vice-versa. The various forms of social persuasion are teachers' knowledge sharing sessions, feedbacks, classroom visitations, career talks, and engagement in professional development activities. Social persuasion occurs when teachers in a school support each other to achieve common school goals. Emotional state of the school refers to overall school environment. A positive school environment is characterised by teachers supporting their colleagues, involvement in meaningful conversations, and regular participation in professional and social gatherings at schools. In such schools, teachers can

rely on their colleagues for support and there is often no petty politics or attempt to bring down other teachers.

Moreover, Goddard et al. (2000) professed that at school level CTE works in a cyclic manner through the process of reciprocal causality. This implies that high collective teacher efficacy leads to positive school outcomes, which reinforces both teachers' self-efficacy and collective teacher efficacy beliefs. Also, collective teacher efficacy is a group attribute which is stable in nature. Hence, within schools characterized by elevated levels of Collective Teacher Efficacy (CTE), teachers displaying lower self-efficacy can benefit from the positive impact of a school-wide culture fostering strong collective efficacy beliefs. Schools consistently cultivating high CTE through collaborative efforts sustain advantageous outcomes over time.

However, low collective efficacy levels among teachers can adversely affect schools' overall performance and work culture (Tschannen-Moran & Barr, 2004). In schools with markedly low collective teacher efficacy beliefs are prominent, teachers hesitate to collaborative and share ideas. They often prefer to work in isolation and are not forthcoming to assist each other. Once established, it becomes onerous for schools to move out from the vicious cycle of low collective teacher efficacy. For example, in schools with low collective teacher efficacy, teachers avoid participation in group works, they doubt their colleagues' capability to teach students, and do not feel comfortable in sharing information and knowledge. There is no group cohesion, and the overall school environment is negative. Under such conditions, none of the sources to develop high collective efficacy are effective and hence a cycle of low collective efficacy of schools goes

on. Though few teachers at such schools can have high self-efficacy beliefs but is it not sufficient to improve collective teacher efficacy across school.

The collective teacher efficacy model proposed by Goddard et al. (2000), can explain the process involved in the evolution and setting up of CTE at schools, that it is a group level or school specific attribute and can affect students' academic outcomes. Also, using this model the authors have developed a tool that can help measuring collective teacher efficacy beliefs of teachers in a school. Later Tschannen- Moran and Barr (2004) modified this tool to build another version known as Collective Teacher Belief Scale. In their model Goddard et al. (2000) also discussed the cognitive processes, involved at school level, that are responsible for the development of CTE beliefs in teachers, which are analysis of the teaching task and assessment of teaching competence. Also, they discussed that formation of collective teacher efficacy at school level depends on how teachers relate to these factors themselves and with one another.

Analysis of teaching task refers to teachers' perception towards learning process at schools. All schools maintain a desired goal to achieve, and for this they provide resources and support to teachers and students. Based on these, teachers analyse how easy or difficult it is to meet the set goals and what are the challenges that needed to be overcome. Teachers made their inferences based on various existing school level factors, which include motivation and attitude of students, community involvement and school's infrastructure.

Complementing to analysis of teaching task is the assessment of teaching competence (Goddard et al., 2000). It refers to teachers' inferences about the teaching ability of their colleagues at the school, with respect to the teaching task and resources available to them.

It also includes teachers' views about learning opportunities for teachers, pedagogical methods used, and skill set of colleagues.

Goddard et al. (2000) explained that the two factors does not operate separately but are working concurrently. According to them, these interacting factors, along with the four sources of CTE are responsible for the development of collective teacher efficacy beliefs of teachers at schools. Once established collective teacher efficacy act as stable school level trait. This model of CTE presented by Goddard et al. (2000) is an effective model as it can explain the process involved in the evolution and setting up of collective teacher efficacy at school, that it is a group level or school specific attribute and can affect students' academic outcomes.

### **2.2.3 Two-Factor Theory for Job Satisfaction by Herzberg**

Herzberg, (1959), proposed the two-factor or the motivation-hygiene theory that can explain the sources of job satisfaction among employees. According to the theory, two types of factors (motivation and hygiene) affect employee's attitude towards their job. The motivation factors are intrinsic to the job and are essential for job satisfaction, on the other hand, hygiene factors, which are extrinsic to the job, are important to avoid job dissatisfaction. Herzberg (1974) asserted that job satisfaction and job dissatisfaction are two separate entities, and an employee can have the feeling of satisfaction and dissatisfaction at the same time. This theory helps in explaining that extrinsic incentives can only help in avoiding job dissatisfaction, but for long term job satisfaction, factors intrinsic to job nature and employees are crucial (Bassett-Jones & Lloyd, 2005). Therefore, it can be said that if any organization wants to retain their employees for a longer time, it is essential that it should focus on fulfilling the motivation factors along with having at least satisfactory

levels of hygiene factors. For example, if the employees have opportunities for professional growth and receive timely recognition for their work, they might stay in their present work even if they are offered better remuneration elsewhere.

**Figure 2.3**

*Two-Factor Theory by Herzberg*



Herzberg et.al. conducted their study on engineers and accountants during early 1950s in the U.S. They used the critical-incident approach and asked the participants to list events where they felt exceptionally good about their jobs and exceptionally negative about jobs (Herzberg, 1965). Based upon the responses of participants the researchers concluded that two different set of factors are responsible for job satisfaction of the employees. Factors, which corresponded to the nature of the job itself and were intrinsic to employees were categorized as motivators, as they contributed directly to job satisfaction e.g., achievement

and recognition at work. However, factors which attributed to job conditions, or the job environment were labelled as hygiene factors e.g., company policy, interpersonal relations. The presence of hygiene factors is responsible for avoiding job dissatisfaction but does not necessarily mean job satisfaction.

The factors were categorized into motivators and hygiene factors depending upon their frequency of appearance and lasting impact they have on participants. The motivators are factors that help in human need of growing psychologically. The motivators as listed by Herzberg are “task achievement, recognition for achievement, intrinsic interest in the work, increased task responsibility, advancement or occupational growth, and possibility of occupational growth,” (Herzberg, 1965; 1974). The motivators work by fulfilling the needs of self-actualization and self-realization of the employees, helping them achieve the ultimate goal of personal growth. Presence of motivators lead to positive job attitude of employees and increasing their job satisfaction.

The hygiene factors exert short term effects on job attitudes and work to satisfy the animal side of human nature (House & Wigdor, 1967). If the hygiene factors are below the minimum threshold than they can cause job dissatisfaction, however, improving hygiene factors alone is not sufficient to achieve job satisfaction in employees. Hence, it can be said that hygiene factors are important for avoiding job dissatisfaction but fulfilling them will not ensure job satisfaction. The hygiene factors as listed by Herzberg (1965; 1974) are, “company policy and administration, supervision, interpersonal relations, working conditions, salary, personal life, status, interpersonal relationship with subordinates, interpersonal relationships with peers, interpersonal relationships with superiors and job security”.

According to Herzberg (1974), to ensure job satisfaction, it is important that the organizations should maintain a balance between the motivational and hygiene factors. The organizations often give undue importance to hygiene factors neglecting the motivators, for example, providing external incentives or monetary rewards to employees can lead to short term satisfaction of employees but for long term effects it is important to give employees opportunities for self-actualization and self-growth (Herzberg et al., 1959). Also, contrary to popular beliefs, money hold value to employees only to certain extent, beyond which it is more of a hygiene factor.

The theory has been widely accepted in the business world but has received a fair deal of criticism as well. It has been criticized for its methodology, using critical- incident approach for data collection. Also, many researchers have argued that the categorization of job factors into motivation and hygiene factors is incorrect, as it fails to consider the individual differences for the same factors (Evans, 2010; Gawel, 1997). However, despite of all the criticism, the theory is still used in the field of research (Bassett-Jones & Lloyd, 2005). It has been found to hold valid in population outside of the U.S. (Herzberg, 1965) and in professions other than business world (Alshmemri et al., 2017).

#### **2.2.4 Trust in Schools -- Hoy & Tschannen-Moran**

Trust is integral for successful human relationships, more so where individuals depend on each other for their success (Goddard et al., 2001; Tschannen-Moran & Hoy, 1998). In schools where high trust relationship is prevalent among stakeholders (teachers, administrators, principals, students, and parents), there is clear and transparent communication, collaborative work culture, healthy social relations, and high levels of student learning. Trust is the binding force that motivates teachers to work with a common



vision for the development and upliftment of students. It contributes towards the social capital of the school and aids in making work environment enjoyable and enriching. In schools with high trust environment, teachers often maintain cordial relations with their colleagues both inside and outside of work environment.

Goddard et al. (2001) asserted that trust is needed only in situations where people experience inter-dependence for achieving common and personal goals, like in big organizations and schools. In conditions where people work in isolation, there is no need for establishing trust. Also, they based their concept of trust on five facets, which are benevolence, reliability, competence, honesty, and openness. In work environment, where people depend on each other for their own and group's success, these facets of trust play an important role. Though in older times, teaching was mostly a work done in isolation, where teachers used to focus only on their own task, in the contemporary education scenario, teaching is a group effort, where teachers rely on each other for support, guidance and knowledge sharing. Thus, trust among stakeholders is integral for the success of schools.

Benevolence means that a person can depend on people around him or her and have faith that his or her well-being will not be compromised. In the scenario of schools, this is a crucial element of trust as it allows teachers to depend on their colleague, students, and parents; students and parents to depend on teachers for the cooperation of everyone to achieve a common goal of student learning and development (Tschannen-Moran, 2003). For schools, benevolence among different stakeholders plays an important role because teachers, students, parents, school staff all interdepend on each other for the success of students.

Reliability along with benevolence help in assuring group members that they can depend on each other for mutual support and help (Tschannen-Moran, 2003). Reliability leads to predicting a scenario which can be both positive and negative. In a positive scenario, reliability predicts support, care, and efficient working in a group, however, in negative scenarios, reliability predicts inefficient and non-cooperative group behaviour. For the establishment of trust in a group working environment like schools, it is essential that the sense of reliability on group members is in combination of their benevolent behaviour. When teachers rely on each other, they know that they can take informed and calculated risks, that their well-being will not be compromised and that they can turn to their colleagues or school staff for professional support.

Competence is the ability to which the group members can perform their professional tasks which they are supposed to do (Tschannen-Moran & Gareis, 2017). Teachers, principals, students and parents all can easily depend on a well competent teacher or staff member, who they believe can help all students in achieving their learning goals. On the other hand, a benevolent and reliable but non-competent teacher can lead to distrust, as other teachers and students will not show trust in him for the delivery of quality teaching activities.

Honesty is the backbone of all social relationships (Tschannen-Moran, 2003). It shows the integrity of a person's character, and an honest person helps in eliciting honest behaviour from other people in the work environment. In schools, students not only engage in academic learning, but they also engage in character building and for holistic development a balanced combination of academic and character building is required. When teachers behave honestly, admit if they don't know anything, and refrain from showing any type of dishonest behaviour they instil similar characteristics in their students as well.

Openness refers to being vulnerable to others and the ability to share information with others freely (Tschannen-Moran, 2003). Openness in communication and behaviour leads to transparency in work environment. It ensures smooth flow of information, without any confusion. All relevant school members receive same information and there is no hidden agenda. Open communication helps in gaining trust from colleagues. However, when people avoid being open and prefer to work in isolation it often leads to distrust in professional relationship.

Hoy and Tschannen-Moran (2003) model of trust clearly explains that reliability, honesty, competence, benevolence, and openness are the building blocks upon which the foundation of trust in professional and personal relations is laid. This model is best suitable for this study as it aims to show how teachers trust in colleagues (TTC) can mediate the effects of PLCs on CTE and TJS.

### **2.2.5 Ability Model of Emotional Intelligence by Mayer, Salovey and Caruso**

Mayer et al. (2004) presented the ability model of emotional intelligence (EI). They first proposed a three-branch model in 1990, later the model was expanded to a four-branch model in 1997, and recently a four-branch model was presented in 2016. The authors based their study on EI on the theory of social intelligence by Thorndike and Gardner. In their first model (Salovey & Mayer, 1990) conceptualized EI as subset of social intelligence and proposed it to be the part of three mental processes namely, “appraising and expressing emotions in the self and other (verbal and non-verbal), regulating emotions in the self and others (verbal and non-verbal), and using emotions in the adaptive way (including planning, thinking, attention and motivation)” (Mayer et al., 2007 & 2016).

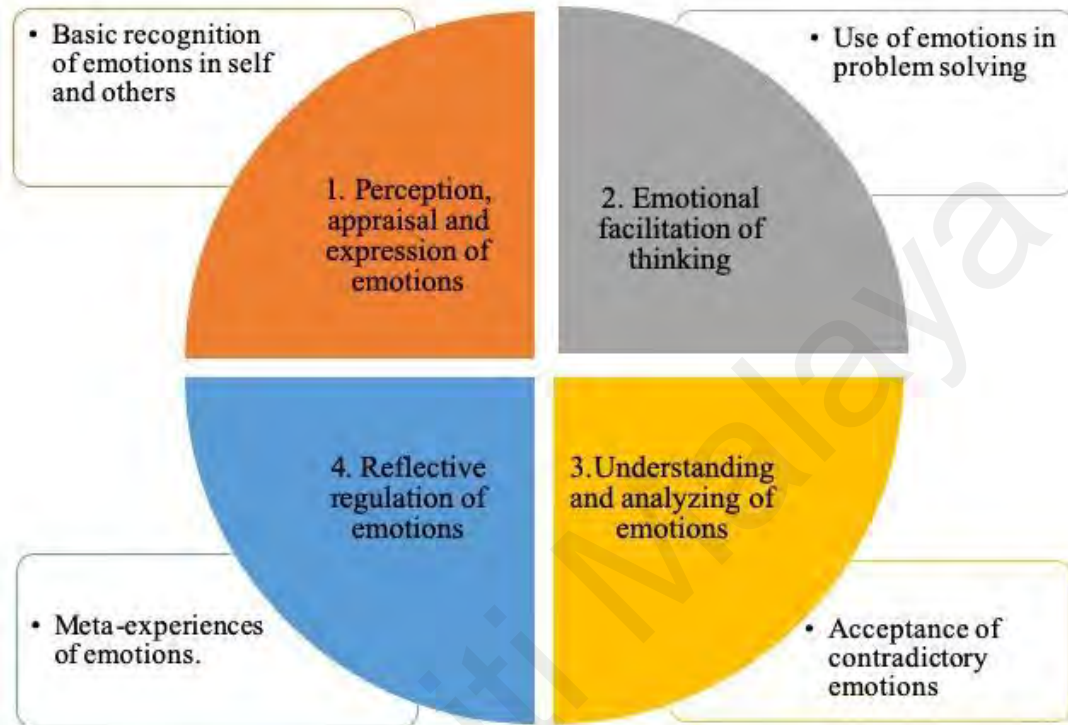
However, Mayer et al. (1999) later professed that EI is a separate intelligence and not a part of social intelligence. They later presented the four-branch model and defined EI as "the ability to perceive accurately, appraise and express emotions; the ability to access and/or generate emotions so as to assist thought, the ability to understand emotions and emotional knowledge, and the ability to reflectively regulate emotions so as to promote emotional and intellectual growth," (Mayer & Salovey, p. 10, pp. 2 1997).

The four branches of the model represent the progression of emotional intelligence skills starting from simple basic psychological level and progressing to more advanced one. Also, within each branch there is evolution of abilities appearing early in life towards abilities being acquired with the development in cognition processing. The four branches as explained in the model are, perception, appraisal, and expression of emotions - branch 1; emotional facilitation of thinking - branch 2; understanding and analysing emotions, employing emotional knowledge - branch 3; and reflective regulation of emotions to promote emotional and intellectual growth - branch 4, (Mayer et al., 1999).

Branch 1 of the model appears at the lowest continuum of mental growth and pertains to recognition of emotions within self, others, as well as art objects (Mayer et al., 1999). It begins early in life when infants start recognizing the emotions of people around them through facial expression and advances with age enabling people to differentiate between the honest and false expression of emotions. Branch 2 pertains to the use of emotions in eliciting thinking process and intellectual reasoning. It shows progress in mental abilities higher up in continuum and within the branch it progresses from simple ability to use emotions in directing attention and thinking to more complex one where emotions or mood assist in problem solving.

**Figure 2.4**

*Ability Model of Emotional Intelligence by Mayer-Salovey-Caruso*



Branch 3 reflects development of more complex emotional processing where the growing child can realize and accept that two or more contradictory emotions can occur at the same time. At the more mature level, individual can identify the transition between the emotions, like from feeling sad at a particular event to relief that the phase has passed. Branch 4 is the highest order of operation of emotional intelligence. This indicates openness to different emotional feelings, both pleasant and unpleasant, and using these experiences for future decision-making. According to Mayer and Salovey meta-experiences of mood occur at this stage and can be divided into meta-evolution and meta-regulation of emotions. At the advanced stage, the individual can regulate emotions within himself and other and strive to enhance the positive experiences.

The Mayer and Salovey model is robust because apart from describing what emotional intelligence is, how it operates at cognitive levels and how emotions can help in making life choices, the researchers were able to establish that emotional intelligence (EI) is a separate form of intelligence and has predictive ability (Mayer et al., 2004). They advocated that EI is a separate form of intelligence because it can meet three criteria (conceptual, correlational, and developmental) of psychology for an entity to be accepted as separate, new type of intelligence. As per the criterion, emotional intelligence is conceptual in nature because it measures actual mental ability and not behavioural characteristic. It can be measured by using different forms of emotional intelligence tests and can determine individual's success in different aspects of day-to-day life.

Also, emotional intelligence exhibit moderate correlation with social intelligence implying it shares similarity with social intelligence but is a separate entity. Emotional intelligence meets developmental criteria as it increases through childhood to old age (Mayer et al., 2004). It changes or evolves as an individual matures from childhood to adulthood. The ability model of emotional intelligence uses Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) to measure emotional intelligence which shows predictive nature of the construct (Mayer et al., 2004). Emotional intelligence can help in predicting important life outcomes, as people with high EI are reported to show high academic outcomes, positive social relations, better communication skills and tend to stay away from self-destructive and problem behaviours. However, individuals low on emotional intelligence often meet failures in different stages of life, they may perform exceedingly well as students but might struggle to maintain job as they are not able to maintain required social and professional relations. At other times, individuals low on emotional intelligence can perform good at

professional life but struggle to maintain personal relations. Hence, for the overall well-being in life, it is important that individuals should have good levels of both intelligence and emotional intelligence.

Moreover, in their revised version of four branch model, Mayer et al. (2016) have retained the four branches as described earlier but introduced more abilities under each branch. They professed that emotional intelligence is part of HOT intelligences (along with social and personal intelligences) and expands the use of emotional intelligence in problem solving abilities. As discussed here, the ability model of the emotional intelligence provides concrete framework that describes EI as distinct type of intelligence which has cognitive ability, can help in effective daily problem-solving abilities, encourages positive social relations, and can predict significant life outcomes. Therefore, ability model was employed in this study to find how emotional intelligence can affect teachers' participation in PLCs and its impact on teachers' collective efficacy and job satisfaction.

### **2.2.6 Summary for Theories and Models**

The above section has discussed in detailed various theories and models for PLCs, collective efficacy, job satisfaction, trust, and emotional intelligence, which are commonly used for research purposes in the field of educational psychology.

This study used Hord's model for professional learning communities (PLCs) for defining and analysing the presence of professional learning communities' model at primary schools in Selangor, Malaysia. Hord's model is a well-accepted model by researchers and had laid foundation for further work in the field (Stoll et al., 2006). Also, the research instrument PLCA-R, developed by Hipp et al. (2010) which helps measuring teachers' perception for

professional learning communities at schools is based on the Hord's model and has been used by researchers globally (Lee et al., 2011; Voelkel, 2022). This model professes that continuous teacher learning through their participation in professional development programs can help enhancing student learning and academic achievement (Hord, 1997; Mu et al., 2018). Also, Hord's model focuses on teachers' collaboration for student improvement and can be used for associating professional learning communities with collective teachers' efficacy at school level (Lee et al., 2011). Apart from that, Hord's model has proven to be successful in Asian cultural settings as well (Abdullah & Ghani, 2014; Tan & Caleon, 2016).

This study used the collective teacher efficacy (CTE) model by Goddard et al. (2000). The model is based on teachers' efficacy model by Tschannen-Moran et. al. (1998 & 2001) and social cognitive theory of Bandura (1997), and explains well the school level differences in CTE and subsequently students' academic outcomes. Further, this model was used by Tschannen-Moran and Barr (2004) to develop the Collective Teacher Belief Scale which help in understanding teachers' perception regarding CTE at schools. This model for collective teacher efficacy can also be used to explain the success of professional learning communities at schools (Gray & Summers, 2015).

The Herzberg's two-factor theory was used in this study to understand the various aspects responsible for job satisfaction in teachers. The theory divides various job-related factors as motivators (intrinsic to job) and hygiene (extrinsic to job) factors and can be successfully used to explain teachers' job satisfaction (Fong, 2015; Lam & Yan, 2011). The theory can explain the role of PLCs in improving teachers' job satisfaction as professional learning communities help in enhancing motivating factors (through on-job learning and increasing



accountability to student learning) and diminishing the negative effects of hygiene factors (increase in social relations, better resources, and positive work environment). Also, based on Herzberg's theory Spector (1985) developed the job satisfaction survey which was used in this study to measure teachers' perception toward their job satisfaction.

Also, Hoy & Tschannen-Moran (2003) model for trust was used in this study to understand the factors responsible for the development of trust among different stakeholders in primary schools, specifically between teachers and their colleagues. This model describes that in a school setting, there are trust relations between teachers, teachers and school principal, and teachers and students and their parents. As the study focuses on professional learning communities, the success of which mostly depends on the relationship between teachers, it focused on the teachers' trust in colleagues' aspect of trust at school. Also, based on this model, Hoy developed the questionnaire Omnibus T-Scale that measure the trust at school between various parties. The study used the teachers' trust in colleagues' part of the questionnaire. Previous studies have supported the role of trust as a significant mediator in school settings (Lindahl, 2011; Zheng et al., 2016) as well as the applicability of the Omnibus T-Scale in Asian school settings (Lee et al., 2011). Hence, Hoy and Tschannen-Moran's (2003) model for trust and the Omnibus T-Scale were most suitable for this study.

The present study used the ability model of the emotional intelligence (EI) developed by Mayer et al. (2016) as well. The model uses the four-branch system to explain the evolution of EI and at each stage it discusses the development of emotional intelligence from simpler to complex form. Further, unlike other models that measures and explains emotional intelligence as extension of certain personality traits, only the ability model successfully describes EI as a new and unique type of intelligence, which comes under

HOT intelligences (2016). Also, based on ability model, Wong & Law (2002) developed the self-assessed questionnaire for measuring individual's perception towards their emotional intelligence ability. Moreover, this model of emotional intelligence can also be used for predicting job satisfaction among teachers and their collective efficacy beliefs (Dickey, 2012; Ignat & Clipa, 2012).

### **2.3 Theoretical Framework of the Study**

The theoretical framework for this study is guided by the social cognitive theory of Bandura (1997; 1999). In his theory, Bandura (1997) postulated that the behavioural characteristics of an individual are the outcome of the triadic reciprocal relationships between his environmental, personal, and behavioural factors. This triadic relationship between the three factors can be explained through reciprocal determinism. According to Bandura, reciprocal determinism shows that the relationship between the environmental, personal, and behavioural factors is reciprocal in nature. However, Bandura further added that the influence of one factor over the other is not necessarily always equal. The effect of a particular factor depends on the situation in which the individual is working. Also, not all factors influence each other instantly, and other factors can mediate the causal effects of one factor over the other.

According to Bandura (1997), social cognitive theory principles apply to a group of individuals associated in a professional or social setting. In the present study, this group refers to teachers working at public primary schools. In this study, reciprocal determinism explains how teachers' environmental factors, school-based professional learning communities, interact with their personal factors, emotional intelligence, and trust in colleagues to influence the behavioural factors, teachers' collective efficacy beliefs and job

satisfaction levels. These three factors continuously interact with each other to determine schools' and teachers' success.

The conducive school environmental factors in the form of professional learning communities (PLCs) provide teachers with the possibility for social and professional collaboration, working towards a joint school mission, and sharing of professional and physical resources (Bolam et al., 2005; DuFour & Eaker, 2009; Hord, 1997). There is an honest and reliable exchange of information, which increases teachers' belief in each other's competency for work. The continuous, smooth, and transparent flow of information develops strong trust-based relations among teacher colleagues (Hoy & Tschannen-Moran, 2003; Murphy et al., 2014). This high level of trust among teachers enables them to actively participate in learning new skills, share knowledge, professionally and socially interact, support each other, and honestly and openly share feedback. In this way, the trust developed between teachers further increases their involvement and outcomes for professional learning communities (Wahlstrom & Louis, 2008; Yin & Zheng, 2018).

In the context of schools, the presence of PLCs and trust in colleagues satisfies the sources of collective teacher efficacy. Teachers are engaged in continuous learning as they participate in training and workshops (Hord, 1997; Shaha & Ellsworth, 2013; Vescio et al., 2008). The application of these learnings and their results in the form of higher students' academic outcomes provide teachers with mastery experiences which can strengthen their collective efficacy beliefs. Also, as an active participant in learning communities, teachers often learn from the experiences and achievements of fellow teachers and other similar schools. They see that others in similar conditions can achieve goals set, which acts as a source of vicarious learning, where teachers learn from the success of others (Donohoo,

2017). Schools adopt professional learning communities with some goals in mind. For some schools, it could be to improve the performance of their students; for other high-performing schools, it could be to maintain their status, and for others, it could be to adopt new technologies. In professional learning communities, all teachers work collaboratively and motivate each other to achieve individual and shared goals (Tobia & Hord, 2012). The collaborative work environment and support from colleagues satisfy the sources of affective state and social persuasion needed to strengthen collective teacher efficacy beliefs.

Moreover, school-based professional learning communities provide teachers with opportunities and a supportive environment that help satisfy both extrinsic- and intrinsic factors related to job satisfaction. For example, leadership opportunities provided to teachers and the support they receive from the school principal and administration (Hord, 1997) contribute to the supervision factor of their job satisfaction. In schools with learning communities, teachers enjoy a collaborative work culture enriched with clearly defined work procedures and goals and transparent and honest communication among the education stakeholders. The outcomes in the form of improved student learning, enhanced knowledge of teachers and appreciation from authorities and colleagues make teachers feel rewarded for their work (Hord, 1997). Hence, learning communities help improve teachers' job satisfaction levels by satisfying the motivation and hygiene factors related to work (Bassett-Jones & Lloyd, 2005; Herzberg, 1959).

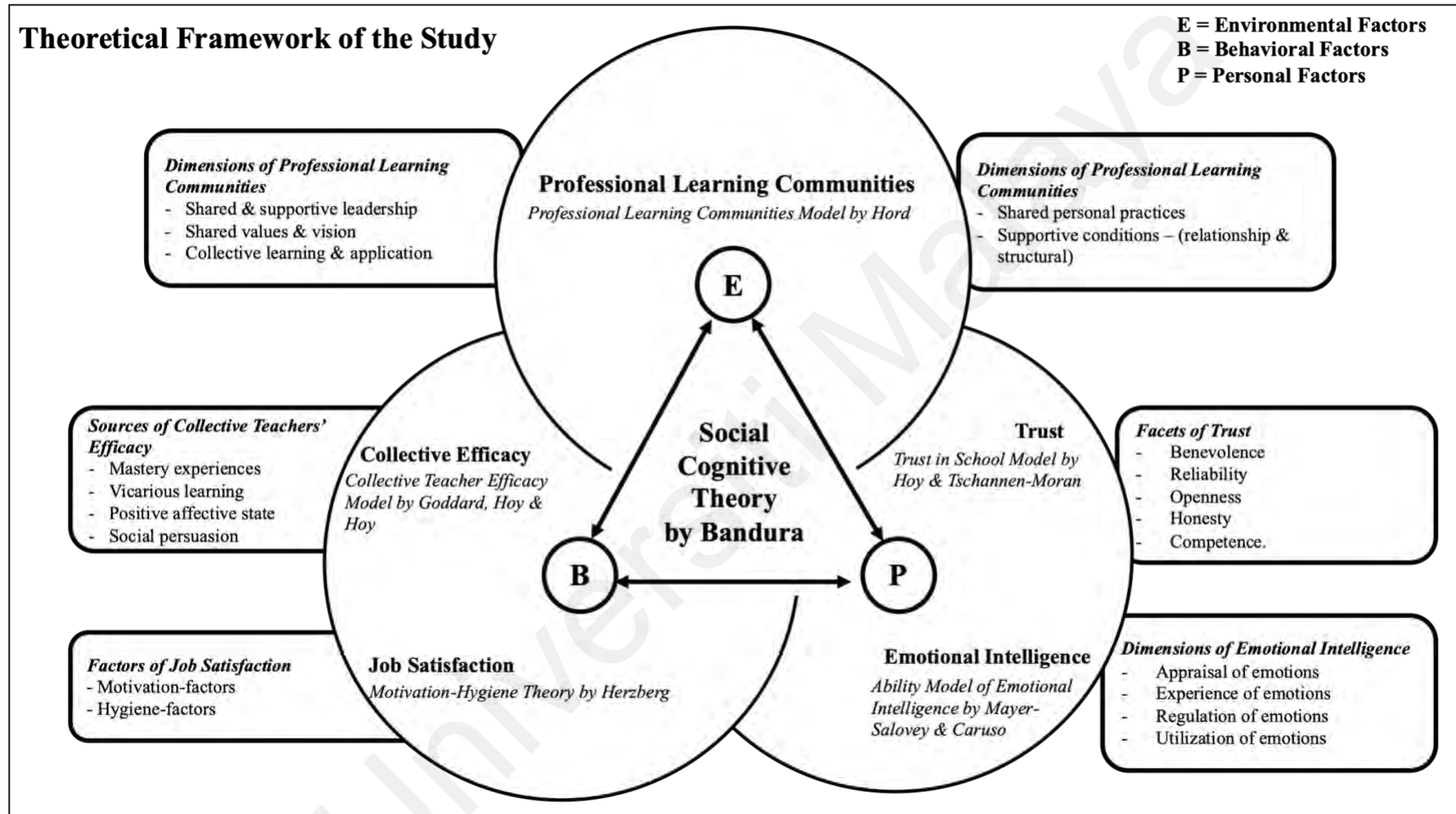
Additionally, teachers' personal level factors like emotional intelligence can determine the differences in the outcome of PLCs. Emotionally intelligent teachers are more adept in handling extra work demands and challenging work conditions (Mayer et al., 2016) that may arise during the initial implementation phase of learning communities. Researchers

have discussed that the predictive ability of EI can help determine the job satisfaction level of individuals. Therefore, in a challenging and emotionally demanding work like teaching, emotional intelligence can influence the outcomes related to work (Mayer et al., 2016).

Hence, in this study, the reciprocal determinism construct from the social cognitive theory of Bandura (1997) was used to prepare the theoretical framework, where professional learning communities are the environmental factor that influences teachers' behaviour in the form of their job satisfaction and collective teacher efficacy. Also, teachers' trust in colleagues is the personal factor influencing the outcomes of professional learning communities (environmental factor) for teachers' job satisfaction and collective efficacy (behaviour outcomes). Also, the teachers' emotional intelligence is another personal factor that can explain the individual differences in the relationships.

**Figure 2.5**

*Theoretical Framework of the Study*



## **2.4 Professional Learning Communities**

The term professional learning communities (PLCs) is composed of three parts or words "professional," "learning," and "communities," each having its own unique significance in the context of education and schools (Hord, 2009). Each of these words has a specific significance and together they represent the whole concept of what professional learning communities are. The term "professional" is used for teachers in the professional learning communities because they are directly responsible for imparting and improving learning of the students. To do so, the teachers attend relevant professional course and training before joining schools and continue to hone their skills through in-service learning. Also, acting as professionals, teachers in professional learning communities work diligently to provide quality education experiences to their students or clients (Tobia & Hord, 2012).

The main idea around which professional learning communities are built is the continuous "learning" for all the participants (Hord, 2009; Stoll et al., 2006). The learning is happening in a social context where the members of the community bring in their past knowledge, share experiences and are motivated to adopt new methods to benefit their students. This method of learning corresponds to constructivism where learners are active participants in the learning process and are engaged continuously in knowledge creation and improvement (Abdullah & Ghani, 2014; Hord, 2009). Another important part of the learning in PLCs is the use of data, the teachers use students' data to make inferences about the success of teaching methods and analyse the individual needs of the students. This data helps teachers in designing lesson plans that can serve the interest of all students at school.

Communities in the PLCs refers to the group of individuals who are collaborating with a common purpose in mind. The individuals collaborating in learning communities can be

teachers, principals, other school staff members, parents, outside trainers etc. All these people are bonded with a shared goal of strengthening student learning and improving their academic outcomes. Also, teachers' collaboration in the communities help them to learn new skills, adopt new teaching methods and stay updated with technological advances in the field of education. The common examples of communities can be group of teachers within the same group, participation between school teachers and institutes of higher education like universities, working together of teachers from different schools, or collaboration between teachers and outside training providers.

In Malaysian context, PLCs is relatively a new concept, where schools started to offer continuous professional development opportunities to teachers since early 2010 and learning communities were formally incorporated into the 2013-2025, Malaysian Education Blueprint (Tai & Omar, 2021). Initially top-down approach for professional development was offered to teachers which was managed and controlled by the Ministry of Education. Under the top-down approach, occasional teaching-related workshops and seminars were offered to teachers, with not much attention to their specific requirements (Derk, 2019). This one size fit-all type of approach was not much appreciated by teachers, and they often complained to too much extra work which hinder their teaching practices (TALIS, 2013).

Acknowledging teachers' needs and with an aim to reform the education system in Malaysia, the MOE has encouraged teachers' participation in designing, planning and leading professional learning communities at their respective schools. Since the introduction of education blueprint (2013-2025) schools across the country have started implementing and promoting learning communities. Though there is no Malaysia specific



learning communities' model, the most common models being used by the researchers are by Hord (1997), DuFour and Eaker (2009), and Olivier et al. (2010).

#### **2.4.1 Factors Supporting the Development, and Sustenance of the Professional Learning Communities**

This literature review has explored conditions reinforcing professional learning communities at schools. These factors can be broadly divided into physical (time, space, data, communication, and teacher empowerment and independence) and personal factors (community membership, leadership, peer relations, trust, teacher knowledge) (Hord, 2009; Louis et al., 1996). It is essential that schools should provide teachers with adequate time to collaborate and discuss their learning, experiences, concerns, and feedbacks about the students. School leadership has the responsibility to provide teachers opportunities for daily collaboration.

Also, teachers' participation in trainings and workshops should be supported by school. In terms of space, school's physical structure should be opportune to teacher collaboration for example, classrooms which are in close vicinity to each other and open-door policy where other teachers can freely visit classrooms and reflect on pedagogical activities. With the advent of technological advances, schools have abundant data, however, the data available is often not used properly. Teachers need to use the data available for ascertaining individual student's needs and plan lessons accordingly. For example, teachers can use data to analyse the trends for students' academic performances at various tests year on year and can determine the factors responsible for certain outcomes. Teachers can also use data to determine the success of educational software which have been used earlier in similar settings.

Also, teachers can conduct action research to analyse and find solution to pertinent problems. For example, if year on year students at a particular school are not performing well in reading comprehension, teachers can conduct action research to determine the factors responsible for it. Moreover, establishing proper communication channel are essential for teacher collaboration. Teachers can use electronic communication channels like e-mails, online chat groups and social media to exchange ideas within and outside of schools. Authentic PLCs framework provides teachers freedom and opportunity to take responsibility for lesson planning and student learning. Teachers are encouraged to take roles like mentoring peers (Hord, 1997). PLCs support helps teachers feel empowered and independent. Shared leadership is the essence of PLCs. Principals should practice distributed leadership and shall be willing to share their power with teachers, to give them autonomy over their work. Supportive leadership styles where teachers are continuously involved in school functioning and are an active participants of decision making are most successful in sustaining professional learning communities at schools.

Development of social relations removes isolation from teaching job. Teachers' cordial relations with their peers, school staff members, parents and students are all essential part of PLCs that leads to the culture of collaboration. Also, in schools where teachers maintain social relations with each other, they feel free to share their learnings with each other, teachers motivate colleagues to reach professional goals, and together they work to achieve schools' common vision and goals. Also, to share their practices, provide feedback, seek guidance, and assist each other, it is important that teacher have trust over each other, their leadership and school management as well. School leadership has the responsibility to motivate and assist teachers in their professional development journey. Also, school leadership has the duty to maintain conducive structural and physical conditions to maintain

professional learning communities at schools. Prior knowledge of teachers, their cognitive understanding also determines teachers' participation in PLCs.

#### **2.4.2 Latest Research for Relationship of Professional Learning Communities with Collective Teacher Efficacy, Teachers' Job Satisfaction and Teachers' Trust in Colleagues**

Past several studies have focused and discussed the critical role of professional learning communities in leading educational reforms resulting in high standards of teachers and students learning (Tobia & Hord, 2012). Similarly, Capraro et al. (2016) have argued that authentic implementation of professional development program for teachers lead to better academic outcomes of their students, in comparison to teachers with low professional development support. Though initial studies about professional learning communities have mostly focused on its direct impact in students' academic outcomes, recent studies are focusing on the impact of professional learning communities on other teachers and school specific outcomes like collective efficacy (Voelkel & Chrispeels, 2017), trust (Lee et al., 2011) and job satisfaction (Loughland & Nguyen, 2020). Guided by the research objectives of this study, this section will discuss research trends, from the past decade, focusing on the relationship of PLCs with collective teacher efficacy, teachers' job satisfaction, trust in colleagues and teachers' emotional intelligence. Also, research areas which need further exploration will be discussed.

##### **2.4.2.1 Professional Learning Communities and Collective Teachers' Efficacy**

In past two decades, many researchers have studied the relationship between the PLCs and collective teacher efficacy (CTE) at schools. Some researcher suggested that collective teacher efficacy helps in successful adoption of professional learning communities at

schools (Olivier & Hipp, 2006), while others maintained that professional learning communities can nurture both the collective teacher efficacy and teachers' self-efficacy at schools (Stegall, 2011; Voelkel & Chrispeels, 2017). However, both proponents were able to establish there exist a significant relationship between PLCs and all its dimensions and the collective teacher efficacy at school level.

In a case study, Olivier and Hipp (2006) used a mixed-method approach to study the relationship between PLCs and CTE at a school district in the U.S. They focused on the effect of collective teacher efficacy on school learning communities and proposed that collective teacher efficacy can help in sustaining PLCs culture at school. According to them, high collective teacher efficacy promotes collective responsibility among teachers for student learning. The researchers were able to establish that there exist a moderate to moderately strong positive correlation between all dimensions of CTE and PLCs. However, as this was a case study, more quantitative studies with large amount of data are needed to support this claim.

Also, in their study on 3074 teachers at 218 elementary schools in Canada, Ross and Gray (2004) found that collective teacher efficacy and transformational leadership of school principals are responsible in determining teachers' commitment to the organizational values of school and their involvement in learning communities. The authors found that the direct effects of transformational leadership style on teachers' involvement in professional learning communities was partially mediated by their collective efficacy beliefs. This study also supported the claim that collective teacher efficacy can determine teachers' participation in professional learning communities.

Teachers' participation in professional development programs can significantly improve their self and collective efficacy. However, the type of schools the teachers work at can affect the PLCs outcomes. In their case study on 63 teachers attending mathematics professional development program, Zambo and Zambo (2008), reported a significant increase in the collective efficacy beliefs of teachers after participation in a professional development workshop. They also reported that the increase in collective efficacy was much higher for teachers coming from school districts with higher number of low performing schools in comparison to teachers coming from school districts with lower percentage of low performing schools. The effects of teachers' participation in PLCs with a resultant increase in collective teacher efficacy were more marked for teachers coming from low performing schools. A possible reason for this could be that teachers' involvement in learning communities provide them a feeling of belongingness and helps in removing the stigma of coming from low performing schools, resulting in higher collective efficacy beliefs.

In their case study Hipp et al. (2008) highlighted the school level factors that help in establishing professional learning communities. They concluded that factors like supportive leadership, high collective efficacy beliefs of teachers and school culture of shared responsibility are essential for the success of PLCs at schools. The authors described that the implementation of professional learning communities at schools undergoes three stages, initiation (adoption of a new idea or technology), implementation (use of that idea or technology), and institutionalization (that idea or technology becomes integral part of school functioning). They professed that at successful schools, PLCs become part of school culture, where teachers often meet to discuss progress of students, they attend outside workshops and engage in knowledge sharing sessions. At such schools, these activities

become integral part of school functioning and it does not feel like extra work or stress for teachers. The authors concluded that school leadership and high collective efficacy beliefs among teachers facilitate daily professional learning activities at schools.

Later, Hardin (2010), in his thesis used the social cognitive theory by Bandura to explain the relationship between CTE and PLCs. His sample was drawn from international schools that provide good cultural and racial mix for students and teachers. He concluded that the relationship between all dimensions of the PLCs and collective teacher efficacy is correlational and bidirectional in nature, among the international schools teachers. His study was unique because, he used international school as sample, a cohort which is far less explored, and he argued that the relationship between the two variables is bidirectional, in contrary to claims made by Olivier and Hipp (2006) earlier. However, as the study involved international schools, which have usually catered to students coming from high income group families, it is required that relationship among the variables at public schools should be explored.

Also, in another study Stegall (2011), found a significant positive correlation between professional learning communities and teachers' self- efficacy and concluded that PLCs helps in improving self-efficacy of the teachers. Stegall used the social cognitive theory of Bandura (1997) to explain the relationship between the variables PLCs and CTE. The author used the Professional Learning Communities Assessment - Revised questionnaire to collect data from primary school teachers, in the U.S. The author concluded that professional learning communities help in strengthening self-efficacy beliefs of teachers. Furthermore, Stegall used the social cognitive theory was used to explain this relationship, it can be said that similar effect of PLCs can exist on CTE.

Similarly, Robertson (2011) supported that PLCs supports the development of collective teacher efficacy at schools. He studied the effects of different phases of PLCs implementation on collective teacher efficacy on elementary, middle, and high school teachers in the U.S. The results supported that the teachers' participation in learning communities act to increase their collective efficacy beliefs and this relationship is more pronounced among elementary school teachers. Robertson concluded that high CTE is associated higher collective responsibility amongst the teachers and collective learning culture at school, which enable teachers to maintain high learning standards for their students. Though the study focused only on the relationship between PLCs and CTE, it supported the relevance of professional learning communities in introducing education reforms.

In a qualitative study, Takahashi (2011) explored the development of collective teacher efficacy among teachers by using the communities of practice approach, based on Bandura's (1997) social cognitive theory. The author interviewed four teachers in detailed and concluded that teachers' social interaction in their schools and collective decision-making approach plays an important role in forming their collective efficacy beliefs as teachers. It was discussed that as teachers engage in shared practices and participate in evidence-based decision-making using student data, they develop stronger collective efficacy beliefs. Also, communities of practice have been used by many researchers as similar to PLCs, and this study adds to the literature evidence to support relationship between PLCs and CTE.

Another argument presented by several researchers is that for the professional development of teachers and establishment of PLCs at schools, CTE plays an important role. Geer and

Morrison (2008) studied the role of collective teacher efficacy in the outcomes for science teachers after participation in professional development programs. It was a qualitative, longitudinal study that explored how teachers' collective efficacy determine their outcomes. The authors found that teachers with higher collective efficacy mentioned they developed higher levels of self-efficacy beliefs as an outcome of participation in professional development program. Whereas teachers with low collective efficacy beliefs does not report any such significant changes. The authors proposed that collective teacher efficacy significantly affected teachers' involvement in professional development activities. It was suggested that and to garner the full benefits of professional development programs, the schools should work to strengthen CTE of their teachers.

Though the scholars have been studying the relationship between PLCs and CTE in Western countries, since past two decades, it gained popularity in the Asian countries in past decade only. Initially, the studies were limited to countries like China, Singapore, or Korea. Lee et al. (2011), studied the relationship between PLCs and CTE, trust and students' academic achievement in Chinese context. Their study focused on 660 teachers from 33 primary and secondary schools in Hong Kong. The study findings pointed at the cultural differences that can impact the practice of PLCs in Hong Kong. Professional learning communities' dimensions that were most pronounced in this study were supportive conditions- structures, shared and supportive leadership, and collective learning and application. Also, all these dimensions could significantly affect collective teacher efficacy for instruction strategies, and only the dimension collective learning and application could affect collective teacher efficacy for student discipline. This was an important study done in Asian context supporting the relationship between these two variables, however, it only



supported three dimensions of learning communities and more studies are needed to explore the variable in detail.

In a mixed-method study, Voelkel (2011) attempted to analyse the relationship between PLCs and CTE using surveys and interviews. The study focused on 297 teachers and including quantitative phase using structural equation modelling, and qualitative phase, including teacher interviews. According to Voelkel (2011), PLCs exert a significant and positive effect on CTE, where school principal's transformational leadership practices helped in establishing PLCs at schools. The study contributed to the literature as it focused on factors that determine the factors responsible for sustaining professional learning communities at schools, and its contribution in determining the learning outcomes of students.

In another study, Moolenaar et al. (2012) used collective teacher efficacy as mediator to understand how networks of teachers (a part of PLCs) can affect students' academic outcomes. They collected data from 775 teachers from 53 schools that had professional learning communities in place. The authors used multiple regression analysis and found that teacher networks directly and positively affect their collective efficacy beliefs and the strength of the effect was directly proportional to the density of the network. Thus, stronger the network, higher the effect on collective efficacy. Also, these collective efficacy beliefs mediated the effects of teachers' networks on student achievement. This shows that teachers' participation in learning communities or network groups provide them opportunities to be close to each other and participate in positive social relations, which in turn helps in strengthening their collective efficacy beliefs.

Similarly, Carpenter and Sherretz (2012) have discussed the benefits for schools when they involve in professional development school partnership programs with other educational or training institutions like universities. In professional development school partnerships, both participate work together with a common aim of improving teachers' learning and training. It was a qualitative case study, through which the authors proposed that when teachers participate in such programs, they gain new skills and knowledge, which help in improving their teaching methods resulting in higher academic achievement of their students. Also, teachers gain leadership as they take responsibility of self and colleagues' learning. As teachers shared positive outcomes of these professional development programs publicly, they experienced higher collective efficacy beliefs in their collective ability for teaching. This study too supported the role of PLCs in strengthening CTE at schools.

Also, in another study Moller et. al. (2013) focused on the relationship of teachers' professional learning communities, collective pedagogical culture at schools and students' achievement in Mathematics. They used the cross- classified growth models to study achievement in mathematics. Through their study Moller et.al concluded that schools with collective pedagogical culture and professional learning communities in place report high students' achievement in Mathematics. Also, these variables can control students' achievement beyond the effect of students' race and socio-economic status.

Several research studies have been done across the world to study how collective teacher efficacy can help in improving experiences of students and teachers at schools and few have focused on international schools. In one similar research Gray and Summers (2015), analysed the role of collective teacher efficacy, trust in colleagues and enabling school structures on establishing professional learning communities at international schools in

Mexico, South and Central America. They used the short form of the research instrument PLCA-R developed by Olivier & Hipp (2010) and Collective Efficacy Scale developed by Goddard et al. (2000). The data was gathered from 185 teachers and was analysed using multiple regression technique. It was concluded that teachers willingly participate in PLCs when school environment is enriched with marked strong collective teacher efficacy, enabling school structures, and collective pedagogical culture. In such schools, teachers put extra effort and show high commitment towards student learning. Findings of this study show that CTE helps in establishing PLCs at schools. Though the study included international schools from different geographical locations, it lacked on few points, like the use of shortened version of PLCA-R instrument which included only 12 items in comparison to 52 items from the original scale. The authors mentioned that they have included 2-items representing each dimension of learning communities, but it is not sufficient as 2 items cannot possibly represent the whole dimension. Also, as reported by authors, the turnaround rate for data collection was only 18 percent, which is quite low. Though the study adds to literature for the relationship between variables, it lacks on methodological part and more robust quantitative studies are needed to further explore this relationship.

Pyhalto et al. (2013) studied the factors that affect teachers learning in PLCs among 2310 teachers in Finland. They proposed that not one single factor can explain the outcomes of teachers' participation in professional learning communities. Also, teachers' learning in these communities to large extent depend on their CTE beliefs. In another study Voelkel and Chrispeels (2017) used the structural equation modeling (SEM) approach to study the correlation between professional learning communities and collective teacher efficacy, as well as between various dimensions of the variables. The study included 16 schools in a

district in the U.S. The researchers found that teachers' involvement in professional learning communities creates collaborative work culture at schools and helps in strengthening their collective efficacy beliefs. Also, teachers' involvement in learning communities and high collective efficacy beliefs helps in ensuring better learning outcome for students leading to increase in their academic achievements. The findings of this study are in contrast with the claims made by other researchers that collective teacher efficacy helps in establishing PLCs at schools (Gray & Summers, 2015).

Furthermore, the relationship between CTE and school-based PLCs was explored by Avalos-Bevan and Bascopé (2017) among 1025 primary and secondary school teachers in Chile. Through their study the authors reported that primary school teachers reported more collaborative work culture and higher collective efficacy beliefs, in comparison with teachers from secondary schools. Also, they suggested that collaborative work environment and strong perception of collective efficacy facilitated teachers' participation in professional development activities. A more focused study on one type of schools only, either primary or secondary would have provided more clarity on the how PLCs and CTE are related in education setup.

Through a systematic review that aimed to analyse how PLCs and CTE are related, Donohoo (2017) discussed that though many studies have studied the relationship between the two variables, only a few have used the social cognitive theory of Bandura to analyse the development of collective efficacy in relation to teachers' participation in learning communities. She argued that professional learning communities, satisfies the collective efficacy chiefly mastery experiences and vicarious learning, which help strengthening teachers' belief in their collective efficacy. However, Donohoo had suggested the necessity

for more empirically rigorous studies capable of thoroughly analysing the relationship between PLCs and CTE in detail.

In Malaysian context, Rauf et al. (2018) studied the development of PLCs at secondary schools and how school culture and management can influence it. In this study, collective teacher efficacy and communication was introduced as part of the school culture. Data was collected from 515 schoolteachers using self-administered questionnaire, using which the authors concluded that as part of the school culture, collective efficacy can determine and influence the application of PLCs at secondary schools. This is one of the important studies in Malaysian context as it focuses on learning communities in relation to collective efficacy, however, the study focuses only on secondary school teachers. A similar study on primary school teachers should be undertaken as previous studies have proposed that both professional learning communities and teachers' collective efficacy work differently at primary schools because of close proximity and frequent collaboration between teachers.

The relationship between these two variables has been intriguing scholars and many are advocating that both PLCs and CTE work together to positively affect student learning. In a recent study, Ma et al. (2019) analysed how teachers' participation in an ongoing professional development, and knowledge building programs can affect their collective efficacy beliefs in Ontario, Canada. The author studied participants from 17 elementary schools and found that the collaborative activities of learning communities provide both direct and vicarious learning opportunities to participating teachers, which further enhances their collective efficacy beliefs, leading to better student learning. However, this study used a small sample size, whereas a larger sample is required to empirically support this argument.

Recently, Voelkel (2019) studied the relationship between school principals' transformational leadership practices, PLCs, and collective efficacy beliefs of teachers in schools. The study was conducted on 181 teachers from eight schools in the U.S. that have strongly and systematically implemented professional learning communities. Voelkel used structural equation modelling (SEM) for data analysis to establish the relationship between these three variables. The study supported that transformational leadership can strongly predict professional learning communities which in turn are significant predictor of collective teacher efficacy, and together these variables help in improving academic outcomes of the students. Though the study focuses on the direct influence of transformational leadership in the success of PLCs, it shows that when teachers feel empowered, they participate actively in professional learning communities, which further improves their collective efficacy and student learning, however, this study lacks on bigger sample size.

The importance of CTE in establishing PLCs at schools was discussed by Hosseingholizadeh et al. (2020) in their recent study on 886 primary school teachers in Iran. The authors proposed that one of the most important contributing factors toward implementing PLCs at schools is principal instructional leadership style. They suggested that instructional leadership of principal is pivotal in developing strong CTE beliefs among teachers, which further increases their participation in PLCs. Furthermore, Karacabey et al. (2020) discussed that CTE beliefs of teachers are critical in determining their participation in PLCs. To support the argument the authors conducted a study to analyse the impact of school principals' leadership style on teachers' participation in professional development programs. The study included 1200 teachers from Turkey, and it was found that both

leadership styles, instructional and transformational, affect teachers' perception for PLCs and this relationship was mediated by CTE.

However, in a case study on 12 primary school teachers in Australia, Loughland and Nguyen (2020) used teacher interviews, classroom visits, teacher reflections and learning communities' meetings to understand the development of CTE in relation to PLCs. The authors used learning communities as a framework to understand the development of collective efficacy of participating teachers. They concluded that active and direct participation in PLCs provide teachers opportunities for mastery experiences and vicarious learning. Both mastery (first-hand learning) and vicarious (gain confidence from seeing others succeed) experiences acts as a strong source for strengthening and developing collective efficacy beliefs. However, the researchers reported that PLCs do not aid in gaining social persuasion and affective state, the other two sources responsible for developing CTE.

Furthermore, Loughland and Ryan (2022) used the zones of proximal development to discuss how PLCs can be designed specifically to improve CTE beliefs. The researchers collected data by interviewing focused groups, comprising of teacher leaders. The authors found that when teachers receive equal opportunities to express and communicate freely in an environment of PLCs, they develop strong collective efficacy beliefs. The inclusive and cohesive environment based on the principals of equality proved pivotal in nurturing their collective efficacy. Also, in another study on school principals in Australia, Lazenby et al. (2022) proposed that networking groups as formed under PLCs can help principals in developing and strengthening their collective efficacy beliefs.

Additionally, a recent study by Zhang et al. (2023) also supported the role of PLCs in developing CTE among Chinese school teachers. According to the study findings, leadership behaviour of school principal determines the success of PLCs at schools, which in turn mediates the relationship between leadership and CTE. Data for this study was collected from 878 school principals and using mediation analysis the authors proposed that PLCs dimensions of collective focus, shared purpose, and reflective dialogue are most important in determining CTE. This study's findings also support the assumption that PLCs are crucial for developing CTE at schools.

It can be concluded from the above review that since past two decades the interest of researcher has increased towards exploring the relationship between PLCs and CTE. Though initial studies focused more on seeing whether there existed a relationship or not, the present trend is trying to understand how school-based PLCs can affect or strengthen CTE and vice versa. However, one point of contention among the researchers is the whether the direction of this relationship is from PLCs to CTE, or from CTE to PLCs. Researchers like Hosseingholizadeh et al. (2020) proposed that high collective efficacy beliefs of teachers facilitate their participation in PLCs. Nevertheless, the recent and more agreed view is that PLCs at schools provide teachers to opportunities collaborate and learn from each other, which strengthen CTE beliefs (Loughland & Ryan, 2022).

Also, PLCs provide teachers opportunities to share learning experiences with colleagues at schools and assume leadership roles. Using Bandura's (1997) social cognitive theory, it can be said that PLCs helps strengthen CTE by providing opportunities for mastery experiences and vicarious learning. The literature review also points that though several studies have focused on the direct and indirect relationship between PLCs and CTE in Western



countries, only a few studies are available in Asian context. It is important to focus on these variables in Asian setting because these variables are group level variables and can be affected by cultural differences, for example, Western culture is very open and promotes collaboration and risk taking on the other hand Asian culture is more conservative, valuing hierarchy at workplace and following of established norms.

Another point highlighted through this review was absence of empirically strong studies in Malaysian context that studied how PLCs can aid in strengthening CTE beliefs of teachers. Previously, it was discussed that CTE significantly relates to students' learning outcomes (Hattie, 2015). As MOE is committed to improve academic outcomes of Malaysian students, it is essential that all factors that contribute towards students' success are deeply and thoroughly studied. The present study fills in the existing gap in literature by adding empirical evidence for the role of professional learning communities in strengthening collective efficacy beliefs among primary school teachers in the Malaysian context.

Also, it analyses the state of PLCs and CTE at public primary schools in Malaysia. Most previous studies have teachers from primary, middle, or high school in the same data set, however, including teachers only from one type of school will provide comprehensive analysis for the relationship between the variables. The primary schools are particularly important because they act as the foundations for the education system. Also, teacher have reported that they feel more proximity with colleagues, and it is easier to collaborate with colleagues in primary schools. Hence, this study has focused on teachers from public primary schools in Selangor, Malaysia.

#### **2.4.2.2 Professional Learning Communities and Teachers' Job Satisfaction**

The model for the professional learning communities (PLCs) was conceptualized as a panacea which can guide the school reform systems for better teacher learning and student outcomes (Hord, 1997; Louis et al., 1994). The model was founded on the principals of teacher collaboration, trust, mutual respect, common vision, and deprivatisation of practice. Later, researchers explored that in schools having professional learning communities, teachers show greater commitment towards their work, were more motivated to teach and take diverse roles, took initiatives for their learning, and reported higher job satisfaction (Louis et al., 1994).

Toole and Louis (2002) professed that PLCs at school determine the social relationship between the teachers, students, staff members and peers. The professional learning communities can also determine level of respect and trust among teachers, leadership support and opportunities for career growth to teachers. In schools with well-established PLCs, teachers have opportunities for collective growth, authority over self and student learning, and recognition for their hard work, which can increase their job satisfaction. Also, at such schools, factors that can cause job dissatisfaction (like, social isolation, school policies, and leadership support) are usually made optimal for teachers' growth. Hence, it will not be incorrect to say that authentic professional learning communities help to enhance teachers' job satisfaction (TJS) levels.

Ackerman (2011) argued that teacher collaboration in PLCs is the main factor that plays a significant role in improving TJS. The author used PLCs model by DuFour and job satisfaction theory by Herzberg, and the data was calculated in the form of interviews, observations, and field notes. He proposed that under PLCs environment teachers engage in

group activities, where they support and learn from each other, take part in social engagement, and work together with a common vision in mind. This positive and supportive work environment along with supportive leadership helps teachers in feeling more satisfied with their work and contribute constructively towards student learning. This study supports that Herzberg motivation hygiene theory can be used when studying teachers' job satisfaction under the framework of PLCs at schools.

Armstrong (2012) discussed a MetLife Survey of American teachers that raised concerns over decreasing level of job satisfaction among teachers. The article points out the trend of declining job satisfaction levels among the teachers (from 2009 to 2011) in the U.S. and discusses factors that are supportive to job satisfaction. Armstrong proposed that factors like favourable work environment, peer relations, supportive principal leadership, collaborative culture, and mutual trust among staff members can lead to higher level of job satisfaction in teachers. It was also suggested that teachers' participation in PLCs can help in improving their job satisfaction levels. Collaborative work culture is an integral characteristic of PLCs, which significantly contributes towards job satisfaction.

Pietarinen et al. (2013) studied school level factors affecting job satisfaction for a sample of 2310 school teachers in Finland. They argued that quality and level of social interactions teachers maintain at school significantly influence their perception of burnout and job satisfaction. Also, they proposed that schools can make their work environment conducive to teachers' job satisfaction by using PLCs, which can promote positive social relations among the teachers. In one study on university teachers in Malaysia, Tahir et al. (2013) proposed that PLCs promote collaboration and teamwork among university teachers which leads to higher job satisfaction and ultimately better academic outcomes for the students.

They used regression analysis to show that learning supportive conditions dimensions of professional learning communities is the main predictor for university teachers' job satisfaction levels, whereas the effect was least for the dimension shared values and vision.

In another study, Stearns et al. (2014) analysed the relationship between PLCs, teachers' collaboration, ethnic-group, job satisfaction and teacher- student ethno-racial mismatch. The data included from 3150 teachers from 980 schools in the U.S. and the authors used hierarchical linear modeling to analyse the relationship between the variables. They concluded that professional collective pedagogical culture is directly associated with teachers' job satisfaction levels and PLCs at schools are essential in mitigating the factors responsible for job dissatisfaction, in relation to teacher-students ethno-racial mismatch. They suggested that in schools that have strong and authentic professional learning communities, teachers receive support from school principals, and enjoy trusting relationships with each other which helps in improving their job satisfaction levels. Also, the advocated the need for carrying out a similar study that can focus on the relationship between PLCs and job satisfaction levels among teachers.

Also, Erdem et al. (2014), studied that effect of school level PLCs on TJS for 450 primary school teachers in Turkey. In their correlation analysis they concluded that teachers' participation in PLCs has direct significant relationship with TJS levels. Also, it was recommended that when the aim is to increase teachers' job satisfaction levels, it is crucial that schools should adopt PLCs framework.

In another study Katz (2015) studied the applicability of a professional development program on the job satisfaction level of teachers from 10 schools in Canada. It was

proposed that teachers' participation in professional development programs lead to significant reduction in teachers' stress and better TJS levels. Teachers' participation in professional development program resulted in better learning outcomes for student, where students were more engaged in their learning, which lead to lesser workload experiences for teachers. In this mixed-method study, the positive changes in job satisfaction levels were more pronounced in qualitative analysis as compared to quantitative analysis. Katz mentioned that PLCs programs helped teachers in feeling efficacious in their capacity to teach all types of students, leading to improved job satisfaction levels and more chances for teacher retention.

In Israel, Kurland and Hasson-Gilad (2015) studied the relationship between organisation learning at school, TJS levels and teacher extra effort on a sample of 1474 elementary school teachers. The researchers analysed data using structural equation modelling (SEM) and reported a direct relationship between organizational learning at schools and teachers' willingness to put extra effort. They also found a direct relationship between organisation learning at school and job satisfaction levels and concluded that TJS (TJS) is a mediator between the above two variables. They proposed that organization learning at school enables teachers to actively participate in daily decision-making process and give them responsibility over their work, which helps in improving their satisfaction from job. In another study, Ghavifekr and Pillai (2016) proposed a direct and positive association between schools' organizational climate and TJS among elementary school teachers in Malaysia.

Gil-Flores (2017) studied the teacher level and school level factors responsible for ensuring TJS among the secondary school teachers in Spain. The researchers used hierarchical linear

modelling and concluded that teachers level factors including self-efficacy, classroom management, work experience and school system are responsible for determining their job satisfaction. Among the school level factors were teacher student relationship, and school size. It is proposed that PLCs can lead to teacher satisfaction by enhancing the effect of some of the teacher level and school level factors. Researchers have time and again maintained that PLCs not only directly affect TJS levels, but PLCs can further moderate the influence of TJS on student achievement.

Furthermore, through their study, Banerjee et al. (2017) professed that though TJS can directly affect students' reading performance, the effect was further increased in presence of PLCs. The authors professed that in schools with PLCs, teachers gain opportunities for on job learning, open communication and knowledge sharing which can mitigate the negative effects of low job satisfaction. Also, they proposed that PLCs can act to mitigate the negative effects of low levels of TJS on student achievement. The aspects of PLCs like collegiality, continuous learning and knowledge sharing, and a common school mission are critical in moderating the effect of teachers' job dissatisfaction over academic outcomes of their students. It is a comprehensive study conducted in the U.S. that focused on the elementary school teachers and supports the claim that PLCs outcomes can be specific to type of schools.

Teacher collaboration is an integral aspect of PLCs. Reeves et al. (2017) in their discussed how different types of collaborations can affect TJS and confidence levels in Japan and the U.S. The authors reported that in the U.S. teachers' collaboration for classroom visitations and sharing feedback positively affected their job satisfaction levels, however, collaboration with the purpose of generating and implementing new ideas negatively

impacted their job satisfaction levels. On the contrary, none of the collaborative activities predicted TJS levels for teachers in Japan. This study highlights the cultural differences that can account for different outcomes for teachers' participation in PLCs activities like work collaboration. Thus, it provides support for the need of this present study to analyse the effect of PLCs on TJS at primary schools in Malaysia, a culturally diverse and a unique society.

However, few researchers argued that unlike student achievement, teachers' participation in PLCs programs do not significantly predict their job satisfaction levels (Kruse, 1994). Also, Ritz et al. (2013) conducted a quasi-experimental study on a beginning teachers' group, who participated in a time management seminar as part of their professional development program. The researchers found no significant pre or post-test differences for the job satisfaction levels in the group of participating teachers. They used the motivation-hygiene theory to explain participants' job satisfaction levels and found that though initially teachers reported neutral to slightly positive levels of job satisfaction, the time management professional development seminar does not have any significant affect. Though the authors used the pre and post-test approach in in this research, the small sample size of only 23 participants is not sufficient to generalise the findings over a larger population and more empirically strong similar studies are needed.

Similarly, Ouellette et al. (2018) analysed the effect of teachers' participation in professional development workshops on job satisfaction levels, for a group of 71 teachers. The researchers found that teachers' participation in workshops for classroom intervention did not significantly affect their job satisfaction levels. They proposed that organizational health is a bigger factor that influence teachers' perception of stress and job satisfaction.

The findings from this study supports that one-time workshop cannot be equivalent to established PLCs at schools, and teachers' job satisfaction levels are significantly impacts by schools' work climate, which learning communities are a part of. Also, the findings of this study suffer from a small sample size, and it is required to have a similar study with bigger sample size to generalise the findings.

Though few scholars have claimed that PLCs or the professional development programs for teachers do not have any direct, significant, or positive consequence for teachers' job satisfaction levels, a large body of researchers believe otherwise. In a mixed-method study, Zhang and Yuan (2020) explored what characteristics of PLCs affect job satisfaction levels of the primary school teachers in China. In this study, the authors characterised PLCs dimensions as school-centric and teacher-centric. The school-centric dimensions included, supportive leadership, organisational structure, and cultural barriers, whereas the teacher-centric dimensions included, collaborative inquiry and sharing, and shared purpose and responsibility. In this mixed-method study, data using survey instruments was collected from 488 teachers from 16 schools and interviews were conducted on 10 teachers to gain insight into the findings from the quantitative analysis. The study findings supported the previous assumption that PLCs exert a significant impact on TJS levels. The interview analysis shows that the relationship between both the organization-centric and teacher-centric dimensions of PLCs helps in predicting TJS levels. It is a comprehensive, mixed-method study that used a decent sample size to add on to the research literature.

Additionally, Huang et al. (2021), not only discussed the direct effect of PLCs on TJS levels for teachers in Taiwan, but they also proposed that PLCs at schools can be a strong mediator for the effect of type of school leadership on TJS. Data for this study was



collected from a sample of 2346 high school teachers. Also, researchers used SEM for data analysis and reported school principal's transformational leadership practices work via PLCs to influence job satisfaction of teachers. A growing body of researchers is showing heightened interest in teachers-level outcomes of PLCs, which corroborates that learning communities are not only beneficial for students learning, but they are also advantageous for teachers as well.

Recently, Zhang et al. (2022) studied how transformational leadership of school principals together with PLCs can affect TJS. The study focused on 572 school principals from China and using SEM analysis it was found that principal leadership can directly and significantly affects PLCs and its five dimensions, as well as TJS levels. Also, using mediation analysis, the authors concluded that PLCs and its dimensions mediates the effects of transformational leadership practices of school principals on job satisfaction of school teachers. The authors concluded that to have more satisfied and committed teachers, it is essential that schools should focus on promoting transformational leadership that can work to establish authentic and school-based PLCs.

In another study, Yoo and Jang (2022) discussed the effect of PLCs on TJS in South Korean context. The author discussed that in South Korea learning communities are administered in a top-down manner, which is managed and controlled by government. However, even in such top-down, centrally controlled format, job satisfaction levels were found to be higher in teachers who participated in PLCs, in comparison with teachers who have not. This study shows that whether administrated in a centrally controlled manner, or in decentralized way, PLCs can help in improving job satisfaction among teachers.

The organization and teacher-centric structure of PLCs in Chinese society was supported by Zhang et al. (2023) in their study on 982 teachers in Shanghai, China. They studied the impact of both organization- and teachers-centric factors of PLCs on TJS and self-efficacy levels. They concluded that teacher-centric dimensions of PLCs including teaching responsibility, collective inquiry and sharing and shared purpose and responsibility can directly affect TJS levels. Whereas from the organization centric dimensions only supportive leadership and organizational structure significantly impact job satisfaction levels while, and culture barriers does not. This study used regression analysis to establish how variables affect each other and suggested that cultural differences can influence the outcomes of the PLCs.

The review for the relationship between PLCs and TJS levels, clearly shows that when implemented properly, PLCs can lead to school reform by encouraging collaboration, trust, mutual respect among teachers, giving teachers more autonomy over work, and sharing leadership roles with them. It shows that PLCs have a direct and positive impact on teachers' job satisfaction levels. However, only few researchers have tried to explain this, where some have based it on motivation-hygiene theory of job satisfaction (Ackerman, 2010), while others focused on organization- and teacher-centric factors of PLCs (Zhang et al., 2023).

Also, most studies were based in Western countries, while few are done in Asian context in countries like China, Japan, Malaysia. Though few researchers have pointed to cultural differences in the outcome of PLCs, there is a gap in literature for studies focusing on the direct and indirect effect of the PLCs on TJS in Malaysian context. Moreover, small sample size and use of only part of PLCs (collaboration) or one-time professional development

programs to predict TJS levels have been limitations of few studies. The present study attempts to address this gap by using adequate sample size, empirically sound research instruments based on Hord's model of PLCs and Herzberg's job satisfaction theory and using SEM for data analysis to establish the relationship between the two variables.

#### **2.4.2.3 Professional Learning Communities and Teachers' Trust in Colleagues**

For many years, researchers have been discussing how school-based PLCs relate to teachers' trust in various stakeholders. A section of scholars has professed that trust is integral for the success of PLCs as it helps in establishment and sustenance of PLCs at schools (Louis et al., 1994). Also, in their research report, Bolam et al. (2005) have professed that trust in colleagues is the most important factor for the flourishing of authentic PLCs at schools. However, another, more recent, point of view is that school-based PLCs provides opportunities for teachers to work collaboratively and be vulnerable and open to each other, which helps in strengthening the trust among various stakeholders in schools (Gray et al., 2016). This review will analyse both arguments considering recent studies conducted by researchers across the world.

In a report, for the Northwest Regional Educational Laboratory of the U.S., Brewster and Railsback (2003) emphasized on the need for and importance of building trust relationship between different stakeholders in educational institutions. The report discussed that though trust alone cannot ensure dramatic improvement in students' learning outcomes, it does contribute towards organizational, social, and psychological factors important for teachers' productivity. They reviewed past studies and discussed that trust helps in sustained development of schools and it is easier to build trust among different stakeholders in smaller schools. The authors recommended that transparent communication, collaboration,

shared decision making and teachers' engagement in PLCs model promotes trusting relationship between teachers.

Wahlstrom and Louis (2008), in their research that included 4165 teachers from various grade levels teaching at school across the U.S., studied the effect of different factors that determine teachers' active involvement in PLCs and the use of instructional strategies. The researchers suggested that teachers' participation in PLCs and the success of these communities depends more on the level of trust among teachers' colleagues and is less dependent on the amount of trust teachers show towards school principal. Also, it was found that this relationship was more pronounced at the elementary school levels. Further, the study added that in scenarios, where there is lack of trust among the colleagues, teachers trust in principal plays more important role in strengthening PLCs.

Tschannen-Moran (2009) through their research on 2355 teachers from 80 middle schools in the U.S. proposed that trust among teachers is essential for the professional behaviour of the teachers. She argued that in schools with low trust environment, there is no clear flow of communication, teachers avoid giving and receiving feedbacks and show lack of willingness for knowledge sharing. The school atmosphere of distrust is detrimental for the PLCs, whereas high trust among stakeholders can take place the need of stringent rules and regulations. Also, using multiple regression analysis the author showed that though both trust in colleagues and trust in school principal are important factors that guide teachers' professional behaviour. However, the contribution of teachers' trust in colleagues (TTC) was found to be greater than trust in school principal. The researcher concluded that for schools to work and operate like a PLCs, it is important that attention is being paid to

reform principals' leadership styles and develop and sustain trusting relationships between various stakeholders, more so between teachers and colleagues.

Also, Van Maele and Van Houtte (2009), through a study on 2104 Flemish teachers found that TTC at a school depends on organizational culture, school size, socioeconomic levels, and type of schools. Similarly, Erden and Erden (2009) in their study on 518 school managers and 922 teachers found that school climate and teachers social interactions determine the level of trust among the teachers' colleagues. They mentioned that teachers' participation in collaborative activities can help in lowering down their vulnerability leading to healthy and trusting relationship between colleagues.

Kensler et al. (2009) conducted a cross-sectional study that focuses on the relationship between the organizational learning, democratic community, teachers' trust among the 3000 middle school teachers in the U.S. They used SEM analysis to prepare a model and explain the relationship between the variables. They proposed that TTC can explain teachers' extent of participation in learning activities as part of their professional development, wherein high trust environment facilitates teachers' active and prolonged participation in learning activities. Also, they suggested that presence of democratic community at schools facilitates development of trust among teacher colleagues.

In their cross-cultural analysis Webb et al. (2009) compared and contrasted development of PLCs at primary schools in England and Finland. The comparison was based on four main factors, which were collaborative working of teachers, professional development opportunities for teachers, primary school community, and trust. They argued trust in the field of education is an important predictor of teachers' overall well-being, and the level of

trust to some extent depends on cultural context as well. Also, establishing trust in schools is a time-consuming process and leaving of staff members can hamper that trust. The researchers compared schools from England and Finland and argued that low trust environment at schools in England was not supportive of education reforms as compared to high trust environment in Finland that aided in implementation of reforms.

Hord et al. (2010) have discussed the importance of PLCs and trust for schools. They explained that “Relational conditions are also vital to the success and effective functioning of the professionals’ community of learners. Trust is a prime factor in the development of positive and productive relationships of the staff, and building trust is given attention and effort. All members of the community develop trust in their colleagues and become trustworthy so that open dialogue, discussion, and debate can occur” (p. 19).

The studies by Lee et al. (2011) and Cranston (2011) presented another viewpoint regarding the relationship between teachers TTC and PLCs, suggesting that trust is an important factor that affects development and sustenance of PLCs at schools. Lee et al. (2011) used hierarchical regression analysis to show that TTC affects teachers' participation in PLCs. The participants included 660 teachers and research instruments Professional Learning Communities Assessment – Revised and Omnibus T-Scale were used to measure the variables. The authors reported cultural differences for the presence of PLCs. They argue that trust among colleagues allows teachers to be open and increases their willingness to take risk and be an active member of PLCs. The study indicates cultural difference for PLCs at schools and holds the view that TTC aids in reforming schools into learning communities.

Cranston (2011) hold the same view in his qualitative study that interviewed 12 school principals to determine the relationship between PLCs and TTC at schools in Canada. Through this study, he supported that that trust is one of the main factors that determine the success of PLCs. He discussed that all school reforms depend on trust among teachers and when teachers trust each other, they show more willingness and openness to share ideas and work together. The teachers support each other in taking informed risks and grow as a professional. He mentioned that though school principals play an integral role in establishing PLCs, teachers' trust among colleagues is the main factor that determines the success of school reforms and learning communities.

Hogg (2013) in a study on 896 middle school teachers teaching at 179 schools in the U.S. used multiple regression analysis to find the relationship between PLCs, teachers trust in principal, and student academic achievement. Hogg reported that though PLCs exert a significant relationship with trust in school principal, but PLCs are not the mediator for the effect of teachers' trust in school principal on student achievement. This study also supported the pivotal role of trust in introducing school reforms and PLCs. Hogg reported that teachers who have high level to trust in their principals confirmed to high levels of PLCs at their schools.

Also, Murphy et al. (2014) proposed that it is possible to help teachers build trust-based relationship by giving them opportunities to participate in community building activities, collaborative work, knowledge sharing and positive social relations. PLCs provides teachers opportunities for such activities and therefore it can be said that PLCs can help in strengthening trust among teachers' colleagues. This study supports the argument that

teachers' engagement in PLCs can help in strengthening trust between teachers' colleagues and different stakeholders in schools.

Hallam et al. (2014) undertook a case study to analyse the development of trust at a struggling, under pressure school in the U.S. The study used focus group approach to examine teachers' views about development of trust and PLCs at the school. Study findings suggests that proposed teachers' participation in collaborative work conditions, like that provided by PLCs are responsible for the formation of strong trusting relationship, specially under challenging school scenarios. The authors used interview techniques on 24 teachers and found that though teacher participation in PLCs helped in increasing trust among them, often this trust was limited between participating group members. In fact, for some teachers, trust for members outside of the groups and towards school leadership further decreased. The researchers concluded that in a struggling school, when teachers work together in a group, they develop inter dependence on each other and feel more open with their group members, however, teachers were not able to extend similar reliability and dependence on members outside of their assigned group. Thus, this study supports the alternative view that teachers' participation in PLCs help in developing trust among them.

In a recent study, Tschannen-Moran (2014) have discussed that trust in colleagues is essential for teachers to work together, share ideas and communicate honestly. In contemporary education set-up where PLCs is essential for schools' success, trust in colleagues is like the backbone of the social structure that can govern the future of learning communities. In schools with low trust among colleagues it is increasingly difficult to sustain authentic PLCs. The factors that lead to low trust among colleagues include, low



competency of colleagues, absence of benevolence or reliability and under such conditions teachers do not feel free to be open and vulnerable to their colleagues.

In another study, Gray et al. (2016) attempted to analyse the how enabling school structures, trust in colleagues, academic emphasis works together in the development of PLCs at schools. The study focused on 67 low-income schools in the U.S. The research involved 3700 teachers and 190 principals and administrative staff members, and the authors used multiple regression for data analysis. The authors used Professional Learning Communities Assessment test to measure the state of PLCs and to measure level of trust among different stakeholders they used Omnibus-T Scale. The study findings showed that though development of PLCs depended on enabling school structures, trust and academic emphasis, but trust in colleagues did not significantly affect the application of PLCs. Also, the authors suggested that there can be a reciprocal correlational relationship between PLCs and trust, where one helps in strengthening the other and vice versa. The study supports the view that in order to introduce school wide reforms like PLCs, it is essential that they are based on the foundation of trust among various stakeholders of education.

Olivier and Huffman (2016) presented a revised model for the PLCs and discussed how school districts can support the application and sustenance of learning communities at schools in the U.S. They proposed that school districts should promote culture of trust to sustain school reforms. Similarly, Chen et al. (2016) have supported that TTC plays an integral role in developing PLCs across educational institutions.

In another study, Tayag (2020) discussed the challenges educators face for the development of PLCs at schools in the Philippines. The researcher reported that one of the main

problems that schools face in introducing school reforms and PLCs is the low trust environment at schools. Once low trust environment becomes part of the school culture it gets difficult to change it to high trust one. Tayag (2020) recommended that school heads should take proactive role in enriching school culture by promoting trusting relationship between teachers and colleagues, which can help in strengthening PLCs.

In another research on 805 primary school teachers in Turkey, Kalkan (2016) explored the relationship between PLCs, organisational trust, and bureaucratic structure. Kalkan used Professional Learning Community Assessment scale by Olivier et al. (2010) to measure PLCs and Omnibus T-Scale to measure teacher trust and found that PLCs and trust are correlated with each other. The author also proposed that trust is an informal component of school and acting as a mediator between the relationship of bureaucratic structure and PLCs. Also, enabling bureaucratic structure at schools helps in strengthening trust among colleagues.

In another recent study, Yin et al. (2019) studied the relationship between PLCs, teachers' trust between stakeholders, and professional learning in Hong Kong. This study included a sample of 2106 teachers and employed multilevel structural equation modelling for data analysis. The authors concluded that teachers' trust in colleagues significantly affects PLCs and teachers' trust in principal and parents do not significantly affects learning communities. Furthermore, the Yin and colleagues suggested that PLCs mediates the effect of teachers' trust (in different stakeholders) on their learning. This is a comprehensive empirical study that analysed the relationship between PLCs and teachers trust in colleague sin Asian context, however, the study sample included kindergarten teachers and it is

needed that this relationship should be studied in other group of teachers like primary school teachers.

In Malaysian context, Khan et al. (2021) attempted to study the relationship between PLCs, teachers' professional development and teachers' trust among colleagues. The study focused on secondary school teachers and using inferential statistical analysis the authors concluded that PLCs and all its dimensions share a strong and positive relationship with TTC. The authors proposed that in schools with strong PLCs there exist strong and positive trusting relationship between teachers and their colleagues.

Also, the direction of relationship from trust to PLCs was supported by Karacabey et al. (2022) in their study on 1200 teachers in Turkey. Through their study the authors showed that both transformational and instructional leadership style of school principal are responsible for the success of PLCs at schools. However, the strength of this relationship was significantly mediated by teacher trust, which means that teacher trust is highly responsible for their participation in PLCs. The authors proposed that when teachers trust each other they can easily participate in knowledge sharing and collaborative activities. However, in absence of trusting relationship they focus more on safeguarding their own interests. The positive relationship between trust and PLCs was also supported by Kouhsari et al. (2022). The researchers proposed that trust in school allows for reflective dialogues among teachers, sharing of ideas and learning and work collaboration which is a pre-requisite for the success of PLCs.

The above literature review shows that since past 20 years scholars have agreed that both PLCs and TTC share a positive and significant relationship with each other. However, there

is no clear consensus about the direction of this relationship. The earlier studies have supported the hypothesis that PLCs help in developing trust in colleagues (Brewster & Railsback, 2003; Van Maele & Van Houtte, 2009; Wahlstrom & Louis, 2008;). However, the more recent literature argues that TTC aids the development of PLCs (Cranston, 2011; Kalkan, 2016). Few researchers (Gray et al., 2016) have professed on the mutual relationship between PLCs and TTC. The present study adheres to the earlier view that professional learning communities (PLCs) help in developing teachers trust in colleagues (TTC) as they provide teachers opportunities for collaboration, clear communication, knowledge sharing and social interactions.

Moreover, the above review shows that most of these studies were done in Western countries, and only a few in Asian context. This is an important outcome because as both PLCs and trust are variables that involves human interactions and working together, therefore, it can have some cultural differences. Hence, it is important to have strong empirically sound studies that can add to the research knowledge for the relationship between these variables. More so, there is a clear gap in literature regarding the study of these variables in Malaysian context. Another point that comes out of this review is that only few studies have focused only on one type of teacher population, like primary, middle, or secondary school teachers. As Bryk and Schneider (2003) have pointed about that development of trust in schools depend on school level and school size, it is important that more studies are done that focuses only on one type of teacher population. To address these gaps in literature, the present study focused on analysing the relationship of PLCs with TTC among primary school teachers in Malaysia.

The review of the past studies shows growing interest among the researchers and educators towards the positive effects of the PLCs on different school, teachers, and students level outcomes. However, only few researchers have attempted to study PLCs in Malaysian context (Ismail et al., 2020). Also, the existing studies are limited in their focus, studying the direct effect that PLCs exert on student achievement. Abdullah and Ghani (2014) in their study on secondary school teachers in Malaysia found that these schools and teachers have successfully adopted the professional learning communities with an aim to improve students' academic outcomes. Ansawi and Pang (2017) studied the role of PLCs in developing lesson study practices, at low performing schools in Sabah, Malaysia. They concluded that professional learning communities positively and significantly affects lesson study practices among teachers and these learning communities are an effective means to introduce education reforms in Malaysia.

In their study on 450 Malay language teachers from 42 schools in Selangor, Malaysia, Ismail et al. (2019), concluded that these schools have high level of PLCs and its dimensions, and recommended that these learning communities should be used by the government to introduce intended education reforms. Though the review shows the presence of PLCs and teachers' commitment towards them at different educational institutes in Malaysia, however, not many studies have explored the concept to its fullest potential. The policy makers should utilize PLCs to incorporate school level changes aimed at improving student and teacher experiences at schools.

Though Malaysian public schools have PLCs in place, the variable has not received enough attention from researchers. Jafar et al. (2022) through their study on the relationship between PLCs and school culture have concluded that three aspects of school culture

namely professional values, sharing planning and transformational leadership can affect PLCs in Malaysian context. The authors have recommended that more empirically sound studies are needed that can analyse and show the relevance and applicability of PLCs for Malaysian education system.

As this comprehensive review shows that in Western countries, the studies in the field of PLCs dates back to 1997 (Hord, 1997), it gained interest from researchers in Malaysia only in the past decade (Abdullah & Ghani, 2014). PLCs is an important concept that helps education policy makers, school districts and schools and teachers in adopting and sustaining education reforms. To bring Malaysian education system at par with international standards, it is essential that more studies are undertaken which can evaluate direct and indirect effects of PLCs, as well as the factors responsible for their success. Therefore, to address this need and gap in literature, this study holds importance as it attempts to analyse the relationship between professional learning communities (PLCs), teachers' collective efficacy (CTE), job satisfaction (TJS), trust in colleagues (TTC) and emotional intelligence (TEI) among primary school teachers in Malaysian context.

## **2.5 Teachers' Trust in Colleagues**

Trust is the most important social capital of the school which not only determines the work culture, teachers' attitude, and student success but also act as the backbone upon which school reforms can take place (Brewster & Railsback 2003; Bryk & Schneider, 2003; Tschannen-Moran & Hoy, 2003). Trust develops between people in different ways, when people are not familiar or close with each other, they act on their previous experiences and the reputation of others to develop trust, often they show caution in doing so (Bryk and Schneider, 2003). However, when people are in close proximity with each other, are

involved in social and professional interactions on daily basis and observe that the other people are not trying to sabotage their well-being, trust develop more organically (Erden & Erden, 2009).

In schools with transparent work culture, open communication, and collaborative environment, teachers learn to trust each other and other stakeholders (principal, parents, and students) gradually. Bryk and Schneider (2003) have earlier discussed that trust helps school in achieving their goals and missions in numerous ways, for example it facilitates participation of all parties involved in reaching school goals. It becomes easier for principals and school administrators to implement professional learning communities and other school reforms when teachers exhibit trust towards each other. Also, trust helps in improving teachers work ethics as they show more willingness to work extra to help their students.

Trust among various stakeholders in educational institutions is important for school success and high levels of student learning. For building trust among teachers, Bryk & Schneider (2003) have argued that “trust within a faculty is grounded in common understandings about what students should learn, how instructions should be conducted, and how teachers and students should behave with one another. For teachers to sense integrity among colleagues, a faculty must not only share these views but also perceive that the actions taken by other teachers are consistent with them,” (as cited in Brewster & Railsback, 2003, p. 21). It requires constant efforts from all parties involved to create and sustain high trust school environment.

Brewster and Railsback (2003) have recommended that to maintain trust between teachers, they should always be involved in keeping school's mission, vision, and core values, provided with collaborative work conditions, engage in healthy social interactions, and maintain social and professional relationships with their colleagues. As establishing trust between new team members is difficult, it is required that new teachers should be inducted and supported during settling down phase and professional development activities at schools should focus on nurturing social relations.

Through their extensive longitudinal research encompassing almost 400 elementary schools in the U.S., Bryk & Schneider (2003) discussed relational trust among various stake holders at school and its importance for the implementation and success of school reforms. They argued that trust among different stakeholders in schools develops on the grounds of mutual respect, regard for each other, professional competencies, and integrity. Furthermore, the authors mentioned that there are several factors that are responsible for the strengthening trust among stakeholders at schools. These factors include supportive leadership of school principals, cordial and mutually respectful relationships between teachers and parents, small size of schools, voluntary relationships between participants and stable school structure with low students' or teachers' attrition rate.

There exist a direct positive and significant relationship between teachers' trust in colleagues (TTC) and professional learning communities (Brewster & Railsback 2003; Gray et al., 2016; Kalkan, 2016;). Though some researchers hold the opinion that professional learning communities help in developing trust among teachers (Kensler et al., 2009) others argue that trust lays the foundation on which professional learning communities succeed (Gray et al., 2016). It would not be incorrect to state that both are



important for each other, and both together contribute towards the students' and school success.

Also, Hoy and Tschannen-Moran (2003) presented the definition of trust, presenting five main facets of trust, "Trust is an individual's or group's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, reliable competent, honest and open" (p.185-186). According to them, in school trust operates as teachers' trust in colleagues, principal, students and parents. Moreover, teachers' trust is the social fabric that helps in keeping the school together and aids in all stakeholders in reaching their personal and professional goals. For measuring trust in schools, they developed the Omnibus T-scale that helps researchers in measuring teachers' trust at school. The instrument can be used to measure teachers' trust between colleagues, trust towards principal, and trust towards clients (student and parents). Also, as formation of trust involves human interaction it can vary according to cultural contexts.

### **2.5.1 Latest Research for Relationship of Teachers' Trust in Colleagues with Collective Teacher Efficacy and Teachers' Job Satisfaction**

This section focuses on the past studies conducted that explored the relationship of teachers' trust in colleagues (TTC) with collective teacher efficacy (CTE) and teachers' job satisfaction (TJS). Many studies have discussed that trust as a school's social construct exhibits significant relationship with collective teacher efficacy, another school level variable. Also, previous studies have supported the role of teachers' trust in colleagues in promoting teachers' job satisfaction levels. This review will critically analyse these past studies and will suggest how this present study can substantially add on the existing literature.

### **2.5.1.2 Teachers' Trust in Colleagues and Collective Teachers' Efficacy**

Goddard et al. (2000), studied the relationship between CTE and TTC, while developing the measurement instrument for collective teacher efficacy. Their study was conducted on 47 elementary schools, and it was found that there exist a positive and significant relationship between the two variables. They proposed that TTC provided teachers opportunities for vicarious learning, which is one of the contributing sources of collective efficacy. In schools with trust-based environment, teachers often work together and learn from each other through knowledge sharing, discussion, and collective lesson planning activities, which can improve their CTE beliefs.

Adams (2003) in his research on 79 schools in the U.S. studied the mediating and effects of different facets of trust for the relationship between enabling school structures, school socio-economic status and school level on CTE. He reported that teachers' trust can significantly mediate the effects of the enabling school structures, school socio-economic status and school level on CTE. Also, a direct and positive relationship was found between the TTC and collective efficacy beliefs of teachers. This shows that in schools with high trust among teachers, they show higher beliefs in the ability of their colleagues to work towards student learning.

Lee et al. (2011) used hierarchical linear modelling to analyse how PLCs, TTC, CTE, and their commitment to students are related. The study was conducted on 480 teachers from 33 schools in Hong Kong, China. This study confirmed that TTC along with PLCs show positive and significant effect over CTE dimensions instructional strategies and student discipline. The authors proposed that both TTC and PLCs have a mutual relationship and together they help in improving CTE at schools. They argued that trust helps in sustaining professional learning communities which further helps in improving CTE. This study

highlights the importance of trust at schools and its role in developing collective teacher efficacy in Asian culture, which is much different from Western world.

Paxton et al. (2014) in a group of educators who participated in a social and emotional learning professional development program, studied the relationship their relational trust and CTE beliefs. Through this mixed method study the authors found that relational trust among teachers could significantly affected their CTE beliefs. In a study involving 74 schools from a school district in the U.S., Stump (2016) studied the relationship between trust and transformational leadership on CTE and concluded that teachers trust in school principal significantly affects their CTE beliefs. The author suggested that transformational leadership practices of school principal and teacher trust work together to form multidimensional leadership which further enhances CTE, as it promotes a school culture marked by collaboration, mutual trust and respect for each other. Though this study discusses the role of trust in forming CTE, it's focus was teachers' trust in school principal. However, as CTE is a group level belief, that exists among a group of teachers, the study should have taken into consideration teachers TTC as well.

Also, Gray et al. (2017) supported the positive and significant relationship between teachers' TTC and CTE. Their study focused on over 3700 teachers and 190 school administrative staff members in the U.S. the author used multiple regression analysis to study the relationship between teachers' trust in colleagues, collective efficacy, enabling school structures, academic emphasis, and PLCs. The authors used Omnibus-T Scale and Collective Efficacy Scale for data collection. The authors used multiple regression approach for data analysis to determine the relationship between the variables. They

proposed that not only TTC and CTE aids in the development of PLCs, the two variables exhibited a positive and significant relationship.

In her review of literature for the school level factors that affect the development of CTE, Donohoo (2017) found that relational trust is a significant factor that is positively correlated with CTE. Using the Bandura's (1997) social cognitive theory, she explained that the relational trust at schools aids the development of two sources of collective teacher efficacy, namely mastery experiences and social persuasion which helps in building strong beliefs in teachers regarding their and colleagues' ability as teachers. The relationship between CTE and TTC was also analysed by Schwabsky, et al. (2020) in their study on 1009 teachers from Israel. The authors used multiple regression analysis to study the effect of the CTE, trust and academic press (as components of academic optimism) on school innovation. They reported that not only there exist a positive and significant relationship between trust and CTE, but trust can also significantly mediate the effects of CTE on school innovation. However, this study took showed the direction of relationship from collective efficacy to trust, which is a different approach as compared to the studies discussed above in this review.

In the contemporary education scenario, researchers have acknowledged the importance of trust among teachers in improving school outcomes. Researchers across the globe are studying how trust among teachers can affect different variables responsible for student learning and school functioning. In a recent study, Ninkovic et al. (2022) studied the effect of TTC on the CTE of 362 educators in Serbia. It was found that TTC exerted a direct effect on both the dimensions of CTE, namely instructional strategies and student

discipline. Also, this relationship was mediated by the shared responsibility component of the professional learning communities.

Though only a few researchers have attempted to study factors responsible for CTE in Malaysian context, Choong and Ng (2022) used mediation analysis to explore how teacher trust can help in developing CTE among secondary school teachers. The authors collected from 255 public secondary school teachers in Malaysia and found that the relationship between the two variables is partially mediated by the organizational citizenship behaviour of the teachers and both variables can determine the development of collective efficacy at schools. This is an important perspective as it analysed the complex relationship between trust, organizational citizenship behaviour and CTE, and not only focusing on direct relationship of collective efficacy with demographic variables. This supports growing research literature in the field of collective efficacy in Malaysian context.

The above review shows that most researchers have a consensus that there exist a positive and significant relationship between TTC and CTE, however, not many researchers have explored this relationship. Though most studies have focused on how teachers' trust affects CTE, only one study by Schwabsky et al. (2019) have taken the opposite approach and studied the role of CTE in forming TTC. Also, the past literature shows that majority of these studies are done in Western world.

Lee et al. (2011) have explored the relationship between CTE and trust in Asian context by focusing on teachers in Hong Kong, China. This is an important consideration because there is a significant difference in Western and Asian work culture, and it is important to see how trust can affect school functioning here. Also, it is a common trend that most

studies are available in Western literature, while only a few are available in Asian context. Moreover, while the Western literature provides empirical evidence using mediation and moderation analysis for three or more variables, most studies in Malaysian context focus on direct relationship between the variables. Only one study by Choong and Ng (2022) have explored the importance of teachers' trust in developing CTE and the role of organizational or school-related factors in this relationship. However, it is needed that more studies using statistically advance methods are added to research literature. To fill in this gap, this study will be using the structural equation modeling approach for data analysis and find the direct and indirect relationship between PLCs, CTE and TTC in Malaysian context.

### **2.5.1.3 Teachers' Trust in Colleagues and Teachers' Job Satisfaction**

Trust among teachers helps in improving their job satisfaction (TJS) levels because it allows teachers to depend on each other for professional growth and help. Yilmaz (2008) in a study on 120 primary school teachers found that trust helps in strengthening the organizational commitment of teachers. In another study, while analysing the factors responsible for organizational citizenship behaviour of 652 teachers and 131 principals in Iran, Zeinabadi and Salehi (2011). The authors conducted SEM analysis and found that trust exerts a direct but non-significant effect on TJS, which in turn leads to higher organizational commitment.

Wolfe (2010) focused on the factors responsible for the development of mutual trust at school and its relationship with TJS. The study was conducted on 4 schools in the U.S. and quantitative data analysis showed that principal behaviour is important for the development of mutual trust, also, there exist a significant relationship between trust and TJS levels. The authors observed that the principals' perspective towards mutual trust were different from

that of the teachers, and teachers trust in school principal can contribute to their job satisfaction levels.

In a study on 2091 teachers, Van Maele and Van Houtte (2012) suggested that trust can help in improving job satisfaction by satisfying intrinsic factors related to the job. The authors studied how the different facets of trust, namely teachers trust in colleagues, principal, students, and parents are responsible for the development of their job satisfaction. The authors found that the relationship between trust in colleagues and TJS was stronger than relationship of other facets with satisfaction. They suggested that the presence of trust improves social structure of schools which leads to more satisfied teachers. The high trust relationship between teachers, principals, students, and parents improves social capital of schools, leading to increased levels of TJS.

In another study, Lindahl (2014) discussed the relationship of school leadership behaviour, trust, and job satisfaction with student achievement. It was found that trust and TJS are positively related with each other and together they improve the effect of school leadership behaviour on students' learning outcomes. However, the study did not support that trust or TJS can significantly affect students' academic achievement. Khany and Tazik (2015) conducted a cross-sectional study on 217 English as Foreign Language (EFL) teachers in Iran to understand the relationship between psychological empowerment, trust, and job satisfaction. They employed structural equation modelling (SEM) for data analysis and concluded that teachers trust indirectly and significantly affect the intrinsic and extrinsic dimensions of TJS through psychological empowerment. Though this study does not support that trust can directly impact teachers' job satisfaction, but it supports an indirect relationship. A possible reason for this could be that the study focused only on the EFL

teachers, who do not get much time to interact with each other, however, establishing trusting relationship between participants requires continuous and timely interactions between them. A similar study on regular primary or secondary school teachers could provide a better understanding of this relationship.

In another study, Trace (2016) studied the relationship between teacher trust in principal and job satisfaction in a sample of 188 teachers from 30 primary schools in the U.S. The author used Pearson correlation coefficient and found a significant positive correlation between trust in principal and job satisfaction levels. However, Usikalu et al. (2015) in their study on 258 secondary school teachers in Nigeria found that though organizational trust has a direct effect on teachers' job performance, it showed no relationship with TJS. Both these studies support the influence of trust in school with TJS levels, however, they do not focus on the direct relationship between teachers' trust in colleagues. The study does confirm that trust is an important social variable, and it influences teachers' job satisfaction levels either directly or indirectly.

Edinger and Edinger (2018) studied the effect of trust and TJS among 122 elementary school teachers in the U.S. They used a five-point single item method to measure teachers' trust with their co-workers and performed hierarchical regression analysis and confirmed that there exist a positive and strong relationship between teachers' trust and TJS levels. Also, this relationship was partially mediated by teacher efficacy. This study focused only on one group of teachers (elementary) and used strong statistical methods for data analysis, however, it suffers from a small sample size of only 122 teachers. A bigger sample size could have added to the generalisability of this study.



Additionally, the relationship between trust and TJS levels was supported through a systematic literature review conducted by Polatcan and Cansoy (2018). They performed a systematic review to determine the factors responsible for TJS in Turkey and concluded that factors including trust-based school culture, justice and communication plays a critical role in determining teachers' job satisfaction. Similarly, in another literature review of past studies on factors affecting job satisfaction in developing countries Sahito and Vaisanen (2020) found that trust in schools was directly related with teachers' reported level of job satisfaction. Also, they reported that common predictors for job dissatisfaction included distrust, autocratic management style and unavailability of resources.

Furthermore, Veretennik and Kianto (2019) through a case study on teachers from vocational schools in Russia confirmed that teachers' trust helps in strengthening job satisfaction levels of teachers. The authors conducted interviews with teachers who are part of different social networks and analysed the relationship between trust, teachers' networks, and job satisfaction. Their findings supported that trust constitute the expressive networks of teachers and both instrumental and expressive networks share direct and positive relationship with job satisfaction. Also, teachers' position within the network determines their level of job security and satisfaction experienced.

In a recent study Aygun (2021) examined the relationship between trust and TJS in 146 physical educators in Turkey. The researcher used Pearson moment correlation for data analysis and reported a significant and positive relationship between organizational trust and TJS. However, a small sample size is one of the main limitations of this study. Later, the importance of trust among colleagues for introducing education reforms and teachers job satisfaction has been professed by Da'as (2021) in a study on 1370 teachers and 106

principals from elementary schools in Israel. The researcher used a 3-item survey to measure teachers' job satisfaction and found that in schools undergoing education reforms, the trust among teachers was positively associated with teachers' job satisfaction levels and this helped in reducing teachers' absenteeism as well. However, this study used only a three items scale to measure TJS, a more comprehensive scale that encompasses dimensions of job satisfaction could have provided better insight.

In another study, Zhao et al. (2022) explored the role of trust in developing teachers' job satisfaction levels on a sample of 330 teachers in rural China. The authors proposed that teachers' trust had a direct and positive relationship with their TJS levels, which in turn influences their commitment towards profession and respective schools. They argued that in challenging situations like Covid-19, teachers' trust has been an important factor that contributed towards their satisfaction levels and motivation to stay at work. The importance of trust in maintaining job satisfaction levels was also supported by Hidayat and Patras (2022) in a sample of 256 teachers in Indonesia.

This literature review supports that teachers' trust can help in strengthening TJS levels and suggests that establishing trusting relationships at schools can help teachers in feeling more satisfied with their work. However, when we investigate the studies from Malaysian perspective there is a clear gap in literature as not many scholars have explored this relationship. Also, small sample size has been found as a challenge with few studies in this review. This proposed study aims to provide much needed support to literature in Malaysian context, by focusing on primary school teachers, with appropriate sample size and using structural equation modeling for data analysis to establish the direct and indirect relationship between the variables under study.

### **2.5.2 Teachers' Trust in Colleagues as a Mediator**

Goddard et al. (2009) studied the role of teachers' trust in students and parents as a mediator for the effects of low socioeconomic composition and racial composition on students' academic achievement in over 75 elementary schools in the U.S. In this cross-sectional study the author found that both low socioeconomic status and racial composition have a direct and negative influence on student achievement but when trust is introduced as a mediator the variables did not exert significant negative influence. This suggests in schools with low trust shown by teachers towards students and parents, students' achievement is often low.

In another study to support the mediating role of trust, Kensler et al. (2009) analysed relationship between democratic learning communities, teachers' continuous learning and trust on over 3000 public school teachers in the U.S. The authors reported that trust is a significant mediator for the relationship between democratic community and organisational learning at schools. The authors used SEM for data analysis and interpretation and suggested that in a democratic school communities teachers show high level of trust towards their colleagues which enables leads to greater involvement in the learning activities. According to the authors, the mediating variable (trust) can explain why the relationship exist between the two variables.

Furthermore, Van Houtte (2010) empirically supported the mediating role of trust in for the effect of school's study culture on teachers' job satisfaction in Belgium. Van Houtte collected data from 711 teachers where one group belonged to general school and the other group of teachers belonged to vocation schools. In this cross-sectional, comparative study, the author performed SEM analysis and claimed that study culture of the schools could

significantly affect TJS levels. The author argued that trust is a significant mediator if this relationship and low level of trust can lead to job dissatisfaction among teachers.

In a study on 652 teacher and 131 principals in Iran, Zeinabadi and Salehi (2011) developed a social exchange model to discuss the relationship between trust, organizational commitment, procedural justice, and TJS, in organizational citizenship behaviour of teachers. The authors used structural equation modeling and reported that trust act a significant mediator for the effect of procedural justice on teachers' organizational behaviour. Lindahl (2014) also reported that trust can mediate the effects exerted by school leadership behaviour on teachers' job satisfaction.

Also, Nasra and Heilbrunn (2016) studied the mediating effect of trust in supervisor on the relationship between transformational leadership style and organizational citizenship behaviour on a sample of 211 teachers in Israel. The authors used structural equation modeling and reported that trust in supervisor does not significantly mediate the effects exerted by transformational leadership on the organizational citizenship behaviour. The role of trust as a mediator for other variables related to students learning in educational set-ups was also supported by Tschannen-Moran and Gareis (2015). They claimed that when school environment is enriched with trust, teachers work together towards a common school goal with a belief in each other's' ability to contribute positively. The attainment of those goals increases CTE beliefs at schools and make teachers more open for risk taking when needed. Teachers' trust in leadership, mediates the effect of principal's leadership styles on student achievement. Thus, school leadership should consciously work towards creating a trusting environment which is conducive for school growth.

Zheng et al. (2016) in their study on 215 schoolteachers in China found that TTC shared a positive relationship with professional learning communities and its five dimensions. The authors used SEM for mediation analysis and proposed that TTC is a significant mediator for effect of leadership practices on PLCs and its five dimensions. The authors described that TTC is pivotal in mediating the effects of principal leadership for promoting de-privatisation of practices and collaborative working among teachers, thus leading to success of learning communities.

Hassan et al. (2016) proposed teacher trust can mediate the effect of workplace spirituality on job satisfaction. The authors collected data from 174 teachers from universities in Pakistan and used SPSS for data analysis, where the results confirmed a positive and significant relationship between workplace spirituality and TJS and this relationship was mediated by trust. The authors used multiple regression for data analysis and supported the mediating role of trust, however, use of convenient sampling, small sample size is one of the main limitations of this study.

Also, Yin and Zheng (2018), studied the importance of trust for the effect of the leadership practices at school on professional learning communities. In their study 1095 primary school teachers in China, the authors found that TTC can significantly mediate the effect of leadership practices on PLCs, however, trust in school principal was a negative mediator for the relationship. The authors explained that the negative mediating effect of teachers' trust in school principal could be because of the cultural differences of Chinese society, where there exist huge differences in the power experienced by school teachers and principals, due to which teachers do not show enough trust in their school principal.

The role of trust as mediator in school setting was also supported by Boyaci et al. (2018) in their study on 2561 teachers. The researchers used SEM approach to find the relationship between organizational trust, school leadership and teachers' job satisfaction levels. It was found that school principals' leadership practices exerted a high effect on organizational trust which affects teachers' job satisfaction levels moderately. Hence, the author supported that trust act as a mediator for the effect of leadership practices on job satisfaction levels of the teachers.

In a study on 401 teachers, Atik and Celik (2020) used SEM approach to study the relationship between principal's empowering leadership style, trust, job satisfaction, and psychological empowerment. The authors discussed that principal's empowering leadership can predict teachers' job satisfaction and this relationship is mediated by trust. Also, in another quantitative study on 405 school personnel, Siswanto and Yuliana (2022) examined the mediating role of trust in the relationship between transformational leadership and TJS. The researcher used partial least square method to examine the relationship and concluded that trust fully mediated the relationship between the two variables.

Furthermore, Edward-Groves et al. (2020) elaborated on the pivotal role played by relational trust in the success of school-based professional development programs. In this case study, the researchers interviewed several teachers and principals to understand teacher-leaders role in facilitating professional development programs and action research at schools. This study's findings showed that relational trust and mutual respect are critical for introducing any learning programs or practice changes at schools. Also, the researcher outlined five dimensions of trust within school staff, which are interpersonal, interactional, intersubjective, intellectual, and pragmatic trust. Also, the role of trust as a mediator was

supported by Tasker-Mitchell and Attoh (2020) in their study on the effect of servant leadership on organisational health. In this study, the authors found that trust acts as a partial mediator for the causal relationship between school principals' servant leadership practices and schools' organisational health.

The role of trust as a mediator in school settings was further corroborated by Talebizadeh et al. (2021) in their study exploring the relationship between learning-centred leadership practices by the school principals and the professional development of primary school teachers in Iran. In this quantitative study, data was collected from 886 teachers, and structural equation modeling was used for data analysis. The study findings confirmed the mediating role of trust in the causal relationship between learning-centred leadership practices and teachers' professional learning. Another study by Hsu et al. (2021) in Taiwan also confirmed the mediating role of trust in the relationship between mobile-based professional communities of teachers and their self-efficacy. This study used the partial least square method for data analysis and substantiated that trust, as social capital in a group setting, acts as a significant mediator.

However, the role of trust as a mediator was not supported by Mansor et al. (2021) in their study focusing on government-funded religious schoolteachers in Malaysia. The researchers found that though teachers at these schools' high level of trust, trust was not a significant mediator for the relationship between transformational leadership practices of school principals and teachers' work commitment. Moreover, the researchers reported an insignificant effect of trust on teachers' work commitment, suggesting trust is not a critical variable for teachers' work outcomes. Similarly, Yin et al. (2022), in their study on 542 kindergarten schoolteachers, found that teachers' trust in colleagues does not mediate the

relationship between school principal's instructional leadership practices and teachers' behavioural intentions. Hence, though education researchers advocated the role of trust as a mediator in school settings, not all studies corroborated the claim, and it indicates cultural differences in the efficacy of trust in school settings.

Many researchers propose that trust as the social capital of schools is a significant mediating variable. In a recent study, Dahleez and Aboramadan (2022) analysed that trust can mediate the effect of servant leadership on job satisfaction among 258 academicians in Palestine. The authors used structural equation modeling to establish that when academic institutes follow the culture of servant leadership and nurture the work environment with trust-based relationships, academicians experience a stronger sense of job satisfaction levels. The mediating effect of trust and its importance for professional learning communities was studied by Bektas et al. (2022) in a sample of 327 primary school teachers in Turkey. Their study showed that teacher trust is necessary for the success of PLCs as it mediates the effects of distributed leadership on learning communities.

The role of trust as a mediator was again advocated by Coban et al. (2023) in their study on secondary school teachers in Turkey. Using multi-level structural equation modeling, the researchers showed that teacher-principal trust mediated the relationship between principal focus on instruction and teacher collaboration, which further increases teachers' sense of self-efficacy. Nevertheless, in a recent study, Alazmi and Hammad (2023) supported the role of trust as a mediator for the relationship between learning-centred leadership and teachers' professional learning. The data was collected from 1060 public school teachers in Kuwait, and SEM analysis was done to establish the relationship between the variables. The study findings confirmed that teacher trust significantly mediated the effects of



learning-centred leadership practices and teachers' professional development. Also, Err (2024), in his study, supported the idea that the relationship between school principals' learning-centred leadership and teachers' professional learning is significantly mediated by teachers' trust.

This review focused on the mediating effect of trust in educational settings and shows that trust at school is an important social construct that is responsible for school success in terms of teachers' job satisfaction, sustaining learning communities and other teachers' and students' experiences. Trust is the foundation for the social structure of schools, and it allows for transparency in work, communication, and interactions (Çoban et al., 2023). Teachers who trust each other feel comfortable in sharing feedback, knowledge, and ideas for the progress of both schools and students (Edward-Groves et al., 2020). Also, acting as a mediator, trust can help increase the effect of one variable over the other. The above review provides theoretical validation for the proposed hypothesis of this present study that teachers' trust in colleagues can mediate the relationship between professional learning communities (PLCs), teachers' collective efficacy (CTE) and job satisfaction (TJS). The study will significantly contribute towards the education literature in the Malaysian context and will, to some extent, fill the gap in the literature.

## **2.6 Teachers' Emotional Intelligence**

Mayer et al. (1997) asserted that emotional intelligence as is a part of human intelligence and though EI is a separate construct, yet it correlates with general intelligence, proving that it is a separate but authentic new kind of intelligence. Also, Mayer et al. (2016) defined emotional intelligence as “the ability of human beings to use emotional understanding of behaviour to solve problems.” In their ability model they presented four branches of EI

which are “ability to perceive emotions in self and others, using emotions for problem solving, understanding emotions and act on them and managing and regulating emotions self and others.”

Mayer et al. (1997) presented the four-branch model of the EI and mentioned that EI is part of the positive psychology (2002). Also, they professed that tool measuring EI as a trait are measuring the personality construct of human psychology and MSCEIT tools based on ability model of EI is the most comprehensive test for measuring the actual EI construct. However, they agreed that MSCEIT is a complicated tool, and more instruments are needed to be developed that can measure EI in a comprehensive yet easier way.

Apart from Mayer et al. (1997) researchers like Goleman and Bar-On have discussed the importance of EI in employees’ job performance, work outcome and professional satisfaction. In case of teachers’ job performance and work outcome relates to the end result which is the learning and academic achievement of their students. Hence, the present result will study the role of teachers’ EI on their students’ academic outcomes and teachers’ satisfaction with their job as well. The following section will review the studies that focuses on teachers’ emotional intelligence and its impact on collective teacher efficacy, and teachers’ job satisfaction. Also, this review will assess the areas in the field that require more attention and discuss how the present study can contribute further in the field.

### **2.6.1 Latest Research for Relationship of Teachers' Emotional Intelligence with Collective Teacher Efficacy and Teachers' Job Satisfaction**

This section will discuss the latest research that explored the relationship of teachers' emotional intelligence with collective teacher efficacy, teachers' job satisfaction and professional learning activities. Though initially, the concept of emotional intelligence was mainly used for management studies, with focus on how it can improve employees' productivity, well-being, work life balance and job satisfaction (Goleman, 1995) but eventually, the concept has found to be valuable to all aspects of work and human life (Mayer et al., 1999, 2004, 2016). In the past decade, more and more educational researchers are trying to assess the impact of teachers' emotional intelligence on their well-being, job satisfaction, work output, stress and on student achievement. It is proposed that emotionally intelligent teachers can teach and manage their students better and can lead to better student outcomes (Colomeischi & Colomeischi, 2014; Vesley et al., 2013). Also, teachers high on EI can handle work stress better and are usually more satisfied with their job. The following section will discuss the studies that focused on such aspects of teachers' EI and will discuss the need for more studies in the context of primary schools in Malaysia.

#### **2.6.1.1 Teachers' Emotional Intelligence and Collective Teacher Efficacy**

Neghabi et al. (2011) in their research have argued that emotional intelligence is a critical contributing factor towards the strengthening of collective and self-efficacy. In another study on the relationship between EI, coaching efficacy and leadership style of 323 basketball coaches in the U.S. They used structural equation modelling (SEM) approach for data analysis and concluded that emotional intelligence is a predictor of the efficacy of basketball coaches. Similarly, a positive relationship between coaching efficacy and EI was reported by Thelwell et. al., (2008).

Pierce (2014) studied the relationship between EI of elementary school principals and CTE through self-reported questionnaires in a sample of 13 principals and 129 teachers in the U.S. This study supported a positive correlation between the CTE and emotional intelligence and concluded that relationship management component of principals' emotional intelligence exerted the most influence over collective teacher efficacy. Also, Garivani et al. (2016) reported a positive correlation between collective efficacy and group emotional intelligence in their study on 145 student athletes in Iran.

In their study on 818 masters' level students, organized in 199 teams, in Norway, Hjerto and Paulsen (2016) used exploratory analyses to understand the relationship between CTE and collective emotional intelligence in team of students. The researchers observed that there exists a negative iteration effect between collective efficacy and collective emotional intelligence which indicates that both variables are interchangeable in their effects in a team setting.

In another recent study, Valente et al. (2020) focused on the effects of teachers' emotional intelligence on teacher efficacy. The sample included 634 teachers from Portuguese who participated in the study by answering self-report questionnaires. The authors used SEM for data analysis and proposed that TEI can positively and significantly influence their teaching efficacy. They argued that helping teachers in developing emotional skills can lead to positive outcomes for both teachers and students including better efficacy beliefs, job competence and personal development of students.

Loughland and Ryan (2022) in their case study on a group of teachers in Australia explored the antecedents to collective teacher efficacy as they participate in PLCs in their school. They concluded that emotional intelligence is an important contributing factor towards the development of affective state component of collective teacher efficacy. They discussed that emotionally intelligent teachers willingly participate in team building activities and help each other in achieving team goals.

#### **2.6.1.2 Teachers' Emotional Intelligence and Teachers' Job Satisfaction**

Previous studies have strongly supported the role of TEI in ascertaining their job-related outcomes, including job satisfaction levels. In one such study, Celik and Karakus (2011) used linear regression modeling technique to analyse the relationship between teachers' emotional intelligence and job outcome measures which are job satisfaction, affective commitment, and organizational citizenship behaviour. A strong and positive effect of teachers' EI on their job outcomes was reported by the authors.

Vesely et al. (2013) proposed that teachers' EI can significantly affects both teachers' (job satisfaction) and their psychological wellbeing and more researchers are needed to further explore the role of EI in education. Researchers have argued that EI can contribute significantly towards employees' well-being, work life satisfaction, stress management and work efficiency (Goleman, 1995; Schneider, 2013). This argument was also supported by Chiva and Alegre (2008), who in their study found that emotional intelligence can significantly affect employees' job satisfaction, and this relationship was also influenced by the learning capability of work organizations. Based on this argument, researchers have been exploring the effect of teachers' EI on TJS and work output (measured in the form of students' academic outcomes).

Also, Platsidou (2010), studied the relationship between EI, burnout and job satisfaction among special educators in Greece, and concluded that emotionally intelligent teachers are less likely to experience burnouts and perceive strong job satisfaction as compared to teachers with lower levels of EI. In another study on schoolteachers in Romania, Ignat and Clipa (2012) used ability model to examine the relationship between EI of teachers and their job satisfaction. They argued that there is a strong relationship between the two constructs and emotionally intelligent teachers are more dedicated towards their work, show motivation towards pedagogical tasks and enjoy higher job and life satisfaction.

Yin et al. (2013) explored ways through which teachers' EI affects their job satisfaction. They conducted the study on 1281 schoolteachers in China and use SEM analysis to understand the relationship. They argued that teachers' EI influences their emotional labour strategies which are responsible for increasing their job satisfaction. In a recent literature review, Merida-Lopez and Extremera (2017), concluded that teachers high on emotional intelligence are more efficient in managing their stress levels, perceive higher social support from school staff, contribute towards creating positive school environment and are in more control of their emotions. These capabilities help teachers in reducing the negative effects of burnout arising from high work demands.

Akhtar and Khan (2019) used the Goleman's EI model and Spector's job satisfaction survey to find how university teachers' emotional intelligence levels can impact their perception of job satisfaction. Their findings supported the positive relationship between EI and job satisfaction levels among teachers. Similarly, Wong et al. (2010) and Wijayati et al. (2020) have supported that teachers' EI can directly affect their job satisfaction levels.

The positive effect of emotional intelligence on TJS was supported by Lee et al. (2019). In their study on 271 high school physical educators the authors found that high level of EI is associated with low levels of unpleasant emotions experienced by the participants, which in turn helps in improving their job satisfaction levels. Later, the incorporation of emotional intelligence-based training programs in professional learning communities' framework was also advocated by Lee et al. (2020). The authors conducted a study on 394 high school athletics directors in the U.S. to study the relationship between EI, job satisfaction, subjective well-being, and emotional exhaustion by using SEM analysis. The authors found that the relationship between TEI and subjective well-being was mediated by job satisfaction levels of the athletics directors. It was proposed that emotional intelligence help people to cope high stress situations, improve social relations and manage challenging work environment which leads to higher job satisfaction levels and lower emotional exhaustion. Hence, Lee et al. proposed that EI training should be a part of professional development programs in educational settings.

Through another study, Merida-Lopez and Extremera (2020) have proposed that, out of all dimensions of EI, teachers' ability to regulate emotions affects their job satisfaction levels the most. Also, lower burnout can lead to better chances for job satisfaction. Also, Hickman and Jureja (2017) proposed that higher emotional intelligence of special education teachers allows for better stress management which results in better student achievement for reading. Though the concept of emotional intelligence evolved in the U.S. and much work has been done in other Western countries, in the past decade more researchers are exploring the application of emotional intelligence in educational context in Asian region as well. In one study on 60 school counsellors in Malaysia, Mustafa et al. (2013) proposed that emotional intelligence bears direct positive relationship with teachers' personal

development and skill competency. They further professed that to prepare better teachers who can meet the demands of globalization, government should provide teachers adequate training in development of both professional skills and emotional intelligence. Though the sample size for the research was small but it showcased the growing interest of researchers in Malaysia for using emotional intelligence as way of improving teachers' and students' outcomes. Later, in another study on 212 secondary school teachers in Malaysia, Mohamad and Jais (2016) concluded that teachers' emotional intelligence bears a positive relationship with job satisfaction.

Emotionally intelligent school principals are more capable of introducing school reforms and are conclusive to the success of PLCs at school (Moore, 2009). In his study, Moore discussed the importance of EI for school principals and mentioned that principals high in emotional intelligence are more capable in developing and implementing common school vision. He mentioned that school leadership is essential for introducing school wide reforms and can benefit both students and teachers. Hence, it can be said that emotional intelligence of school staff members can contribute towards the introduction, success and sustenance of PLCs model at school.

Additionally, teachers' emotional intelligence can determine their multicultural attitude towards school's staff and students. In their study Arslan and Yigit (2016), explained the impact of teachers' emotional intelligence on multicultural awareness. Their study was done on 315 primary school teachers in Turkey and concluded that emotional intelligence can significantly influence teachers' multicultural attitudes in a positive direction. Recently, Vesely-Maillefer and Saklofske (2018) conducted a longitudinal study on preservice teachers who participated in an EI training program and found that regular EI training was



able to reduce the stress level and increase the efficacy and resilience among the participants. The authors have strongly proposed that emotional intelligence training should be a regular component of professional development programs for teachers.

The direct and positive relationship between TEI and job satisfaction was also supported by Li et al. (2018) in their study on 881 teachers and 37 principals from primary schools in China. Using moderation and mediation analysis the authors have proposed that emotionally intelligent teachers can usually experience higher levels of job satisfaction which directly affects their job performance. Also, the effect of EI on job performance is found to be greater in schools with low levels of trust.

Furthermore, Martínez-Monteaudo et al. (2019) explored the relationship between teachers' emotional intelligence and work attitude characteristics such as, burnout, anxiety, depression, depersonalization, and emotional exhaustion. Research data for this study was collected from 834 teachers and participants were clustered into four groups based on EI levels, namely, high emotional intelligence and low emotional repair, high emotional intelligence, generalized low emotional intelligence, and low EI with high emotional repair. Data analysis confirmed that group with low EI reported to have higher levels of emotional exhaustion, depersonalization, anxiety, depression, and burnout.

In another recent study to determine the effect of perceived EI of teachers on their job satisfaction levels, D'Amico et al. (2020) found that TEI can significantly affect their job satisfaction levels. In a sample of 238 teachers in Italy, the authors found that use of emotions dimensions of EI can best predict their work engagement and job satisfaction levels. Teachers who having high level of emotional intelligence can thrive under

unprecedented stressful work conditions such as recently caused of Covid-19. The study substantiated that teachers' EI supports positive work engagement and helps ameliorate negative aspects related to job such as burnout.

In a study on 322 teachers from Poland, Rogowska and Meres (2022) found that teachers with higher level of emotional intelligence could cope with Covid19 challenges better and reported higher level of life and job satisfaction. The researchers recommended that schools should invest in programs that can help teachers in improving their emotional intelligence to better handle work and life stress.

The above review of literature helps in understanding that emotionally intelligent teachers can contribute significantly towards their students' academic achievement, are better apt in handling stress and experience more job satisfaction. Also, emotional intelligence is a fluid intelligence and many researchers have argued that school authorities should include EI as part of teachers' professional development program. However, there is a gap in literature that can explain how teachers' emotional intelligence can affect teachers' participation in PLCs and moderate its influence of their job satisfaction and student achievements. Moreover, few studies have focused on the relationship between TEI and their CTE. The purpose of the present study is to address the gap in the existing research literature and discuss in what ways teachers' emotional intelligence can influence students' academic outcomes and teachers' job satisfaction. The results will help policy makes in promoting teachers' training programs to enhance their EI skills.

### **2.6.1.3 Teachers' Emotional Intelligence and Professional Learning Communities**

Several researchers have professed that employees' EI is positively related to their work performance (Mayer et al., 2004). Also, the managers with high emotional intelligence are conclusive for maintaining continuous learning and progressive work culture (Goleman, 1995). In organizations that have learning communities, it was observed that employees with higher EI were more satisfied with their job (Chiva & Alegre, 2007). In another research Singh (2007) studied 280 working adults and reported a positive relationship between employees' EI and the organizational learning.

However, few researchers have studied the relationship between TEI and their participation in PLCs in a school. In one study, Jackson (2008), analysed the effect of school principal's emotional intelligence on their capability for implementing and preserving professional learning communities at 13 schools in Texas, U.S. He concluded that school principal with high emotional intelligence encourages teachers' participation in decision making and they make school environment conclusive for the sustenance of professional learning communities.

Also, previous studies have supported that teachers' emotional intelligence is directly associated with their multicultural awareness (Arslan & Yigit, 2016), school culture, and school reforms. Moore (2009) reported that school principal's emotional intelligence is directly associated with their abilities to manage schools with high standards and introduce reforms when necessary. In another study, Mustaffa et al. (2013) reported a direct positive relationship between school counsellors' personal development and their emotional intelligence. The researchers argued that incorporating EI training programs can help schoolteachers in their professional and personal development.

Vesely et al. (2013) in one study focused on TEI, job satisfaction and self-efficacy. They argued that teachers' emotional intelligence can significantly affect teachers' job satisfaction and burnout. They professed that teachers' emotional intelligence helps in improving self-efficacy, which leads to better job satisfaction. The researchers proposed that including EI development courses in teacher training and on job learning programs can help in improving overall teachers' job satisfaction.

Konrad and Gabrijelcic (2014) discussed the importance of TEI in their professional development. Teaching is not a job done in isolation, as teachers need to interact with each other, students, and parents on daily basis. Emotional intelligence can help teachers in being sensitive towards students' and parents' issues and find amicable solution to other work-related issues. Also, teachers with high emotional intelligence are more open to new learnings and adopting new skills and using innovative teaching methods.

In recent studies the importance of emotional intelligence towards professional development in education sector have been discussed by several scholars. Gomez-Leal et al. (2022) conducted a literature review to highlight the importance of emotional intelligence for school principal and its effect of teachers' performance. They professed that emotional intelligence training should be a regular part of professional development programs designed for school principals. However, using mediation analysis Kouhsari et al. (2022) claimed that there exist no significant and substantial relationship between emotional intelligence of school principals' and teachers' performance, which contradicts the findings of the previous studies.

Though researchers agree that teaching is an emotionally demanding job and TEI plays an important role in day-to-day teaching activities, only few studies have tried to explore the impact of emotional intelligence on teachers' professional development (Gomez-Leal et al., 2022; Konrad & Gabrijelcic, 2014). There is a need for more studies that can focus on how teachers' emotional intelligence can affect their participation in professional learning communities at school. It can be assumed that teachers high on emotional intelligence will not only be open towards new learnings opportunities, but they will adopt them willingly and successfully in day-to-day activities. As a result, it can lead to better student learning, higher academic achievements, and more improved job satisfaction for teachers.

### **2.6.2 Emotional Intelligence as Moderator**

The study focuses on teachers' emotional intelligence as the moderator for the relationship of PLCs with students' academic achievement in Mathematics and teachers' job satisfaction. It is assumed that emotionally intelligent teachers exhibit different results for the above-mentioned relationship, as compared to teachers with lower EI. The present study is using teachers' emotional intelligence as a moderator based on the review of similar past studies. Carmelli (2003) studied the effect of managers EI on their work life and proposed that EI can be a significant moderator of the relationship between work-life conflict and career commitment of the managers.

In another study, Gao et al. (2012) explored the moderating influence of EI on the relationship between work-family conflict and TJS in 212 high school teachers in China. The study discussed that teachers with high EI can manage their work-family conflict more efficiently and report better job satisfaction levels as compared to teachers with lower levels of EI. The study supports the role of EI as a moderator for the negative effects of

work-family conflict on job satisfaction. Gorgens-Ekermans and Brand (2012), explored the moderating role of the EI on the relationship between stress and burnout in a group of nurses in South Africa. The study discussed that higher EI in nurses was associated with lower stress and consequently diminished burnout levels. Also, it was proposed that emotional intelligence training for the nurses can help in improving their work life.

In a study on 351 primary school teachers and 344 secondary school teachers in Spain, Merida-Lopez et al. (2019) showed that TEI acts as a significant moderator for the effect of self-appraisal stress on teachers' work engagement. The importance of EI as a moderator for job-related outcomes in the education sector was again discussed by Merida-Lopez et al. (2020). According to the study findings, teachers' EI levels can negatively moderate the effect of teachers' perceived support from colleagues on their work engagement. The study was conducted on 1297 primary and secondary school teachers in Spain, and the findings showed that teachers with low levels of EI depend on external support, such as from colleagues, to stay engaged and committed to their work. However, teachers with higher levels of EI do not rely on external factors to stay in their jobs.

The inclusion of emotional intelligence training for teachers' professional development was advocated by Chakravorty and Singh (2020). Using survey method, in a sample of 713 teachers in India, the authors reported that emotional intelligence can significantly moderate the relationship between job stress, work interference with family and family interference with work. The authors used partial least square method for data analysis to support their findings and concluded that emotional intelligence significantly and negatively moderated the effects of work interference with family and family interference with work on burnout. According to the authors, high levels of EI in teachers enable them to maintain positive work relations with colleagues and stay motivated. Despite of high

levels of interference between work and family life, EI help teachers in managing negative effects of burnout. They concluded that EI training should be an integral part of teachers' learning programs.

Furthermore, Peláez-Fernández (2021) discussed that teachers' EI plays a critical role in determining their positive work behaviour. In a study on 685 teachers in Spain the researchers found that teachers EI exerts a positive effect on both subjective happiness and job satisfaction, however the effect on turnover intention was negative. Using SEM analysis the authors reported that teachers EI negatively moderates the relationship between happiness and turnover intention. The study postulated that subjective happiness is high among teachers with higher level of EI and such teachers express low desire to switch their job. The researchers also proposed that emotional skills training should be an integral part of teachers' development programs to ensure better job satisfaction and job retention among teachers.

Once again, the role of EI as moderator was also supported by Mérida-López and Extremera (2020) in their study on 780 pre-service teachers in Spain. Through their study, the researchers aimed to explore how TEI levels can moderate the relationship between the intention to quit and occupational commitment. The study used the Spanish version of the Wong and Law Emotional Intelligence Scale to determine the EI levels of the participants. The researchers concluded that appraisal of emotions and use of emotions dimensions of EI negatively moderated the effects of occupational commitment on the intention to quit. The negative moderation means that at higher levels of EI, the intention to quit decreases, whereas at lower levels, the teachers expressed a higher intention to quit. The author suggested that based on the ability model of EI by Mayer et al. (2016), high levels of EI

help teachers identify their own emotional responses and equip them to manage challenging situations.

Similarly, Chigeda et al. (2022) conducted a moderation analysis to determine the interaction effect of work-related stress and EI on organisational commitment. The data was collected from 212 school staff members, and it was found that EI negatively moderated the effects of job stress on the organisational commitment of the participants. The study findings supported the idea that a high level of EI increases the workers' emotional awareness and management abilities, which helps negate the effects of work stress on their organisational commitment. The author discussed that EI acts as a supportive factor that helps mitigate the effects of stress on employees' job behaviour. Also, D'Souza et al. (2022) discussed the vital role of teachers' emotional intelligence in unprecedented situations like the COVID-19 pandemic. In a sample of 384 academicians in India, the authors found that EI moderated the effect of transformational leadership on organisational citizenship behaviour.

The above review shows the importance of emotional intelligence as a moderator in organisational set-ups, including schools. Scholars like Peláez-Fernández et al. (2021) have advocated the importance of emotional intelligence in maintaining job-related outcomes for teachers. Previous studies have discussed that EI, with respect to negative aspects affecting job behaviour, such as stress, burnout, and intention to quit, EI can act as a negative moderator, which means individuals with higher levels of EI are more confident and equipped to manage work-related stress. High EI levels act as a psychological cushion that helps teachers manage challenging situations without getting perturbed (Chigeda et al., 2022; Mérida-López et al., 2020). Emotional intelligence helps teachers understand their



own and others' emotional responses and empowers them to use emotions in managing untoward work conditions. Also, researchers have suggested time and again that emotional development training should be a regular feature of teachers' professional development programs (Chakravorty & Singh, 2020).

Nevertheless, there is a lack of studies that have focused on teachers' emotional intelligence as a moderator for job-related outcomes in the Malaysian context. As Krishnan and Awang (2020) mentioned, Malaysian teachers are frequently subjected to high emotional demands in managing classrooms and teaching students from diverse cultural, socio-economic and intellectual backgrounds. This review clearly shows a lack of research that can highlight the importance and role of teachers' emotional intelligence (TEI) as a moderator in the Malaysian education system. Therefore, this study employed teachers' emotional intelligence as a moderator for the relationship between professional learning communities (PLCs), teachers' collective efficacy (CTE) and job satisfaction (TJS) among primary school teachers in Selangor, Malaysia.

## **2.7 Conceptual Framework of the Study**

The conceptual framework for the study was developed based on the theoretical framework and the review of the past studies. In the present study, PLCs is the independent (exogenous) variables that determines teachers' collective efficacy and job satisfaction (endogenous) variables, and the effect of learning communities is mediated by teachers trust in their colleagues (TTC). Also, emotional intelligence of the teachers is the moderating variable in the relationship that can determine differences in the outcomes of learning communities.

This framework is conceptualized under the theoretical underpinnings of the social cognitive theory (Bandura, 2001). Critical analysis of the past literature showed that school-based professional learning communities are pivotal in improving teachers' collective efficacy beliefs and job satisfaction (Donohoo, 2017; Reeves et al., 2017; Voelkel & Chrispeels, 2017; Zhang et al., 2022). The learning communities provide teachers with opportunities for work collaboration, skill development, knowledge sharing, a clear vision for school goals, learning from peers and supportive work culture that aids in developing strong collective efficacy beliefs. Also, through supportive leadership conditions, properly defined job expectations and a decrease in work isolation, the learning communities help ensure job satisfaction by satisfying motivation factors related to the job and controlling for hygiene factors.

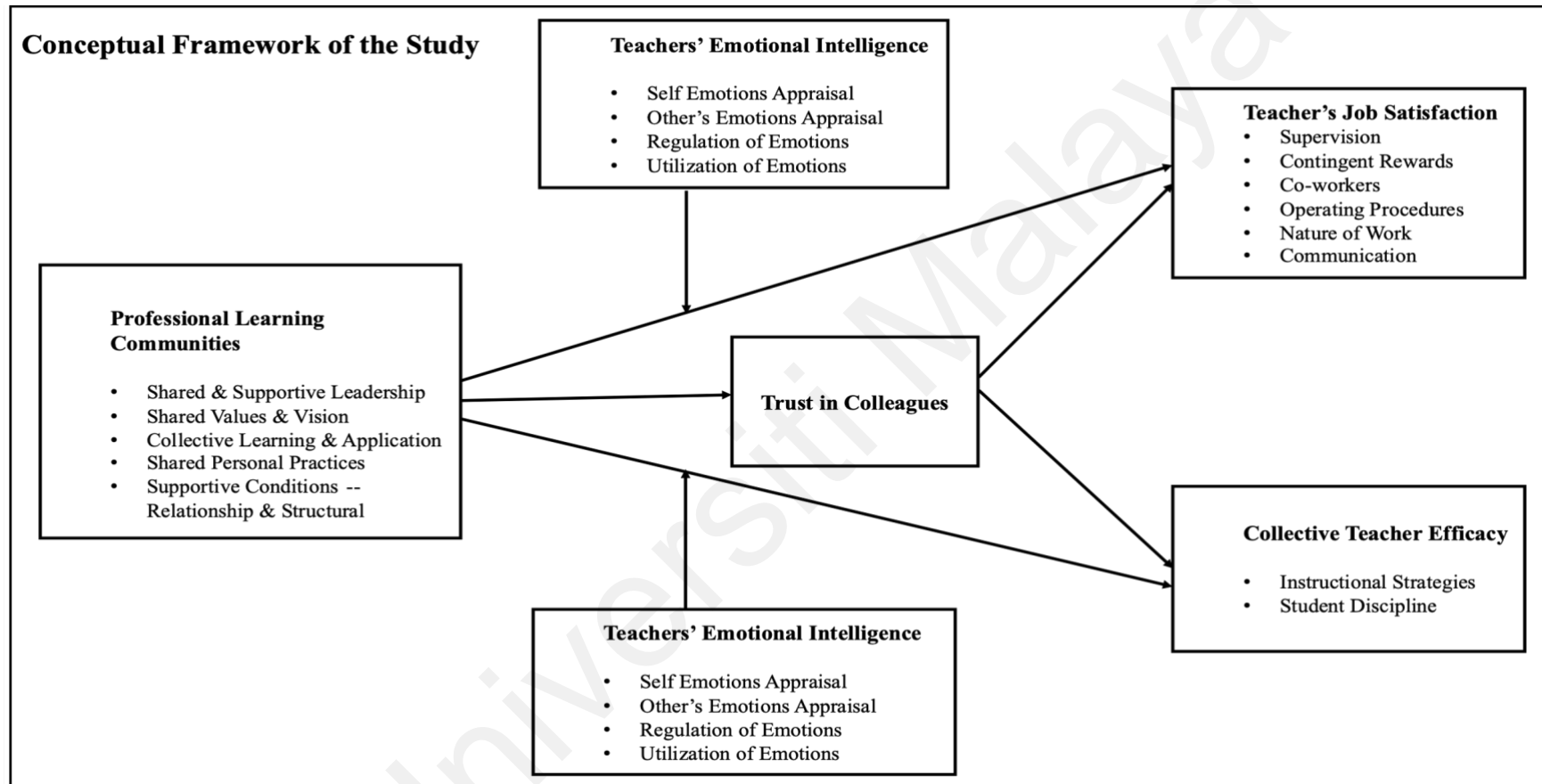
Additionally, the study has postulated that the effect of professional learning communities (PLCs) on teachers' collective efficacy and job satisfaction is mediated by trust in colleagues. Trust is the cohesive bond that aids the commencement, sustenance, and success of learning communities at the schools. Researchers have discussed that trust among stakeholders in schools is essential for the success of learning communities, and both support each other (Bolam et al., 2005; Gray et al., 2016; Nonkovic, 2022). Trust among education stakeholders helps in schools' success and the strengthening of collective efficacy and job satisfaction levels among teachers. Trust in teachers allows them to be vulnerable and open to each other. It facilitates open and constructive discussions and exchange of information and ideas, making the overall work environment supportive and cohesive. Teachers' engagement in the learning communities gives them opportunities to learn and grow professionally, which provides a sense of support, value and empowerment, hence increasing trust among them.

In addition, teachers' emotional intelligence has been postulated as a moderating variable in this study. Mayer et al. (2016) have suggested that emotional intelligence has a predictive ability, and it can help determine outcomes like job satisfaction. Teachers with a higher level of EI can perceive the importance of professional learning communities and be willing to be active participants, despite the chances of the extra workload. Also, emotionally intelligent teachers believe in their collective ability to contribute towards student learning and help develop high collective efficacy beliefs at schools. Furthermore, teachers' emotional intelligence enables them to regulate their emotions while managing student behaviour and work stress, build positive and constructive relationships with their colleagues, and be open to new learnings and ideas, contributing to their overall job satisfaction.

Though previous studies support the relationship between the PLCs collective teacher efficacy, job satisfaction, trust and emotional intelligence, no comprehensive study has focused on all these variables in the context of the Malaysian education system. Therefore, the present study examined the relationship between these variables among teachers in public primary schools in Selangor, Malaysia, and accordingly, the conceptual framework for the study was developed.

**Figure 2.6**

*Conceptual Framework of the Study*



## 2.8 Summary

This comprehensive literature review discusses the contribution of the professional learning communities, teachers' trust in colleagues and teachers' emotional intelligence towards collective teacher efficacy, and teachers' job satisfaction. However, there is gap in literature for studies done in Asian region, more specifically, in Malaysia. The review clearly indicates that very few studies have focused on PLCs or CTE in Malaysia. The primary schools present a unique cohort because professional learning communities are more school focused in context of primary schools, unlike middle or high schools, where the communities are more subject focused. Also, primary schools lay the foundation for the education system. In order to introduce education reforms, it is essential to have a strong base, hence the present study is focusing on the primary schools.

Also, though previous studies have discussed that both PLCs and collective teachers' efficacy shares a correlational study but there is no consensus among the researchers about the direction of the relationship. Some studies suggests that PLCs affect CTE, while other report that CTE is important for the success of PLCs, and only few studies discuss about bi-directional relationship. To add on to the literature, the study holds the point of view that in schools with successful PLCs model, teachers often report higher CTE levels. Also, in Malaysian context not many studies have focused on the role of CTE, though it has been identified as most important factor that can determine students' academic outcomes (Eells, 2011; Hattie, 2015).

Another important takeaway from this review is that most PLCs activities are being limited to teachers' participation in different professional development trainings. The

term PLCs is losing its actual meaning and is being referred to any activity where teachers are coming together and working to improve student learning (DuFour, 2007).

To address this issue, the researcher focused on application of PLCs model at schools and not on teachers' participation at trainings or workshops. As previous studies have discussed that trust in colleagues is an important factor that leads to collaborative work environment and more satisfied teachers, but this area is not properly explored in Malaysian context. Malaysia is a multi-cultural society, where teachers from different ethnic backgrounds works together in schools. Researchers have discussed that it is easier to establish trusting relationship among individuals with similar backgrounds, hence trust can play an important role in school success in Malaysia. Similarly, though few studies have discussed the influence of teachers' EI on CTE, there is a need to further explore this area. When proven empirically, this can present a case for including EI training in pre-service teachers' education.

Moreover, there is a need for more quantitative studies that can provide empirical evidence for the impact of PLCs model on school success. As discussed, most studies have focused on subject specific learning communities or the establishment of PLCs at schools. However, it is equally important to assess the other factors that can contribute to the success of PLCs at schools. In Malaysian context, none of the studies have assessed how teachers' trust in colleagues can mediate the effects of PLCs on teachers' collective efficacy and job satisfaction. Also, none of the studies have explored how EI can indirectly affect PLCs outcomes at schools. It is one of its kind of studies to be done in Malaysia which will be focusing on primary schools, the basic foundation if the education system.

## CHAPTER 3

### METHODOLOGY

#### 3.1 Introduction

The purpose of this study was to examine how professional learning communities (PLCs) at public primary schools can affect teachers' collective efficacy (CTE) and job satisfaction (TJS) levels. Also, the study focused on the mediating effect of teachers' trust in colleagues (TTC) and the moderating role of teachers' emotional intelligence (TEI) to explain the relationship mentioned above. The chapter discusses the research design, target population, sampling methods, and research instruments used in the study. In addition, the chapter presents a discussion of data collection and analysis procedures, research ethics, and the timeline of the study.

#### 3.2 Research Design

Research design entails the guidelines, processes, and materials needed to carry out the study. It provides the framework based on which the whole research process is carried out, including identification of the problem, finding of research gap, formation of hypothesis, choosing sample population, data collection, data analysis, interpretation of results, and final preparation of the report (Kumar, 2018).

The first step of this study was the identification of the problem, to find the gap and to plan a study that can fill that gap. To find the problem, the researcher referred to the Malaysian Education Blueprint, examined the previous studies done in Malaysia and globally, and had discussions with experts. Once the problem and relevant variables were identified, extensive literature research was carried out. Past studies and established theories were examined to formulate the study objectives, hypothesis, and

framework that linked the variables PLCs, CTE, TJS, TTC, and TEI in public primary school teachers in Selangor, Malaysia.

This is a non-experimental, quantitative study based on the causal relation research design. An important component of the quantitative studies is the identification of variables as independent, dependent, mediator, and moderator, as required based on study framework (Creswell, 2014). The independent (exogenous) variable is the one that causes the change or exerts an effect on the dependent (endogenous) variables (Cohen et al., 2007). The effect of the exogenous variable on the endogenous variable follows two paths, direct and indirect (via another mediating variable). The mediating variable can either increase or decrease the total effect of the exogenous variable. Similarly, the effect of the exogenous variable on the endogenous variable can differ in the presence of another independent variable known as the moderator (Hair et al., 2017). The moderator can determine how the effects of the independent variable will differ for different population groups. To propose mediation, exogenous, mediator, and endogenous variables must have some degree of correlation with each other. However, the moderator variable is often independent of the exogenous variable, and both variables interact together to exert an effect on the endogenous variable (Hair et al., 2017).

Causal relationship studies are correlational in nature and are helpful in establishing the degree, direction, and level of association between the variables (Cohen et al., 2007). Causal studies are used to explore the predictive ability of an exogenous variable for the endogenous variable, meaning it helps predict how a change in an exogenous variable can cause a change in the endogenous variable. Hence, this causal study aimed to explore the relationship between the research variables (PLCs, CTE, TJS, TTC, and



TEI) in a set of population. As this study is based on sound theoretical framework and used reliable research instruments, the findings of this study are applicable to other similar populations.

As a next step, suitable research instruments were employed for data collection by using survey method. The benefit of survey method is that it allows easy collection of data from large set of respondents, in an objective manner (Creswell, 2014). Another important component of a quantitative study is data analysis using appropriate statistical methods. In this study data analysis was done in two phases. The first phase included descriptive analysis where the software IBM SPSS was used. The second phase included inferential analysis where the relationship between the variables was established, by using software SmartPLS3. The present study used Partial Least Square (PLS) analysis-based structural equation modeling (SEM) approach to explore how the research variables are related with each other. PLS is a regression-based method that uses path models, and the variance caused in endogenous variables by exogenous variables is explained based on path coefficients (Hair et al., 2017).

The statistical analysis based on SEM helped in developing a research model that presented the effects of exogenous variable (professional learning communities) on the endogenous variables (teachers' collective efficacy and job satisfaction), in presence of the mediating variable (trust in colleagues) and the moderating variable (teachers' emotional intelligence) by using path coefficients.

### **3.3 Location of the Study**

Location for this study is the state of Selangor in Malaysia. Selangor is one of the most prominent and populated states in Malaysia. In the state of Selangor, there are a total of

660 primary schools with a total of approximately 35000 teachers working, which is the highest for any state in Malaysia. Schools from all 10 school districts in Selangor were included in the study.

### **3.4 Population and Sample of the Study**

According to Creswell (2009), "A population is a group of individuals who have the same characteristics" (p. 142). In this study, the population included primary school teachers working at public primary schools in Malaysia. "The target population refers to the group of individuals who meet the criteria of the study" (Creswell, 2009), which for this study are teachers from the public primary schools in Selangor, Malaysia. The state of Selangor is one of the biggest states in Malaysia, with more than 600 primary schools and more than 35000 teachers working at primary schools (the maximum number of teachers for a state in Malaysia). Hence, teachers from the state of Selangor adequately represent the teacher population in Malaysia. Also, data collection for the study occurred during the Covid-19 times when the movement control order was in place, and it was not possible to travel from one state to another. Therefore, the study focused on public primary school teachers in Selangor as the target population.

In Malaysia there are following categories of public schools (MOE, 2020):

- Malay-medium national schools (Sekolah Kebangsaan, SK)
- National-typed school Chinese (Sekolah Jenis Kebangsaan Cina, SJKC and
- National-typed School Tamil (Sekolah Jenis Kebangsaan Tamil, SJK T.

SJKC and SJKT are non-Malay medium schools or the vernacular schools. All three categories of schools come under the Selangor Education Department and were included in this study. As an inclusion criterion, teachers who were teaching at a public primary school in Selangor, Malaysia, for at least one year or more were included in the study. The time-period of one year was chosen because a newly recruited teacher takes

at least one year to get familiar with the school's work culture and form professional or personal relationships.

### **3.4.1 Sample Size Determination**

The sample size is the most critical part of quantitative research. A sample is a subset of a population, and ideally, it should well represent the possible similarities and differences of that population (Hair et al., 2017). A sample that presents a population allows for generalising the results from that sample to a bigger population. The present study used the statistical software SmartPLS to conduct structured equation modeling analysis. According to Hair et al. (2017), when using SmartPLS, sample size calculations should be based on the complexity of the mode, power analyses and the largest number of predictors for a particular dependent variable. For this purpose, Hair et al. (2017) recommended two approaches for calculating sample size, first based on guidelines by Cohen (1992) and the second using G\*power software for sample size calculation.

Cohen (1992) presented guidelines for calculating minimum sample size based on minimum R<sup>2</sup> values of 0.10, 0.25, 0.50, and 0.75 at a significance level of 1%, 5%, and 10%. These recommendations are based on the assumptions of statistical power of 80% and the complexity of the path model (Hair et al., 2017). The table below outlines the minimum sample size recommendations as Cohen (1992) suggested. Using Cohen's table for sample size calculation, the minimum sample size for this study was 150 respondents.

**Table3.1.***Sample Size for Using SmartPLS:*

	Significance Level											
	10%				5%				1%			
	Minimum R <sup>2</sup>				Minimum R <sup>2</sup>				Minimum R <sup>2</sup>			
	0.10	0.25	0.50	0.75	0.10	0.25	0.50	0.75	0.10	0.25	0.50	0.75
Maximum No. of Arrows Pointing at a Construct (No. of Independent Variables)												
2	72	26	11	7	90	33	14	8	130	47	19	10
3	83	30	13	8	103	37	16	9	145	53	22	12
4	92	34	15	9	113	41	18	11	158	58	24	14
5	99	37	17	10	122	45	20	12	169	62	26	15
6	106	40	18	12	130	48	21	13	179	66	28	16
7	112	42	20	13	137	51	23	14	188	69	30	18
8	118	45	21	14	144	54	24	15	196	73	32	19
9	124	47	22	15	150	56	26	16	204	76	34	20
10	129	49	24	16	156	59	27	18	212	79	35	21

Source: Cohen (1992): A Power Primer. Psychological Bulletin 112: 155–159

Additionally, as recommended by Hair et al. (2017) the researcher used G\*power software to calculate the sample size. For the two-tailed, with effect size  $f^2$  value of 0.05, error probability of 0.05 and power (1 - error probability) of 0.95, the minimum sample size suggestion was 262 respondents. Though based on Cohen's recommendation, the minimum sample size requirement was 150, the researcher could successfully collect data from 311 primary school teachers, which satisfied G\*power recommendations as well. This sample size was sufficient to avoid sampling errors or missing data when using SmartPLS (Creswell, 2014).

### 3.4.2 Sampling Method

Before initiating the sampling procedure, permissions from the MOE, Malaysia, and subsequently from the Selangor Education department were obtained. There are ten school districts in Selangor, known as Pejabat Pendidikan Daerah (PPDs), which are PPD Gombak, PPD Hulu Langat, PPD Hulu Selangor, PPD Klang, PPD Kuala

Selangor, PPD Petaling Perdana, PPD Petaling Utama, PPD Sabak Bernam and PPD Sepang with a total of 868 primary schools (Selangor Education Department, 2020).

A master list of all the public primary schools in Selangor was obtained from the website of the Selangor Education Department. At first, stratified sampling procedure was used to determine the number of schools required from each school district (Cohen et al., 2007; Creswell, 2014). The number of schools from each district was calculated following the percentage method, the number of schools chosen corresponded to the total percent of schools in a particular school district with respect to the total number of primary schools in Selangor. Of the ten school districts, there are 104 schools in PPD Gombak (11.98%), 130 schools are in PPD Hulu Langat (14.97%), 68 schools are in PPD Hulu Selangor (7.83%), 133 schools are in PPD Klang (15.32%), 92 schools are in PPD Kuala Selangor (10.59%), 139 schools are in PPD Petaling Perdana (16.01%), 86 schools are in PPD Petaling Utama (9.91%), 64 schools are in Sabak Bernam (7.37%), and 52 are in PPD Sepang (5.99%). Based on the percentage of schools, a minimum number of schools needed from each district to participate in the study was calculated.

To maintain adequate sample size, considering both Cohen's and G\*power recommendations, the researcher aimed to obtain at least 300 respondents for the study. For this purpose, another list of schools, based on their PPD was prepared, and each school was assigned a number starting from 001. In this stage, a simple random sampling approach was used schools' selection. This method was most suitable because it allows for all schools to have an equal probability to be selected in the study (Cohen et al., 2007; Creswell, 2014). In order to maintain the randomness of data, a chit system was used to select schools. In total, 19 schools were selected to be approached, of them, 2 were from PPD Gombak, 3 from PPD Hulu Langat, 2 from Hulu Selangor, 3 from

PPD Klang, 2 from PPD Kuala Selangor, 3 from PPD Petaling Perdana, 2 from PPD Petaling Utama, 1 from PPD Sabak Bernam and 1 from PPD Sepang.

From each school, 15 to 20 teachers were randomly approached to participate in the study. The researcher visited the schools and gave the physical forms to the main contact person at those schools. The filled-in forms were collected at a later date. The physical distribution of forms continued until the schools moved to online learning mode again because of Covid-19. In total, 320 paper-based or physical forms were distributed to the teachers from participating schools, out of which 289 filled-in forms were received back. After the schools moved to online learning mode, the researcher distributed Google forms through dedicated online social media groups of primary school teachers in Selangor, Malaysia. Hence, both online and physical forms were used in this study for data collection. A total of 311 teachers participated in this study, of which 289 participated through physical forms and 22 used Google forms.

**Table 3.2**

*Sample Size from Each Pejabat Pendidikan Daerah (PPDs) in Selangor*

Pejabat Pendidikan Daerah (PPDs)	Total No. of Schools	Schools Included	Participating Teachers
PPD Gombak	104	2	21
PPD Hulu Langat	130	3	42
PPD Hulu Selangor	68	2	31
PPD Klang	133	3	52
PPD Kuala Selangor	92	2	33
PPD Petaling Perdana	139	3	51
PPD Petaling Utama	86	2	34
PPD Sabak Bernam	64	1	11
PPD Sepang	52	1	14
Total	868	19	289

To initiate data collection, the researcher contacted the school gatekeepers or receptionists, requesting teachers' participation in this study. The school gatekeepers or receptionists later connected the researcher with the school principal. In a meeting with the school principal, the researcher presented a brief introduction about the research, aims, methodology, and implications of this study. Also, school principals were assured of issues related to data privacy, confidentiality, and the well-being of teachers, upon participation in this study. The researcher shared the physical forms with the principals with a request to distribute them among the primary grade teachers. The teachers filled in the forms anonymously and submitted them to the school office, from where the researcher picked up the forms later. Once the forms were collected, filled-in forms were included in the study. For the Google forms, the researcher approached the social media groups of primary school teachers from Selangor and asked the admins to share the form with teachers with a request to fill in the forms. While distributing Google forms, it was requested that those teachers who have already filled-in the physical forms at their schools, should not fill in the Google forms again.

### **3.5 Instruments of the Study**

The research uses pre-established instruments for measuring different variables involved in the study. One advantage of using established instruments is their proven reliability and validity (Creswell, 2014). The research instruments used in this study are, Professional Learning Communities Assessment -- Revised (PLCA-R) developed by Olivier et al. (2010), Faulty Trust in Colleagues (FTC) part of the Omnibus-Tscale developed by Hoy and Tschannen-Moran (2003), Collective Teacher Belief Scale (CTBS) developed by Tschannen-Morgan & Barr (2004), Job Satisfaction Survey (JSS) by Spector (1985) and the Wong & Law Emotional Intelligence Scale (WLEIS) developed by Wong and Law (2004). The research instrument PLCA-R was used to

measure the status of professional learning communities at school, FTC was used to measure trust in colleagues, CTBS was used to determine teachers' collective efficacy levels, JSS helped in assessing teachers' perception towards their job satisfaction, and WLEIS was used to determine teachers' perceived emotional intelligence. Additionally, the researcher prepared a demographic survey for preparing teachers' profiles. The researcher contacted all the instrument authors through email and obtained their permission to use instruments in this study.

### **3.5.1 Demographic Questionnaire**

The researcher prepared a demographic questionnaire to obtain information into the teachers' personal and professional backgrounds. The questionnaire helps gain personal information about teachers' age, gender, nationality, and marital status. Also, it provides professional information about teachers' educational qualifications, years of experience (at present school and total work experience), grade level teaching, and the number of students in their classrooms. This questionnaire helped to ascertain that the research participants are truly the representative of the target population and can help in generalizing the results of the study.

### **3.5.2 Professional Learning Communities Assessment-Revised by Olivier, Hipp and Huffman (PLCA-R)**

The instrument Professional Learning Communities Assessment - Revised (PLCA-R) was developed by Olivier et al., (2010) and it helps to measure the teachers' perception for the professional learning communities (PLCs) practices being followed at their respective schools. The instrument was developed following the Hord's (1997) model of PLCs. The instrument PLCA-R measures teachers' perception of six PLCs characteristics: "shared and supportive leadership, shared values and vision, collective



learning and application, shared personal practice, and supportive conditions for relationships and structures.”

### 3.5.2.1 Description of Professional Learning Communities Assessment-Revised

In this study, the instrument PLCA-R was administered through both physical and Google forms. It consists of 52 items in total and has six subscales. The items are responded to via the Likert type scale with four options: “Strongly Disagree”, “Disagree”, “Agree”, and “Strongly Agree”. The PLCA-R measures teachers' perception of PLCs practices at school and its six dimensions. The instrument was scored based on the responses to Likert scale with 1 as minimum value for a response and 4 as maximum value.

**Table 3.3**

*“Dimensions, Item Numbers & Scoring of PLCA-R”*

“Dimensions”	“Item Numbers”	“Scores”
“Shared and Supportive Leadership (SSL)	1 - 11	11 - 44
Shared Values and Vision (SVV)	12 - 20	9 - 36
Collective Learning and Application (CLA)	21 - 30	10 - 40
Shared Personal Practice (SPP)	31 - 37	7 - 28
Supportive Conditions – Relationships (SCR)	38 - 42	5 - 20
Supportive Conditions – Structures (SCS)	43 - 52	10 - 40
Total PLCs”	1 - 52	52 - 112

The PLCA-R has been used by researchers across different cultural and geographical setups to study teachers' perceptions of the state of PLCs at their schools. Lee et al. (2011) translated the PLCA into the Chinese language for their study and extracted three factors of PLCs where the Cronbach alpha ranged from 0.84 to 0.90. They

reported that the instrument items retained good internal consistency when translated into Chinese. Also, Gray et al. (2016) developed a shortened version of the PLCA-R for their study. They chose 2 items from each subscale of PLCA-R and prepared a 12-item version with the same 4-point response choices on the Likert scale. Upon factor analysis for the shortened version, Cronbach's alpha was found to be 0.92 which proved high internal reliability of the scale. Also, in Malaysian context, Idi et al. (2021) have mentioned that PLCA-R is one of the most adopted and used instrument by researcher to measure professional learning communities at different educational institutes in the country.

#### **3.5.2.2 Reliability & Validity for Professional Learning Communities Assessment-Revised**

In an analysis of 1209 teachers, the authors of the PLCA-R reported high-reliability coefficients for each subscale and the whole instrument (Olivier et al., 2010). The authors reported Cronbach alpha 0.97 for the whole scale and for subscales “shared and supportive leadership ( $\alpha=0.94$ ), shared values and vision ( $\alpha=0.92$ ), collective learning and application ( $\alpha=0.91$ ), shared personal practice ( $\alpha=0.87$ ), supportive conditions – relationships ( $\alpha=0.82$ ), and supportive conditions structures ( $\alpha=0.88$ )”.

#### **3.5.2.3 General Consideration for Professional Learning Communities Assessment-Revised**

The PLCA-R helps assess the teachers' perceptions about using PLCs models at schools. The teachers are the main participants of professional learning communities, and their perception can give a concrete idea about the success of PLCs model at a given school. While analysing the scores, it is important to note that some subscales may be rated lesser than others, which means it is an improvement area for the school.

Also, one or more subscales can be rated lower, but overall scores can be high. Such scenarios show that the school has a good PLCs framework in place, but a few areas need further attention. The PLCA-R assesses teachers' perception of a given school, hence, the scores for all the teachers should be somewhat similar. A marked difference in the scores for the same school indicates the respondent's bias.

### **3.5.3 Collective Teacher Belief Scale by Tschannen-Moran and Barr**

The Collective Teacher Belief Scale was developed by researchers Tschannen-Moran and Barr (2004). Theoretically the instrument is founded on Bandura's (1997) work on self-efficacy, particularly teachers' self-efficacy. It measures school faculties' belief in their collective capability to contribute to students' achievement at school. The questionnaire is used to measure collective teachers' efficacy beliefs of teachers at schools and helps in determining school-level differences in collective teacher efficacy.

#### **3.5.3.1 Description of the Collective Teacher Belief Scale**

The instrument CTBS includes 12 items to which teachers rate their responses on a 9-point Likert-type scale. These responses can range from "None at all" to "A great deal," and the responses anchor at 1, 3, 5, 7, and 9. The scale contains two subscales, "Instructional Strategies" (items numbers 1 to 6) and "Student Discipline" (items numbers 7 to 12). For scoring the CTBS, responses are marked from 1 to 9, corresponding to the 9 points on the Likert scale. The overall collective teacher efficacy is calculated through the mean of all the responses.

**Table 3.4***Dimensions, Item Numbers & Scoring of CTBS*

Dimensions	Item Numbers	Scores
Instructional Strategies (CEI)	1 - 6	6 - 54
Student Discipline (CES)	7 - 12	6 - 54
Total CTE	1 - 12	12 - 108

Also, the collective teacher efficacy for each subscale is measured by taking the mean for each subscale. A high score on the scale indicates high teacher collective efficacy, which means teachers at a school believe that together they can contribute significantly towards their students' academic achievement. In their study, Tschannen-Moran and Barr (2004) used correlational analysis and reported that teachers' scores on CTBS can significantly and positively contribute to students' achievements in Mathematics and English. Also, a significant relationship was found between both the subscales of CTBS and students' achievements in Mathematics and English.

The Collective Teacher Belief Scale has been adopted and adapted by researchers across different cultures and regions and has yielded consistent results. Casanova and Azzi (2015) adapted the CTBS for Brazilian educators and reported high reliability for both subscales ( $\alpha = 0.93$  and  $\alpha = 0.91$ ) and  $\alpha = 0.95$  for the overall scale. The authors also verified the convergent validity and criteria validity of the instrument. They concluded that the instrument CTBS holds reliability and validity and is suitable for measuring the collective teacher efficacy of teachers in Brazil.

In another study, Lee et al. (2011) translated the CTBS into Chinese to measure the CTE beliefs of primary and secondary school teachers in Hong Kong, China. They

reported that when translated, the instrument showed high Cronbach alpha (0.89 for instructional strategies and 0.87 for student discipline), proving good internal consistent reliability. They argued that the instrument could retain well in Chinese settings. Klassen et al. (2010) professed that the CTBS is a superior instrument which can be used to measure teachers' perception of CTE. The researchers also confirmed the validity and reliability of this instrument.

### **3.5.3.2 Reliability & Validity of the Collective Teacher Belief Scale**

The authors used factor analysis to establish the construct validity of the CTBS. Upon first-level factor analysis, the constructs (instructional strategies and student discipline) show moderate correlation, and on second-order factor analysis, the two constructs yielded a single factor. The CTBS reported high reliability, with Cronbach's alpha = 0.97. Also, the authors reported Cronbach's alpha = 0.96 for instructional strategies and Cronbach's alpha = 0.94 for student discipline, indicating high reliability for both subscales as well.

### **3.5.3.3 General Considerations for the Collective Teacher Belief Scale**

It is essential that all items are completely answered by the respondents. The high scores on the instrument indicate that teachers' have a positive perception of the CTE for their school. However, the low scores indicate low collective teacher efficacy at school. These scores can help determine the school-level differences for the collective teacher efficacy. It is expected that for a given school, the score of all teachers should be in a similar range. In contrast, substantial differences can indicate respondents' bias in responding to the scale. The scale will help in determining school-level differences in collective teacher efficacy.

### **3.5.4 Job Satisfaction Survey by Spector**

The job satisfaction survey (JSS) was developed by Spector (1985). The instrument is useful in determining employee job satisfaction across different working environments. The JSS is used for studying employees' attitudes towards different aspects of their job and can provide insight into the employees' attitude for their job.

#### **3.5.4.1 Description of the Job Satisfaction Survey**

JSS is a self-report questionnaire frequently used in different work settings to determine employees' level of satisfaction with different components of their job. In the present study, teachers' job satisfaction was measured using six dimensions from the original instrument, namely "Supervision, Contingent Rewards (performance-based rewards), Operating Procedures (required rules and procedures), Co-workers, Nature of Work, and Communication". Each dimension has 4 items, leading to a total of 24 items in total. These items can be responded to a Likert-type scale with "Disagree Very Much", "Disagree Moderately", "Disagree Slightly", "Agree Slightly," "Agree Moderately," and "Agree Very Much" as options. Also, each dimension has both positive and negative worded items. for the instrument.

The Job Satisfaction Survey has been used in both the private and public sectors. Also, researchers have successfully used the instrument for measuring teachers' job satisfaction in different countries. Brewer and McMaha-Landers (2003) used the JSS to find the correlation between job satisfaction and job stressors for technical teacher educators in the U.S. They reported that job satisfaction and stressors share an inverse correlation relationship with each other. Similarly, in her study, Fong (2015) used the JSS to determine factors contributing to the contact renewal of teachers from

international schools in China, Japan, and Thailand. For the complete scale, she reported a Cronbach's, and values higher than 0.50 for each of the facets of the scale.

**Table 3.5**

*Dimensions, Item Numbers & Scoring of JSS*

Dimensions	Item Numbers	Scores
Supervision (JSS)	1 - 4	6 - 24
Contingent Rewards (JSR)	5 - 8	6 - 24
Co-workers (JSW)	9 - 12	6 - 24
Operating Procedures (JSO)	13 - 16	6 - 24
Nature of Work (JSN)	17 - 20	6 - 24
Communication (JSC)	21 - 24	6 - 24
Total PLCs	1 - 24	24 - 144

The JSS has shown consistent reliability and validity when translated to other languages or used in different cultural setups. The instrument has been adopted, as well as adapted in several studies across the world. In Turkey, Yucel and Bekats (2012) used the JSS to determine the relationship between teachers' organizational commitment, job satisfaction, and age. They combined the results of all facets of job satisfaction into a single high-order factor measuring job satisfaction and reported the Cornbach's alpha for the scale as 0.81. In the above below, ambivalent means the state of neither satisfaction or dissatisfaction related to the corresponding facet or the job itself.

**Table 3.6***Interpretation of Job Satisfaction Survey*

Category	Score Range	Interpretation
Each Facet (4 items)	4 to 12	Dissatisfaction
	13 to 16	Ambivalent
	17 to 24	Satisfaction
All 24 items	24 to 72	Dissatisfaction
	73 to 96	Ambivalent
	97 to 144	Satisfaction

**3.5.4.2 Reliability & Validity for the Job Satisfaction Survey**

Spector has reported internal consistent reliability (coefficient alpha) of 0.91 for the complete scale. He used a sample of 2870 respondents when developing the instrument. The internal consistent reliabilities for each of the facets are reported as supervision ( $\alpha=0.82$ ), contingent rewards ( $\alpha=0.76$ ), operating procedures ( $\alpha=0.62$ ), co-workers ( $\alpha=0.60$ ), nature of work ( $\alpha=0.78$ ), and communication ( $\alpha=0.71$ ) (Spector, 1985).

**3.5.4.3 General Consideration for Job Satisfaction Survey**

It is essential that all the items are answered for the proper scoring. It is possible that the respondent may have a low score for certain facets and a high for others. The low score would indicate a feeling of dissatisfaction towards that facet. Also, an overall high score on the instrument, with few low scores on facets would indicate that the teacher is overall satisfied with the job, but there is some dissatisfaction with certain aspects of the job.



### **3.5.5 Omnibus T-Scale -- Faculty Trust in Colleagues**

The Omnibus T-Scale was developed by researchers Hoy and Tschannen-Moran (2003) and is used to measure teachers' perception of trust towards various stakeholders at schools. The scale is based on the definition of trust "Trust is an individual's or group's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, reliable, competent, honest, and open." The instrument was developed with an aim to measure different aspects of teachers' trust: trust in the principal, colleagues, and clients (parents and students). It measures trust across the following characteristics, vulnerability, benevolence, reliability, competence, honesty, and openness (Hoy & Tschannen-Moran, 2003).

#### **3.5.5.1 Description of Omnibus T-Scale -- Faculty Trust in Colleagues**

The present study focused on the faculty trust in colleagues' part of the Omnibus T-Scale. It included 8 items, where the item number three was negatively worded. The instrument was administered through paper-based and Google forms. All the items of the instrument were responded to through a 6-point Likert-type scale with "Strongly Disagree", "Disagree", "Somewhat Disagree", "Somewhat Agree," and "Strongly Agree" as options. On this single dimension instrument, the minimum score possible was 8 and maximum possible was 48.

Several researchers have used Omnibus T-Scale entirely or part of it to study teachers' perceptions about the level of trust at schools. Flood and Angelle (2017) used the Omnibus T-scale to study the effect of teachers' trust and CTE on teacher leadership at schools in the U.S. They concluded that trust, along with collective efficacy, helped in promoting teacher leadership behavior. In Iran, Vaiskarami et al. (2017) explored the reliability and validity of the Omnibus T-Scale on 255 primary school teachers. They

calculated the Cronbach alpha of the scale and reported it to be 0.96 showing high reliability. Also, the confirmatory factor analysis confirmed the three subscales for Omnibus T-Scale and proved that it has a good fit for the data.

#### **3.5.5.2 Reliability & Validity for Omnibus T-Scale -- Faculty Trust in Colleagues**

The authors of the instrument have reported high reliability as the Cronbach alpha ranged from 0.90 to 0.98.

#### **3.5.5.3 General Consideration for Omnibus T-Scale -- Faculty Trust in Colleagues**

The Omnibus T-Scale helps assess the level of trust teachers hold toward colleagues at schools. The instrument can be used for teachers from both primary and secondary schools (Hoy & Tschannen-Moran, 2003). Also, participants can answer to the instrument through a Likert scale ranging from 1 to 6.

#### **3.5.6 Wong & Law Emotional Intelligence Scale (WLEIS)**

WLEIS is a self-report instrument that is helpful in measuring participants' emotional intelligence across four dimensions. The difference between WLEIS and other EI measures like Mayer-Salovey Emotional Intelligence Scale and Bar-On EQ Inventory is that WLEIS is a short yet reliable instrument that is easy to administer and can be completed in a short time.

##### **3.5.6.1 Description of the Wong & Law Emotional Intelligence Scale**

WLEIS was developed by management researchers Wong and Law (2002), at the Chinese University of Hong Kong, in Hong Kong, China. It was developed with the aim of having a self-report EI measure that is psychometrically sound and reliable. The instrument is based on the ability model of emotional intelligence by Mayer et al.

(2016). It consists of 16 items and measures emotional intelligence across four factors: “self-emotional appraisal, others' emotional appraisal, regulation of emotions, and use of emotions.” It is a self-report measure where the participants can mark their response on a 7-point Likert-type scale ranging from "Strongly Agree" to "Strongly Disagree."

**Table 3.7**

*Dimensions and Scoring of the Wong & Law Emotional Intelligence Scale*

Dimensions	Item Numbers	Scores
Self-emotion appraisal	1-4	4-28
Others' emotion appraisal	5-8	4-28
Use of emotion	9-12	4-28
Regulation of emotion	13-16	4-28
Total EI	1-16	16-112

### **3.5.6.2 Reliability & Validity for the Wong & Law Emotional Intelligence Scale**

Wong & Law reported the internal consistency reliability of the four dimensions in a range from 0.83 to 0.90. The four dimensions show mild correlation with each other, indicating that they show some similarity but are not identical in nature. Also, the authors compared and correlated the WLEIS with Big Five Personality Inventory and EQ-I, on a sample of business students in Hong Kong. They reported satisfactory internal consistency, convergence, and discriminant and incremental validity (Wong & Law, 2002). For construct validity, Wong & Law proved that the instrument positively correlates with the life satisfaction survey and negatively with the powerlessness scores. The CFA showed that the four dimensions of the WLEIS can reasonably present a multidimensional EI construct.

WLEIS is widely used by researchers across the world in both original and adapted forms. The instrument has shown satisfactory reliability and validity when translated into other languages and used in different cultural settings. In one study, Li et al. (2012) administered the Chinese and English versions of the scale to university students in China and Canada. The authors reported that in both settings, the instrument showed acceptable reliability and the four-factor structure.

Also, Whitman et al. (2009) administered the WLEIS to job applicants from different ethnic and gender groups. Their findings supported the four dimensions of the WLEIS and found the instrument reliable for different ethnic and gender groups. Also, researchers Libbercht et al. (2012) reported that three out of the four dimensions of the WLEIS show measurement invariance in the Chinese and American populations, however, the dimension, 'use of emotions,' showed non-invariance. These studies support that WLEIS is a self-report, reliable instrument which can be used in different cultural and ethnic settings for measuring EI.

### **3.5.6.3 General Consideration for the Wong & Law Emotional Intelligence Scale**

The advantage of using WLEIS is that it is a short test with only 16 items that can be administered quickly. It is an objective measure that follows the proper scoring method. The participant's scores on the four dimensions can differ, and the cumulative score provides the overall score for EI. Some participants can score high on one dimension and low on the other. The scale has proven reliability and validity and has been used across cultures and regions for assessing individuals' EI.

### 3.5.7 Administration of the Research Instruments

All the research instruments were administered through physical and Google forms in both English and Malay languages. The teachers were provided instructions for filling in the forms. The participating teachers were asked to read each statement carefully and mark the response that most appropriately represented their judgment of that statement. In total, there were 112 items that were required to be responded to on a Likert-type scale.

**Table 3.8**

*Summary of Research Instruments*

	PLCA-R	CTBS	JSS	Omnibus T-Scale	WLEIS
Theoretical Base	Based on PLCs model by Hord. Developed by Olivier, Hipp and Huffamn, 2010.	Based on CTE model by Goddard, Hoy and Hoy. Developed by Tschannen-Moran & Barr, 2004.	Based on Herzberg's motivation-hygiene theory. Developed by Spector, 1985.	Based on trust definition by Hoy and Tschannen-Moran, 2003	Based on ability model of EI. Developed by Wong and Law, 2002.
Dimensions	Six dimensions.	Two dimensions.	Six factors of job satisfaction.	Single dimension	Four dimensions.
Reliability	Overall reliability reported by authors is 0.97	Overall reliability reported by authors is 0.95	Overall reliability reported by authors is 0.91	Overall reliability reported by authors is 0.90 to 0.96	Reliability reported by authors for different dimensions: 0.83 to 0.90.
Global Acceptance	Used in different cultural settings globally (Gray Kruse & Tarter, 2016 and Lee, et.al., 2011).	Used in different cultural settings globally (Casanova & Azzi, 2015 and Lee, et.al. 2011).	Used in different cultural settings globally (Fong, 2015 and Yucel & Bekats, 2012).	Used in different cultural settings globally (Ali Vaiskarami, Ghadampour and Reza Mottaghinia, 2017 and Flood and Angelle, 2017)	Used in different cultural settings globally (Li, Saklofske, Bowden, Yan and Fung, 2012 and Whitman, Rooy, Viswesvaran and Kraus, 2009).
Research Questions	1, 2, 3, 4, 7, 8, 11, 12	1, 2, 5, 7, 9, 11	1, 3, 6, 8, 10, 12	1, 4, 5, 6, 7, 8	1, 9, 10, 11, 12

### **3.5.8 Instrument Translation**

All the research instruments used in the study were in the English language. As the study focused on primary school teachers in Selangor, Malaysia, all the instruments were first translated into Bahasa Malaysia through the help of a qualified translator. Once the instruments were translated into Bahasa, they were content validated by three experts who were native Bahasa speakers, and two out of them are working in the field of education. To further check for content validity and translation efficacy, the instruments were back-translated into English with another expert's help. The new expert was proficient in both Bahasa and English languages. The second translator was not provided with the actual English language research instruments for back translation. Once the instruments were back-translated they were matched with the original instruments to ensure correct translation. Also, to ensure instrument content validity, the final instrument had statements in both English and Bahasa Malaysia languages.

### **3.6 Validity and Reliability of Instruments**

This study used multivariate statistical methods for data analysis. In multivariate studies, a common issue faced by the researcher is measurement error, defined as “the degree of difference between the observed and true values of the measured constructs” (Cohen et al., 2007). To avoid measurement errors, the researcher took measures to ensure validity and reliability in the study (Hair et al., 2017). Also, as this study is followed the philosophy of positivism, it is important that the study adheres to the basic tenets of positivism, which relates to controllability, replicability, predictability, observability, and scientific nature of the study (Cohen et al., 2007 and Hair et al., 2017). Additionally, a pilot study was conducted before the commencement of the actual study which helped in ensuring the reliability of the research instrument used in the present study.

### 3.6.1 Validity

Validity is one of the most important characteristics of a research instrument, and it ensures that the information conveyed by the instrument is correct, appropriate, and meaningful. Validity helps ascertain whether the instrument measures what it is supposed to measure (Cohen et al., 2019). This study used all the pre-established instruments and focused on construct and content validity. The benefit of using pre-established instruments is that they have wider acceptance, proven validity, and reliability and have shown replicability in previous studies. The instruments' original authors proved the instrument's criterion validity. The researcher and supervisor then carefully and diligently studied all the items of the instruments to ascertain the content and face validity. For this purpose, they matched the instrument items with the research purpose, objectives, questions, hypothesis, conceptual definition, and conceptual framework.

Content validity refers to whether the instrument appropriately represents and covers all the relevant domains or content of the variables (Cohen et al., 2019). To ensure content validity, the researcher requested a panel of three experts who helped in identifying the appropriateness of the research instruments of study. In the panel, expert one specializes in educational psychology, psychological assessment, and organizational and industrial psychology. Expert two specializes in educational psychology, emotional and behaviour, and educational achievement. While expert three specializes in statistics and quantitative research methods. The researcher provided the expert with the research instruments, the study's conceptual framework, a brief introduction about the study, and an evaluation form. Expert 1 approved of all the instruments being used for the study but suggested that in the adopted job satisfaction survey, instead of 3 all 4 items should be included. This suggestion was later incorporated into the main study.

Expert 2 also approved all of the instruments but suggested changes for the Likert scale for the Collective Teacher Belief Scale and Wong & Law Emotional Intelligence Scale. However, as these instruments are adopted from original instruments which have successfully used the same scale, and different Likert scales help in avoiding respondent bias, the researcher continued with the original Likert scale. Expert 3 also approved the research instruments and did not recommend any changes to the instrument.

For determining the construct validity of the translated instrument, the researcher asked 5 bilingual teachers to fill in the instrument before the pilot study. This helped in checking for the language and meaning of the instrument by focusing on the presence of poorly worded items, ambiguous words, or unclear instructions. This process helped ascertain that the translated instruments were the same in meaning as the original instrument. Finally, the recommendations and feedback obtained were used in modifying and finalizing the instruments before the pilot study.

### **3.6.2 Reliability**

“Reliability refers to the extent to which an instrument truly measures what it is needed to measure (Cohen, 2007; Hair et al., 2017).” Research instruments high on reliability meet the principles of stability, predictability, and replicability. One method to check the reliability is by correlating each item of the instrument with the sum of all the other items. This is known as internal consistency reliability and is tested by calculating Cronbach's alpha values which lies between 0 to 1. Cohen (2007), provided the guidelines for relating levels of reliability with the Cronbach value:



**Table 3.9***Cohen's Guidelines for Cronbach Alpha Values*

Value of Cronbach alpha	Reliability
>0.90	very high
0.80 – 0.90	high
0.70 – 0.79	reliable
0.60 – 0.69	marginally/minimal
<0.60	unacceptably low

### 3.6.2.1 Pilot Study

The pilot study helped to initially check for the reliability of the research instruments PLCA-R, Omnibus T-Scale, CTBS, WLEIS, and JSS used in this study. A pilot study before the commencement of the actual study helps in checking for reliability of the research instruments for the population under study, examining the research methods employed, and checking for participants' attitudes towards the study (Creswell, 2014). In this study, the pilot study was done on 38 primary school teachers from government schools outside of the state of Selangor. The sample for the pilot study was similar to the actual sample for the study but was from a different location.

The pilot test helped the researcher know how the participants felt completing the research instruments. It also helped check if the participants could understand and respond to the research instruments without a problem. In the pilot test, Google forms were used for data collection, which helped check online forms' suitability. The research instruments with 135 items in total, the pilot test helped assess if the teachers were comfortable completing the questionnaire without any fatigue stress.

To check this instrument's reliability, the researcher used IBM SPSS to check Cronbach's alpha value. Cronbach's alpha is the most used measure for ascertaining instrument reliability. As mentioned by Bryman and Cramer (1990: 71) in Choen

(2007), “Cronbach's value greater than 0.8 should be acceptable”, however, other researchers have argued that Cronbach's value great than 0.67 can be accepted in exploratory studies. All the instruments of the present study have shown high reliability (Cronbach's alpha > 0.8) when used in previous studies. This shows that the instruments being used are stable and replicable. The acceptable Cronbach alpha ranges from 0.7 to 0.97, Cronbach's value of 0.98 or above indicates redundancy in the instrument, while Cronbach's value below 0.6 shows the instrument is low on reliability.

**Table 3.10**

*Cronbach Alpha Values in Pilot Test*

Research Instruments	Cronbach Alpha
Complete Instrument	0.97
Professional Learning Communities Assessment - Revised	0.97
Omnibus T-Scale (faculty trust in colleagues)	0.91
Collective Teacher Belief Scale	0.93
Job Satisfaction Survey	0.89
Wong and Law Emotional Intelligence Scale	0.93

Overall, Cronbach's alpha value for the research instrument with 112 items, as calculated in the pilot study, was 0.972. The Table 1 shows that the values of all the constructs and sub-constructs in the pilot study range from 0.65 to 0.97. As recommended by Hair et al. (2017), an instrument can be said to have acceptable reliability if the Cronbach alpha values is greater than 0.7. Also, in humanities and social sciences, Cronbach's alpha values in the range of 0.60-0.80 can be regarded as adequate as well (Shelby, 2011; Vaske et al., 2017). Therefore, this instrument is deemed reliable for the actual study.

### **3.7 Data Collection Procedure**

As a first step, the researcher presented the research proposal to the University Malaya's Faculty of Education review board through Seminar 1. After completing Seminar 1, the researcher obtained an approval letter from the Faculty of Education. To collect data from public primary schools in Selangor, Malaysia, the researcher needed to obtain a permission letter from the Education Policy Planning and Research Division (EPRD) of the Ministry of Education (MOE), Malaysia, and from the Jabatan Pelajaran Selangor (JPS). For this purpose, the faculty's approval letter, research proposal, and research instruments were submitted to the EPRD website. After the approval from EPRD, the researcher submitted the documents mentioned above and the EPRD approval letter to Jabatan Pelajaran Selangor, seeking permission for data collection.

After obtaining all the required permissions, the researcher approached the principals' offices of the selected schools for data collection. The researcher made an appointment to visit the schools and, during the meeting with the principals, explained to them the importance of the study and how teachers can fill in the research instruments. It was assured that teachers' participation in this study was voluntary and that utmost precautions would be taken to maintain the confidentiality of the data collected. Also, the teachers were given a consent form to sign and were informed that they have the right to withdraw from the study whenever they feel and withdrawing from the study will not have any untoward consequence in any form. Data collection took place between April to August 2021 during which the movement control order because of Covid-19 was in place. Out of the 19 selected schools, 18 agreed to participate in the study, and one declined because of covid protocols they were following.

### **3.8 Ethical Concerns**

This study followed all the established research protocols and ethical guidelines. There was no obligation on any participant for participation in the study. A brief explanation was provided by the researcher to the participants, and they were requested to sign the consent form as well.

The anonymity of the respondents was fully maintained. The researcher used alpha-numeric code to save participants' data. None of the personal information of the participants was shared with anyone to maintain their privacy. At no point individual teachers' responses on various tests were shared with schools or other research participants. The participants were not subjected to any physical or mental stress by participating in the research. They were given enough time to complete the questionnaires. The researcher ensured that the privacy, dignity, and safety of the participants were maintained throughout this study. Additionally, the participants were informed that at any point, they could contact the researcher to withdraw their participation.

#### **3.8.1 Consent Form**

All the participating teachers were requested to sign the consent form indicating their wilful participation in this study. The consent form described that the teachers understood the research's basic objective, that their data would be used for academic purposes only, that their private information would not be shared, and that the study would follow established research ethics and protocols.

### **3.9 Data Analysis**

The process of data analysis includes statistical analysis of the data collected and making logical interpretations using the results from the analysis. The numerical results obtained through the statistical analysis show the level, tendency, and relationship between the variables, which helps make predictions and generalizations for similar populations. This is a causal relationship study where the effect of PLCs (independent or exogenous variable) on CTE (dependent or endogenous variable) and TJS (dependent or endogenous variable) was analyzed at public primary schools in Selangor, Malaysia. Also, the study analyzed the mediating effect of TTC and the moderating effect of TEI in the above relationship.

For data analysis both descriptive and inferential statistical methods were used that helped in answering the research questions and hypothesis testing. For descriptive analysis, the computer software IBM SPSS was used, and for inferential analysis, the computer software SmartPLS was used. According to Cohen (2007), "descriptive statistics do exactly what they say, they describe the data" (pg., 503). The common methods used in descriptive statistics are frequency, mean, median, mode, standard deviations, range, variance, standard error, etc. These measures help in presenting the data as it is, without making any inferences or predictions. Also, descriptive statistics helped in preparing the participants' demographic profiles and to answer research questions 1a to 1e. For demographic profiling, measures of frequencies and percentages were used. To answer research questions 1a to 1e, measures of central tendencies (mean) and spread of scores (variance and standard deviation) were used (Cohen, 2007). The descriptive analysis helps in understanding the overall trends of the research sample.

Moreover, the mean values help ascertain the variable's level in the population sample. As this study used different Likert scales for different variables, it is important to describe what a particular mean value represents for each variable. The research instrument PLCA-R uses a 4-point Likert-type scale ranging from 1 as the lowest score to 4 as the highest score. According to the authors of the instruments, Olivier et al. (2010), a mean value score above 3 for each dimension of PLCA-R and for the whole instrument indicates teachers' agreement regarding the practice of PLCs at their schools. In simpler terms, the mean value of 3 and above for each dimension and whole instrument indicates the presence of PLCs, whereas mean values below 3 indicate low levels of PLCs. As the instrument has a range only from 1 to 4, dividing it into equal intervals shows that mean values (for PLCs and all its constructs) between 1 to 2 means absent, 2 to 3 somewhat present, 3 to 3.5 moderate level of presence, and 3.5 to 4 high levels of application of PLCs and its constructs at schools (Olivier et al., 2010).

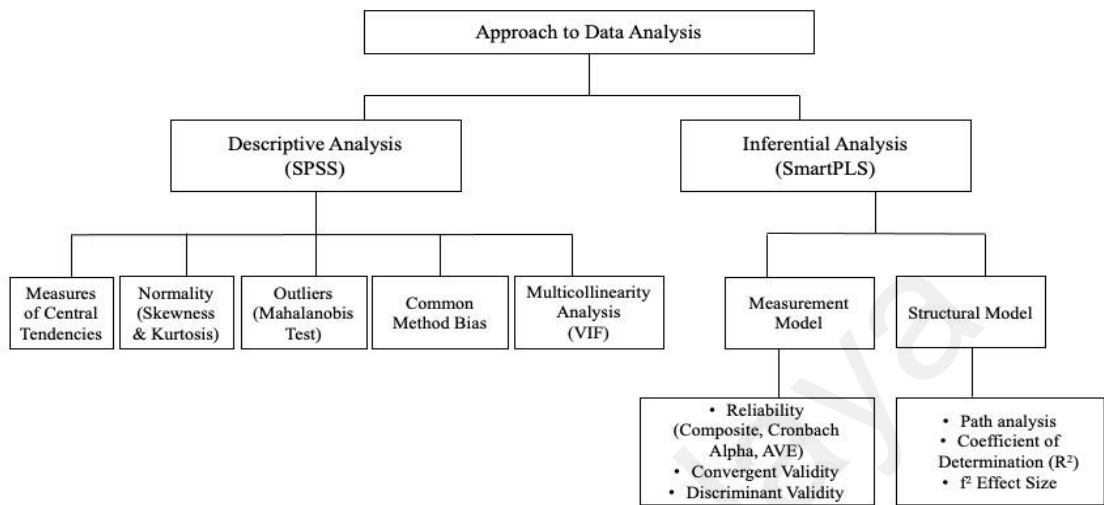
Also, for the research instrument CTBS, the values range from 1 to 9. However, the instrument's authors (Tschannen-Moran & Barr, 2004) have given intervals at values 1, 3, 5, 7, and 9. Mean values (for CTBS and its constructs) of around 1 suggest the absence of CTE, nearly 3 suggest very low levels, nearly 5 suggest some presence of CTE, nearly 7 suggest moderate levels, and nearly 9 suggest high levels. The same approach was used by Thien et al. (2021) in describing the mean values and corresponding inference for a similar scale developed by the same author. For the instrument, JSS, the author Spector (1995) has suggested that mean values between 1 to 3 indicate the absence of job satisfaction, between 3 to 4 shows neither absence nor presence of job satisfaction, between 4 to 5 refers to moderate levels of job satisfaction and between 5 to 6 shows a high level of job satisfaction.

For the research instrument Omnibus T-Scale, the score ranges from 1 to 6. For this scale, mean values between 1 to 2 show very low levels of trust, between 2 to 3 indicate low levels, between 3 to 4 show some level of trust, between 4 to 5 show moderate level, whereas between 5 to 6 indicate high level of trust. The research instrument WLEIS measures teachers' emotional intelligence on a 7-point Likert-type scale. As reported by the authors of the instruments, the average score (for EI and its dimensions) is between 4 and 5; scores below four are considered low levels of EI, and scores above five are considered high levels of EI. Also, the scores range from 1 to 7 and mean values between 1 to 2 show a very low level of EI, between 2 to 3 show low level of EI, 3 to 4 mean somewhat presence of EI, 4 to 5 mean average level of EI, 5 to 6 convey a high level of EI and 6 to 7 convey a very high level of EI.

Inferential statistical analysis was used for hypothesis testing and it helped to draw conclusions from the data and to make predictions. The present study used software SmartPLS for structural equation modeling (SEM) analysis as part of inferential data analysis. This study used statistical software SmartPLS because the software is non-parametric in nature, uses a regression-based approach, is suitable for both small and big data, can carry out both mediation and moderation analysis effectively, and can handle both types of measurement models, reflective and formative (Hair et al., 2017). Another advantage of using the SmartPLS is that it is not dependent upon the data distribution assumptions and can help analyse both normally and non-normally distributed data.

**Figure 3.1**

*Approach to Data Analysis*



The SmartPLS analyses data by developing path models, the diagrams that represents the relationship between exogenous, endogenous, mediating and moderating variables of the study. In developing the SmartPLS models, the independent variables (PLCs) are coined as exogenous variables, and the dependent variables (CTE and TJS) are coined as endogenous latent variables. These main variables are called latent variables and are measured through constructs or indicators. The relationship between latent variables is manifested through single-headed arrows, and the arrowhead's direction represents the relationship's direction.

The SmartPLS is used to develop two types of models, the measurement or outer model, and the structural or inner model. The measurement model (outer model) will depict the relationship of the latent variables (exogenous and endogenous), with their respective constructs/indicators. The measurement models can be reflective or formative in nature (Hair et al., 2017). The reflective models are calculated for their internal consistency reliability (Cronbach's alpha and composite reliability), convergent validity, average



variance extracted, and discriminant validity through cross-loadings and path coefficients (Hair et al., 2017). This study used reflective measurement models for the variables PLCs, CTE, TJS, TTC, and TEI because causality direction is from construct to the indicator, for each construct, the indicators show moderate to high correlation and represent the consequence of the construct.

The structural models present the relationship between the exogenous, endogenous, mediator and moderating variables. In this study, the structural model was conceptualised after a thorough and critical analysis of previous similar studies and was based on established theories. The structural models showed the effect of the exogenous variable (professional learning communities) on the endogenous variables (teachers' collective efficacy and job satisfaction) in the presence of a mediating (trust in colleagues) and a moderating (emotional intelligence) variable. For a mediation model, the effect of an exogenous variable on the endogenous variable can be expressed as direct, indirect and total effect (Hair et al., 2017). Wherein the direct effect (path c') refers to the individual path coefficient value for the effect of an exogenous variable on the endogenous variable. The direct effect shows that a single-unit change in the exogenous variable can alter the endogenous variable by an amount equal to the value of the path coefficient, assuming all other factors remain constant (Hair et al., 2017).

Moreover, the effect of an exogenous variable on the endogenous variable can increase or decrease in the presence of another variable, known as a mediating variable. For this purpose, path coefficients from the exogenous variable to the mediating variable (path a) and from the mediating variable to endogenous variables (path b) are calculated. The specific indirect effect corresponds to the effect of the exogenous variable on the endogenous variable in the presence of the mediating variable and is calculated as the

product of path a and path b (Hair et al., 2017). Also, the total effect is the cumulative effect that the exogenous and mediating variables have on the endogenous variable. The total effect is the sum of the direct (path c') and the specific indirect effect.

Furthermore, the mediating effect can be partial, full, or no mediation, depending on path coefficient values. When both the direct and specific indirect effects are significant, it is known as partial mediation. In the case of partial mediation, if the specific indirect effect and direct effect point in the same direction, the mediating effect is complimentary. However, in the case of competitive mediation, the direct effect of the exogenous variable and the specific indirect effect point in the opposite direction (Hair et al., 2017). To explain further, in the case of partial mediation, both exogenous and mediating variables exert a significant effect on the endogenous variable, and their effects either add or cancel each other depending upon the direction of the relationship.

On the other hand, full mediation occurs when the specific indirect effect is significant, but the direct effect is not significant. In the case of full mediation, the effect of an exogenous variable on the endogenous variable is significant only in the presence of the mediating variable (Hair et al., 2017). Whereas no mediation occurs when the specific indirect effect of exogenous variable on endogenous variable in the presence of mediating variable is not significant. In case of no mediation, the presence of mediating variable does not alter the effect of exogenous variable either positively or negatively (Hair et al., 2017).

Additionally, in this study, the structural model examined the moderating effect of the TEI for the effect of PLCs on CTE and TJS. To calculate the moderating effect, first, the direct effect of the moderating variable (TEI) on the endogenous variables (CTE and

TJS) is calculated. In addition, the moderating effect is represented by an arrow pointing to the effect from the exogenous variable to the endogenous variable. The arrow point helps in creating an interaction effect (Hair et al., 2017). Furthermore, Hair and his colleagues have discussed that "moderation is similar to mediation in that a third variable (i.e., a mediator or moderator variable) affects the strength of a relationship between two latent variables. The crucial distinction between both concepts is that the moderator variable does not depend on the exogenous construct." Therefore, it is not required to link a path between the exogenous and the moderating variable.

The calculations for the structural model were done after establishing the reliabilities and validities of the measurement models. As recommended by Hair et al. (2017) in this study, the structural model was assessed by calculating the significance of the path coefficients (t-values & p-values), coefficient of determination ( $R^2$  values),  $f^2$  effect size, and the predictive relevance through  $Q^2$  values. As the goodness-of-fit measure is not supported by Smart-PLS, the model's quality can be judged based on the predictive relevance and  $Q^2$  values.

The structural model in this study was conceptualized by analysing previous similar studies. A careful and thorough review of the literature, and using established theories was conducted. The structural models show the direct and indirect effect of the exogenous variable on the endogenous latent variables. The structural models showed the effect of the exogenous variable (professional learning communities) on the endogenous variables (teachers' collective efficacy and job satisfaction). Also, mediating effect of teachers' trust in colleagues was assessed through the structural model. Mediation analysis helped to explain the indirect effect of the exogenous variable PLCs on endogenous variables CTE and TJS. Additionally, the structural

model examined the moderating effect of the TEI for the effect of PLCs on CTE and TJS. The calculations for the structural model were done after establishing the reliabilities and validities of the measurement models. As recommended by Hair et al. (2017) in this study, the structural model was assessed by calculating the significance of the path coefficients (t-values & p-values), coefficient of determination ( $R^2$  values),  $f^2$  effect size, and the predictive relevance through  $Q^2$  values.

**Table 3.11**

*Approach to Data Analysis of the study*

S.No.	Research Question	Data Analysis
1.	What are the teachers' perceptions regarding the following at public primary schools in Selangor, Malaysia: a. professional learning communities b. collective teacher efficacy c. teachers' job satisfaction d. trust in colleagues e. emotional intelligence	SPSS Mean, Standard Deviation
2.	Is there a significant relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; $R^2, f^2$
3.	Is there a significant relationship between professional learning communities and teachers' job satisfaction in public primary schools in Selangor, Malaysia?	SmartPLS Path Analysis; $R^2, f^2$
4.	Is there a significant relationship between professional learning communities and teachers' trust in colleagues in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; $R^2, f^2$
5.	Is there a significant relationship between teachers' trust in colleagues and collective efficacy in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; $R^2, f^2$
6.	Is there a significant relationship between teachers' trust in colleagues and job satisfaction in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; $R^2, f^2$
7.	Does teachers' trust in colleagues significantly mediate the relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; $R^2, f^2$ Mediation Analysis
8.	Does teachers' trust in colleagues significantly mediate the relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor,	SmartPLS Path Analysis; $R^2, f^2$ Mediation Analysis

---

	Malaysia?	
9.	Is there a significant relationship between teachers' emotional intelligence and collective efficacy in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; $R^2, f^2$
10.	Is there a significant relationship between teachers' emotional intelligence and job satisfaction in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; $R^2, f^2$
11.	Does teachers' emotional intelligence significantly moderate the relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; Moderation Analysis
12.	Does teachers' emotional intelligence significantly moderate the relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia?	SmartPLS Path Analysis; Moderation Analysis

---

Universiti Malaysia

### **3.10 Summary**

This chapter discussed the research methodology for this study. It is a causal relationship study that focuses on public primary school teachers in Selangor, Malaysia. The researcher used both physical forms and Google forms for data collection and faced some challenges because of the movement control order imposed during Covid-19. The researcher presented the research proposal at Seminar 1 before the Faculty of Education of the University Malaya committee. After completing Seminar 1, the researcher took data collection permissions from the EPRD of the Ministry of Education, Malaysia, and the Jabatan Pelajaran Selangor for data collection at public primary schools. All relevant research ethics were followed during the conduction of the study. Also, the chapter briefly discussed the research instruments used in the study, namely PLCA-R, CTBS, JSS, Omnibus T-Scale, WLEIS, and demographic survey. The reliability of the instruments was established using the pilot study. The researcher used the cluster random sampling approach for data collection and used both descriptive and inferential statistics for data analysis. For descriptive analysis, IBM SPSS software was used, and for inferential analysis, SmartPLS software was used. The chapter discusses using the Structural Equation Modeling approach through SmartPLS for path analysis to answer the research questions.

## CHAPTER 4

### FINDINGS

#### 4.1 Introduction

This chapter presents the results from the quantitative data analysis using descriptive and inferential statistics approaches. The present study explored the causative relationship between the exogenous variable (professional learning communities) and the endogenous variables (teachers' collective efficacy and job satisfaction). Also, the direct and indirect effects of the exogenous variable were analysed in the presence of mediating variable (teachers' trust in colleagues), while the moderating variable (teachers' emotional intelligence) helped understand the differences for different population groups. The relationship between the different variables was explored by doing SEM analysis. The chapter is divided into the following sections: data preparation, descriptive statistical analysis, measurement model analysis, structural model analysis, answering the research questions, and hypothesis testing. In the first stage, the computer software IBM SPSS was used for data screening, cleaning, and descriptive analysis. Later, for structural equation modeling, the computer software SmartPLS3 was used to conduct inferential statistical analysis and model development.

#### 4.2 Data Preparation

The data for this study was collected from 311 respondents using a research questionnaire containing 112 items. The data was collected using both paper-based and online Google forms. Out of the 311 responses, 289 were obtained through paper-based forms and 22 through Google forms. This approach was used because the data was collected during the COVID-19 time, and only a few schools allowed visitors on campus. In total, 320 paper-based forms were distributed to teachers working at various

government primary schools across Selangor, Malaysia, out of which 289 teachers returned the forms after completing them. The response rate was almost 90 percent, but 4 out of these 289 forms were incomplete and hence were removed from the data collected. Thus 285 completed forms were obtained, which led to an 89 percent of response rate. This along with 22 Google forms lead to a total of 307 completed responses. Data thus obtained was coded, cleaned, and checked for missing values before carrying out any analysis.

#### **4.2.1 Data Coding and Cleaning**

Data coding is the first and most important step before proceeding with data analysis. The participants' responses obtained through paper-based and online forms were coded according to the directions mentioned in respective research instruments and then documented in the XLS. Before data collection, a numerical value corresponding to each response item was set, as the authors recommended in the research instruments. Once the data was collected, all responses were given a numerical value corresponding to their response. For the negatively worded items, the technique of reverse coding was used. The data thus prepared using the XLS was entered into SPSS software in the CSV format. SPSS was used for cleaning and examining missing data, followed by descriptive analysis. The data entered was screened based on minimum value, maximum value, and mean value to ascertain that all the values were entered correctly for each item. This procedure helps in finding out missing values or outliers. In total, three missing values were found at random places.

#### **4.2.2. Handling of Missing Data**

Missing data is the most common issue faced by researchers involved in empirical studies. There could be many reasons for missing values, like participants missing or



forgetting to put an answer for a particular question, unwillingness to answer a particular question, or the researcher missing logging in the response in the XLS file. There are two approaches for handling the missing values, mean replacement of missing values and list-wise deletion of the entire response from the data set (Hair et al., 2017). As there were three missing values, which is less than 1 percent of the total responses, the first approach of mean replacement was used in this study. Also, missing data was the issue only for the paper-based forms, as in Google forms, all items were made mandatory to answer, hence the respondent could not avoid them.

### **4.3 Test for Normality**

SmartPLS uses a non-parametric approach for SEM analysis that is robust enough to calculate data with both normal and non-normal distribution, however, it is always recommended to check data for normality using skewness and kurtosis (Hair et al., 2017). Skewness determines whether the data is symmetrically distributed or not. In a bell-shaped graph, the data is positively skewed if it concentrates on the right-hand side and negatively skewed if it concentrates on the left-hand side. Also, kurtosis refers to whether the response distribution is too concentrated (curve peaked at centre) or spread out (flat curve). Many researchers consider skewness as a greater concern than kurtosis when determining the normality of data. According to Byrne et al., (2010), the skewness value within -2 to +2 and the kurtosis value within -7 to +7 indicate the normal distribution of data. In the present study, the value for skewness ranged from 0.22 TO -1.27, and the kurtosis for the data ranged from 3.94 TO -0.39. As both values for the skewness and kurtosis lie well within the recommended value, it confirms that the data was normally distributed. Also, many researchers have professed that skewness in data can be more problematic than kurtosis, however, for both skewness and kurtosis, the results were well within the acceptable range.

**Table 4.1***Skewness and Kurtosis for the Variables*

Variable	No.	Skewness Statistics	Std. Error	Kurtosis Statistics	Std. Error
PLCs	307	+0.22	0.14	-0.39	0.28
TTC	307	-1.27	0.14	+3.94	0.28
CTE	307	-0.30	0.14	+0.97	0.28
TJS	307	-0.61	0.14	+0.78	0.28
TEI	307	-0.26	0.14	+0.10	0.28

**4.4 Outlier**

As discussed by Hair et al. (2017) "an outlier is an extreme response to a particular question or extreme responses to all questions. Outliers must be interpreted in the context of the study, and this interpretation should be based on the type of information they provide" (p.80). Before statistical analysis, it is imperative that the researcher should check data for the presence of outliers, as outliers can significantly affect the normality of data. In this study, the researcher conducted the Mahalanobis Distance test using the computer software SPSS to check for outliers. First, the Mahalanobis value was calculated for all the constructs, and then the p-value was calculated using the expression  $[1 - \text{CDF.CHISQ}(\text{MAH}_1, 3)]$ . A p-value less than 0.001 indicates the presence of an outlier (Cohen et al., 2007). Only one outlier was found, and to handle the outlier, first, the entry was checked carefully to rule out any manual error. It was found that the outlier was not the result of manual error and was the actual response of the participant. Finally, the outlier was retained and not removed from the final data because, as mentioned by Hair et al. (2017) though extreme in nature, outliers are representative of a set of population, and if not a result of entry error, it is advisable to retain them in final data analysis.

#### **4.5 Common Method Bias**

Common methods bias is a common issue encountered by researchers in a cross-sectional study (Podsakoff & Organ, 1986). It occurs when multiple variables (both dependent and independent) are measured using the same survey questionnaire. It is recommended that the researcher should take measures before and during data collection to avoid the occurrence of common method bias. In this study, the researcher took two measures to avoid this problem. First, the researcher used different Likert scales for different variables, as this controls respondents' tendencies to provide the same answer to all or most items. Also, some negatively worded items were used in the questionnaire with a reverse scoring technique to control the tendency to provide the same response to all items.

Additionally, the respondents were given ample time to respond to the questionnaires and were ensured anonymity, which helped avoid the tendency to give socially favourable responses. However, even after all these measures, it is necessary to check for common method bias in the data collected before proceeding to the final data analysis. This study used the single factor test to measure common method variance in the data (Harman, 1976). In this study used Harman single factor analysis was done to calculate the presence of common method bias in the data. As recommended, common method variance value below 50% is considered acceptable for statistical analysis (Podsakoff & Organ, 1986), and in this study, the CMV value was found to be 35.78%. Hence, it can be said that the data of this study did not suffer from the common method bias.

#### **4.6 Multicollinearity Analysis**

Multicollinearity occurs when two or more variables under study fail to show independence from each other. The problem is more pronounced while using two or more independent variables, as in the presence of high multicollinearity, it would be difficult to unambiguously present the effect of every independent variable on the dependent variable. As in this study, there is only one independent variable, and the problem of multicollinearity is not severe, however, the researcher checked for multicollinearity by using the Variance Inflation Factors (VIFs) values. According to Hair et al. (2017), the VIF values lesser than 5 are considered acceptable for SEM analysis. The VIF values for the two dependent variables in this study were 1.635 for collective teacher efficacy and 1.635 for teachers' job satisfaction, which was under the acceptable value of 5. Also, as the study involves mediation analysis, the correlation coefficient between the independent and the mediator variable was calculated and found to be 0.57, well below 0.8. As both VIF values and correlation coefficient were between the acceptable range, multicollinearity between the variables was not present.

#### **4.7 Demographic Analysis**

Demographic analysis helps in understanding the background of the research participants and to ascertain whether they can truly represent the intended research population or not. This is helpful when generalizing the study results. In total, 307 primary school teachers participated in this study, and all were Malaysian nationals. The number of male participants was 56, and that of female participants was 251, meaning the total percent of male participants was 18.2%, and that of females was 81.8%. Out of 307 participants, 258 (84.0%) were married, and 49 (16.0%) were not married.

Also, for age category, 72 participants (23.5%) were in the group of 21 to 30 years, 90 participants (29.3%) were in the group of 31 to 40 years, 114 participants (37.1%) were in the group of 41 to 50 years, and 31 participants (10.1%) were in the group of 51 to 60 years. For educational qualification, 15 participants (4.9%) reported completing a diploma, 234 participants (76.2%) reported completing a bachelor's degree, 53 participants (17.3%) reported they had completed a master's degree, 03 participants (1.0%) completed a doctorate, and only 02 (0.7%) mentioned others as their educational qualification.

In response to the number of years teaching at their current school, 141 participants (45.9%) responded that they have been teaching at their present school for 0 to 5 years, 70 participants (22.8%) responded to teaching for 6 to 10 years, 64 participants (20.8%) responded to 11-15 years, 14 participants (4.6%) responded to 16 to 20 years, and 18 participants (5.9%) responded to 21 to 25 years.

Moreover, for total teaching experience, 69 (22.5%) reported teaching experience of 00 to 05 years, 48 (15.6%) had teaching experience of 06 to 10 years, and 86 (28.0%) participants reported total teaching experience to be 11 to 15 years. Whereas a total of 47 (15.3%) participants mentioned a total experience of 16 to 20 years, 25 participants (8.1%) had teaching experience of 21 to 25 years, and 32 participants (10.4%) had teaching experience of more than 26 years.

For the number of students in their class, out of 307 respondent teachers, 03 (1%) reported they have 10 or less students in their class, 08 teachers (2.6%) reported having 11 to 20 students, 53 teachers (17.3%) reported to have 21 to 30 students in class, 202

teachers (65.8%) reported to have 31 to 40 students in class, and 41 teachers (13.4%) reported to have 40 to 50 students in their class.

**Table 4.2**

*Frequency Distribution of Demographic Characteristics*

Variable	Classification	Frequency	Percent
Nationality	Malaysian	307	100.00
	Non-Malaysian	NIL	NIL
Gender	Male	056	18.2
	Female	251	81.8
Marriage	Married	258	84.0
	Not Married	049	16.0
Age	21--30	072	23.5
	31--40	090	29.3
	41--50	114	37.1
	51--60	031	10.1
Educational Qualification	Dilpoma	015	04.9
	Bacelors'	234	76.2
	Masrtrs'	053	17.3
	PhD	003	01.0
Teaching Exp. at Current School	Others	002	00.7
	00-05	141	45.9
	06--10	070	22.8
	11--15	064	20.8
	16--20	014	04.6
Total Teaching Experience	21--25	018	05.9
	00--05	069	22.5
	06--10	048	15.6
	11--15	086	28.0
	16--20	047	15.3
No. of Students	21--25	025	08.1
	26 or more	032	10.4
	10 or less	003	01.0
	11--20	008	02.6
	21--30	053	17.3
Total	31--40	202	65.8
	41--50	041	13.4
		307	100.00

## **4.8 Descriptive Statistics**

Descriptive statistics are helpful in analysing the trend of the data by using measures of central tendencies like mean and standard deviation (Cohen, 2007). Mean values for a variable represent, on average, the response of participants towards that variable. The maximum value corresponds to the maximum value that a variable or construct can take. Also, when a maximum value obtained is greater than the maximum possible value it shows error in data. The minimum value for the variable or construct is the average of the minimum value reported by participants for each item corresponding to that construct or latent variable. The difference between the minimum, mean, and maximum values shows the range of the score (Field, 2009).

When reporting descriptive statistics for a variable, the measures of central tendencies like mean are often presented together with standard deviation values. According to Cohen et al. (2018), the standard deviation (SD) values represent the average distance between the mean value and each score. Smaller values for standard deviation indicate that the variables' scores are clustered together and are not too far apart. In contrast, a high value for standard deviation can indicate that the participants' scores are scattered far apart. This section presents the results of the descriptive data analysis using IBM SPSS software and will be used to answer research questions 1a to 1e.

### **4.8.1 Descriptive Statistics for Professional Learning Communities**

The level of PLCs was measured using the adapted version of the Professional Learning Communities Assessment - Revised scale developed by Olivier et al. (2010). The PLCA-R has six constructs with a total of 52 items. The six constructs are, shared and supportive leadership (SSL, 11 items), shared values and vision (SVV, 9 items), collective learning and application (CLA, 10 items), shared personal practices (SPP, 7

items), supportive conditions – relationships (SCR, 5 items) and supportive conditions – structural (SCS, 10 items). All the items of the scale are measured on the 4-point Likert-type scale, with a maximum to minimum values ranging 4 to 1, and a median value of 2.5. The overall mean for the first construct SSL was 3.16, with standard deviation (SD = 0.47), for the second construct SVV, overall mean was 3.28 (SD = 0.45), for the third construct CLA, the mean value was 3.31 (SD = 0.47), for fourth construct SPP the mean value was 3.25 (SD = 0.46). The mean value for the fifth construct SCR was 3.31 (SD = 0.48), and for the sixth construct, SCS was 3.21 (SD = 0.47). Additionally, the mean value for complete PLCA-R was 3.25 (SD = 0.42).

It shows that the mean value for all the constructs ranges from 3.31 (SCR) to 3.16 (SPP). The mean value for all constructs was more than 3, indicating a general agreement among the research participants for the presence of moderate levels of PLCs and its constructs (Olivier et al., 2010). Also, the maximum mean value was reported for the constructs CLA and SCR, and the minimum value was reported for the construct SSL. The table below presents the descriptive analysis of professional learning communities and all its subscales.

**Table 4.3**

*Descriptive Statistics for Professional Learning Communities*

Constructs	No. of Respondents	Minimum Value	Maximum Value	Mean Value	Std. Deviation
PLCs	307	1.98	4.00	3.25	0.42
SSL	307	1.55	4.00	3.16	0.47
SVV	307	2.00	4.00	3.28	0.45
CLA	307	1.80	4.00	3.31	0.47
SPP	307	2.00	4.00	3.25	0.46
SCR	307	1.80	4.00	3.31	0.48
SCS	307	2.00	4.00	3.21	0.47



#### 4.8.2 Descriptive Statistics for Collective Teacher Efficacy

The study used the CTBS developed by Tschannen-Moran & Barr (2004) to measure collective teacher efficacy at public primary schools in Selangor, Malaysia. The CTBS has two subscales, “collective efficacy for instructional strategies (CEI) and collective efficacy for student discipline (CES)”. Both constructs were measured by six items on a 9-point Likert type scale with a maximum to minimum values ranging from 9 to 1. The mean for CEI was 7.08 (SD = 0.94), and CES was 7.11 (SD = 1.02). The shows moderate level of overall collective teacher efficacy and its dimension of CEI and CES among the respondents (Thien et al, 2021).

**Table 4.4**

*Descriptive Statistics for Collective Teacher Efficacy*

Constructs	No. of Respondents	Minimum Value	Maximum Value	Mean Value	Std. Deviation
CTE	307	3.33	9.00	7.09	0.94
CEI	307	2.67	9.00	7.08	0.94
CES	307	3.67	9.00	7.11	1.02

#### 4.8.3 Descriptive Statistics Teachers’ Job Satisfaction

The variable TJS was measured by using the JSS developed by Spector (1985). The study used the six constructs of the instrument, namely supervision (JSS), contingent rewards (JSR), co-workers (JSW), operation procedures (JSO), nature of work (JSN), and communication (JSC). All the subscales have 4 items each and were measured on a 6-point Likert scale, with maximum to minimum value ranging from 6 to 1. The descriptive analysis found that the mean values for the constructs of job satisfaction were JSS (M = 4.93 & SD = 0.79), JSR (M=4.25 & SD = 0.77), JSW (M = 4.83 & SD = 0.68), JSO (M = 3.48 & SD = 0.77), JSN (M = 4.98 & SD = 0.72), and JSC (M = 4.78 & SD = 0.96). Also, the overall mean value for teachers' job satisfaction was found to

be 4.54 (SD = 0.58). The mean value for all the subscales was more than the median value of 3.5. Also, the maximum value was reported for the construct JSN and the minimum value for JSO. The descriptive analysis showed that teachers at public primary schools in Selangor experience a moderate level of job satisfaction (Spector, 1995).

**Table 4.5**

*Descriptive Statistics for Teachers' Job Satisfaction*

Constructs	No. of Respondents	Minimum Value	Maximum Value	Mean Value	Std. Deviation
TJS	307	2.33	6.00	4.54	0.58
JSS	307	1.25	6.00	4.93	0.79
JSR	307	2.00	6.00	4.25	0.77
JSW	307	2.75	6.00	4.83	0.68
JSO	307	1.50	6.00	3.48	0.77
JSN	307	2.25	6.00	4.98	0.72
JSC	307	1.75	6.00	4.79	0.96

#### 4.8.4 Descriptive Statistics for Teachers' Trust in Colleagues

The variable teachers' trust in colleagues was measured by using the Faulty Trust in Colleagues part of the Omnibus T-Scale developed by Hoy and Tschannen-Moran (2003). It has a total of 8 items that were measured on a 6-point Likert scale with a maximum value of 6 and a minimum value of 1. The overall mean value for the scale was 5.04 (SD = 0.63), which is more than the median value of 3.5. The findings indicate that the participants have reported a high level of teachers' trust in colleagues at public primary schools in Selangor, Malaysia.

**Table 4.6**

*Descriptive Statistics for Teachers' Trust in Colleagues*

Construct	No. of Respondents	Minimum Value	Maximum Value	Mean	Std. Deviation
TTC	307	1.38	6.00	5.04	0.63

#### 4.8.5 Descriptive Statistics Teachers' Emotional Intelligence

The Wong & Law Emotional Intelligence Scale (WLEIS) developed by Law et al. (2004) was used to measure TEI. The scale has four subscales, namely “self-emotions appraisal (EIS), others' emotions appraisal (EIO), regulation of emotions (EIR), and use of emotions (EIU)”, with 4 items each. All the items were measured on a 7-point Likert type scale with a maximum to minimum value ranging from 7 to 1. The mean value for EIS was 5.94 (SD = 0.63), for EIO was 5.39 (SD = 0.95), EIU was 5.88 (SD = 0.71), and EIR was 5.72 (SD = 0.81). The mean for the complete scale was measured to be 5.73 (SD = 0.61). The mean value for the overall and all subscales was more than the median value of 4, with a maximum mean for EIS and a minimum for EIO. The descriptive analysis showed that respondents had reported an overall a high level of EI.

**Table 4.7**

*Descriptive Statistics for Teachers' Emotional Intelligence*

Constructs	No. of Respondents	Minimum Value	Maximum Value	Mean Value	Std. Deviation
TEI	307	3.63	7.00	5.73	0.61
EIS	307	3.75	7.00	5.94	0.63
EIO	307	2.50	7.00	5.40	0.96
EIU	307	3.50	7.00	5.88	0.71
EIR	307	2.00	7.00	5.72	0.81

**Research Question 1:** What are the teachers' perceptions regarding the following at public primary schools in Selangor, Malaysia:

a. Professional Learning Communities

To answer research question 1a, the mean values for the variable professional learning communities and its six dimensions were calculated. The authors of the instrument PLCA-R, Olivier et al. (2010), have recommended that the mean score of 3 or higher shows general agreement among the respondents regarding the presence of PLCs and its constructs at the schools. The mean value for overall PLCs was

3.25, which indicated a general agreement among the research participants for the presence of professional learning communities at the public primary schools in Selangor, Malaysia. In terms of level of professional learning communities, this mean value corresponded to moderate level of PLCs at schools (Olivier et al., 2010). Also, the highest mean value was found for the constructs CLA and SCR, whereas the lowest value was for the construct SSL. Though all the mean values were found to be greater than 3 but none was close to 4. Hence, there is a consensus among participants for the application of professional learning communities and its constructs at public primary schools in Selangor, Malaysia. However, the levels of PLCs and its dimensions are moderate.

b. Collective Teacher Efficacy

To answer research question 1b, the mean values for collective teacher efficacy and its two constructs were calculated. For collective teacher efficacy, the mean value was found to be 7.09, which corresponds to moderate level among the public primary school teachers in Selangor, Malaysia. Based on the mean values, both the dimensions also showed moderate levels among the participants (Thien et al., 2021). However, the level of collective teacher efficacy for student discipline (7.11) was found to be slightly higher than the collective teacher efficacy for instructional strategies (7.07).

c. Teachers' Job Satisfaction

To answer research question 1c, the mean values of teachers' job satisfaction and its constructs were calculated. In his scoring and interpretation recommendation, the instrument's author (Spector, 1994) has mentioned that a mean score of less than 3 indicates dissatisfaction, a mean score of 4 or more indicates satisfaction, and a

mean score between 3 to 4 presents ambivalence (neither satisfied nor dissatisfied). Based on the mean values for overall job satisfaction, the teachers at public primary schools in Selangor, Malaysia, have expressed satisfaction with their job. Also, the mean value for the constructs JSS, JSR, JSW, JSN, and JSC was found to be greater than 4, indicating overall teachers' satisfaction with these constructs. However, the mean value for the JSO was 3.48, showing that the participants are neither satisfied nor dissatisfied with this construct of the job satisfaction scale. The respondents reported the highest level of satisfaction towards the construct "nature of work" (JSN, M = 4.98), while the minimum level of satisfaction was expressed towards the construct "operation procedures" (JSO, M= 3.48). Hence, the findings of the study support overall job satisfaction among the teachers working at the public primary schools in Selangor, Malaysia.

#### d. Trust in Colleagues

For research question 1d, the mean value for the variable teachers' trust in colleagues (TTC) as measured through the faculty trust in colleagues' subscale of Omnibus T-Scale was used. The mean value for TTC was 5.04, which shows presence of high level of trust among teacher colleagues at public primary schools in Selangor, Malaysia.

#### e. Emotional Intelligence

To answer research question 1e, the mean values of teachers' emotional intelligence as measured through the WLEIS were used. It was found that the overall mean for emotional intelligence and its four constructs was more than the mean averages reported by the authors in previous studies. Hence, it can be said that the teachers at public primary schools in Selangor, Malaysia have reported high level of emotional

intelligence. Also, the participants reported the highest level of emotional intelligence for the construct self-emotions appraisal and the minimum for others' emotions appraisal.

#### **4.9 Structural Equation Modeling Analysis – PLS-SEM**

After the descriptive analysis, computer software SmartPLS was used for structural equation modeling (SEM) analysis. The SEM analysis was used for answering research questions (6 to 11) and to validate the corresponding research hypothesis. SmartPLS3 uses a combination of different statistical approaches to establish the effect of the one or more independent variables on one or more dependent variables. Also, SmartPLS can be used to analyse the effect of the mediating and moderating variables as well.

SmartPLS is the most appropriate software for this study because this is an exploratory study, where the relationship between the variables is explored, and SmartPLS works on the principles of partial least square path modeling to explain the variance in dependent variables (Hair et al., 2017). PLS is non-parametric in nature and uses a regression-based approach for analysis, hence is capable of handling both normally and non-normally distributed data. Data should always be checked to see if it is not too far from the normal distribution. Also, PLS is capable of handling small sample sizes as it uses the technique of bootstrapping for analysis (Hair et al., 2017).

Also, SEM is used for checking the measurement model by using confirmatory factor analysis (CFA) and testing the structural model by using the approach of path analysis. The measurement model is used to evaluate the relationship between the latent variables, their constructs, and the items of the constructs (Hair et al., 2017). For this purpose, convergent and discriminant validities of the variables and reliability

(Cronbach's and composite) are calculated. Whereas, the structural model presents the relationship between the two or more latent variables under study. To establish the relationship between the variables, path analysis, coefficient of determination  $R^2$ , effect size  $f^2$ , and predictive relevance  $Q^2$  are calculated (Hair et al., 2017).

#### **4.9.1 Measurement Model Assessment**

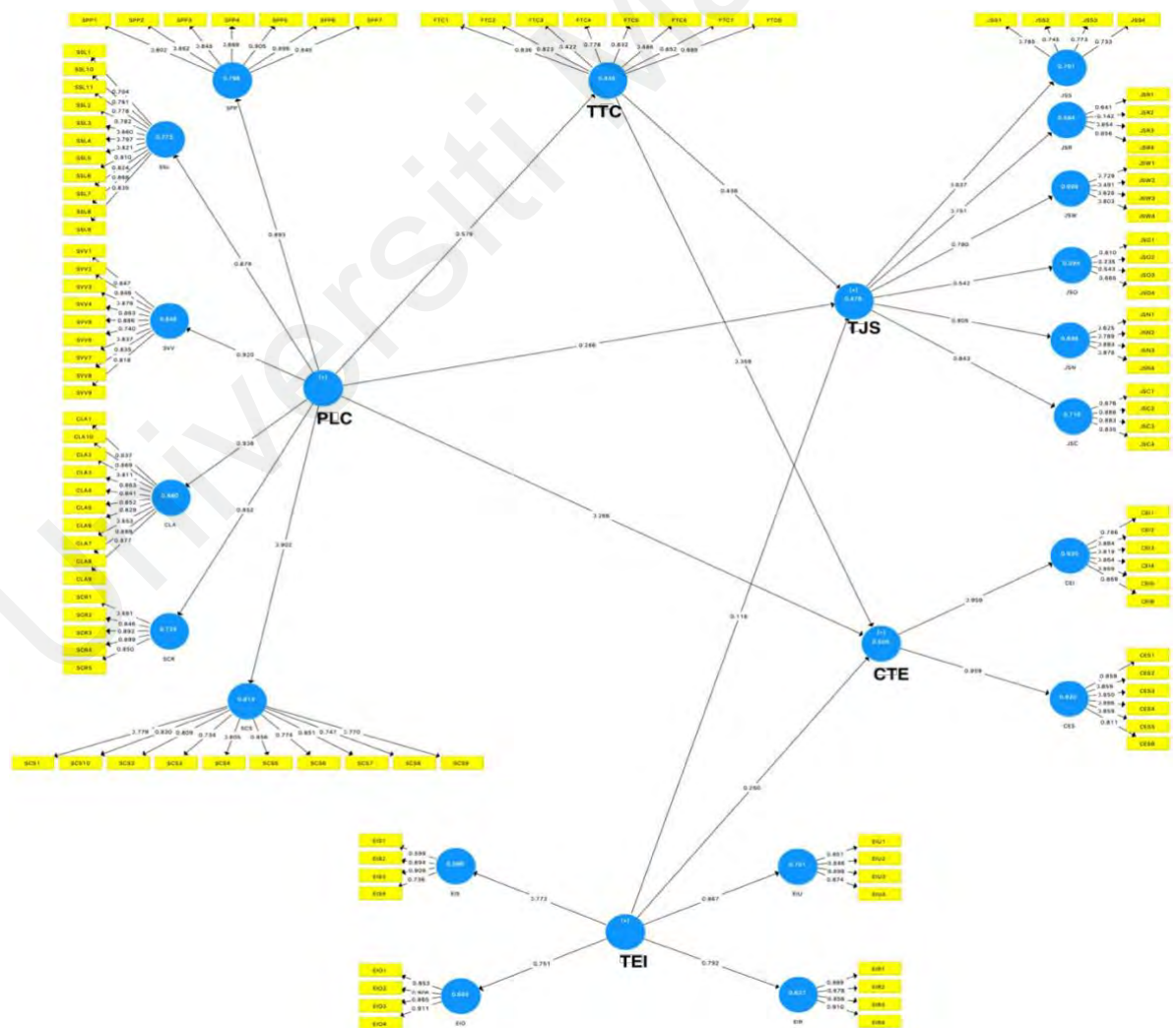
The measurement model analysis is done to explore how the latent variables are related to their constructs. This is done by using confirmatory factor analysis (CFA). According to Hair et al. (2017), the nature of the measurement model can either be reflective or formative. In the reflective model, measures are representative of the constructs, hence the causality is from constructs to measures. In a reflective model, the items or measures reflect the conceptual domain of the construct being measured. The items are said to be caused by the construct and thus show high correlation with each other. The items are interchangeable, and given the conditions of reliability are met, excluding one or more items will not affect the overall meaning of the construct.

However, for the formative model, the causality is from items to constructs. Each item of a formative model forms a particular dimension of the construct, as a result, the items are not interchangeable in nature, and excluding any item can alter the measure or meaning of the construct. Also, the items of a formative measure are not necessarily correlated with each other. As explained by Hair et al. (2017), choosing the model as reflective or formative depends on the theoretical approach, variables conceptualization, and research objectives developed for the study, hence, the reflective measurement approach was used for this study.

The measurement model is tested first to ascertain that the latent variables of the study are properly measured and are distinct from each other (Hair et al., 2016). The measurement model also tests how the latent variables are calculated with respect to their observable constructs. The model is tested for reliability, convergent validity, and discriminant validity (Hair et al., 2017). When the measurement model fails to meet the criteria for reliability and validity, it shows that either some of the constructs for the variables are unreliable or they are not distinct from each other. If the measurement model fails to meet the reliability or validity criteria, it adversely affects the structural model.

**Figure 4.1**

*Initial Measurement Model for the Study*





#### 4.9.1.1 Convergent Validity

Convergent validity, which is a subtype of construct validity, helps to measure how closely a scale or measure corresponds to a similar scale or measure of the same construct (Hair et al., 2017). It is measured through outer loadings and average variance extracted (AVE). For a construct, outer loadings refer to commonalities shared by the indicators of a construct. The outer loading values greater than or equal to 0.708 are considered statistically significant, however, for exploratory research, outer loading values from 0.40 to 0.70 can be deemed acceptable too. Also, Hair et al. (2017) suggested that if the outer loadings of an item are below 0.70, it can only be removed if removing it will increase the AVE and composite reliability of the construct considerably. However, items with very low outer loadings (less than 0.40) should always be removed.

AVE indicates how much variance in indicators can be explained by the construct. In PLS analysis, an AVE value of 0.50 and higher is considered statistically significant, as it shows that a construct is responsible for more than half of the variance in its indicators (Fornell & Larcker, 1981; Gefen et al., 2000; Hair et al., 2017). As mentioned earlier, in this study, the latent variable PLCs is measured through six constructs, which are “shared and supportive leadership (SSL – 11 items), shared values and vision (SVV – 9 items), collective learning and application (CLA – 10 items), shared personal practices (SPP – 7 items), supportive conditions relationship (SCR – 5 items) and supportive conditions structural (SCS – 10 items)”, a total of 52 items. The outer loading for all 52 items was found to be satisfactory, and at this stage, all items were retained.

**Table 4.8***Outer Loadings for Professional Learning Communities Items*

	Items	Outer Loading
SSL	SSL1	0.70
	SSL2	0.78
	SSL3	0.66
	SSL4	0.80
	SSL5	0.82
	SSL6	0.81
	SSL7	0.82
	SSL8	0.87
	SSL9	0.84
	SSL10	0.76
	SSL11	0.78
SVV	SVV1	0.85
	SVV2	0.85
	SVV3	0.88
	SVV4	0.86
	SVV5	0.89
	SVV6	0.74
	SVV7	0.84
	SVV8	0.84
	SVV9	0.82
CLA	CLA1	0.84
	CLA2	0.81
	CLA3	0.86
	CLA4	0.84
	CLA5	0.85
	CLA6	0.83
	CLA7	0.85
	CLA8	0.89
	CLA9	0.88
	CLA10	0.87
SPP	SPP1	0.80
	SPP2	0.86
	SPP3	0.85
	SPP4	0.87
	SPP5	0.91
	SPP6	0.90
	SPP7	0.85
SCR	SCR1	0.88
	SCR2	0.85
	SCR3	0.89
	SCR4	0.90
	SCR5	0.85
SCS	SCS1	0.78
	SCS2	0.81
	SCS3	0.73
	SCS4	0.81
	SCS5	0.86

SCS	SCS6	0.77
	SCS7	0.85
	SCS8	0.75
	SCS9	0.77
	SCS10	0.83

The dependent variable CTE was measured using 12 items. It has two constructs, namely, collective efficacy for instructional strategies (CTEI) and for student discipline (CTES), with 6 items each. All the items for both CTEI and CTES presented outer loadings greater than 0.7, which is the recommended minimum value.

**Table 4.9**

*Outer Loadings for Collective Teacher Efficacy Items*

	Items	Outer Loading
CEI	CEI1	0.79
	CEI2	0.86
	CEI3	0.82
	CEI4	0.86
	CEI5	0.87
	CEI6	0.87
CES	CES1	0.86
	CES2	0.86
	CES3	0.85
	CES4	0.87
	CES5	0.86
	CES6	0.81

The dependent variable, teachers' job satisfaction, was measured through 24 items. It has 6 constructs, namely JSS (supervision), JSR (contingent rewards), JSW (co-workers), JSO (operating procedures), JSN (nature of work), and JSC (communication)", with 4 items each. Of the 24 items, 3 items presented very low outer loading, JSO2 (0.24), JSW2 (0.49), and JSR2 (-0.14), hence were removed from the measurement model.

**Table 4.10***Outer Loadings for Teachers' Job Satisfaction Items*

	Items	Outer Loading
JSS	JSS1	0.79
	JSS2	0.75
	JSS3	0.77
	JSS4	0.73
JSR	JSR1	0.64
	JSR2	-0.14
	JSR3	0.85
	JSR4	0.86
JSW	JSW1	0.73
	JSW2	0.49
	JSW3	0.63
	JSW4	0.80
JSO	JSO1	0.81
	JSO2	0.24
	JSO3	0.54
	JSO4	0.67
JSN	JSN1	0.63
	JSN2	0.79
	JSN3	0.88
	JSN4	0.88
JSC	JSC1	0.68
	JSC2	0.89
	JSC3	0.88
	JSC4	0.84

The mediating variable TTC was measured using 8 items, however, the outer loading for item number 3 (TTC3) was found to be 0.42, which is low and close to 0.4, and hence was removed.

**Table 4.11***Outer Loadings for Teachers' Trust in Colleagues Items*

Items	Outer Loading
TTC1	0.84
TTC2	0.82
TTC3	0.42
TTC4	0.78
TTC5	0.83
TTC6	0.89
TTC7	0.85
TTC8	0.69

Also, the moderating variable teachers' emotional intelligence was measured through 16 items. It has 4 constructs, which are ‘EIS (self-emotions appraisal), EIO (others' emotions appraisal), EIR (regulation of emotions), and EIU (use of emotions). The constructs have 4 items each, and all 16 items presented outer loadings in the acceptable range.

**Table 4.12**

*Outer Loadings for Teachers' Emotional Intelligence Items*

	Items	Outer Loading
EIS	EIS1	0.60
	EIS2	0.89
	EIS3	0.91
	EIS4	0.74
EIO	EIO1	0.85
	EIO2	0.91
	EIO3	0.87
	EIO4	0.91
EIR	EIR1	0.89
	EIR2	0.88
	EIR3	0.86
	EIR4	0.91
EIU	EIU1	0.85
	EIU2	0.85
	EIU3	0.90
	EIU4	0.87

Further, to establish the convergent validity, Cronbach's alpha and VIF were calculated. According to Hair et al. (2016), the composite reliability value less than 0.95 is most appropriate, and the VIF should not be greater than 5. Composite reliability greater than 0.95 suggests redundancy. For the latent variable PLCs, the construct has CLA reported composite reliability of 0.96, SPP has composite reliability of 0.95, and SVV has composite reliability of 0.96. Upon checking for VIF values, the items CLA10, CLA9 and CLA8 have very high VIF values and hence were removed from the model, which led to composite reliability of 0.948 (~ 0.95) for the construct CLA. For the construct SPP, SPP6 with the VIF value 7.78 was removed to reach composite reliability of 0.94.

Finally, for the construct, SVV, the items SVV3 (VIF = 6.69) and SVV5 (VIF = 5.92) were removed to reach the final composite reliability of 0.941. These items were then removed from the model, which led to acceptable Cronbach's alpha and VIF values.

#### **4.9.1.2 Discriminant Validity**

The discriminant validity value of the constructs helps to analyse how distinct the constructs are from each other. It can be measured through cross-loadings, using two approaches, heterotrait-monotrait ratio (HTMT) and the Fornell-Larcker criteria. The Fornell-Larcker approach calculates discriminant validity by taking the square root of the AVE values of constructs, but this approach is not suitable for constructs with only slight variations in their indicator loadings (Henseler et al., 2015; Hair, 2017). Hence, the researchers have recommended that HTMT ratio analysis is a better approach to establish discriminant validity. In variance-based SEM, HTMT values help to evaluate the degree of correlation between two constructs when they are perfectly measured and the HTMT value close to 1 point to the absence of discriminant validity. Also, Henseler et al. (2015) suggested 0.85 as a threshold for HTMT value, however, an HTMT value close to 0.90 is acceptable in the case of conceptually similar constructs. HTMT value greater than 0.90 clearly indicates the absence of discriminant validity.

In the present study, the six constructs for the professional learning communities presented satisfactory HTMT values and hence showed that they are distinct. However, the two constructs of collective teacher efficacy (CEI and CES) presented a high HTMT value (more than 0.90), hence the two constructs were combined into one single construct (CTE). Similarly, the two constructs JSS and JSR of the latent variable teachers' job satisfaction showed a high HTMT value (more than 0.90), as a result, they were merged into a single construct and renamed as JSSR. Apart from that, based on the

HTMT values, dimensions of the latent variables, teachers' trust in colleagues, and emotional intelligence presented satisfactory discriminant validity.

Universiti Malaya

**Table 4.13***Discriminant Validity of the Constructs*

	CEI	CES	CLA	EIO	EIR	EIS	EIU	TTC	JSC	JSN	JSO	JSR	JSS	JSW	SCR	SCS	SPP	SSL	SVV
CEI																			
CES	0.91																		
CLA	0.57	0.57																	
EIO	0.41	0.38	0.35																
EIR	0.42	0.36	0.34	0.42															
EIS	0.49	0.48	0.28	0.52	0.58														
EIU	0.52	0.46	0.40	0.63	0.66	0.64													
TTC	0.66	0.63	0.57	0.31	0.38	0.31	0.43												
JSC	0.39	0.41	0.43	0.21	0.34	0.27	0.29	0.49											
JSN	0.51	0.58	0.43	0.35	0.46	0.58	0.57	0.61	0.72										
JSO	0.15	0.16	0.13	0.11	0.12	0.16	0.19	0.21	0.49	0.33									
JSR	0.44	0.44	0.48	0.13	0.21	0.13	0.21	0.53	0.72	0.52	0.54								
JSS	0.65	0.66	0.56	0.25	0.36	0.31	0.41	0.64	0.72	0.75	0.41	0.93							
JSW	0.68	0.67	0.53	0.26	0.33	0.33	0.45	0.81	0.75	0.82	0.38	0.78	0.89						
SCR	0.51	0.51	0.86	0.30	0.28	0.24	0.32	0.52	0.39	0.33	0.09	0.45	0.49	0.59					
SCS	0.55	0.55	0.83	0.42	0.35	0.33	0.45	0.56	0.45	0.52	0.16	0.41	0.52	0.58	0.79				
SPP	0.54	0.53	0.89	0.38	0.33	0.29	0.45	0.53	0.41	0.41	0.11	0.38	0.46	0.54	0.84	0.82			
SSL	0.57	0.53	0.79	0.36	0.35	0.33	0.46	0.57	0.52	0.52	0.20	0.47	0.63	0.61	0.68	0.83	0.73		
SVV	0.55	0.51	0.89	0.34	0.32	0.27	0.42	0.57	0.43	0.43	0.10	0.43	0.56	0.58	0.78	0.82	0.82	0.85	



**Table 4.14***Discriminant Validity of the Constructs After Combining JSS & JSR and CEI & CES*

	CLA	CTE	EIO	EIR	EIS	EIU	TTC	JSC	JSN	JSO	JSSR	JSW	SCR	SCS	SPP	SSL	SVV
CLA																	
CTE	0.58																
EIO	0.35	0.41															
EIR	0.34	0.40	0.42														
EIS	0.28	0.50	0.52	0.58													
EIU	0.40	0.50	0.63	0.66	0.64												
TTC	0.57	0.66	0.31	0.38	0.31	0.43											
JSC	0.43	0.41	0.21	0.34	0.27	0.29	0.49										
JSN	0.43	0.56	0.35	0.46	0.58	0.57	0.61	0.72									
JSO	0.13	0.16	0.11	0.12	0.16	0.19	0.21	0.49	0.33								
JSSR	0.54	0.59	0.20	0.30	0.24	0.33	0.60	0.74	0.67	0.47							
JSW	0.53	0.70	0.26	0.33	0.33	0.45	0.81	0.75	0.82	0.38	0.86						
SCR	0.86	0.52	0.30	0.28	0.24	0.32	0.52	0.39	0.33	0.09	0.48	0.59					
SCS	0.83	0.56	0.42	0.35	0.33	0.45	0.56	0.45	0.52	0.16	0.48	0.58	0.79				
SPP	0.89	0.55	0.38	0.33	0.29	0.45	0.53	0.41	0.41	0.11	0.43	0.54	0.84	0.82			
SSL	0.79	0.56	0.36	0.35	0.33	0.46	0.57	0.52	0.52	0.20	0.57	0.61	0.68	0.83	0.73		
SVV	0.89	0.54	0.34	0.32	0.27	0.42	0.57	0.43	0.43	0.10	0.51	0.58	0.78	0.82	0.82	0.85	

#### 4.9.1.3 Reliability of the Constructs

In PLS-SEM reliability can be established by calculating the values for Cronbach alpha and composite reliability values. The Cronbach Alpha values for the constructs JSO and JSW were less than 0.6, however, they have satisfactory composite reliability (JSO = 0.73, JSW = 0.789) and, therefore, were retained in the model. In PLS analysis, more than Cronbach's alpha is needed to test for reliability as it can depend on the number of items of a construct and assumes that all items have equal outer loadings. Hence, in PLS analysis, composite reliability is more suitable when establishing constructs' reliability, more so for exploratory research (Hair et al., 2017). The composite reliability values above 0.70 are deemed satisfactory and reliable (Hair et al., 2017). In the present study, the composite reliability value for all constructs was found to be  $>0.7$ , and the AVE was  $>0.5$ , which satisfies the reliability criterion.

**Table 4.15**

*Reliability and AVE values for the Constructs*

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
CLA	0.94	0.94	0.95	0.72
CTE	0.95	0.95	0.96	0.66
EIO	0.91	0.91	0.94	0.78
EIR	0.91	0.91	0.93	0.78
EIS	0.80	0.85	0.87	0.63
EIU	0.89	0.89	0.92	0.75
TTC	0.92	0.92	0.93	0.67
JSC	0.84	0.84	0.89	0.68
JSN	0.81	0.82	0.88	0.64
JSO	0.59	0.68	0.75	0.51
JSSR	0.81	0.81	0.86	0.51
JSW	0.59	0.62	0.79	0.56
PLCs	0.98	0.99	0.99	0.56
SCR	0.92	0.93	0.94	0.76

SCS	0.94	0.94	0.95	0.63
SPP	0.93	0.93	0.94	0.74
SSL	0.94	0.94	0.95	0.62
SVV	0.93	0.93	0.94	0.69
TEI	0.92	0.93	0.93	0.47
TJS	0.91	0.92	0.92	0.36

As the last step, the path analysis for the measurement model was conducted. For latent variables with more than one construct, i.e., professional learning communities, teachers' job satisfaction, and emotional intelligence, the path co-efficient values showed that all the constructs have a positive and significant relationship with the latent variables they measured. The table below shows the path values:

**Table 4.16**

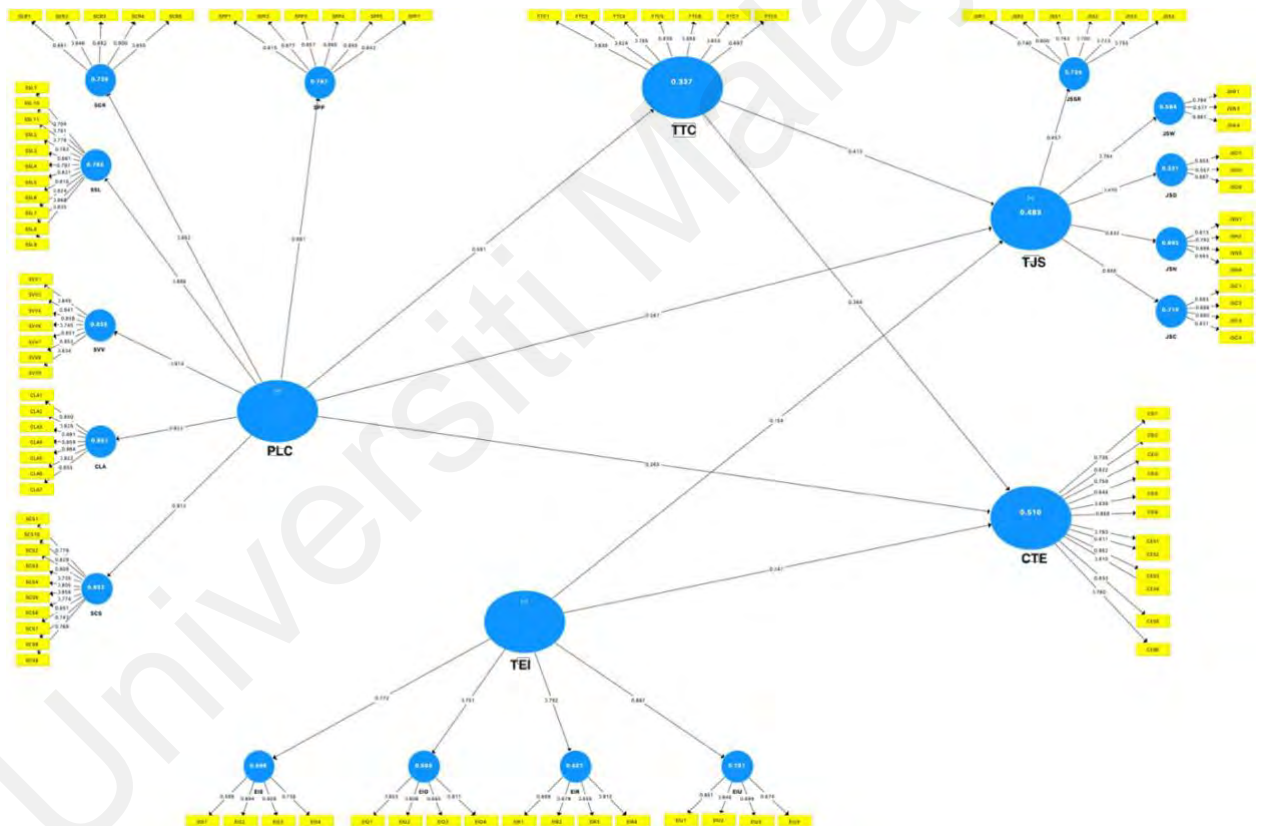
*Path Analysis for the Measurement Model*

Path	Original Sample (O)	Sample Mean (M)	Std Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
PLCs -> CLA	0.92	0.92	0.01	87.54	p < 0.01
PLCs -> SCR	0.85	0.85	0.02	42.17	p < 0.01
PLCs -> SCS	0.91	0.91	0.02	56.00	p < 0.01
PLCs -> SPP	0.89	0.89	0.01	60.83	p < 0.01
PLCs -> SSL	0.89	0.89	0.02	55.47	p < 0.01
PLCs -> SVV	0.91	0.91	0.01	77.30	p < 0.01
TEI -> EIO	0.75	0.75	0.03	26.37	p < 0.01
TEI -> EIR	0.79	0.79	0.03	27.55	p < 0.01
TEI -> EIS	0.77	0.77	0.03	28.97	p < 0.01
TEI -> EIU	0.87	0.87	0.02	54.94	p < 0.01
TJS -> JSC	0.85	0.84	0.02	42.71	p < 0.01
TJS -> JSN	0.83	0.83	0.02	39.70	p < 0.01
TJS -> JSO	0.47	0.47	0.06	08.59	p < 0.01
TJS -> JSSR	0.86	0.86	0.03	37.40	p < 0.01
TJS -> JSW	0.76	0.77	0.03	22.39	p < 0.01

Hence, by testing for reliability, convergent and discriminant validity, and path analysis, the measurement model was tested. In the final measurement model, out of the total 112 items, 12 items were removed. This final measurement model, thus having 100 items, was then used for the structural model analysis.

**Figure 4.2**

*Final Measurement Model*



#### 4.9.2 Structural Model Analysis

The inner or structural model in the PLS-SEM depicts the relationship of the latent (exogenous and endogenous) variables under study. The structural model analysis is done by performing path analysis that uses the multiple regression approach to show the complex relationships between variables, including direct, mediation, or moderation effects (Hair et al., 2017; Ho, 2006). The structural model analysis is based on the estimations of path coefficients, level of  $R^2$ , effect size  $f^2$ , and predictive relevance  $Q^2$  values. The inner model analysis is used for answering research questions 2 to 12 and for accepting or rejecting the research hypothesis accordingly.

As a first step towards structural analysis, the model was checked for collinearity using variance inflation factor (VIF) values. The VIF value less than or equal to 5 is considered acceptable in PLS analysis (Hair et al., 2017). As shown in table below, all the variables of the study have a VIF value of  $<5$  and thus satisfy the collinearity criteria.

**Table 4.17**

*Inner VIF Values for the Structural Model*

	CTE	TTC	TJS
TTC	1.57		1.57
PLCs	1.66	1	1.66
TEI	1.32		1.32

As all the VIF values are positive, significant and less than 5, it satisfies the collinearity criteria for the structural model.

The conceptual framework developed for this study depicts the direct relationship of the PLCs (exogenous variable) with CTE and TJS (endogenous variables), along with mediating effect of TTC and moderating effects of TEI. The mediation analysis is helpful in showing the direct as well as the indirect effects of the exogenous variable (PLCs) on the endogenous variables (CTE and TJS), in the presence of the mediating variable (TTC). For moderation, the direct effect of moderating variable on endogenous variables (CTE and TJS), and the interaction effect of moderating (TEI) and exogenous (PLCs) variables on endogenous variables were examined. The following paths were examined to understand the direct, indirect (via mediation), total, and moderating effects:

- Direct effect of PLCs (exogenous variable) on CTE, and TJS (endogenous variables).
- Direct effect of PLCs (exogenous variable) on TTC (mediating variable).
- Direct effect of TTC on (mediating variable) on CTE, and TJS (endogenous variables).
- Direct effect of TEI on (moderating variable) on CTE, and TJS (endogenous variables).
- Indirect effect of PLCs (exogenous variable) on CTE, and TJS (endogenous variables) – via TTC as mediator.
- Total effect of PLCs on CTE, and TJS (endogenous variables), respectively, which is the sum of direct and indirect effects.
- Moderating effect of TEI for the effect of PLCs (exogenous variable) on CTE, and TJS (endogenous variables).

#### 4.9.2.1 Path Analysis for Research Questions 2 and 3

The path analysis for the direct and total effects of PLCs (exogenous variable,) on CTE and TJS (endogenous variables) yielded path co-efficient values which helped to answer research questions 2 and 3. Later the corresponding research hypotheses were tested. This study used the bootstrapping procedure to determine path coefficients. In bootstrapping, SmartPLS uses random re-sampling of data from the original data set to generate a new sample. Bootstrapping is used for reliability testing and path model estimation in SEM analysis. The significance of the effect is tested based on the path coefficient ( $\beta$ ) values, t-values, and the significance level (p-values) (Hair et al., 2017). Also, bootstrapping procedures help in knowing the standard error and SD for the estimated coefficient.

In this study, the "number of bootstraps samples" was fixed at 5000, and the "bias-corrected confidence interval" was 95%. The significance of the results was determined based on the resultant t-values obtained. The resultant values were compared with the critical t-values, which are 1.65 ( $p = 0.10$ ), 1.96 ( $p = 0.05$ ), and 2.57 ( $p = 0.01$ ) for two-tailed tests (Hair et al., 2017). The p-values reported indicate the probability of obtaining the relationship coefficient values by chance, or the probability of accepting a significant effect in a relationship, when there is not (wrongly rejecting the null hypothesis). In general, significance value of 5% ( $p < 0.05$ ) is the acceptable value by researchers. However, in the case of exploratory studies,  $p < 0.10$  is acceptable as well (Hair et al., 2017). Therefore, in this study, significance of the effect between the variables is based on the levels of t-values, p-values, and path coefficient values.

To answer research questions 2 and 3, specific indirect, direct, and total effects of the exogenous variable (PLCs) and the mediating variable (TTC) on the endogenous variables

(CTE and TJS) were calculated. This was done using the bootstrapping procedure in SmartPLS. The results proved that the total effect of PLCs on CTE was  $\beta = 0.47$  (SD = 0.05, t-value = 9.61, and  $p < 0.01$ ). Also, total effect of PLCs on CTE is the sum of direct effect  $\beta = 0.25$  (SD = 0.06, t-value = 3.99, and  $p < 0.01$ ) and specific indirect effect via TTC (mediator)  $\beta = 0.22$  (SD = 0.05, t-value = 4.82, and  $p < 0.01$ ).

Similarly, the total effect of PLCs on TJS was found to be  $\beta = 0.50$  (SD = 0.05, t-value = 9.68, and  $p < 0$ ). The total effect was the sum of direct effect  $\beta = 0.28$  (SD = 0.07, t-value = 4.18, and  $p < 0.01$ ) and the specific indirect effect via TTC (mediator) was  $\beta = 0.23$  (SD = 0.05, t-value = 4.52, and  $p < 0.01$ ).

This showed that the total effect and the direct effect of PLCs on CTE and TJS was significant and positive.

**Table 4.18**

*Path Analysis with Direct, Indirect, and Total Effects*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Interpretation
Specific Indirect Effect						
PLCs -> TTC -> CTE	0.22	0.22	0.05	4.82	$p < 0.01$	Significant & Positive
PLCs -> TTC -> TJS	0.23	0.24	0.05	4.52	$p < 0.01$	
Direct Effect						
PLCs -> CTE	0.25	0.25	0.06	3.99	$p < 0.01$	
PLCs -> TJS	0.28	0.28	0.07	4.18	$p < 0.01$	Significant & Positive
Total Effect						
PLCs -> CTE	0.47	0.47	0.05	9.69	$p < 0.01$	
PLCs -> TJS	0.52	0.52	0.05	10.20	$p < 0.01$	Significant & Positive



**Research Question 2:** Is there a significant relationship between PLCs and CTE in public primary schools, Selangor, Malaysia?

The total effect of PLCs on CTE was  $\beta = 0.47$  (SD = 0.05, t-value = 9.69 &  $p < 0.01$ ) of which the direct effect was  $\beta = 0.25$  (SD = 0.06, t-value = 3.99 &  $p < 0.01$ ). As both direct and total effect were significant and positive, there exist a significant, and positive relationship between PLCs and CTE at the public primary schools in Selangor, Malaysia.

**Research Hypothesis 1 (H<sub>01</sub>):** There is no significant relationship between PLCs and CTE in the public primary schools, Selangor, Malaysia.

Research hypothesis 1 (H<sub>01</sub>) for the study is rejected. As path analysis confirms that both direct and total effects of PLCs on CTE are significant and positive, null hypothesis that there is no significant relationship between PLCs and CTE in the public primary schools, Selangor, Malaysia is rejected.

Alternative hypothesis (H<sub>A1</sub>) that there is a significant relationship between PLCs and CTE in the public primary schools, Selangor, Malaysia is accepted.

**Research Question 3:** Is there a significant relationship between PLCs and TJS in public primary schools in Selangor, Malaysia?

The total effect of PLCs on TJS was  $\beta = 0.52$  (SD = 0.05, t-value = 10.20 and  $p < 0$ ), of which the direct effect was  $\beta = 0.28$  (SD = 0.07, t-value = 4.18 &  $p < 0.01$ ). As both total and direct effects were significant and positive, there exist a significant and positive relationship between PLCs and TJS in the public primary schools, Selangor, Malaysia.

**Research Hypothesis 2 (H<sub>02</sub>):** There is no significant relationship between PLCs and TJS in public primary schools, Selangor, Malaysia.

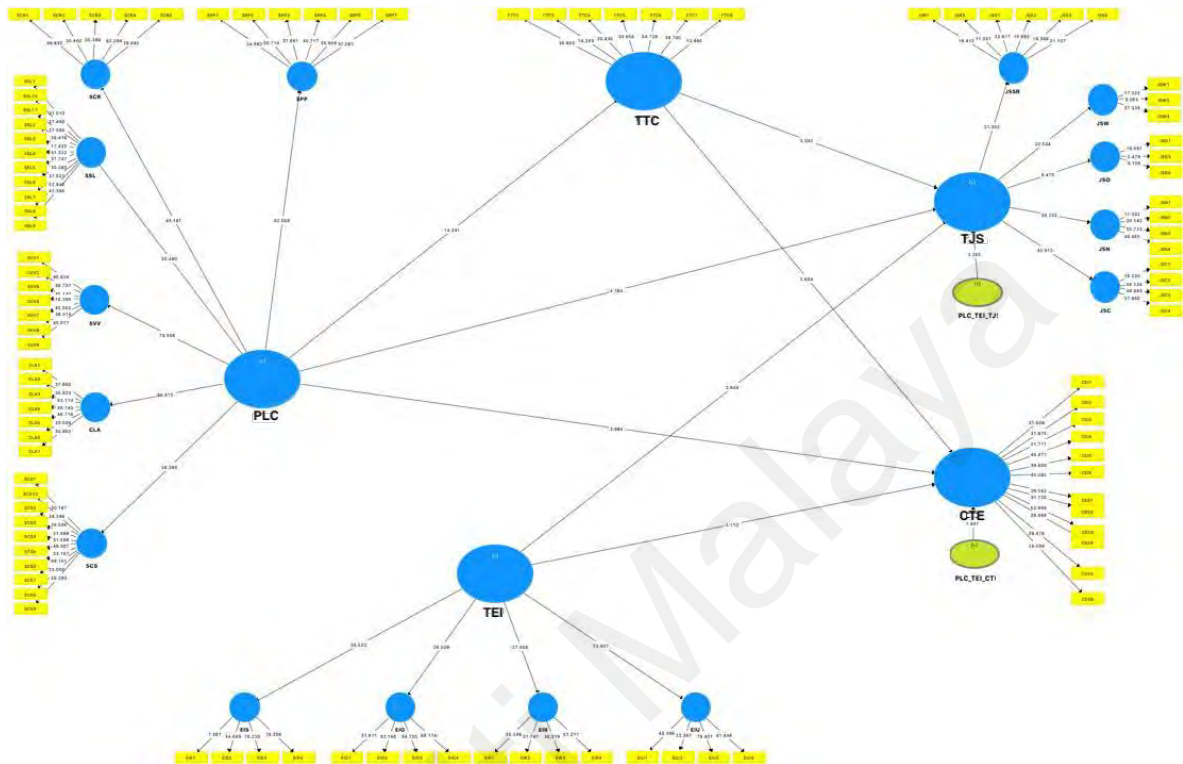
Research hypothesis 2 (H<sub>02</sub>) for the study is rejected. As path analysis confirms that both direct and total effects of PLCs on TJS are significant and positive, null hypothesis that there is no significant relationship between PLCs and TJS in the public primary schools, Selangor, Malaysia is rejected.

Alternative hypothesis (H<sub>A2</sub>) that there is a significant relationship between PLCs and TJS in the public primary schools, Selangor, Malaysia is accepted.

Universiti Malaysia

**Figure 4.3**

*Path Model*



#### 4.9.2.2 Mediation Analysis for Research Questions 4 to 8

When a variable intervenes in the direct effect of the exogenous variable (IV) on the endogenous variable (DV), it is called mediation, and the intervening variable is known as the mediating variable (Hair et al., 2017). To explain mediation, it can be said that when a change is introduced into the exogenous variable, it changes mediating variable, which in turn affects the endogenous variable (Hair et al., 2017). The complex cause-and-effect relationships between the exogenous and endogenous variables can be better explained by analyzing the possible effects of intervening mediating variables. In this study, mediation was calculated by using the bootstrapping method, where the "number of bootstraps samples" was fixed as 5000 and the "bias-corrected confidence interval" was 95%.

The mediation effect can be partial or complete. Partial mediation occurs when the relationships between the mediating variable and the endogenous variable, as well as the relationships between exogenous variable and the endogenous dependent variable are statistically significant (Hair et al., 2017). In the case of complete mediation, the mediating variable completely explains the effect exerted by the exogenous variable over the endogenous variable. Moreover, depending on the direction of the indirect and direct effects exerted by the exogenous and mediating variables, Zhao et al. (2010) have identified three types of mediation, namely complementary, competitive, and indirect-only. As defined by Zhao et al. (2010), “in complementary mediation the indirect effect and the direct effect both are significant and point in the same direction. For competitive mediation the indirect effect and the direct effect both are significant and point in opposite direction. Finally, for indirect-only mediation, the indirect effect is significant but not the direct effect,” (Hair et al., 2017, p. 237).

As suggested by Hair et al. (2018), for mediation analysis, it is important to establish first the significant effect of the exogenous variable on the endogenous variables, then the significant effect of the exogenous variable on the mediator variable, and finally, the significant effect of the mediator variable on the endogenous variable. Once these are established, the mediating effect is calculated by introducing the mediator as another independent variable. In this study, TTC mediates the direct effect of PLCs on CTE and TJS. Mediation analysis was conducted following Hair et al. (2017) recommendations, where after finding the total and direct effects of exogenous variable (PLCs) on the endogenous (CTE and TJS) variables, the direct effect of exogenous variable (PLCs) on mediating variable (TTC) and the direct effects of mediating variable (TTC) on the endogenous variables (CTE and TJS) were examined. Following this, it was calculated how

the presence of the mediating variable (TTC) affected the effect of the exogenous variable (PLCs) on the endogenous variables (CTE and TJS).

Table 4.18 presents the mediating effect of TTC on the effect of PLCs on CTE and TJS. As shown in the table, path 'a' presents the direct effect of the exogenous variable (PLCs) on the mediating variable (TTC), with path coefficient  $\beta = 0.58$  (SD = 0.04, t-value = 14.24 and  $p < 0.01$ ). This shows the direct, significant, and positive effect of PLCs on TTC. Path 'b' presents the direct effect of the mediating variable (TTC) on the two dependent variables, CTE  $\beta = 0.38$  (SD = 0.07, t-value = 5.66 and  $p < 0.01$ ), and TJS  $\beta = 0.40$  (SD = 0.08, t-value = 5.29 and  $p < 0.01$ ). The findings confirm a positive and significant effect of TTC on CTE and TJS. Path 'c' presents the direct effect of PLCs on CTE as  $\beta = 0.25$  (SD = 0.06, t-value = 3.99 and  $p < 0.01$ ) and TJS as  $\beta = 0.28$  (SD = 0.07, t-value = 4.18 and  $p < 0.01$ ). The effect of PLCs on both CTE and TJS and were positive and significant.

**Table 4.19**

*Path Analysis for Mediation*

Paths	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Interpretation
Path a (IV to Med) PLCs -> TTC	0.58	0.59	0.04	14.24	$p < 0.01$	Significant & Positive
Path b (Med to DV) TTC -> CTE	0.38	0.38	0.07	5.66	$p < 0.01$	Significant & Positive
TTC -> TJS	0.40	0.41	0.08	5.29	$p < 0.01$	
Path c' (IV to DV) PLCs -> CTE	0.25	0.25	0.06	3.99	$p < 0.01$	Significant & Positive
PLCs -> TJS	0.28	0.28	0.07	4.18	$p < 0.01$	
Specific Effect PLCs -> TTC -> CTE	0.22	0.22	0.05	4.82	$p < 0.01$	Significant & Positive
Indirect Effect PLCs -> TTC -> TJS	0.23	0.24	0.05	4.52	$p < 0.01$	

The SEM analysis showed that the direct effect of the exogenous variable (PLCs) on the mediating variables (TTC) and endogenous variables (CTE and TJS) was significant and positive, as well as the direct effect of the TTC (mediating variable) on the CTE and TJS (endogenous variables) was significant and positive. Therefore, teachers' trust in colleagues positively and partially mediates the effect of PLCs on CTE and TJS.

Also, to calculate the strength of the mediation, the specific indirect path analysis was done (Table 4.17). It was found that the path coefficient for the effect of PLCs on CTE via TTC (PLCs→TTC→CTE) was  $\beta = 0.22$  (SD = 0.05, t-value = 4.82 and  $p < 0.01$ ) and for teachers' job satisfaction (PLCs→TTC→TJS) was  $\beta = 0.23$  (SD = 0.05, t-value = 4.52 and  $p < 0.01$ ). As both path coefficients were significant and positive, a direct mediation via the teacher's trust in colleagues was confirmed. Furthermore, as both the direct effect of the exogenous variable on endogenous variables and the mediating effects were significant and positive, partial mediation is reported.

**Research Question 4:** Is there a significant relationship between PLCs and TTC in public primary schools, Selangor, Malaysia?

The direct effect of PLCs on teachers' trust in colleagues was  $\beta = 0.58$  (SD = 0.04, t-value = 14.24 &  $p < 0.01$ ) this shows there exist a significant and positive relationship between PLCs and TTC in the public primary schools, Selangor, Malaysia.

**Research Hypothesis 3 (H<sub>03</sub>):** There is no significant relationship between PLCs and TTC in the public primary schools, Selangor, Malaysia.

Research hypothesis 3 (H<sub>03</sub>) for the study is rejected. As path analysis confirms a significant, and positive direct effect of PLCs on TTC, null hypothesis that there is no significant relationship between PLCs and TTC in the public primary schools, Selangor, Malaysia, is rejected.

Alternative hypothesis (H<sub>A3</sub>) that there is a significant relationship between PLCs and TTC in the public primary schools, Selangor, Malaysia is accepted.

**Research Question 5:** Is there a significant relationship between TTC and CTE in public primary schools, Selangor, Malaysia?

The direct effect of TTC on CTE was  $\beta = 0.38$  (SD = 0.07, t-value = 5.66 &  $p < 0.01$ ) this shows there exist a significant and positive relationship between TTC and CTE in the public primary schools, Selangor, Malaysia.

**Research Hypothesis 4 (H<sub>04</sub>):** There is no significant relationship between TTC and CTE in the public primary schools, Selangor, Malaysia.

Research hypothesis 4 (H<sub>04</sub>) for the study is rejected. As path analysis confirms a significant, and positive direct effect of TTC on CTE, the null hypothesis that there is no significant relationship between TTC and CTE in the public primary schools, Selangor, Malaysia, is rejected.

Alternative hypothesis (H<sub>A4</sub>) that there is a significant relationship between TTC and CTE in the public primary schools, Selangor, Malaysia is accepted.

**Research Question 6:** Is there a significant relationship between TTC and TJS in public primary schools, Selangor, Malaysia?

The direct effect of TTC TJS was  $\beta = 0.40$  (SD = 0.08, t-value = 5.29 &  $p < 0.01$ ) this shows there exist a significant and positive relationship between TTC and TJS in the public primary schools, Selangor, Malaysia.

**Research Hypothesis 5 (H<sub>05</sub>):** There is no significant relationship between TTC and TJS in public primary schools, Selangor, Malaysia.

Research hypothesis 5 (H<sub>05</sub>) for the study is rejected. As path analysis confirms a significant, and positive direct effect of TTC on TJS, the null hypothesis that there is no significant relationship between TTC and TJS in public primary schools, Selangor, Malaysia, is rejected.

Alternative hypothesis (H<sub>A5</sub>) that there is a significant relationship between TTC and TJS in the public primary schools, Selangor, Malaysia is accepted.

**Research Question 7:** Does TTC significantly mediate the relationship between PLCs and CTE in public primary schools in Selangor, Malaysia?

The direct effect of PLCs on CTE and the direct effect of TTC on CTE was significant and positive. Also, the specific indirect effect of PLCs on CTE, via TTC (PLCs→TTC→CTE) was significant and positive,  $\beta = 0.22$  (SD = 0.05, t-value = 4.82 and  $p < 0.01$ ). Therefore, it is concluded that teachers' trust in colleagues significantly mediates the relationship between PLCs and CTE, and the mediating effect is of partial mediation.



The direct effects of PLCs on TTC ( $b=0.58$ ,  $SD = 0.04$ ,  $t\text{-value} = 14.24$  and  $p < 0.01$ ), of PLCs on CTE ( $b=0.25$ ,  $SD = 0.06$ ,  $t\text{-value} = 3.99$  and  $p < 0.01$ ), and of TTC on CTE ( $b=0.38$ ,  $SD = 0.07$ ,  $t\text{-value} = 5.66$  and  $p < 0.01$ ) were significant and positive. Also, the specific indirect effect of PLCs on CTE, via TTC (PLCs→TTC→CTE) was significant and positive ( $b = 0.22$ ,  $SD = 0.05$ ,  $t\text{-value} = 4.82$  and  $p < 0.01$ ). Furthermore, the path analysis shows that the total effect of PLCs on CTE increases in the presence of TTC ( $b=0.47$ ,  $SD = 0.05$ ,  $t\text{-value} = 9.69$  and  $p < 0.01$ ). Therefore, it is concluded that TTC significantly mediates the relationship between PLCs and CTE. As both the exogenous variable (PLCs) and the mediator variable (TTC) exerts a significant and positive effect on the endogenous variable (CTE), the mediating effect is partial in nature.

**Research Hypothesis 6 (H<sub>06</sub>):** TTC does not significantly mediate the relationship between PLCs and CTE in public primary schools, Selangor, Malaysia.

Research hypothesis 6 (H<sub>06</sub>) for the study is rejected. As path analysis confirms the direct effects of PLCs on CTE, as well as the indirect effect via TTC were significant and positive, the null hypothesis that teachers' trust in colleagues does not significantly mediate the relationship between PLCs and CTE in public primary schools, Selangor, Malaysia is rejected.

Alternative hypothesis (H<sub>A6</sub>) that TTC significantly mediates the relationship between PLCs and CTE in the public primary schools, Selangor, Malaysia is accepted.

**Research Question 8:** Does TTC significantly mediate the direct relationship between PLCs and TJS at the public primary schools in Selangor, Malaysia?

The direct effect of PLCs on TJS and the direct effect of TTC on TJS was significant and positive. Also, the specific indirect effect of PLCs on TJS, via TTC (PLCs→TTC→TJS) was significant and positive,  $\beta = 0.23$  (SD = 0.05, t-value = 4.52 and  $p < 0.01$ ) Therefore, it is concluded that TTC significantly mediates the relationship between PLCs and TJS, and the mediating effect is of partial mediation.

The direct effects of PLCs on TTC ( $b=0.58$ , SD = 0.04, t-value = 14.24 and  $p < 0.01$ ), of PLCs on TJS ( $b=0.28$ , SD = 0.07, t-value = 4.18 and  $p < 0.01$ ) and of TTC on TJS ( $b=0.40$ , SD = 0.08, t-value = 5.29 and  $p < 0.01$ ) were significant and positive. Also, the specific indirect effect of PLCs on TJS, via TTC (PLCs→TTC→TJS) was significant and positive,  $b = 0.23$  (SD = 0.05, t-value = 4.52 and  $p < 0.01$ ). Furthermore, the path analysis shows that the total effect of PLCs on TJS increases in the presence of TTC ( $b=0.52$ , SD = 0.05, t-value = 10.20 and  $p < 0.01$ ). Therefore, it is concluded that TTC significantly mediates the relationship between PLCs and TJS. As both the exogenous variable (PLCs) and the mediator variable (TTC) exerts a significant and positive effect on the endogenous variable (TJS), the mediating effect is partial in nature.

**Research Hypothesis 7 (H<sub>07</sub>):** TTC does not significantly mediate the relationship between PLCs and TJS in public primary schools, Selangor, Malaysia.

Research hypothesis 7 (H<sub>07</sub>) for the study is rejected. As path analysis confirms the direct effects of PLCs on TJS, as well as the indirect effect via TTC are significant and positive, the null hypothesis that teachers' trust in colleagues does not significantly mediate the

relationship between PLCs and TJS in public primary schools, Selangor, Malaysia is rejected.

Alternative hypothesis ( $H_{A7}$ ) that TTC significantly mediates the relationship between PLCs and TJS in the public primary schools, Selangor, Malaysia is accepted.

#### **4.9.2.3 Moderation Analysis for Research Questions 9 to 12**

According to Hair et al., (2017, p. 246), “moderation describes a situation in which the relationship between two constructs is not constant but depends on the values of a third variable, referred to as a moderator variable.” This means the relationship between the independent or exogenous variable and the dependent or endogenous variable is not constant and a moderator can change the strength or the direction of this relationship. Also, in PLS analysis moderating variable shows a direct relationship with the dependent variable, however, this relationship is independent of the exogenous variable (unlike mediation). In this study, moderation analysis was done following the recommendations by Hair et al. (2017) where the moderating variable was teachers' emotional intelligence.

According to Hair, in moderation, the moderating variable acts like another independent variable and there exist no direct relationship of the independent with the moderating variable. In this study, the moderating effect was calculated by using path analysis for the relationship between the exogenous variable (PLCs) and endogenous variables (CTE and TJS) in the presence of a moderating variable (TEI). Table 4.19 presents the path coefficients for the effects of the moderating variable (TEI) on the dependent variables (CTE and TJS) and for the interaction effect between the moderating (TEI) and the independent variable (PLCs) on the dependent variable (CTE and TJS).

**Table 4.20***Moderating Effect of Teachers' Emotional Intelligence*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Interpretation
Direct Effect						
TEI -> CTE	0.25	0.25	0.05	5.11	0	Significant & Positive
TEI -> TJS	0.15	0.15	0.05	2.94	0.003	
Moderating Effect						Very Small & Non Significant
PLCs_TEI_CTE	0.06	0.06	0.04	1.45	0.148	
PLCs_TEI_TJS	-0.08	-0.07	0.03	2.27	0.02	Significant & Negative

**Research Question 9:** Is there a significant relationship between TEI and CTE in public primary schools, Selangor, Malaysia?

The direct effect of TEI on CTE was  $\beta = 0.25$  (SD = 0.05, t-value = 5.11 &  $p < 0.01$ ) this shows there exist a significant and positive effect of the TEI on CTE in the public primary schools, Selangor, Malaysia.

**Research Hypothesis 8 (H<sub>08</sub>):** There is no significant relationship between TEI and CTE in the public primary schools, Selangor, Malaysia.

Research hypothesis 8 (H<sub>08</sub>) for the study is rejected. As path analysis confirms a significant and positive direct effect of TEI on CTE, the null hypothesis that there is no significant relationship between TEI and CTE in public primary schools, Selangor, Malaysia, is rejected.

Alternative hypothesis (H<sub>A8</sub>) that there is a significant relationship between TEI and CTE in the public primary schools, Selangor, Malaysia is accepted.

**Research Question 10:** Is there a significant relationship between TEI and TJS in public primary schools, Selangor, Malaysia?

The direct effect of TEI on TJS was  $\beta = 0.15$  (SD = 0.08, t-value = 2.94 &  $p < 0.01$ ) this shows there exist a significant and positive relationship between TEI and TJS in the public primary schools, Selangor, Malaysia.

**Research Hypothesis 9 (H<sub>09</sub>):** There is no significant relationship between TEI and TJS in public primary schools, Selangor, Malaysia.

Research hypothesis 9 (H<sub>09</sub>) for the study is rejected. As path analysis confirms a significant and positive direct effect of TEI on TJS, the null hypothesis that there is no significant relationship between TEI and TJS in public primary schools, Selangor, Malaysia, is rejected.

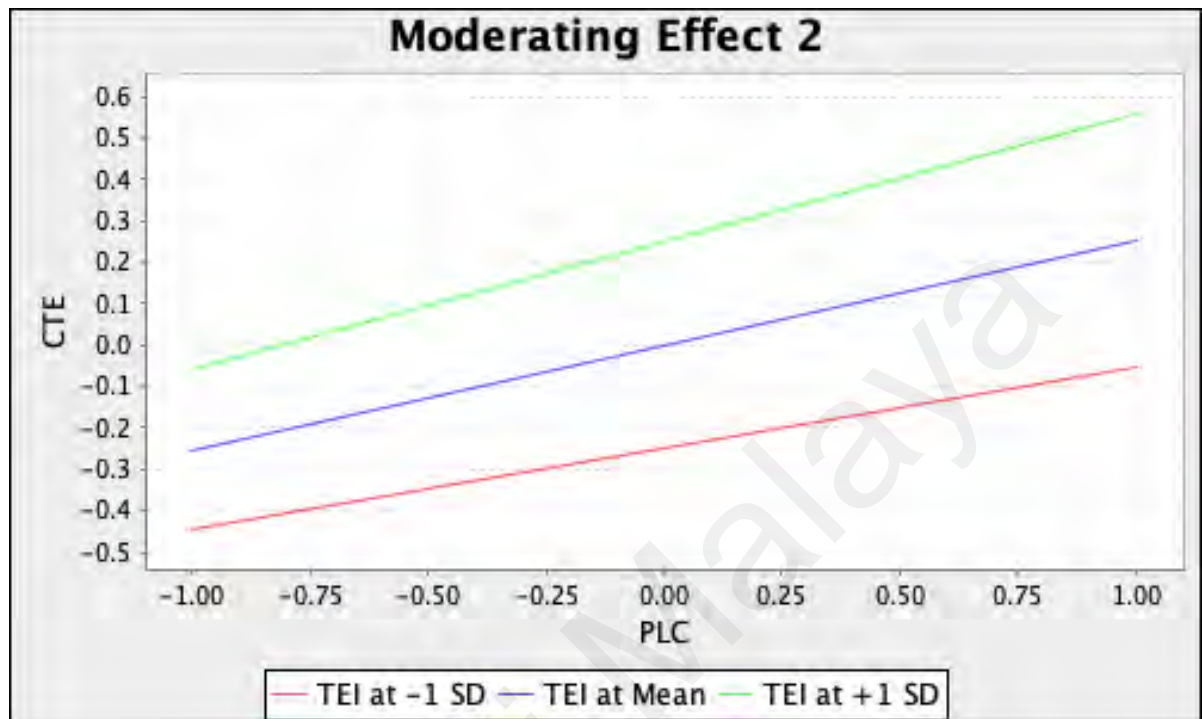
Alternative hypothesis (H<sub>A9</sub>) that there is a significant relationship between TEI and TJS in the public primary schools, Selangor, Malaysia is accepted.

**Research Question 11:** Does TEI significantly moderate the relationship between PLCs and CTE in public primary schools, Selangor, Malaysia?

To answer this question, the moderating effect of TEI on the relationship between PLCs and CTE was calculated. The path coefficient was  $\beta = 0.06$  (SD = 0.038, t-value = 1.45 and  $p = 0.148$ ), as both t-value and p-values do not meet the criteria of significance, it is concluded that TEI does not significantly moderate the relationship between PLCs and CTE in public primary schools, Selangor, Malaysia.

**Figure 4.4**

*Moderating Effect of TEI on PLCs\_\_CTE*



**Research Hypothesis 10 (H<sub>10</sub>):** TEI does not significantly moderate the relationship between PLCs and CTE in public primary schools, Selangor, Malaysia.

The finding of the study fails to reject research hypothesis 10 (H<sub>10</sub>) of the study. As path analysis does not support the moderating effect of TEI for this relationship. Thus, the null hypothesis that TEI does not significantly moderate the relationship between PLCs and CTE in the public primary schools, Selangor, Malaysia, is not rejected.

Alternative hypothesis (H<sub>A10</sub>) that TEI significantly moderates the relationship between PLCs and CTE at the public primary schools in Selangor, Malaysia is accepted.

**Research Question 12:** Does TEI moderate the relationship between PLCs and TJS in the public primary schools, Selangor, Malaysia?

To answer this question, the moderating effect of TEI on the relationship between PLCs and TJS was calculated. The path coefficient was  $\beta = -0.08$  (SD = 0.03, t-value = 2.27, and  $p = 0.02$ ). It is concluded that TEI does significantly moderate the relationship between PLCs and TJS in public primary schools, Selangor, Malaysia. However, the direction of moderation is negative.

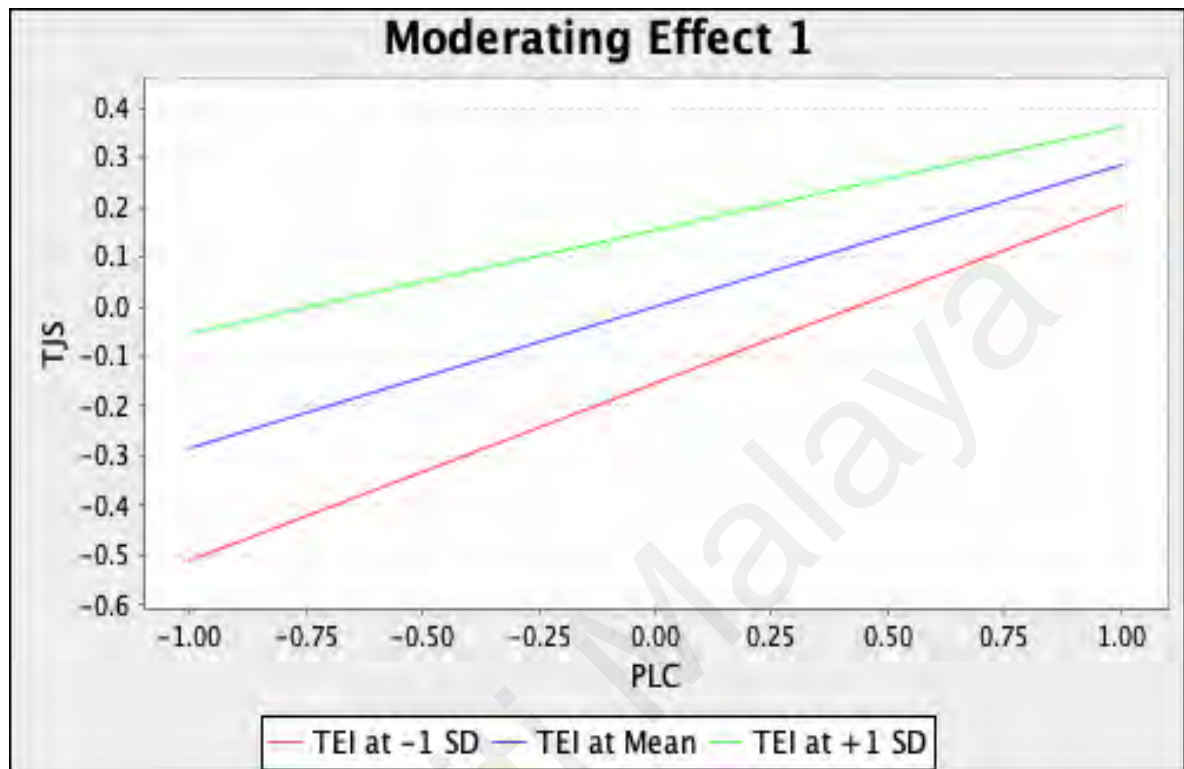
**Research Hypothesis 11 (H<sub>11</sub>):** TEI does not significantly moderate the relationship between PLCs and TJS at the public primary schools in Selangor, Malaysia.

Research hypothesis 11 (H<sub>11</sub>) of the study is rejected. As path analysis supports the moderating effect of TEI for the relationship between PLCs and TJS, null hypothesis that TEI does not significantly moderate the relationship between PLCs and TJS at the public primary schools in Selangor, Malaysia is rejected.

Alternative hypothesis (H<sub>A11</sub>) that TEI significantly moderates the relationship between PLCs and TJS at the public primary schools in Selangor, Malaysia is accepted.

**Figure 4.5**

*Moderating Effect of TEI on PLCs\_\_TJS*



#### 4.9.2.4. Predictive relevance of the Final Model

One of the essential aspects in PLS-SEM analysis is to find the predictive relevance of the model, which depends on the coefficient of determination  $R^2$ , effect size  $f^2$ , and predictive ability  $Q^2$  values (Hair et al., 2017). This helps in generalizing the results of the study over a similar set of populations.

##### 1. Co-efficient of Determination $R^2$

The coefficient of determination,  $R^2$ , is used to show the amount of variance in the endogenous (dependent) variable which is caused by the exogenous (independent) variable. The  $R^2$  value represents the squared correlation value for the relationship shared by the exogenous and endogenous variables and serves as the predictive power of the model (Hair



et al., 2017).  $R^2$  value can range from 0 to 1, where 0.25 represents weak, 0.5 moderate, and 0.75 strong predictive accuracy of the exogenous variable for the endogenous variable. The  $R^2$  value can be used to explain the percent change in the endogenous variable, which can be explained by the exogenous variable.

In this study,  $R^2$  values for collective teacher efficacy were 0.51, for teachers' job satisfaction was 0.49 and for teachers' trust in colleagues was 0.34. This explains that 51% variance in collective teacher efficacy, 49% variance in teachers' job satisfaction, and 34% variance in TTC can be caused by the PLCs. Therefore, this model shows moderate predictive accuracy of PLCs for CTE, TJS, and TTC.

**Table 4.21**

*Coefficient of Determination  $R^2$  Values*

	R Square	$R^2$ Adjusted	Interpretation
CTE	0.51	0.51	Moderate
TJS	0.49	0.48	Moderate
TTC	0.34	0.34	Small

## 2. Effect Size $f^2$

Another important measure to evaluate the structural model is the effect size  $f^2$ . According to Hair et al., (2017, p. 211), “the change in the  $R^2$  value when a specified exogenous construct is omitted from the model can be used to evaluate whether the omitted construct has a substantive impact on the endogenous construct. This is known as effect size  $f^2$ .” The effect size  $f^2$  value is used to depict how strongly the exogenous variable can affect the endogenous variable in the model. It is calculated by the following formula:

$$f^2 = \frac{R_{\text{included}}^2 - R_{\text{excluded}}^2}{1 - R_{\text{included}}^2}$$

According to Cohen (1998), the  $f^2$  values of 0.02 present small, 0.15 present medium, and 0.35 present large effect sizes, respectively. In this study, the effect size  $f^2$  of PLCs on CTE was 0.08, on TJS was 0.08, and on TTC was 0.51 representing a small to moderate effect size.

**Table 4.22**

*Effect size  $f^2$  Values*

	CTE	TTC	TJS
TTC	0.18 (medium)		0.20 (medium)
PLCs	0.08 (small--medium)	0.51(large)	0.09 (small--medium)
TEI	0.10 (small--medium)		0.04 (small)

The effect size  $f^2$  value for the effect of PLCs on both CTE and TJS was 0.08 and 0.09, respectively, showing small to moderate effects. Also, the effect size  $f^2$  value for the effect of TTC on CTE was 0.18 and for TJS was 0.20 showing a more than the moderate effect for both. Also, the effect size  $f^2$  value for professional learning communities on teachers' trust in colleagues was 0.51 showing a large effect. Finally, the effect size of TEI on CTE was 0.10 and for TJS was 0.04, showing a small effect size again.

### 3. Predictive Relevance $Q^2$ Value for Structural Model

Predictive relevance  $Q^2$  refers to the model's predictive ability for different data set. The  $Q^2$  value was calculated by using the blindfolding procedure in SmartPLS and by examining Stone-Geisser's  $Q^2$  value. According to Hair et al. (2017),  $Q^2$  value is calculated for endogenous variables, and a value greater than 0 confirms the model's predictive power. This study used the cross-validated redundancy approach, and the  $Q^2$  values for teachers'

trust in colleagues were 0.326, for collective teacher efficacy was 0.405 and for teachers' job satisfaction was 0.362. As all the values are significantly greater than 0, it confirms the predictive relevance of the exogenous variable (PLCs) for mediating variable (TTC) and the dependent variables (CTE and TJS).

**Table 4.23**

*Predictive Relevance for the Endogenous Variables*

	SSO	SSE	Q2 (=1-SSE/SSO)
CTE	3684	2469.30	0.33
TJS	6140	5092.60	0.17
TTC	2149	1676.68	0.22

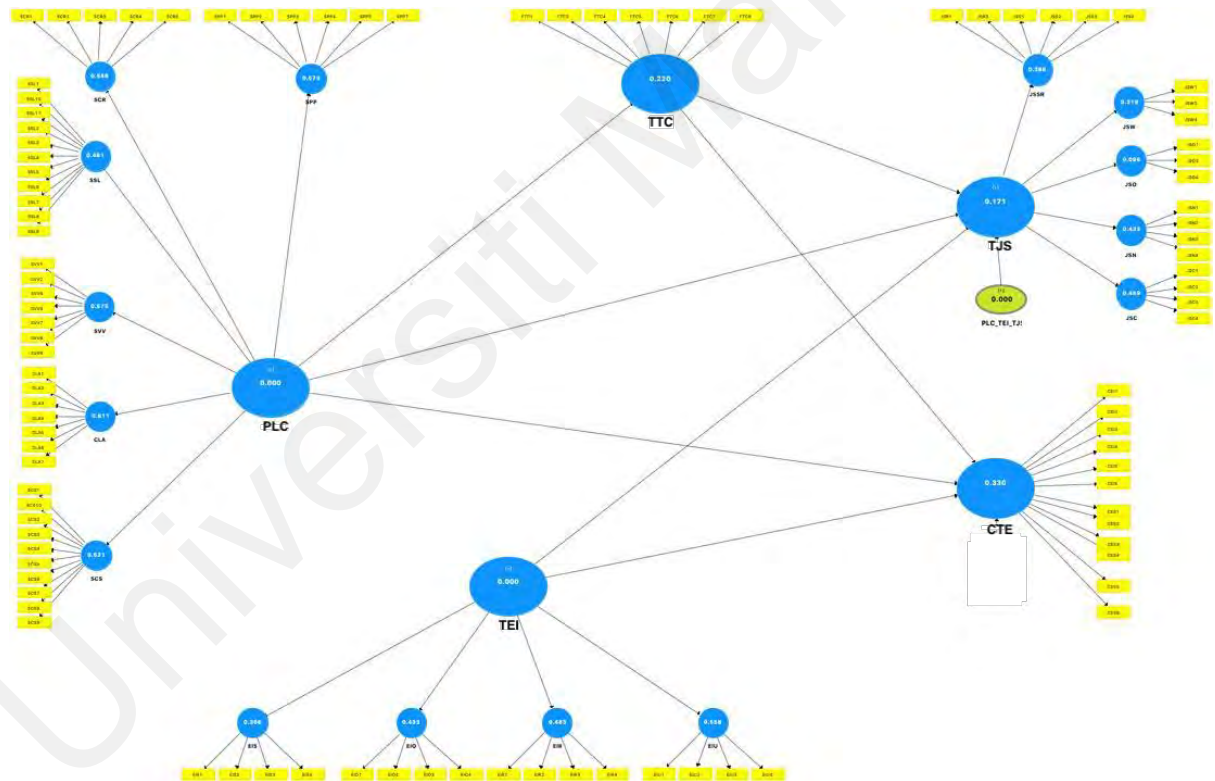
Therefore, to conclude, using the path coefficients,  $R^2$ ,  $f^2$ , and  $Q^2$  values, it is shown that the PLCs exert a direct and significant effect on CTE ( $\beta = 0.47$ ), with a small effect size ( $f^2 = 0.08$ ) and a moderate predictive ability ( $R^2 = 0.51$ ). Also, PLCs have a direct and significant effect on TJS levels ( $\beta = 0.52$ ), with a small effect size ( $f^2 = 0.09$ ) and a moderate predictive ability ( $R^2 = 0.49$ ). For the mediating variable, PLCs have a direct and significant relationship with TTC ( $\beta = 0.58$ ) with a large effect size ( $f^2 = 0.51$ ) but small predictive ability ( $R^2 = 0.34$ ). Moreover, the mediating variable TTC has a significant and direct mediating effect on the effect of the exogenous variable on CTE ( $\beta = 0.22$  and effect size  $f^2 = 0.18$ ), and on TJS ( $\beta = 0.23$  and effect size  $f^2 = 0.20$ ). The moderating variable TEI has a direct effect on CTE ( $\beta = 0.25$ ) and TJS ( $\beta = 0.15$ ). However, the moderating effect was significant only for the relationship between PLCs and TJS ( $\beta = -0.08$ ).

### 4.9.3 Final Model

Following the SEM analysis that tested both the measurement and structural model, the final research model was developed. As compared to the initial model, 10 items were removed from the final model. The two constructs of the variable teachers' job satisfaction and two constructs of the variable collective teacher efficacy were merged into one construct for the final model. Also, the moderating effect of TEI on the relationship between PLCs and CTE was not supported.

**Figure 4.6**

*Final Research Model*



#### 4.10 Summary of Research Questions and Hypothesis

The table below (Table 4.24) presents a summary of the research questions and hypothesis of the study. The inferences are made after descriptive analysis done using IBM SPSS and structural equation modeling analysis done using SmartPLS3. The findings from this study support a direct and positive effect of the PLCs on CTE and TJS, which was significantly and positively mediated by TTC. As total, direct, and mediating effects were significant and positive, the findings support partial mediation via TTC. Also, the findings show a negative but significant moderating effect of TEI on TJS. However, the moderating effect for CTE was not significant.

**Table 4.24**

*Summary of Research Questions & Hypothesis*

Research Question	Answer	Research Hypothesis	Result
RQ1: What are the teachers' perceptions regarding the following at public primary schools in Selangor, Malaysia:	PLCs - Moderate level (M=3.5 SD=0.42)	N/A	N/A
a) professional learning communities (PLCs)	CTE - Moderate level (M=7.09 SD=0.94)		
b) collective teacher efficacy (CTE)			
c) teachers' job satisfaction (TJS)	TJS - Moderate level (M=4.54 SD=0.58)		
d) trust in colleagues (TTC)	TTC - High level (M=5.04 SD=0.63)		
e) emotional intelligence (TEI)	TEI - High level (M=5.73 SD=0.61)		
RQ2: Is there a significant relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia?	Significant & positive ( $\beta = 0.25$ ; $p < 0.01$ )	H <sub>01</sub> : There is no significant relationship between professional learning communities and collective teacher efficacy in public primary school,	Null Hypothesis was rejected

---

Selangor,  
Malaysia.

RQ3: Is there a significant relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia?	Significant & positive ( $\beta = 0.28$ ; $p < 0.01$ )	H <sub>02</sub> : There is no significant relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected
RQ4: Is there a significant relationship between professional learning communities and teachers' trust in colleagues in public primary schools, Selangor, Malaysia?	Significant & positive ( $\beta = 0.58$ ; $p < 0.01$ )	H <sub>03</sub> : There is no significant relationship between professional learning communities and teachers' trust in colleagues in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected
RQ5: Is there a significant relationship between teachers' trust in colleagues and collective efficacy in public primary schools, Selangor, Malaysia?	Significant & positive ( $\beta = 0.38$ ; $p < 0.01$ )	H <sub>04</sub> : There is no significant relationship between teachers' trust in colleagues and collective efficacy in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected

---

RQ6: Is there a significant relationship between teachers' trust in colleagues and job satisfaction in public primary schools, Selangor, Malaysia?	Significant & positive ( $\beta = 0.40$ ; $p < 0.01$ )	H <sub>05</sub> : There is no significant relationship between teachers' trust in colleagues and job satisfaction in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected
RQ7: Does teachers' trust in colleagues significantly mediate the relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia?	Significant & positive. Partial mediating effect. ( $\beta = 0.22$ ; $p < 0.01$ )	H <sub>06</sub> : Teachers' trust in colleagues does not significantly mediate the relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected
RQ8. Does teachers' trust in colleagues significantly mediate the relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia?	Significant & positive. Partial mediating effect. ( $\beta = 0.23$ ; $p < 0.01$ )	H <sub>07</sub> : Teachers' trust in colleagues does not significantly mediate the relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected
RQ9. Is there a significant relationship between teachers' emotional intelligence and collective teacher efficacy in public primary schools, Selangor, Malaysia?	Significant & positive ( $\beta = 0.25$ ; $p < 0.01$ )	H <sub>08</sub> : There is no significant relationship between teachers' emotional intelligence and collective efficacy in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected

RQ10. Is there a significant relationship between teachers' emotional intelligence and job satisfaction in public primary schools, Selangor, Malaysia?	Significant & positive ( $\beta = 0.15$ ; $p < 0.01$ )	H <sub>09</sub> : There is no significant relationship between teachers' emotional intelligence and job satisfaction in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected
RQ11. Does teachers' emotional intelligence significantly moderates the relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia?	Not Significant ( $\beta = 0.06$ ; $p > 0.10$ )	H <sub>10</sub> : Teachers' emotional intelligence does not significantly moderate the direct relationship between professional learning communities and collective teacher efficacy in public primary schools, Selangor, Malaysia.	Null Hypothesis was accepted.
RQ12. Does teachers' emotional intelligence significantly moderate the relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia?	Significant & negative ( $\beta = -0.08$ ; $p < 0.05$ )	H <sub>11</sub> : Teachers' emotional intelligence does not significantly moderate the relationship between professional learning communities and teachers' job satisfaction in public primary schools, Selangor, Malaysia.	Null Hypothesis was rejected



#### **4.11 Summary**

This chapter discussed the statistical findings of the study. Two types of statistical analysis were conducted, descriptive using IBM SPSS, and structural equation modeling (SEM) analysis using SmartPLS. The data was analysed for outliers, normality (skewness and kurtosis), and common method bias before conducting the descriptive analysis. The descriptive analysis was used to answer research questions 1a to 1e, and no hypothesis was made for descriptive analysis. Later, confirmatory factor analysis that included testing for the reliability and the convergent and divergent validity was done as part of measurement model analysis using SEM. Also, the results from the structural model analysis were used to establish the relationship between the exogenous, endogenous, mediating, and moderating variables. Path analysis for this study was done using the method of bootstrapping, and the results showed a direct and significant effect of PLCs on CTE and TJS. The mediating effect of TTC and moderating effect of TEI was also tested. The results from SEM analysis were used to answer research questions 6 to 11 and for testing hypotheses 1 to 6. All the null hypotheses for the study were rejected except for one. The SEM analysis was used to present the final research model, which is derived from the conceptual framework of the study. A detailed discussion based on the research findings is presented in the next chapter.

## CHAPTER 5

### DISCUSSION and CONCLUSION

#### 5.1 Introduction

This chapter presents a study summary based on problem statements, research questions, hypotheses, and findings mentioned in the previous chapters. The chapter discusses the statistical findings with respect to the research questions and compares them with other similar studies. Also, the chapter presents the theoretical, methodological, and practical implications, of the study, as well as suggestions for future studies. The last segment of the chapter presents the limitations of this study and the conclusion drawn from this study.

In Chapter 1, the researcher has proposed that the professional learning communities at schools are an effective means to improve students' academic outcomes, an important goal of the MOE, as mentioned in the Malaysian education Blueprint. Professional learning communities improve student outcomes in multiple ways, including improving teachers' subject knowledge, promoting a collaborative work environment, strengthening teachers' collective efficacy beliefs (Loughland & Nguyen, 2020), and increasing their job satisfaction levels (Zhang & Yuan, 2020). Previous studies have identified CTE as the most important factor contributing to students' learning outcomes. Hattie (2012), through his meta-analysis, has argued that the effect of collective teacher efficacy on student outcomes is higher than the effect of socio-economic status and homework. Another important effect of PLCs is on TJS. Teachers who experience higher level of job satisfaction, find their work enjoyable, are more likely to put extra effort into teaching, stay in their profession longer and contribute positively towards students' development (Lindahl, 2014).

Several studies in Western and some Asian countries have shown that professional learning communities can significantly and positively affect CTE and TJS. However, in the Malaysian context, this area needs more attention (Abdullah & Ghani, 2014; Ismail et al., 2020; Jafar et al., 2022). To bridge the existing gap in the Malaysian research literature, the focus of the present study was to analyse the effects of PLCs on CTE and TJS among teachers working at public secondary schools in Selangor, Malaysia. Apart from this direct relationship, the study also explored the mediating effects of TTC and moderating effects of TEI.

## **5.2 Summary of the Findings**

The study used both descriptive and inferential approaches for data analysis. The computer software IBM SPSS was used for descriptive analysis, and inferential analysis was done using the computer software SmartPLS. The descriptive analysis of the data indicated that teachers at the primary public schools in Selangor, Malaysia agrees with the presence of professional learning communities ( $M=3.25$ ,  $SD=0.42$ ) and its six constructs “shared and supportive leadership ( $M=3.16$ ,  $SD=0.47$ ), shared values and vision ( $M=3.28$ ,  $SD=0.45$ ), collective learning and application ( $M=3.31$ ,  $SD=0.47$ ), shared personal practices ( $M=3.25$ ,  $SD=0.46$ ), shared conditions – relationships ( $M=3.31$ ,  $SD=0.48$ ) and shared conditions – structural ( $M=3.21$ ,  $SD=0.47$ )”. Of the six constructs, study participants scored highest for the constructs collective learning and application and structural conditions -- relationship, whereas the minimum was for the construct shared and supportive leadership. The mean values for PLCs and all its constructs were higher than 3, showing a moderate level at the public primary schools.

Similarly, the study found moderate levels of collective teachers efficacy ( $M=7.09$ ,  $SD=0.94$ ) and its two constructs, namely, collective efficacy for instructional strategies ( $M=7.08$ ,  $SD=0.94$ ) and collective efficacy for student discipline ( $M=7.11$ ,  $SD=1.02$ ). Among the two constructs, teachers expressed a slightly more degree of efficacy towards CTE for student discipline than CTE for instructional strategies. Though in general, teachers reported an overall level of job satisfaction ( $M=4.54$ ,  $SD=0.58$ ) and its five constructs, namely, supervision ( $M=4.93$ ,  $SD=0.79$ ), contingent rewards ( $M=4.25$ ,  $SD=0.77$ ), co-workers ( $M=4.83$ ,  $SD=0.68$ ), nature of work ( $M=4.98$ ,  $SD=0.72$ ), and communication ( $M=4.79$ ,  $SD=0.96$ ), teachers' reported neither satisfaction nor dissatisfaction for the construct operational procedures ( $M=3.48$ ,  $SD=0.77$ ).

Furthermore, the results showed a high level of teachers' trust in colleagues at these schools ( $M=5.04$ ,  $SD=0.63$ ). Also, the mean values for teachers' emotional intelligence ( $M=5.73$ ,  $SD=0.61$ ) and its constructs, namely, self-emotions appraisal ( $M=5.94$ ,  $SD=0.63$ ), others' emotions appraisal ( $M=5.40$ ,  $SD=0.96$ ), regulation of emotions ( $M=5.72$ ,  $SD=0.81$ ), and use of emotions ( $M=5.88$ ,  $SD=0.71$ ) showed high level of emotional intelligence among teachers working at public primary schools in Selangor, Malaysia. Teachers reported the highest level of EI for the construct self-emotion appraisal and the lowest for others' emotional appraisal.

The structural equation modeling analysis, using the computer software SmartPLS, was done to find the relationship between exogenous, endogenous, mediating, and moderating variables. It was found that PLCs exerts a significant and positive effect on CTE ( $\beta = 0.25$ ,  $p < 0.01$ ) and TJS ( $\beta = 0.28$ ,  $p < 0.01$ ) among the teachers at the public primary schools in

Selangor, Malaysia. Also, teachers' trust in colleagues significantly mediated the relationship between PLCs and CTE ( $\beta = 0.22, p < 0.01$ ) and PLCs and TJS ( $\beta = 0.23, p < 0.01$ ). As both the direct effect of PLCs on CTE and TJS was significant, and the indirect effect via TTC was significant too, the mediating effect was partial mediation.

The moderating variable for this study was TEI. The SEM analysis found that the moderating effect of teachers' emotional intelligence on the relationship between PLCs and CTE was not significant ( $\beta = 0.06, p > 0.10$ ). However, the moderating effect on the relationship between PLCs and TJS was significant but negative ( $\beta = -0.08, p < 0.05$ ).

Also, the predictive accuracy of the model was calculated using the coefficient of determination ( $R^2$ ), effect size ( $f^2$ ) predictive relevance ( $Q^2$ ) values (Hair et al., 2017). It was found that professional learning communitive exerts a moderate co-efficient of determination ( $R^2$ ), for collective teacher efficacy (0.51), teachers' job satisfaction (0.49), and trust in colleagues (0.34). Also, the effect size ( $f^2$ ) values show a small to medium effect of PLCs on CTE (0.08) and TJS (0.09), while a large effect was found for teachers' trust in colleagues (0.51). The predictive relevance ( $Q^2$ ) value of professional learning communities for the endogenous variables showed that it is responsible for 33% variation in CTE, 22% in TTC, and 17% in TJS. The results obtained from the PLS-SEM data analysis support that for this research model, and the instruments of this study can be used for collecting data and making inferences.

### **5.3 Discussion**

In this section, the study findings will be critically discussed with respect to similar previous studies for similarities and differences. The discussion will revolve around what statistical analysis results mean and how are they related to the research objectives.

#### **5.3.1 Professional Learning Communities at Public Primary Schools**

The findings of this study showed that primary school teachers in Selangor, Malaysia agrees with the presence of PLCs and its constructs at their schools (Olivier et al., 2010). Abdullah and Ghani (2014) and Ismail et al. (2019) also reported the moderate level of PLCs and its' dimensions at schools in Malaysia. Also, among the constructs of PLCs, collective learning and application, and supportive conditions – relations were found to have a stronger presence than other constructs at the primary schools in Selangor, Malaysia. The participants reported a moderate level of presence for other dimensions, shared values and vision, and shared personal practices. Though the mean scores for the dimensions, supportive conditions – structures and shared and supportive leadership was in the moderate range, they were ranked lowest by the participants of the study. Nevertheless, the moderate levels of PLCs and its' constructs raise a concern and points to the need for re-evaluating the progress of educational reforms in Malaysia.

Previous studies have discussed that the moderate levels of PLCs are related to low performance of schools (Ansawi & Pang, 2017) which can explain the low achievement levels of Malaysian school children at international tests like PISA and TIMSS. Moreover, in the Malaysian context, moderate levels of professional learning communities and its constructs at public schools in Malaysia were reported by Abdullah and Ghani (2014) and Ismail et al., (2019), and Mannan (2017). Though the findings of this present in the past

several years, significant progress has yet to be made to strengthen the professional learning communities at Malaysian public schools.

The results from this study show that PLCs in Malaysia are still in the implementation phase. In the implementation phase, the schools have adopted professional learning communities to some extent but only partially (Hipp & Huffman, 2003). According to Hipp and Huffman (2003), in their journey to become full-fledged professional learning communities, schools undergo three phases, initiation, implementation, and institutionalization. As the name implies, initiation is the phase where schools start to adopt professional learning communities, implementation is the phase where learning communities are working partially, and institutionalization is the stage where learning communities become part of day-to-day school culture.

The ultimate quest for all schools is to achieve the institutionalization phase and become fully developed PLCs (Hipp & Huffman, 2003). The findings of this study show that for past many years, Malaysian schools have been struggling to reach the institutionalization phase, pointing to a lack of progress and stagnation of education reforms. Many challenges can obstruct the progress of schools in becoming authentic PLCs, for example, lack of leadership support, teachers' attitudes, professional and social work environment, or lack of physical resources.

The constructs shared and supportive leadership and supportive conditions – structural were scored lowest by the primary school teachers in Selangor, which strongly suggests that these constructs are not well established at public primary schools in Selangor, Malaysia. For successful schools, it is a requirement that teachers are part of school leadership, have

autonomy over their work, and that their voices are heard. Also, for the success of PLCs, the construct of shared and supportive leadership plays the most critical role (Yin & Zheng, 2018; Zhang et al., 2022). However, in this study, the participants reported the lowest level of shared and supportive leadership compared to other dimensions, which is a cause of concern.

The findings show that leadership reforms are needed in Malaysian primary schools. The school leaders should encourage teachers' active participation in decision-making and must practice sharing power and authority. Teachers need greater autonomy over their work and chances to grow professionally, which transformational leadership practices can attain. As argued by Yin and Zheng (2018), school leadership has the most important role in establishing PLCs, and they do so by providing resources, leadership opportunities, and guiding instructional practices. The role of shared and supportive leadership in strengthening PLCs was also supported by (Hipp et al., 2008; Hord et al., 2010).

The construct supportive conditions – structural refers to the availability of resources, time, and physical space for conducting activities associated with PLCs. In the model for the PLCs, Hord (1997) has professed that it is the responsibility of school administration to support teachers with enough resources, which can facilitate their participation in learning communities. Nevertheless, the findings of this study show that primary school teachers in Selangor feel they do not have the requisite physical support system to be a part of professional learning communities. Physical support can include school supplies, opportunities to participate in learning workshops, time for carrying out teaching and self-learning tasks, educational resources, and physical space. The common issue is that teachers lack time to perform teaching tasks, learn new skills, and share knowledge



(Capraro, 2016). Often, school authorities fail to provide dedicated time, place, and materials using which teachers can engage collaboratively for learning, knowledge sharing, skill development, and lesson planning activities. Also, teachers often complain of professional learning communities as extra work that hampers their routine teaching jobs. This happens when learning communities feel like extra work that teachers need to perform. However, if PLCs are part of school culture, teachers will not feel an extra burden when engaging in learning communities (Hipp et al., 2008).

The results show that primary school teachers in Selangor, Malaysia feel a moderate level of PLCs's construct shared personal practices. There is some shift in teaching practices from solitary to collaborative work, but this construct does have a moderate mean value, indicating a lack of teamwork practices among teachers. Without a collaborative work culture, teachers do not work together as a team and help students achieve their best potential. However, as researchers have professed time and again, for the success of PLCs, a collaborative work environment is key where teachers feel free to share ideas and feedback.

In schools with a culture of shared personal practices, teachers support their colleagues in achieving common personal and group professional goals and are ready to assist each other in learning new skills or making curriculum changes (Bolam et al., 2005). Teachers frequently visit each other classrooms, review teaching methodologies, and provide constructive feedback. The moderate level shows that teachers do not regularly participate in such activities, this could be either due to unwillingness to be open for reviewing or lack of respect and trust towards their colleagues. When teachers share their practices, they become more considerate towards each other and acknowledge the issues other teachers

face. They help each other by adopting best teaching practices and working collaboratively towards the common goal of students' success. A moderate level for this construct shows a need for more opportunities for teachers to be able to associate with their colleagues professionally and personally. This also indicate towards the absence of a cohesive, supportive, and collaborative work environment at schools.

According to Teague and Anfara (2012), successful and student-centred schools have a shared value and vision system, which act as a guiding foundation for teachers' work. In the presence of a shared vision for school and students' success, teachers work individually and collaboratively towards a common goal of high levels of student learning. Moderate level of shared values and vision at primary schools in Selangor, Malaysia, is a sign indicating that schools are moving in the right direction to become fully developed PLCs. Though none of the constructs showed a very high level of presence, teachers from primary schools in Selangor still rated the constructs collective learning and application and supportive conditions – relationship higher as compared to other constructs. The results show teachers' commitment towards student learning, regular engagement in constructive dialogues, willingness to learn new skills, and use of knowledge-sharing practices. The findings of this study show a positive trend. A culture of collective learning and growth is developing at schools, and a gradual, progressive shift is taking place. Nevertheless, much work is needed for schools to achieve the institutionalization phase of the PLCs in Malaysian context.

The study results are supported by previous studies conducted outside Malaysia as well. In a multiple regression analysis on primary school teachers in China, Zhang et al. (2016) confirmed the presence of PLCs and proposed that leadership practices considerably affect the application, development, and sustainability of professional learning communities and

its dimensions in primary schools. Also, Munoz and Branham (2016) have proposed that professional learning communities are an effective means to introduce the school reform as it leads to collaborative, collegial relationships, and better student outcomes.

However, the findings of this study are in contrast with that of Khan et al., (2021). The authors have reported a high level of PLCs and all its constructs in a study on secondary school teachers in Malaysia. A possible reason behind this could be the use of different research instruments or the focus of the study on secondary schools, where professional learning communities work differently compared to primary schools (Gray & Summers, 2015).

The findings of the study are in contrast with those of Mei Kin and Kareem (2021) who reported that secondary schools in Malaysia have quite good practices of PLCs. One reason behind this could be that schools in general and government are more focused on improving the education standards in secondary schools as their students sit in competition exams like PISA and TIMSS. Also, from secondary schools, students moved to university degrees, which could be another reason for more focused approach to improve teaching and learning outcomes at these schools. Also, as mentioned by the researchers, the learning communities' dimensions pertaining to principal support and leadership was rated highest in secondary school sample. Nevertheless, the similar dimension was rated lowest in the present study. The lack of proper support from school leadership can be one reason behind only moderate level of PLCs at public primary schools in Selangor, Malaysia.

Though the descriptive analysis of the study shows that teachers agree to a moderate level of PLCs and its constructs at primary schools in Selangor, Malaysia. However, much work

needs to be done to help schools reach the institutionalization phase and make them authentic PLCs (Jafar et al., 2022). Also, for the past almost 10 years (Abdullah & Ghani, 2014; Ismail et al., 2019; & Mannan, 2017), the status has been almost the same. This shows that educational reforms proposed by MOE have yet to fully reach the primary schools, which can be the cause for an average academic performance by Malaysian students. The results indicate that teachers need more time, resources, and outside-school opportunities. Schools need to have a clear vision for their student's growth, and teachers should be an integral part of that approach. The study findings indicate that interpersonal and professional relationships among teachers are the factors that support the growth of learning communities at present. However, the schools can only keep depending on them for a short time, and proper implementation of educational reforms is needed.

### **5.3.2 Collective Teacher Efficacy at Public Primary Schools**

Though collective teacher efficacy has been identified as one of the most critical factors contributing to student's academic outcomes, it has yet to receive much attention regarding public schools in Malaysia (Saidin et al., 2020; Tiong, 2016). In the Malaysian context, Alzaidiyen et al. (2011) have reported a moderate level of CTE in a sample of secondary school teachers. The descriptive analysis confirms the presence of moderate levels of CTE efficacy among primary school teachers in Selangor, Malaysia. However, only a few studies are based on public primary school teachers when studying CTE, therefore this study does not find much support from Malaysian literature.

Though Rashid and Latif (2021) reported high perception of teachers for CTE in their study that focused on primary schools in Perak, Malaysia, the present study findings do not support this. A possible reason behind this discrepancy could be the use of different type of

Likert-scale for the same statistical instruments by the two studies. The authors have adapted the CTBS by Tschannen-Moran where the original instrument has 9-items, the adapted version has 5-items. Whereas the present study used the translated version of the original instrument with all 9-items.

This study focused on primary school teachers, which is a unique cohort because, in primary schools, collective efficacy works as a whole school concept. In contrast, in secondary schools, the development of CTE depends on teachers' subject groups. Primary schools serve as the foundation block for students' education. Their experience and outcomes during these years will determine their future direction. Within the primary school setup, teachers work closely in collaboration towards a common goal. They share similar challenges and concerns, which contrasts with secondary schools where teaching becomes more subject-specific. For example, in a primary school context, a common goal for teachers can be to make sure all students pass and move on to the next grade, in a secondary school context, a common goal can be for math teachers to ensure the students perform well in Mathematics subject. Findings from the present study suggest that moderate to high levels of CTE at public primary schools can assist MOE in bringing much-needed education reforms.

Contrary to the report by Klassen et al. (2010) who using a cross-cultural analysis, found that collective teacher efficacy among Asian teachers is lower than their Western counterparts, this study indicates a positive shift toward contemporary teaching practices at Malaysian schools. According to Bandura (1997), teachers' collective efficacy beliefs are a school-level attribute that becomes very difficult to change once established. Schools with low collective efficacy need to put in consistently high efforts to change the school climate

from lower to higher efficacy. It can take years of hard work from all stakeholders before any substantial positive results can be seen. The findings from this study show that primary schools in Malaysia are moving in the right direction. With a consistently positive and collaborative work environment, in the future, these schools will have high collective teacher efficacy, which can aid in improving the educational outcomes of the students.

However, contrary to previous studies (Tschannen-Moran & Barr, 2004), in this study, the confirmatory factor analysis did not support the two-construct structure of collective teacher efficacy. The factors CTE for instructional strategies and CTE for student discipline presented high HTMT values indicating they are not discriminant from each other in this study. Therefore, these two components were merged as a single construct for further analysis and named collective teacher efficacy. The findings from this study addresses the research gap pertaining to dearth of empirically sound studies in Malaysian context. Though the two-factor structure of collective efficacy was not supported in this study, it still confirms to moderate to high levels of collective efficacy among primary school teachers.

### **5.3.3 Teachers' Job Satisfaction at Public Primary Schools**

The descriptive analysis supports a moderate level of job satisfaction as reported by the primary school teachers in Selangor, Malaysia. The study findings show that of all the constructs of job satisfaction, teachers scored operating procedures as the lowest in this study. The findings indicate that the teachers feel there is too much work pressure and there is a lack of autonomy towards the job. School policies often hinder their work with little professional freedom, therefore, towards this construct, teachers reported satisfaction and satisfaction. Similarly, for the construct contingent rewards, teachers expressed a moderate

level of satisfaction, implying that they do not receive the desired appreciation and acknowledgement when they attempt to do extra work. School leadership and authorities do not adequately appreciate teachers' efforts toward student learning. This could be in the form of the absence of promotion opportunities, pay raises, or acknowledgment certificates.

The constructs of communication and co-workers are rated somewhat better, however, teachers have expressed only a moderate level of satisfaction with these. The moderate level implies that the communication at the public primary school is satisfactory but needs to be more transparent. Also, the relations among the teachers are moderately satisfactory. One possible reason for this could be the multicultural environment at public schools in Malaysia. Establishing professional and personal relationships between individuals with similar backgrounds is always easier. However, as Malaysia is a multicultural society, sometimes it requires extra effort to maintain rapport in such conditions. Also, the results show that though contemporary teaching practices are being adopted at public schools, traditional teaching practices like working in isolation are still present. The mean score for the constructs, nature of work and supervision shows that teachers like the work they are doing and believe they receive some support from their supervisors. When teachers enjoy their job, they are more likely to stay in their place of work and put in the effort for students' development.

The analysis shows that neither overall job satisfaction nor any of the constructs of job satisfaction presented high mean scores for teachers working at public primary schools in Selangor. This relates to previous studies that have raised concern over teachers' low to moderate levels of job satisfaction. Globally, researchers have raised the issue that work-related satisfaction among teachers is mostly low to medium and rarely do teachers express

complete satisfaction with their job. This requires deliberation from governments and school bodies because teachers' satisfaction level is related to their job commitment (Yucel & Bektas, 2012) and student learning (Banerjee et al., 2017). Using Spector's job satisfaction survey, Fong (2015) reported low to moderate levels of job satisfaction among school teachers in Asia, which directly affected their contract renewal options. Within the Malaysian context, Tahir et al. (2013), Shen et al. (2018), and Ghavifekr and Pillai (2016) have reported that even in different educational settings, teachers in Malaysia experience low to moderate levels of satisfaction with their work.

The study findings call for the attention of policymakers and school authorities because it reflects on the status quo situation, which can be more harmful than low levels of job satisfaction. As the satisfaction levels are low, education stakeholders, including policymakers, school management, and teachers, show little interest in changing this situation, which ultimately becomes part of the work culture. Moreover, these moderate levels can easily shift negatively toward the lower side, leading to teachers quitting their job. There will be low enrolment of new teachers or teachers disinterested in their work, which can adversely affect students' academic progress.

Also, the confirmatory factor analysis showed that the factors "supervision" and "contingent rewards" are not distinct from each other. Hence, they were combined into one single factor during SEM analysis. This shows that supervision activities and rewards for work are closely related and are not separate factors for the participating teachers. The school environment and work culture should be conducive to teachers' growth, allowing them to flourish and reach their goals. This study provides statistical evidence for the moderate level of job satisfaction among teachers, which calls for work reforms that can



provide teachers autonomy over their job. If there are low levels of job satisfaction, it demands immediate actions from authorities, whereas a high level of job satisfaction shows that teachers are happy with their work conditions. However, the moderate level shows a status quo kind of situation, and this can be unnoticed as it does not pose a serious threat. Nevertheless, prolonged periods of moderate level job satisfaction can ultimately lead to teachers' dissatisfaction with their job, leading to low retention, lesser commitment towards work, and frequent absences. Therefore, though not alarming, the findings do not support a promising teacher job satisfaction trend and urge for swift actions by government and school authorities.

#### **5.3.4 Teachers' Trust in Colleagues at Public Primary Schools**

The descriptive analysis of the teachers' response to the Omnibus T-scale shows high levels of trust among colleagues at primary schools in Selangor, Malaysia. Trust is the binding force that unites all the stakeholders in the workplace, in this case, schools, together. In a trusting school environment, teachers can rely on each other, support each other, and have a smooth and transparent flow of information. Trust is important for schools to be the successful centre of learning (Tschannen-Moran & Barr, 2004; Tschannen-Moran & Chen, 2014; Tschannen-Moran & Gareis, 2017). On the other hand, low levels of trust among teachers are detrimental to schools' success. In such scenarios, teachers refrain from sharing their ideas or believing what is conveyed to them. Trust is multifaceted in nature, and within a school setting, it can be described as teachers' trust in the principal, colleagues, and students and parents. As this study focused on PLCs and CTE, trust among colleagues is deemed the most pertinent facet of trust, as teachers are the salient stakeholders in learning communities (Yin & Zhen, 2018).

The high-levels of trust among teacher colleagues is a positive sign for introducing school-level reforms. In a high-trust environment, teachers are open to taking risks and adopting changes that benefit students. They engage in honest, transparent, and constructive communication and support each other in reaching school-level goals. Teachers' trust is also important for the functioning of learning communities, and previous studies have discussed that it is easier to establish trust among people from similar backgrounds (Bryk & Schneider, 2003). Therefore, a high level of teachers' trust in a multicultural society like Malaysia is an important foundation stone for cultivating a school environment marked by mutual respect, support, and collaboration.

The study findings find support in other studies as well. In a recent study, Khan et al. (2021) reported high level of trust in secondary school teachers in Malaysia and proposed a strong relationship between TTC and PLCs. Similarly, Yin and Zhen (2018) reported that Chinese teachers share trust-based relationships with their colleagues. They used the Omnibus T-scale in their study and professed that trust among colleagues is one of the essential factors for developing and maintaining professional learning communities. Though this study's findings support the relationship between PLCs and TTC, however, factor analysis showed that one statement of the teachers' trust in colleagues' questionnaire, "Teachers in this school are suspicious of each other" was not supported. by the responding teachers. A possible explanation for this could be that in a cohesive society like Malaysia, teachers could not relate to the word "suspicious," a negatively toned word. This item was thus removed from the final analysis because of low factor loading. Furthermore, Bryk & Schneider (2003) have also proposed that it is easier to establish trusting relationships among primary school teachers because of work proximity. As the present study focused on primary school teachers as the sample, this assumption was supported by the findings of the

present study. Therefore, it is supported that trust among colleagues is prevalent among primary school teachers and teachers' trust in their colleagues is conducive to the success of learning communities. Therefore, policy makers, schools, teachers, students and parents should all work together to maintain and nurture trust-based relationships in school settings. The positive school atmosphere marked by trust in stakeholders creates numerous possibilities for a cohesive and collaborative work environment.

### **5.3.5 Teachers' Emotional Intelligence at Public Primary Schools**

This study used the WLEIS, a self-report questionnaire, to measure teachers' emotional intelligence. This questionnaire measured teachers' emotional intelligence across four facets, “self-emotions appraisal, others' emotions appraisal, utilization of emotions, and regulation of emotions”. The descriptive analysis shows moderate to high levels of emotional intelligence among the responding teachers at the public primary schools in Selangor, Malaysia.

The construct self-emotions appraisal depicts the capability of an individual to acknowledge and understand their own emotions. Sometimes, people struggle to realise why and how they are responding to different scenarios, however, those who have control over their own emotions can control and manage their responses to different situations. This is specifically important for primary school teachers as they need to manage and modify their emotional reactions to pressing and demanding classroom situations. Others' emotions appraisal refers to an individual's ability to be sensitive towards the emotions of others. With reference to teachers, this aspect of EI plays a crucial role in day-to-day teaching activities (Merida-Lopez & Extremera, 2020). Primary school teachers manage young children in daily work life, who do not have much control over their emotional expressions.

For healthy classroom and learning environment, it is imperative that such young children and managed by teachers who can understand their emotions well and can see why different students react differently to seemingly same situations. Also, addressing emotional requirements of such young students can help in making teaching task easier.

Furthermore, utilization of emotions corresponds to using emotions for personal and professional growth. High score for this dimension means that teachers in Malaysia are capable to use their EI in managing their both personal and professional life. At the same time, the regulation of emotions indicates individuals' capability to control emotions under different circumstances (Merida-Lopez et al., 2020). This is particularly crucial in managing their own psychological wellbeing, while being involved in an emotionally challenging and demanding job like teaching. Also, this helps teachers in managing cordial social and professional relationships, which is important in creating a healthy, collaborative, and supportive work environment. High mean values across all the facets of this scale show that teachers at primary schools in Selangor, Malaysia, can proficiently use emotions in managing their job and student learning. In an educational setup, this means teachers can express and control their emotions positively as and when needed (Valente et al., 2020; Vesely, 2013). Also, constructive expression of emotions ensures there is no emotional frustration among teachers, and teachers are sensitive toward their students' emotions. They can understand why students behave in a particular way and what measures can be taken to manage students' behaviour. The ability to understand others' emotions also helps teachers maintain professional and personal relations with their colleagues (Vesely-Maillefer & Saklofske, 2018).

Moreover, analysis shows a high emotional regulation ability among the teachers. Such teachers can easily handle stressful work conditions and professional setbacks. They are not perturbed by extra workload or responsibilities given to them and look for innovative solutions to overcome work challenges, which is indicated by their high scores on the ability to utilize emotions. Teachers' high level of EI was found to be associated with their job performance (Mohammed & Jais, 2016) and their teaching satisfaction (Yin et al., 2013). Also, the present study results were supported by Whitman et al. (2009), who reported a high level of emotional intelligence and its four facets in a sample of school teachers. Finally, the confirmatory factor analysis supported the four-construct structure of the instrument WLEIS.

### **5.3.6 Relationship between Professional Learning Communities and Collective Teacher Efficacy at Public Primary Schools**

One of the research objectives was to find the relationship between PLCs and CTE. For this purpose, statistical analysis was done using structural equation modeling with the help of the computer software SmartPLS. The model analysis showed that there exists a significant and positive relationship between these two variables. The strength of the relationship was found to be moderate in nature where professional learning communities exerted a direct, positive, and significant effect over collective teacher efficacy, which was consistent with previous similar studies (Hardin, 2010 and Voelkel & Chrispeels, 2011; 2017).

Though past studies have professed that CTE is a critical factor that affects students' academic outcomes, only a few scholars have studied collective teacher efficacy in the Malaysian context. Most studies have been limited to either studying the direct effect of collective efficacy on student academic outcomes or its levels at different educational

institutions (Saidin et al., 2020; Tiong, 2016). The present is an important and unique study that assesses how PLCs can affect CTE at public primary schools.

Primary schools are a vital cohort because both PLCs and CTE work differently in primary schools compared to higher education institutions (Louis & Marks, 1998; Robertson, 2011). Both variables exert influence at the school level in the case of primary schools, where all teachers and school staff work together towards a common goal. In contrast, at higher education institutions, the goals are mostly subject-specific. In simpler terms, collective teacher efficacy at primary schools can easily refer to all teachers in primary schools. However, at higher education institutions, the collective efficacy of one subject teacher can significantly differ from the collective efficacy of other subject teachers.

Though the present study supports a direct, positive, and significant relationship between PLCs and CTE, the policymakers and school administrations should ponder the fact that both variables were found to be at a moderate level in this study. This implies that public primary schools still need to develop fully into learning communities and are still in the implementation phase. This can explain the moderate levels of CTE found in this study. It should be noted that CTE is a school-level construct, and once established, it is difficult to change collective efficacy in either a positive or negative direction. Within the same school district, collective efficacy can be used to explain the school-level differences in students' academic outcomes. Some studies have professed that collective efficacy helps strengthen professional learning communities (Robertson, 2011; Takahashi, 2011). However, based on the findings from this study, strengthening PLCs can help improve collective teacher efficacy at public primary schools.

There are several ways in which professional learning communities at schools work to improve collective teacher efficacy. As discussed earlier, PLCs provide teachers with opportunities to connect and collaborate (Yin & Zheng, 2018). Teachers often engage in learning new skills, share their knowledge, and adopt new teaching strategies. Within the PLCs framework, teachers engage in an exchange of constructive feedback, be responsible for their work, motivate colleagues to reach professional goals, and participate in learning workshops (Zhang et al., 2020).

Also, PLCs provide teachers with avenues to interact socially with their colleagues. Drawing from Bandura's (1997) social cognitive theory, it can be said that PLCs provide teachers with mastery experiences (as they learn and succeed at new skills), vicarious learning (when they learn from others in similar situation), affective state (through collaborative work environment), and social persuasion (as peer support each other to succeed), which work together to develop their collective efficacy (Donohoo, 2017). For example, when teachers participate in workshops outside of school, they gain mastery experiences by directly learning something new. Vicarious learning happens when teachers see other teachers coming from a similar background and overcoming obstacles, social persuasion happens when teachers motivate each other to achieve school and personal goals, and affective state is the general positive work environment of school that leads to collaborative work.

However, this study's findings differ from that of Lee et al. (2011), who proposed that successful professional learning communities at schools are instrumental in strengthening CTE for both instructional strategies and student discipline. Confirmatory factor analysis in this study did not support the two-factor structure of CTE still, SEM analysis shows a direct

positive relationship between the variables. Furthermore, Zambo and Zambo (2008) discussed that when teachers from low-performing schools participate in professional development programs, they experience an increased sense of efficacy in their ability to contribute towards student learning. Teachers no longer feel isolated in their professional activities and gain increased belief in their efficacy to bring positive changes in their students' development irrespective of students' or schools' background. The collaborative work environment facilitates sharing of ideas and learning.

The positive relationship between PLCs and CTE was also supported by Hipp et al. (2008) in their case study focusing on elementary schools. Schools that follow PLCs principles and promote collaborative work culture help teachers in developing high-efficacy beliefs. The support and encouragement teachers gain from team members make them confident in their abilities. Also, high collective efficacy beliefs not only help increase student achievement but also help teachers develop high self-efficacy beliefs.

An essential component of PLCs is data-driven decision-making (Muñoz & Branham, 2016). Teachers use data to focus on individual student needs, on gaps in student and self-learning, and to make informed decisions. Data help teachers identify changes needed in teaching plans. It enables teachers to judiciously utilise of the resources available to them and plan their own learning as well, which strengthens their collective efficacy beliefs (Takahashi, 2011). Moreover, PLCs help teachers in forming professional and personal social networks with colleagues from the same and other schools. Teachers' involvement in these social networks provides helps in fulfilling social persuasion and vicarious learning aspects of the CTE. The effect of these networks on CTE, to some extent, will rely on the density of these networks (Moolenaar et al., 2012).



Furthermore, shared leadership aspect of PLCs provides teachers with leadership opportunities. Teachers are more in control of students' learning and development and actively engaged in curriculum planning and implementation. Within the PLCs framework, they share a vision for students and school success and work in collaboration to reach that goal. The shared vision helps teachers visualize the collective goal and plan the resources and support needed to reach those goals. In doing so, teachers not only focus on their personal accomplishments but also help their colleagues prosper in their professional journey. The vision, support, and accomplishment they achieve help teachers form high collective efficacy beliefs (Carpenter & Sherretz, 2012).

Also, PLCs provide teachers avenues to learn collaboratively and apply these learnings practically in their classrooms. The nurturing work environment and availability of teaching resources allow teachers to focus on their job. Teachers who wholly and freely focus on their work help students reach their full potential and attain higher academic outcomes, reinforcing teachers' collective efficacy beliefs (Avalos-Bevan & Bascope, 2017). Similarly, Ma et al. (2019) and Loughland and Nguyen (2020) based their explanation the social cognitive theory to describe the how PLCs can impact the development of CTE. Teachers' participation in knowledge-building activities provides mastery experiences and vicarious learning, which are essential for developing high collective efficacy beliefs.

Hence, the findings of this study reject first research hypothesis that there is no direct and significant relationship between PLCs and CTE at the public primary schools in Selangor, Malaysia. Also, further statistical analysis showed that professional learning communities not only exert a small to moderate effect on collective teacher efficacy, but it can also explain a moderate amount of variation in collective efficacy. However, as found during

descriptive analysis, moderate levels of both these variables show that to improve students' academic outcomes, policymakers and school administration should first aim to establish authentic professional learning communities. Teachers' active participation in PLCs will allow them to work collaboratively and constructively. They can engage in workplace learning, share knowledge, provide honest feedback, take ownership of their work, and become a part of school decision-making. In such schools, teachers strongly believe in each student's ability to learn and achieve their highest potential. These can strengthen their belief in each other's ability to contribute positively toward student learning. Therefore, schools and relevant authorities need to work diligently to implement professional learning communities that can help teachers develop strong collective efficacy, eventually leading to high student learning standards.

### **5.3.7 Relationship between Professional Learning Communities and Teachers' Job Satisfaction at Public Primary Schools**

The SEM analysis of this study supported the direct, positive, and significant relationship between PLCs and TJS for teachers working at public primary schools in Selangor, Malaysia. In this study Herzberg's motivation-hygiene theory was used to explain the relationship, which only a few studies have attempted previously. The motivation-hygiene theory is a holistic approach explaining job satisfaction as it considers all the possible factors contributing to job satisfaction. For studying teachers' job satisfaction, most studies have used either 1 item questionnaire or a short survey that does not encapsulate all facets that relate to job satisfaction (Banerjee et al., 2017). On the other hand, Spector's job satisfaction survey used in this study constitutes six constructs of job satisfaction that are most relevant in the context of PLCs.

The descriptive analysis has earlier reported a moderate level of PLCs and TJS among the primary school teachers in Selangor. The direct positive relationship between these variables shows that schools can improve TJS levels by establishing authentic, teachers-focused, school-based PLCs. The moderate levels of both variables are a matter of concern as it shows stagnancy and a lack of reforms at public primary schools. The constructs of PLCs, like supportive leadership, collaboration, time, and resources, can be instrumental in increasing teachers' job satisfaction (Akerman, 2011). PLCs help increase job satisfaction by strengthening motivation factors (through opportunities for professional growth, autonomy at work, and participation in decision-making) and hygiene factors (collaborative work conditions, colleagues' support, and availability of resources). Motivation factors lead to a direct increase in job satisfaction, while hygiene factors ensure lower levels of job dissatisfaction (Herzberg, 1974).

In schools with PLCs, where all five constructs are ranked high, teachers often experience higher job satisfaction (Zhang et al., 2022). All five dimensions of PLCs work together to satisfy motivation and hygiene factors of job satisfaction. When teachers get opportunities to learn a new skill, make data-driven decisions, get autonomy on their work, experience positive challenges, and receive recognition for their contribution towards the success of their students and school, the motivation factors of jobs are satisfied. Also, supportive school conditions like availability of resources, clear and transparent flow of communication, enjoyable co-workers, and enriching networks act to control hygiene factors, which are responsible for job dissatisfaction. Therefore, PLCs and its dimensions contribute to teachers' job satisfaction by satisfying both motivation and hygiene factors.

Malaysia is a multicultural country where it is common to find teachers and students from different ethnic and cultural backgrounds within the same schools. Stearns et al. (2014) argued that cultural and ethnic differences within schools and classrooms could cause stress among teachers and the possibility of job dissatisfaction. However, the collaborative work culture promoted by PLCs can greatly help reduce teachers' job dissatisfaction arising from these factors. Therefore, in a multicultural school environment like that in Malaysia, PLCs can be particularly useful in decreasing job dissatisfaction leading to more satisfied teachers at work.

Collaboration opportunities provided by PLCs significantly affect teachers' job satisfaction (Armstrong, 2012; Reeves et al., 2017). In schools with authentic PLCs framework, teachers often visit colleagues' classrooms, exchange relevant inputs, and support each other in professionally. The supportive work environment makes day-to-day work easy and enjoyable. Teachers participate in constructive discussions, voice their opinion, and engage in network building. In such scenarios, teachers feel supported and supported with work. With the support of school management and colleagues, they show a willingness to adopt new skills and are more open to risk-taking when needed (Banerjee et al., 2014). Active involvement in teaching, learning new skills, and positive work culture help in improving teachers' job satisfaction.

Moreover, within PLCs, teachers are often engaged in meaningful social and professional networks. They communicate with each other openly. Social interactions help reduce burnout among teachers, leading to more satisfied teachers who work towards enhancing student learning (Pietarinen et al., 2013; Ruth, 2014). However, in the Malaysian context, only a few studies have focused on the relationship between PLCs and TJS. Tahir et al.

(2013), in their study on university teachers, have found that collaborative work conditions developed by professional learning communities lead to more satisfied teachers.

In the present study, SEM statistical analysis has proved that PLCs have a moderate effect on teachers' job satisfaction and can also explain a moderate level of variance in job satisfaction. Though other scholars support the findings of this study (Reeves et al., 2017; Zhang & Yuan, 2020;) however, these results contrast with the findings by Ritz et al. (2013), who found no difference in teachers' job satisfaction levels upon participation in professional development programs. A possible explanation is that temporary participation in professional development programs is insufficient to change job satisfaction levels. Therefore, it is proposed that in their quest to have committed and satisfied teachers, schools should strive to have successful and well-established professional learning communities, as short-term programs cannot lead to long-lasting results.

Hence, the second research hypothesis is rejected, that there is no direct and significant relationship between PLCs and TJS. However, the moderate levels of both variables are not promising for the desired education reforms of MOE and invites constructive work to be done to establish authentic professional learning communities and desired educational reforms.

### **5.3.8 Mediating role of Teachers' Trust in Colleagues in the Relationship between Professional Learning Communities and Collective Teacher Efficacy at Public Primary Schools**

Once a direct, positive, and significant relationship was established between PLCs and CTE, the next step was to check the role of trust as a mediator for this relationship. For this purpose, SEM analysis was conducted using the computer software SmartPLS. The results showed that TTC significantly mediated the relationship between PLCs and CTE. As the direct effect of PLCs on CTE was significant and positive, and the indirect effect via TTC was also found to be significant and positive. This implies that the mediating effect observed here is "partial mediation" (Hair et al., 2017).

The professional learning communities' direct effect on CTE was positive and moderate. The cumulative effect of PLCs on CTE was increased upon introducing TTC as a mediator. This shows that TTC acts as a mediator for the relationship between the two variables for teachers working at public primary schools in Selangor, Malaysia. Moreover, the effect size of TTC over CTE was moderate in nature, and the analysis showed that trust in colleagues could cause moderate variation in collective teacher efficacy. Also, it was found that professional learning communities moderately affect teachers' trust in colleagues.

The principle of collective learning, shared vision, knowledge sharing, and shared practices can work in the presence of trusting relationships among teacher colleagues (Bolam et al., 2005). The study findings point to the importance of schools' social capital, like teachers' trust in colleagues, for the success of PLCs at public primary schools in Selangor, Malaysia (Khan et al., 2021). The SEM analysis shows that though there is a direct, and positive relationship between PLCs and CTE, the strength of this relationship is increased in the

presence of a high-trust environment at schools. This explains that trust among colleagues increases the effect of PLCs on CTE. To better understand this, suppose when teachers need feedback from their colleagues, only in trusting relationships can they believe that their colleagues will provide honest and constructive feedback, which they can rely on. Also, when participating in learning workshops outside of their respective schools, only when teachers have trusting and supportive relationships with colleagues, they feel confident enough to share the knowledge gained.

Professional learning communities and trust in colleagues are both essential for each other, it can be said that one thrives in the presence of other. The mutual correlational relationship between PLCs and trust was supported by Gray et al. (2017), who further added that PLCs and TTC interact and help develop stronger collective efficacy beliefs among teachers. The reciprocal or correlational relationship was also supported by Kalkan (2016) in a study on primary school teachers in Turkey. It showed that not only did the two variables share a correlational relationship, but trust also mediated the relationship between organizational structures and PLCs.

Lee et al. (2011) have suggested that trust provides a flourishing environment for the growth of PLCs. In such schools, teachers feel connected with their colleagues, understand the importance of collective growth, and freely participate in knowledge-sharing activities. These meaningful partnerships help teachers develop higher collective efficacy. Also, Stoll et al. (2005) stated that trust and PLCs are the founding stones for a successful school. It becomes easier for teachers to work and support their colleagues in the presence of strong mutual trust. In school environments with low levels of trust, teachers are always suspicious of the activities of their colleagues and stay stressed to safeguard their

professional well-being. When teachers exert a strong level of trust in their colleagues, they believe in the abilities of other teachers to teaching and commit towards students' development, which helps strengthen their CTE beliefs (Ninkovic et al., 2022).

This is a distinctive study in the Malaysian context that focused on the relationship between PLCs and CTE with trust as a mediator. It is essential that schools focus on nurturing and developing trusting relationships among the teachers and other stakeholders. In building trust, schools should encourage shared learning practices among students and teachers, a collaborative work environment, and community building (Murphy-Graham & Lample, 2014). Having professional learning communities at schools can help in achieving these objectives. Within a professional learning community, teachers constantly rely on each other and know that to succeed as an individual or as a group, and they must trust each other first.

Though few studies have focused on trust as a mediator between PLCs and CTE, the mediating role of trust has been studied in other scenarios. Students' academic outcomes are negatively associated with their and schools' socio-economic backgrounds. However, acting as a mediator, trust in schools can mitigate the adverse effects of school disadvantages on student academic outcomes (Goddard et al., 2009). Thus, teachers' trust is not only important for PLCs or CTE, but it also positively affects students learning outcomes as well. Yin and Zheng (2018) focused on how leadership practices help develop PLCs and found that TTC mediates the effect of leadership practices on learning communities.

The present study is one of the few studies done in Malaysia from which the public schools can benefit greatly by working to establish trusting relationships among teachers and other



stakeholders of schools. The findings of the study help to reject research hypothesis 3 that trust in colleagues does not significantly mediate the relationship between PLCs and CTE for primary school teachers in Selangor, Malaysia. Interestingly, trust acts as a partial mediator in this relationship, increasing the effect of PLCs over CTE.

### **5.3.9 Mediating Role of Teachers' Trust in Colleagues in the Relationship between Professional Learning Communities and Teacher's Job Satisfaction at Public Primary Schools**

The SEM analysis showed that the effect of the PLCs on TJS was mediated by TTC in a sample of teachers working at public primary schools in Selangor, Malaysia. As the direct effect of both PLCs on TJS and the indirect effect via TTC was significant and positive, the mediating effect observed here is "partial mediation" (Hair et al., 2017). When trust between colleagues was introduced as a mediator, the cumulative effect of professional learning communities on teachers' job satisfaction via trust was increased. The findings confirm the mediating nature of trust in colleagues for the relationship between PLCs and TJS for teachers working at public primary schools in Selangor, Malaysia.

Moreover, both PLCs and TTC exerted moderate effect size over teachers' job satisfaction, and further analysis showed that both could cause moderate variation in teachers' job satisfaction levels. As previously stated, a moderate effect of PLCs on TTC was also found. Therefore, the analysis establishes the mediating effect of TTC for the relationship between PLCs and TJS among primary school teachers in Selangor, Malaysia.

The findings show that though PLCs help in improving TJS, the presence of a trusting environment at schools can further increase the desired outcomes. In a low-trust

environment, individuals are suspicious of each other, always working to safeguard their own goals, which is detrimental to a healthy work environment. However, when teachers trust their colleagues, not only they work together towards common goals, but they also support each other in achieving individual professional goals as well. Trust enables transparency in communication between colleagues leading to a smooth flow of information.

Also, PLCs' constructs like collaborative learning and application, shared vision, and supportive conditions -- relationships help in maintaining healthy and trusting relationships between teachers. When teachers frequently engage in a cohesive work environment and realize that they can rely on their colleagues for factual and accurate information and that everyone is genuinely working towards a common goal without any hidden agenda, the trust between them gets stronger (Hallam et al., 2014). In schools with high-trust environments, teachers experience less stress. They focus more on performing their work than watching their back and are more satisfied with their job.

The findings from this study are also supported by previous studies that teachers trust in their colleagues, the principal, and students can lead to higher job satisfaction among teachers as it helps to support motivator factors of job satisfaction (Van Maele & Van Houtte, 2012; Siswanto & Yuliana, 2022). Also, trust among colleagues can help mitigate the effects of burnout in teachers (Van Maele & Van Houette, 2015). Additionally, the study by Zeinabadi and Salehi (2011) further confirms the relationship between TTC and TJS and the role of trust as mediator for the relationship between school climate and job satisfaction. Trust helps improve teachers' psychological empowerment, which is responsible for higher level of job satisfaction among them (Khany & Tazik, 2015).

However, this study refutes the findings by Trace (2016) that trust in colleagues does not significantly affect teachers' job satisfaction. A possible explanation for this could be the cultural differences between the U.S. and Malaysian cultures. In a close-knit society like Malaysia, teachers look up to their colleagues and feel more secure and comfortable when they can interdepend on their colleagues. Hence, trust in colleagues can significantly affect levels of TJS among teachers in Malaysia. Whereas, in an individualistic society like the U.S., teachers only depend a little on social factors like trust to experience job satisfaction. In independent societies, teachers feel more comfortable working independently, and factors like trust may not influence their job satisfaction levels significantly.

Hence the fourth hypothesis of the study, that trust in colleagues does not significantly mediate the relationship between PLCs and TJS for teachers working at primary schools in Selangor, Malaysia, is rejected. Also, these findings are particularly important in the Malaysian context because forming trust relationships can take time in a multicultural setup. Policymakers and school administrators who aim to introduce education reforms at public schools in Malaysia can capitalize on the trusting environment present at these schools. Trust in colleagues can aid the effects of PLCs on variables like TJS, which motivates teachers to ensure high standards of student learning. When teachers know they can rely on their colleagues and their trust will be maintained, they enjoy the workplace and feel more satisfied.

### **5.3.10 Moderating Role of Teachers' Emotional Intelligence in the Relationship between Professional Learning Communities and Collective Teacher Efficacy**

The results of the study show that TEI is not a significant moderator of the relationship between PLCs and CTE for teachers working at public primary schools in Selangor, Malaysia. Though statistical analysis presented a direct and significant effect of TEI on CTE, the moderating effect of emotional intelligence was positive but insignificant. The findings show that the effect of PLCs on CTE is not affected by teachers' emotional intelligence.

A moderator is a variable that can determine the strength and the direction of the effect of the exogenous variable on the endogenous variable (Hair et al., 2017). The moderation effect is significant when the effect of the exogenous variable (PLCs) on the endogenous variables (CTE) changes based on the presence of the moderating variables (TEI) (Hair et al., 2017). In the social cognitive theory of Bandura (1997) it was postulated that one of the important factors in developing CTE is the affective state of teachers and schools. Also, Loughland and Ryan (2020) have proposed that under professional learning communities, teachers high in emotional intelligence can easily experience a positive affective state, which helps form high collective efficacy beliefs. In other studies, teachers with high EI were found to be more cognizant of their students' responses and motives. Therefore, it was expected that TEI could be a significant moderator in this study. However, the study findings failed to support this hypothesis.

It is an interesting finding contrary to the hypothesis proposed by the researcher. It implies that irrespective of individual teachers' high or low emotional intelligence, their participation in professional learning communities will help in improving collective teacher

efficacy. The interaction between professional learning communities and teachers' emotional intelligence does not affect collective teacher efficacy. The graph for this moderation effect also shows two almost parallel lines supporting non-significant moderation. A possible explanation for this could be that the effect of PLCs on CTE is so strong that it is independent of a moderating variable like teachers' emotional intelligence. Also, the study found that TEI exerts a direct, positive, and significant effect on collective teacher efficacy, which was supported by previous studies (Loughland & Ryan, 2020). However, the interactive effect of the exogenous (PLCs) and moderating (TEI) variables on CTE was insignificant. The study confirms that though individually, both professional learning communities and teachers' emotional intelligence are important for the development of CTE. The interaction between the two variables do not cause any significant in the collective efficacy beliefs of the teachers.

Usually, researchers use demographical variables like participants' sex, age, or socio-economic status to analyse the moderating effect. However, this study used latent variable teachers' emotional intelligence as a moderator. The reason behind this approach was first to see if TEI can affect CTE directly and second to analyse if teachers' emotional intelligence interacts with PLCs and affects its outcome on CTE. If the moderating influence was supported, the study aimed to recommend including teachers' emotional intelligence training programs as part of their professional development framework. Nevertheless, the effect of PLCs on CTE was not moderated by teachers' emotional intelligence, suggesting PLCs are beneficial for all teachers, and their outcomes do not depend on their emotional intelligence.

Hence, the study fails to reject the fifth hypothesis that teachers' emotional intelligence does not significantly moderate the relationship between PLCs and CTE for teachers working at public primary schools in Selangor, Malaysia. However, the direct and significant effect of both exogenous (PLCs) and moderator (TEI) variables on collective teacher efficacy was supported in this study.

### **5.3.11 Moderating Role of Teachers' Emotional Intelligence in the Relationship between Professional Learning Communities and Teachers' Job Satisfaction**

The statistical analysis in this study shows that TEI significantly moderates the relationship between PLCs and TJS for teachers working at public primary schools in Selangor, Malaysia. Also, the study found a direct and positive effect of TEI on TJS. However, this study found the moderating effect of teachers' emotional intelligence for the effect of PLCs on TJS was negative.

The negative moderating explains the individual differences in the outcomes of PLCs on TJS levels. The study findings support that teachers' emotional intelligence alters the effect of professional learning communities on job satisfaction. The negative moderation explains that participation in PLCs will have a more significant effect on job satisfaction for teachers with lower or moderate levels of emotional intelligence than for teachers with higher emotional intelligence. In other words, teachers with high emotional intelligence do not rely on extrinsic factors like professional learning communities to achieve higher or lower levels of job satisfaction. The findings of this study are supported by previous studies that affirmed the negative moderating role of EI for untoward job-related outcomes (Chakravorty & Singh, 2020; Peláez-Fernández, 2021).

Previous studies have discussed that EI can act as a negative moderator, decrease the negative impact of stressful work situations, and support teachers in maintaining work commitment (Mérida-López & Extremera, 2022), intention to stay on the job (Chigeda et al., 2022) and organisational behaviour (D'Souza et al., 2022). Researchers have discussed that teachers with high EI are more in control of their emotional responses, do not rely on external support to achieve satisfaction with their work, can manage stressful work conditions, and experience lower incidences of burnout (Mayer et al., 2016; Merida-Lopez et al., 2020).

Also, EI provides a cushion for teachers' psychological well-being and directly affects their job satisfaction levels (Rogowska & Meres, 2022). Teachers with high emotional intelligence can manage stressful work conditions well. They are committed to working and can easily accept challenging tasks. Such teachers enjoy their work and experience better job and life satisfaction (Ignat & Clipa, 2012; Yin et al., 2013). A major cause of lower levels of job satisfaction among teachers is burnout. Teachers with high emotional intelligence manage social relationships well and are in charge of their emotional reactions to stressful situations. On a group level, it helps to create an enjoyable work environment for their colleagues, which helps mitigate burnout and improve job satisfaction levels (Merida-Lopez & Extremera, 2017; Rogowska & Meres, 2022).

Within the Malaysian context, most studies have focused on the direct relationship between TEI with other variables. Mustaffa et al. (2013) found a positive relationship between TEI and their personal and professional growth. In contrast, Mohamad and Jais (2016) supported the relationship between TEI and job satisfaction. However, this study focused on TEI as the moderator for the relationship. Teachers' responses to work-life conflict

depend on their emotional intelligence level, where highly emotionally intelligent teachers feel more competent in managing work-life stress efficiently and experience higher job satisfaction (Gao et al., 2013).

In alignment with previous studies, the findings of this study support that teachers' EI directly and significantly affects their job satisfaction levels (D'Amico et al., 2020; Rogowska & Meres, 2022). Furthermore, the negative moderating effect of EI shows that teachers with higher levels of EI do not depend on external sources like PLCs to manage their work and feel satisfied with their job. The negative moderating effect found in the present study suggests that the effects of the PLCs on job satisfaction can be more pronounced for teachers with low levels of EI. In contrast with high EI levels, teachers with low levels of EI depend on external aids such as supportive colleagues and school management, professional aid in the form of internal and external training and a cooperative work environment (Merida-Lopez et al., 2020).

Moreover, as discussed in previous studies (Chakravorty & Singh, 2020), including emotional intelligence-based training programs as part of professional development activities can help teachers achieve higher job satisfaction. It can be explained based on previous studies which showed that emotionally intelligent professionals are more satisfied with their jobs (Lee et al., 2019; Merida-Lopez & Extremera, 2017) because they can easily manage job-related stress, form social relations with their colleagues and show dedication towards their work. However, for teachers with low to moderate levels of emotional intelligence, providing extra support, such as PLCs, where they get equal opportunities to grow, learn new skills, and engage in social relations, can help them experience job satisfaction.



Hence, the study rejects the sixth and last hypothesis of the study that TEI does not significantly moderate the relationship between PLCs and TJS for teachers working at public primary schools in Selangor, Malaysia. Also, the negative moderating effect means that PLCs are more helpful for teachers with low emotional intelligence in reaching a higher level of job satisfaction.

## **5.4 Implications**

The main objective of this study was to find the relationship between PLCs, CTE, and TJS for primary school teachers in Selangor, Malaysia. Additionally, the study focused on how other variables can affect this relationship using trust in colleagues as the mediator and teachers' emotional intelligence as the moderator. The findings of the study have supported all research hypotheses except one. The present study is a one of its kind study in Malaysia which has explored relationships that were not studied earlier. This study's findings have significant theoretical, methodological, and practical implications, which are discussed in detail in the following section.

### **5.4.1 Theoretical Implications**

The findings of this study confirm that PLCs has a direct and significant effect on CTE and TJS at public primary schools in Selangor, Malaysia. The theoretical framework for this study was based on the reciprocal determinism construct of the social cognitive theory by Bandura (1997). The framework postulated that the relationship between the environmental (PLCs), personal (TTC and TEI) and behavioural (CTE and TJS) is cyclical and reciprocal in nature. By reciprocal determinism, the study findings showed that the direct effects of PLCs on CTE and TJS are mediated by TTC and moderated by TEI.

According to Bandura (1997), the four sources of CTE are mastery experiences, vicarious learning, social persuasion, and affective state. Also, CTE is a school-level construct that is one of the most critical contributing factors toward students' academic outcomes (Hattie, 2014). Bandura (1997) has argued that the contribution of collective teacher efficacy toward students' academic outcomes is more crucial than their past academic achievements or socio-economic status. Reciprocal determinism can explain the effect of PLCs on CTE. At the core of PLCs is continuous teacher learning, work collaboration, availability of resources, shared leadership, and a vision for students and school development, which directly and positively affect students' and teachers' level outcomes.

In schools with successful and authentic professional learning communities, teachers can see how their work directly contributes to students' success. When teachers participate in workshops, learn, and implement new teaching methods and make data-driven decisions for teaching plans, they feel confident in their and colleagues' ability to teach, gaining mastery experiences that act to improve collective efficacy (Voelkel & Chrispeels, 2017). Also, when participating in outside school workshops, teachers get opportunities to learn from experts in their field. They see examples of other schools and teachers making constructive changes in their students' learning and academic outcomes. Seeing others succeed is a source of vicarious learning that makes teachers believe that if others can do it, they can too (Ma et al., 2019).

Moreover, the social and professional interactions in schools with PLCs help create a positive and constructive school environment where teachers and other staff work collaboratively and support each other in reaching common goals (Voelkel, 2022). In the presence of authentic learning communities, the schools offer a nourishing environment to

teachers for personal and professional growth, creating a positive affective state for both teachers and schools as an entity. Also, under the PLCs framework, colleagues motivate each other to learn new skills, express their views and be open to risk-taking. The support from colleagues fills the social persuasion aspect of CTE. Therefore, the findings of the study confirm the social cognitive theory of Bandura (1997) and explain that PLCs affects CTE by providing teachers with mastery experiences (self-learning), vicarious learning (learning from others achievement), social persuasion (peers involve in supporting and knowledge sharing), and a positive affective state (cohesive work environment).

Another important outcome of the study is the direct and positive relationship between PLCs and TJS. According to Herzberg's motivation-hygiene theory for job satisfaction (1974), two factors lead to job satisfaction: motivation and hygiene factors. Within a PLCs framework, teachers are in charge of students' learning, leadership is supportive, they receive recognition for their work, and their contribution towards work is appreciated (Olivier & Huffman, 2016). There is a clear and transparent flow of communication across schools with opportunities for growth and optimal workload. Frequent collaboration helps develop meaningful professional and social networks making work life more enjoyable. Hence, PLCs aids both motivation and hygiene factors responsible for causing job satisfaction (Ackerman, 2011). Thus, based on Herzberg's theory, the findings of this study explain the direct and positive effect of PLCs on TJS.

Trust is an integral social factor that binds the school community together (Stoll et al., 2006). In schools with high trust environment, teachers are invested in students' growth, take work-related initiatives, and transparency in work is part of school culture. The study shows how trust is an important factor in the success of PLCs. Though a direct and positive

relationship between PLCs, CTE, and TJS was established in the study, the findings added that the positive effect of PLCs on the dependent variables increases when trust is brought as the mediator. The findings of this study support that PLCs helps strengthen TTC in schools (Yin et al., 2019), which strengthens the effects of these PLCs on CTE and TJS, confirming to the mediating role of TTC (Karacabey et al., 2022).

Furthermore, the study affirms that TEI can determine the effect of professional learning communities on job satisfaction. Emotionally intelligent people are in control of their emotions and their response to stressful conditions. Such people understand how to manage social and professional relationships and how to overcome demanding job conditions. They have self-managing capabilities, and outside factors do not significantly influence their work-related attitudes (Platsidou, 2010; Vesely et al., 2013). However, the responses of individuals with a lower level of emotional intelligence depend on outside personal, professional, and social support.

The study's findings support the triadic relationship between PLCs, TTC, CTE, TJS, and TEI, as described in Bandura's social cognitive theory (1997). The analysis validates that PLCs as the school environment interacts with the personal factors, TTC and TEI, and together, they impact behavioural outcomes in the form of CTE and TJS. To summarise, PLCs at schools can help strengthen CTE and TJS. Also, the effect is increased in the presence of TTC, whereas TEI can determine individual differences in these outcomes.

#### 5.4.2 Methodological Implications

The study findings have several relevant methodological implications as well. The study used the causal relationship design to analyse and develop a model that can predict the relationship between PLCs, CTE, TJS, TTC, and TEI. The findings of the study support that PLCs at schools can predict levels of CTE and TJS. Also, this relationship is mediated by trust in colleagues and moderated by the teachers' emotional intelligence. As the statistical analysis showed a significant coefficient of determination  $R^2$  values, effect size  $f^2$  values, and predictive ability,  $Q^2$  values, the final research model can be used to predict the relationship between the variables of the study for a different sample set as well.

Moreover, the model also shows that these learning communities can help teachers with lower emotional intelligence to experience better job satisfaction levels. Therefore, the study confirm that the causal relationship approach is suitable for studying the effects of exogenous variable (PLCs) on endogenous variables (CTE and TJS) in the presence of mediating variable TTC and the moderating variable TEI and supports the final model developed. For data collection, the researcher used translated versions of previously established instruments, namely PLCA-R (Olivier et al., 2010), CTBS (Tschannen-Moran & Barr, 2004), JSS (Spector, 1985), trust in colleagues' part of the Omnibus-T Scale (Hoy & Tschannen-Moran, 2003) and the WLEIS (Law et al., 2004). In their Malay translated version, all these instruments presented acceptable reliability showing they are well suited for the Malaysian population.

Though all the constructs of the research instruments PLCA-R and WLEIS were supported in this study, the CTBS did not adhere to the two-factor structure in the Malaysian education setup. Similarly, the JSS and JSR constructs of the job satisfaction survey

emerged as a single construct. Also, for the Omnibus T-Scale, the negatively worded third item was not supported in the study. For data collection, both paper-based and Google forms were used. The response rate showed that the paper-based forms were more successful than Google forms. Though the study occurred during Covid times when most of the teaching was online, teachers still preferred to respond through paper-based forms compared to online forms. When teachers have survey forms in their hands, they feel more compelled to fill them. However, when the forms are in their mailboxes, they can often be ignored. Both English and Malay language forms were provided to the participants, which ensured an adequate understanding of the survey forms.

Also, the use of computer software SPSS for descriptive analysis and Smart PLS for inferential analysis shows that both are adequate for undertaking data analysis in similar scenarios. Finally, the statistical analysis confirms the conceptual model developed for the study, which shows that similar studies can be replicated over different populations and yield similar results.

#### **5.4.3 Practical Implications**

The study has several important implications for the government, schools, education trainers, teachers, and any other individual having an interest in the education sector. This study shows that professional learning communities at schools directly and significantly affect two most important factors contributing to student learning: collective teacher efficacy and teachers' job satisfaction. It implies that professional learning communities are pertinent to achieve the MOE goals of holistic development of Malaysian students. The collaborative work culture, growth opportunities, social interaction, and job autonomy provided by professional learning communities (Olivier & Huffman, 2016) help schools

strengthen collective teacher efficacy beliefs (Loughland & Nguyen, 2020) and teachers' job satisfaction (Zhang et al., 2022).

Though previous studies have established the importance of PLCs for schools (Tobia & Hord, 2012), only a few studies are available in Malaysia (Abdullah & Ghani, 2013). The study confirms a moderate level of PLCs at primary schools in Selangor, Malaysia, implying that though the schools have PLCs, they are only in the implementation phase and have yet to become an inherent component of the schools working and culture. However, in Western countries, PLCs are already an integral part of schools, which have helped in achieve high levels of student learning and outstanding performance at various national and international competitions (TSchannen-Moran & Chen, 2014). The PLCs research literature supports that government and the school administration in Malaysia should work together to make schools successful and authentic professional learning communities leading to its institutionalization phase.

Making PLCs an integral part of education culture requires policy reforms. The government and policymakers need to provide adequate financial and structural resources that can enable schools to establish authentic professional learning communities. Teachers should be active participants of their school decision-making body, and their direct involvement in forming educational frameworks for schools should be encouraged. An important component of PLCs is data-based decision-making. It is essential that all educational policies need to be developed based on factual data available (Munoz & Branham, 2016). The government can make use of best practices in Western countries where PLCs have reached the institutionalized phase and further adopt them as per the needs of the Malaysian education system.

Even when the government provides all the support and resources, the success of PLCs at schools largely depends on the school themselves. Schools must ensure that teachers' professional development activities are not limited to participation in one-off workshops or talks. Instead, schools need to adopt and strengthen all five constructs of the PLCs so that they can become a part of school culture (DuFour & Eaker, 2009). A common challenge in the authentic implementation of PLCs is mistaking them for one-off workshops or teacher training or failing to provide adequate time and resources to teachers (DuFour & Eaker, 2009; Tobia & Hord, 2012). The moderate level of PLCs and its constructs at schools in Selangor points towards challenges like traditional leadership practices, lack of physical and social resources, individualistic work environment, or ambiguity about school goals.

Teachers must constitute an essential part of the school decision-making body, their feedback and inputs are heard, and opportunities for engaging in meaningful and challenging work are provided. The schools can help teachers by providing dedicated time, for example, a few days of full non-teaching workdays to plan for curriculum, student assessment, and extra-curricular activities before the start of each school term. Separate time should be allotted for teachers' participation in workshops. Learning resources in terms of teachers' workbooks, computers, internet, stationery, factual data about students' performances and outside school trends in education, and physical spaces like staff rooms, and meeting rooms, should be available for teachers to participate in knowledge-building and sharing activities (Hargreaves et al., 2013).

Schools can further help teachers by promoting a collaborative work environment and leadership opportunities. School principals can support teachers by delegating leadership



roles to them, promoting their participation in school-level decisions, giving them ownership for teaching and curriculum planning, and providing physical, social, and knowledge resources (Zhang et al., 2022). When teachers are continuously engaged in collaborative work in the form of visiting classrooms, sharing honest feedback, lesson planning, attending workshops, and sharing knowledge, they gain trust from each other in each other's efficacy for teaching students. Also, collaboration makes them feel connected with their colleagues, where they can rely on and trust each other and be more open to sharing ideas (Zheng et al., 2016).

The study also adds on the evidence for the role of trust in positively affecting the relationship between PLCs, CTE, and TJS. The findings bear an important implication for schools. When schools promote teachers' participation in decision-making processes, it leads to a transparent flow of communication between teachers and authorities. Teachers have a sense of assurance that their inputs and concerns are valued and addressed, leading to a higher level of trust between various stakeholders and teachers (Yin et al., 2019). Also, school authorities should avoid misinformation being passed on in schools which can undermine trust-building among teachers. Trust between various stakeholders in schools positively affects teachers' collective efficacy beliefs (Schwabsky et al., 2020) and job satisfaction levels (Da'as, 2021).

Moreover, the study implies that apart from learning-related workshops and training, schools can benefit by having emotions management workshops because teachers' emotional intelligence bears a direct and positive relationship with CTE (Pierce, 2014) and job satisfaction (Extremera et al., 2018). The study shows a negative moderating effect of TEI on the relationship of PLCs with TJS. It implies that teachers with high levels of EI do

not depend much on external factors like professional learning communities to experience higher job satisfaction. However, teachers with low to moderate levels of emotional intelligence can benefit significantly by participating in PLCs as they gain social and professional support that makes work life more satisfying.

Furthermore, the study has salient implications for teachers as well. Since collaboration is a common and essential theme emerging from this study, it implies that teachers can benefit significantly by being constructive team members at their schools (Ackerman, 2011; Avalos-Bevan & Bascope, 2017). Instead of competing for the resources available, the greater good of the school and students lies in teachers sharing those resources. Also, when teachers participate in workshops outside of schools, their self and colleagues' knowledge will improve if they share learning from those workshops. In the contemporary education scenario, teaching is work done in collaboration. Education should be a partnership between various stakeholders of education, where everyone works together to succeed at individual and group aims. When teachers work together towards a common goal and honestly support each other in achieving these goals, they build trusting relationships. Teachers who still follow traditional teaching practices of working individually, fail to gain their colleagues' trust.

As trust is found to be a significant mediator, teachers should put in the effort to form positive and trusting relationships with their colleagues. Establishing trust takes time and continuous effort from all the participants involved. When teachers in a school feel that their colleagues are honest, vulnerable, and open with them and their well-being will not be harmed, they develop trusting relationships (Hallam et al., 2014). Rumour-mongering and gossiping should be avoided as it leads to misinformation and groupism at schools. Also,

teachers' willingness to adopt and use new teaching methods, use student data for lesson planning and group decision-making, and be open to feedback and suggestions are essential for the success of PLCs (Tobia & Hord, 2012). When teachers adopt these practices in their day-to-day teaching activities, not only will it improve the school's work environment, but it will also help improve students' academic outcomes.

Education trainers can gain from the findings of this study as well. To make programs more successful, trainers should incorporate more activities that promote collaborative work. As vicarious learning contributes significantly towards developing high collective efficacy beliefs, the trainers can include examples for their participants of schools and teachers who have succeeded in similar conditions. Similarly, trainers can help schools by promoting the idea of knowledge sharing among teachers and encouraging them to apply and share the learnings of the workshops practically. Additionally, they can include training programs that aim to improve the emotional intelligence of teachers (Lee et al., 2020). Emotional intelligence is fluid in nature, and correct interventions can help improve it. The study findings support that TEI can directly affect their collective efficacy and job satisfaction levels. It implies that including emotional intelligence training as part of pre-service and in-service teachers' programs can help achieve the final goal of high student learning standards.

As this is one of the few studies that focused on how PLCs can help improving teachers' collective efficacy and job satisfaction in the Malaysian context, it also has important implications for other researchers. Other researchers can use this information and explore these variables within different settings. Though collective efficacy has been identified as the most critical factor in student learning (Hattie, 2014), unfortunately, few studies are

available in the Malaysian context (Saidin et al., 2020). This study adds to the research literature in the Malaysian context regarding the state of collective teacher efficacy at public primary schools.

For students and parents, it highlights the importance of PLCs and trust at school and how essential it is for teachers to participate in ongoing workplace learning activities. They should be cognizant of the workload teachers may feel because of extra learning activities. Also, they can help build trust at schools by refraining from spreading false and malicious information and trusting teachers that they will always work to help students achieve their highest potential.

The study has important implications for the researcher herself. It provided an understanding of the Malaysian education system. It showed that there is a level of professional learning communities at schools in Selangor, Malaysia, and it requires more attention to move from implication to the institutionalization phase. Also, the study showed that despite being a multicultural society, there is a good level of trust among teachers working at public primary schools. Another practical implication for the researcher was that though almost everybody uses the internet and Google forms are prevalent, still the most effective mean for data collection are physical forms.

Moreover, the study findings have implications for people from fields other than education. The concept of PLCs was first proposed by Senge (1990) for managers working at different organizations. The study findings show that as professional learning communities exert a positive and significant relationship with TCE and TJS, business organizations can also

gain from them. Also, for business enterprises, trusting relationships among co-workers can help employees achieve higher levels of satisfaction with their job.

### **5.5 Suggestions from the Study**

The main finding of this study is that trust is an important mediator for the effect of the PLCs on CTE, and TJS. The study supports the direct and positive effect of PLCs over CTE (Voelkel & Chrispeels, 2017) and TJS (Zhang & Yuan, 2020). This effect further increases in the presence of a high-trust environment. Trust is the social capital of a school that helps in binding teachers and other school members professionally and personally. The study strongly suggest that school administration and teachers should work collaboratively and honestly to maintain trusting relationships.

It is easy to develop trust between similar people (Bryk & Schneider, 2003). However, in a multicultural society like Malaysia, substantial efforts are needed from all participants to develop and maintain trust. The researcher strongly advocates that school administration and teachers should always work consistently to maintain honest and clear communication, as wrong information often leads to suspicion. Also, teachers need to take care cultural considerations of their colleagues and respect each other's viewpoints. People often trust those who are benevolent and care for others. Hence, instead of competing with colleagues, teachers should maintain a cordial approach towards work that can nourish the work environment.

Similarly, school administration can help maintain trust by adopting a non-biased approach toward all teachers. The school rules should be the same for all, and leadership should treat all teachers with respect and equality. Sharing leadership among teachers and giving them

autonomy over work will assure them that they are being trusted with the responsibilities of student learning (Karacabey et al., 2022). Instead of just recipients of instructions, teachers should be active participants in school decision-making. Also, schools should use accurate data to ensure factual and transparent communication. It is strongly recommended that schools encourage collaborative work culture, this could be in the form of teachers visiting each other's classrooms, designing lesson plans together, discussing the needs of students, and sharing knowledge (Teague & Anfara, 2012).

As the study clearly shows that there exist moderate levels of PLCs, CTE, and TJS, it is essential that policymakers, school administration, and teachers should work together to make substantial and positive changes. As discussed before, MOE has an ambitious goal of bringing the academic performance of Malaysian students to par with the international standards on tests like TIMSS and PISA. To achieve this, MOE should provide financial and physical support to schools to establish authentic professional learning communities. The study clearly shows a direct effect of PLCs on CTE and TJS, which are essential for ensuring high levels of student learning outcomes. The MOE can help schools by giving financial grants, planning and mandating dedicated days for professional development activities, and setting realistic targets for each school.

It is highly recommended that schools should have a clear vision and plan for teachers to work. The schools' management needs to practice shared leadership culture where teachers are not only part of decision-making but also take responsibility for student learning (Voelkel, 2022). Also, opportunities for all teachers to participate in in-school and out-school workshops should be there, and teachers need to have adequate time for both participating in PLCs activities and teaching. The goals of each school can be different, and

to be successful, it is imperative that all school members are aware of what they want to achieve.

The study strongly suggests that teachers should actively participate in professional learning communities and take responsibility for self and student learning. Teachers' role should not be just limited to attending in-school or outside workshops, but they need to actively engage in applying those learnings in their teaching activities and share the knowledge gained with their colleagues (Banerjee et al., 2017). Again, the researcher advocates that the contemporary education scenario requires teachers and school administration to work in collaboration, individualistic or traditional work approaches can be detrimental to learning outcomes of both teachers and students.

Also, as the study supports the direct effect of the PLCs on CTE and TJS, it is recommended that when implementing learning communities at teachers, and school administrators should focus on how to use this. There should be a clear vision, plan and mission when adopting professional learning communities at schools. In case of public primary schools in Malaysia, one of the visions could be how to use learning communities to improve collective efficacy and job satisfaction levels of teachers.

As mentioned by Bandura (1997), one of the key sources to develop collective teacher efficacy is through mastery modelling, which occurs when teachers can see their success in form of student learning. To achieve mastery modelling, it is important that relevant and challenging goals are achieved regularly, success at these goals will motivate to achieve bigger goals. However, when designing goals, it is important that they should be challenging yet achievable, unachievable goals can fill teachers with fear of failure and can

lower their efficacy beliefs (Tschannen-Moran & Barr, 2004). Some of these achievable goals can be in the form of step-by-step adoption of new teaching methods, targeting all students in a class pass to next level, or improvement in students grades in comparison with previous years. It is to be noted that these goals should not be too difficult to attain, but yet challenging enough.

To achieve improved level of job satisfaction among teachers, PLCs should be designed to promote collaborative work culture, support in form of physical and structural means, promoting leadership in teachers, and providing job enrichment and promotion opportunities. When learning communities are presented in an authoritative way, without active involvement of teachers, they can increase job stress, causing low job satisfaction or possibility to leave (Abdullah & Hui, 2014). However, including teachers' opinion in formatting learning communities, providing enough time to participate and offering social benefits will not only increase teachers' involvement, it can lead to higher levels of job satisfaction as well.

Data is the best resource that can help teachers and school administration in making informed decisions (Munoz & Branham, 2016). It is required teachers should feel free to share the educational data of their students with colleagues and take their input on how to improve student learning. Also, school administration can support teachers by providing pertinent data from other schools to compare and contrast their progress and goals. Data shows how other schools are performing and progressing, which can help teachers make informed decisions based on facts. Moreover, teachers can gain information about the latest education trends, the performance of other schools locally and internationally, and teaching best practices using data.



The study points to the importance of teamwork and supportive work culture and suggests that teachers should encourage and support their colleagues to reach school and individual professional goals. Schools can only succeed if teachers work together as a team. It is strongly recommended that teachers should involve in trust building and maintain cordial relationships with their colleagues, which can only be achieved when there is a genuine connection between teachers (Tschannen-Moran, 2014). They should work hand in hand towards common goals. Trust is broken when people go behind the backs of their colleagues or there is intentional miscommunication. At all costs, such acts should be avoided.

Moreover, emotionally intelligent teachers are more capable of handling the varying emotions of their students and other work-related stress (Vesely-Maillefer & Saklofske, 2018). Teachers who have low levels of emotional intelligence rely on external factors to feel more efficacious or satisfied with their work. Hence it is recommended that schools should have provisions for training that can help teachers improve their EI. The study suggests that professional learning communities are particularly beneficial for teachers who experience low levels of emotional intelligence. Therefore, schools need to strengthen learning communities and, whenever possible, should include EI training workshops as part of teachers' professional development.

Nevertheless, the study findings suggest that PLCs can surpass teachers' emotional intelligence's effect on collective efficacy and job satisfaction. Establishing authentic learning communities should be a priority for all stakeholders in education. The study clearly presents that PLCs can help schools, teachers, and students in reaching high

standards of academic outcomes. The collaborative, respectful, and trusting school environment created with the help of professional learning communities help teachers feel more efficacious in their ability to contribute to student learning. Also, constant opportunities for self-learning, work autonomy, exchange of ideas, dissemination of information, and supportive work culture lead to higher levels of work satisfaction among teachers (Zhang & Yuan, 2020). Therefore, the study strongly suggests a cohesive approach by all stakeholders towards strengthening PLCs throughout schools in Malaysia to reach desired educational goals.

Furthermore, it is required to continuously monitor the progress of PLCs at each step. For this, the role of teachers, school principals, government, and education researchers are most important. Teachers should closely check on how the implementation is affecting students' progress. It can be done by checking student knowledge from time to time and by comparing students' data from previous years. Also, teachers should provide feedback on changes needed, based on individual requirements of the students (Hord et al., 2010). Nevertheless, when the outcomes of these learning communities are not as expected, concerns should be expressed along with suggestions for relevant changes for improvement.

Leadership practices by school principal are an important factor that affects not only PLCs but collective efficacy, job satisfaction and trust in school as well (Trace 2016; Tschannen-Moran & Chen, 2014; Zhang et al., 2022). The schools' principals need to weigh the benefits of PLCs for both students and teachers. For students, comparison with previous performance and data-driven analysis can help. In case of teachers, it should be analysed if learning communities are creating extra job stress, how teachers are feeling with the

changes introduced and how it is affecting their performance. School principals need to ensure that teachers perceive PLCs as an avenue for their professional and personal development which is beneficial for their students. The supportive measures like provisions of dedicated time, regular meetings, ownership of work, and availability of resources are helpful for teachers. Also, principals need to check the progress of PLCs in comparison to the goals specified and should appreciate teachers for achieving those goals. School principals should be actively engaged with outside stakeholders for the smooth functioning of PLCs.

The government should monitor how the financial and other resources allocated for learning communities are being utilized. Regular school inspections, inputs from teachers in form of surveys, and student outcomes are some of the ways through which government can monitor the advancement. However, too much control from government can change the contemporary structure of learning communities to top-down, therefore, more independence and optimal overview should be the key (Idi et al., 2021; Mei Kin & Kareem, 2021).

Furthermore, education researchers play a crucial role in tracking the development and progression of learning communities. Research data helps education stakeholders in making informed decisions. Therefore, sound quantitative and qualitative studies that explore pertinent issues are needed for the success of PLCs. When researchers provided data that top-down approach for PLCs is not effective, in fact it can cause job related stress among teachers, the government decided to adopt the contemporary approach with more involvement of teachers. Research methods like surveys, case studies, and interviews are important as teachers feel more at ease in voicing their concerns and suggesting

improvements. Particularly in context of Malaysia, researchers have performed an important role in raising awareness for the benefits of PLCs and the drawbacks in the system that was needed to be addressed (Abdullah & Ghani, 2014; Hassan et al., 2022; Rahman et al., 2021).

## **5.6 Research Limitations**

All measures were taken to conduct this study with the highest level of standards, but as with all research works, there are a few limitations of this study. It is a cross-sectional study, where the data was collected one time only using self-report questionnaires. The self-report questionnaires are an effective way to measure the variable under study, but they lack the ability to gather participants' viewpoints completely. To overcome this challenge well, established instruments with proven reliability and validity were used in the study. Moreover, the researcher avoided using any single or two-item questionnaire as it has limitations in covering the concept comprehensively.

Initially, the researcher intended to conduct this study on international school teachers as they present a unique set of the population that needs more attention. However, during data collection time, only a few schools agreed to participate in the study, a possible reason could be the Covid-19 effect, as data was collected in 2021. To manage this challenge, the researcher shifted the focus to public primary school teachers in Selangor, Malaysia. The researcher experienced that once the approval was taken from the Ministry of Education, the public schools and teachers from Selangor were very cooperative and appreciative of the researcher's work. It was a boon in disguise as initially the researcher felt perturbed by issues in data collection, but then the shift towards public schools increased the researcher's understanding of the education system in Malaysia and made the data collection procedure

more streamlined and convenient. In this way, the researcher learned how to manage the research journey's roadblocks and stay focused on the process.

In an ideal scenario, it is always desirable and valuable to have a big sample size from a large area using random sampling. However, for this study though the sample size met the G-power criteria and Hair's (2017) recommendation for PLS analysis, the sample was collected from the state of Selangor only using cluster random sampling.

Though not as ideal as random sampling, in cluster random sampling, some randomness of data is retained, which is more desirable than purposive sampling (Cohen et al., 2018). The reason to use the cluster random sampling was that data collection occurred during the Covid-19 times, where the schools were mostly online. The researcher tried data collection during the online phase of schooling using Google forms, however, the response rate from schools and teachers was very low. Therefore, when the schools resumed physically, the research got a small window of time for data collection and hence could do that in Selangor only. Moreover, during that time, the movement control order was in place, which limited people's travel from one state to another. However, as Selangor is one of the most populated states of Malaysia, with a large number of teachers teaching at public primary schools, the sample could adequately represent the teachers' population in Malaysia.

As this is one of a kind of study done in Malaysia, where not many studies have focused on the relationship between PLCs, teachers' CTE, and TJS, it wasn't easy to find many references from the local context. However, adequate references were available from

international literature. This shows the uniqueness and value of this study and proves how this study can benefit other researchers with similar research interests.

### **5.7 Recommendations for Future Studies**

The focus of this study was primary school teachers as PLCs are more effective at primary schools as compared to secondary schools (Gray & Summers, 2015). It will be interesting to see a similar study on secondary school teachers. This will help understand how the difference in school levels can affect the outcomes of PLCs. Also, a cross-cultural analysis by replicating this study on teachers from other countries will be useful in understanding if cultural factors can affect the research findings.

One of the study's limitations was its focus on only teachers from Selangor, Malaysia. It is recommended to have a similar study on a larger population of teachers from other states of Malaysia. This was a cross-section study that collected data one time only. A longitudinal study on this relationship can provide further insight into the relationship between the variables. For longitudinal study before and after study for a professional development program can provide insight into how teachers responded and how their attitude towards professional learning communities changed after participating in the program. Another point to consider could be including teachers' interviews and gaining their insight into PLCs at their school.

One of the main aims of the study was to analyse the relationship between PLCs and CTE. This was based on previous findings that CTE is the most significant factor that contributes to student learning. To understand the relationship better, it is recommended to conduct a

study focusing on the direct effect of the PLCs on student achievement with CTE as the mediator. This will help to know how these variables interact.

Also, the study found an insignificant moderating effect of emotional intelligence for the effect of PLCs on CTE and a negative moderating effect for the effect of PLCs on TJS. A similar study but with different population groups can show whether the findings are relevant to the Malaysian scenario only or they are more general in nature. The sample population for the study was public primary school teachers, however, PLCs are a relevant variable for other fields as well (for example, business organizations, government offices, and hospitals). Future studies can replicate this study with another type of population as well.

## **5.8 Conclusion**

The present study focused on the relationship between PLCs, CTE, job satisfaction, TTC, and emotional intelligence at public primary schools in Selangor, Malaysia. This study was founded on the groundwork laid by previous studies confirming that CTE and job satisfaction are important teacher-level variables that can determine students' learning outcomes (Banerjee et al., 2017; Goddard et al., 2000; Hattie, 2014). This study supported the direct, positive, and significant effect of the PLCs on CTE, as well as on TJS. The presented study is a unique and valuable study that focuses on public primary school teachers in Malaysia, and its findings fill the gap in the research literature in this field (Saidin et al., 2020).

The study presents a possible pathway for the Ministry of Education's goal of improving Malaysian students' learning outcomes and bringing them to par with international

standards. As collective teacher efficacy is the most important contributing factor toward students' academic outcomes (Hattie, 2014), and the study model confirms that PLCs can help strengthen CTE, the government should incorporate this goal when planning and implementing PLCs at schools. The government can help reach these goals by providing financial and personnel aid that can support and strengthen PLCs at public schools in Malaysia.

The study clearly indicates the presence of PLCs at public schools in Selangor, Malaysia, but it is at a moderate level. A collaborative effort from the government, school authorities, management, and teachers are required to have authentic and strong PLCs at schools. Though only a few previous studies have focused on collective teacher efficacy in Malaysia (Saidin et al., 2020), the study findings show moderate collective teacher efficacy at public primary schools, meaning that teachers believe in their and colleagues' ability to change student learning positively. Similarly, the study shows that the teachers have some degree of job satisfaction, which is low but, at the same time, not low to cause worry. Strengthening professional learning communities at schools can enhance teachers' collective efficacy and job satisfaction.

Another important finding from the study was the mediating role of trust in the relationship between PLCs, CTE, and TJS. Trust is the most critical component in all human interactions. In setups that require humans to work together frequently, it is essential that all parties involved can trust each other. Trust allows individuals to be open, vulnerable, receptive, and honest. In the case of schools, if teachers are not trusting of each other, they will hesitate to share their opinions, learning, and thoughts, which can lead to a hostile work environment, competition, and individuality (Tschannen-Moran, 2014). However, an



encouraging finding from this study was the high level of trust among teachers (Hoy, 2004). As trust is an essential mediator for the effect of PLCs on CTE and TJS, investing more time and effort in deepening these trusting relationships can benefit all education stakeholders.

Though the moderating effect of teachers' emotional intelligence was found to be insignificant for the effect of PLCs on CTE, the moderating effect was negative for the effect on TJS, which was an interesting outcome of the study. The findings for the moderating effect show that application and involvement in PLCs are more important for teachers with lower EI. Also, it conveys that the effect of PLCs on CTE is independent of the emotional intelligence levels of the teachers. Therefore, the study professes that PLCs plays an important role in improving CTE (the most critical factor for student learning outcomes). Moreover, incorporating emotional intelligence training for teachers is recommended to help them feel more efficacious in their work and increase satisfaction levels.

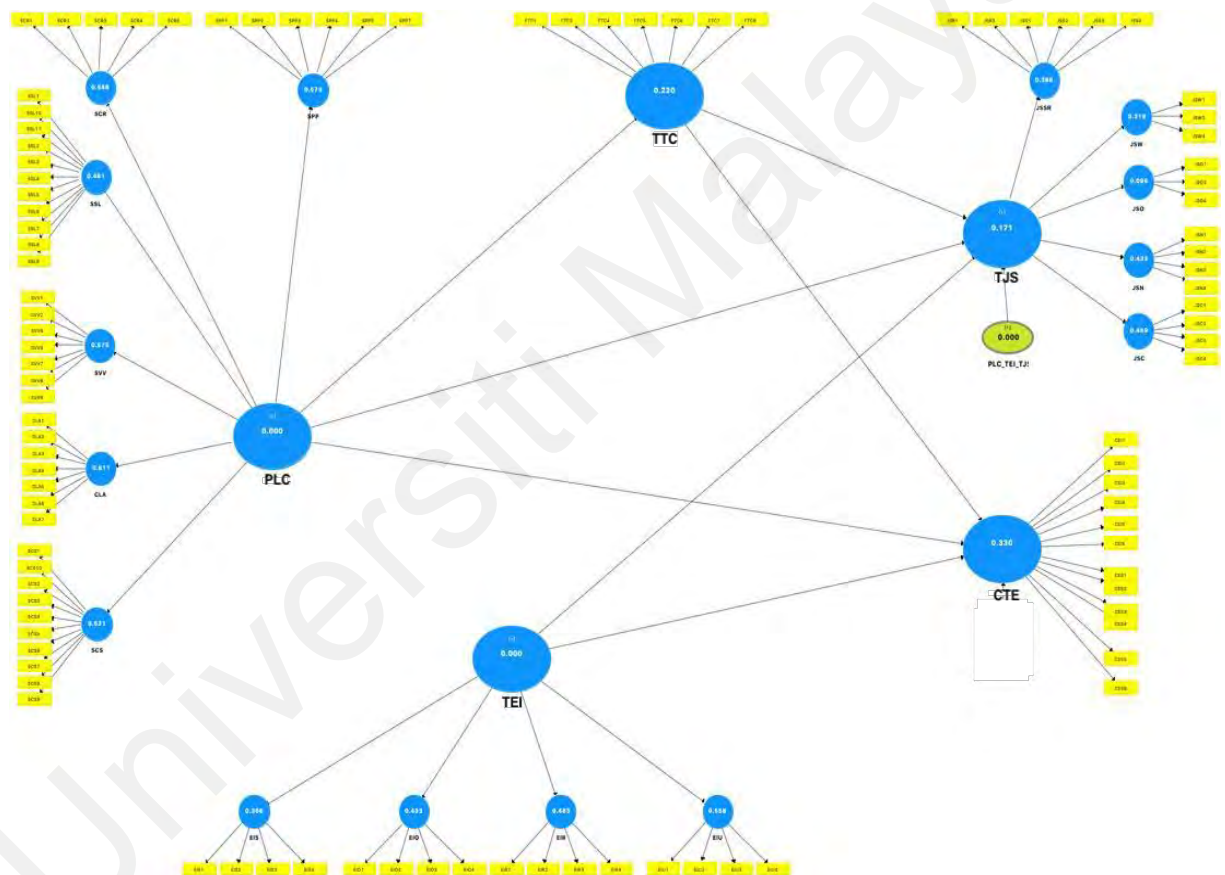
Furthermore, the study's findings confirm the conceptual model prepared and show that it can be used again to repeat similar studies in Malaysia. The conceptual model used Bandura's social cognitive theory (1997) to describe the relationship between the study variables. The relationships between the variables of this study were defined using a solid theoretical concept and were proved by the study's results.

As this was a first-of-its-kind study done in the Malaysian context, the results found little support from literature related to Malaysia. The results of the study find support from other studies done in different Asian and Western countries. Hence, this is a valuable, relevant,

contemporary study that explored the concepts of PLCs, CTE, TJS, TTC, and TEI, a much-needed reference for the Malaysian education field. It has particular significance for the government, schools, and teachers and can help them achieve the goal of high student learning standards.

**Figure 5.1**

*Final Research Model*



**5.8.1 Final Research Model**

The study proposed a model that could be used to explain the importance of PLCs in strengthening CTE and TJS among primary school teachers in Malaysia. In the model, teachers' trust in colleagues was the mediator of the relationship, and emotional intelligence

was the moderator. The model was developed after a diligent and critical review of the past studies and theoretical framework of social cognitive theory by Bandura (1997). The study's statistical analysis confirmed that the proposed model is practical, viable and sustainable.

The model developed confirms that PLCs are indeed an effective means to strengthen CTE among primary school teachers in Malaysia. Researchers across the globe have time and again emphasised that CTE is one of the most critical factors that affect students' learning outcomes (Hattie, 2014; Voelkel, 2022). Nevertheless, previous studies have emphasised the need for more attention to the construct of collective efficacy in Malaysian education research (Saidin et al., 2020). As the MOE in the blueprint expresses the need to improve the academic performance of Malaysian students, it is essential to study the construct of collective efficacy in the Malaysian context and explore the means to strengthen it.

According to the study model, one of the ways to strengthen CTE is the introduction of school-based and teachers-centred PLCs. Educators and researchers have professed that when implementing PLCs, it is essential to have a clear vision and goal in mind (Hord, 1997; Louis et al., 1996). For some schools, these goals can help improve students' academic outcomes, and for some high-performing schools, these goals could aid in maintaining the school's performance. Therefore, as suggested in this study model PLCs can be initiated to strengthen CTE. PLCs provide teachers with on-the-job training, which they use in day-to-day teaching work and see improvements in their teaching abilities and students' learning outcomes. The positive changes in teaching tasks and student learning provide teachers with mastery experiences, an essential source of CTE.

Also, including teachers' opinions and requirements when planning PLCs is essential. When teachers participate in outside learning activities that fulfil their professional goals and see other colleagues reaching desired goals, they gain vicarious learning. Teachers see others benefitting from similar training programs and feel motivated to learn and grow. Vicarious learning is another important source for improving CTE. Similarly, the collaborative and cohesive work environment supported by PLCs works in favour of developing CTE by satisfying sources of social persuasion and affective state.

Moreover, the model shows that PLCs helps in improving job satisfaction among teachers in Malaysia. Previous studies have expressed concerns about stressful work conditions experienced by teachers in Malaysia and the prevalence of overwork because of the top-down PLCs approach being practised (Derk 2019). However, as the study shows, changing PLCs approach from top-down to teacher-centric can help increase teacher job satisfaction. Teacher-centric PLCs helps improve job satisfaction by improving both motivation and hygiene factors related to the job. PLCs core values, such as support from the school principal, leadership opportunities, mutual engagement with colleagues, transparent and equitable job conditions, and smooth flow of communication, help improve teachers' job satisfaction levels.

Furthermore, the study model shows that TTC mediates the effect of PLCs on CTE and TJS. Trust is the social fabric of schools, and teachers' participation in school-based PLCs, engaging in cooperative work relationships, support from colleagues, exchanging honest feedback, and maintaining transparent and honest communication help strengthen trust among colleagues. In a trust-based environment, teachers actively support each other and

know they can rely on colleagues. The supportive and trusting work environment helps strengthen the effects of PLCs on both CTE and TJS.

However, TEI moderated only the effects of PLCs on TJS and not on CTE. The direct effect of TEI was significant for both CTE and TJS. The model shows that emotional intelligence is essential in improving both CTE and TJS. Emotionally intelligent teachers control their emotional responses and can use emotions to handle stressful work conditions and establish meaningful relationships (Mayer et al., 2016). Nevertheless, the interaction effect of TEI with PLCs on CTE was not supported in this study. Also, the study findings showed that the interaction effect of TEI with PLCs on TJS was negative. The negative effect means that school-based PLCs are more helpful for teachers with lower levels of EI to achieve job satisfaction.

Therefore, the model developed in this study explains that school-based and teacher-centric PLCs can help strengthen both CTE and TJS. Also, the effect of PLCs on CTE and TJS is mediated by TTC, and TEI moderates the effect of PLCs on TJS. This model can help MOE, school authorities, teachers, and future researchers design, plan, and implement PLCs. When introducing PLCs, due diligence should be given to the end goals, as what works for one school, one school district, or one state might not be applicable for another. Hence, incorporating teachers' input in planning school-based PLCs is highly recommended as it can help achieve desired goals.

To conclude, this study provides a functionally implementable model which contributes significantly to the Malaysia research literature and education sector. This model is based on proven theories to simplify the complex relationship between the exogenous variables

(PLCs), endogenous variables (CTE and TJS), mediating variable (TTC) and the moderating variable (TEI). This model demonstrates and explains how the change in PLCs at school can positively affect CTE and TJS levels. The model could successfully establish that the total effect of PLCs on CTE and TJS increases in the presence of TTC. Another critical attribute of this model is to show how teachers with different levels of emotional intelligence can benefit from PLCs. The model confirms that PLCs are more beneficial for teachers with low to medium emotional intelligence in experiencing satisfaction from their work. It is a theoretically sound, simple-to-understand, and practical model that can help policymakers, schools, and teachers to design education policies for Malaysia.

## REFERENCES

- Abdullah, Z., & Hui, J. (2014). The relationship between communication satisfaction and teachers' job satisfaction in the Malaysian primary school. *Asian Journal of Humanities and Social Sciences (AJHSS)*, 2(2), 58-71.
- Abdullah, Z. Ghani, A., & Faizal, M. (2014) Professional learning community in secondary schools community in Malaysia. *Journal of Education and Learning*, 8(3), 227-248. <https://pdfs.semanticscholar.org/68c5/9458551e0b539f3a86516ee5b61b403c8f05.pdf>
- Abdullah, M. M., Uli, J. & Parasuraman, B. (2009). Job satisfaction among secondary school teachers. *Jurnal Kemanusiaan*, 13.
- Ackerman, D. V. (2011). *The Impact of Teacher Collaboration in a Professional Learning Community on Teacher Job Satisfaction*. [Doctoral dissertation, Walden University]
- Adams, C.M. (2003). *The effects of school structure and trust on collective teacher efficacy*. [Doctoral dissertation, Oklahoma State University] <https://shareok.org/bitstream/handle/11244/44601/Thesis-2003DA211e.pdf?sequence=1>
- Akhtar, Z., & Khan, A. D. (2019). Relationship between emotional intelligence and job satisfaction of university teachers. *Journal of Educational Research*, 22(1), 17-29.
- Alazmi, A. A., & Hammad, W. (2023). Modeling the relationship between principal leadership and teacher professional learning in Kuwait: The mediating effects of trust and teacher agency. *Educational Management Administration & Leadership*, 51(5), 1141-1160. <https://doi.org/10.1177/174114322110380>
- Alshmemri, M., Shahwan-Akl, L., & Maude, P. (2017). Herzberg's two-factor theory. *Life Science Journal*, 14(5), 12-16. <https://doi.org/10.7537/marslsj140517.03>
- Alzaidiyeen, N. J., Abdullah, A. G. K., & Kuppan, A. (2011). Quality commitment in Malaysia: Mediating role of collective efficacy and moderating role of self-efficacy. *Journal of International Social Research*, 4(16), 191-200.
- Anari, N.N. (2012). Teachers: emotional intelligence, job satisfaction, and organizational commitment. *Journal of Workplace Learning*, 24(4), 256-269. <https://doi.org/10.1108/13665621211223379>
- Ansawi, B., & Pang, V. (2017). The relationship between professional learning community and lesson study: A case study in low performing schools in Sabah, Malaysia. *Sains Humanika*, 9(1-3).
- Armstrong, A. (2012). Build higher levels of job satisfaction. *The Leading Teacher*, 7(6), 4-5. [https://learningforward.org/wpcontent/uploads/2012/05/may12\\_issue.pdf](https://learningforward.org/wpcontent/uploads/2012/05/may12_issue.pdf)

- Arslan, S., & Yigit, M. F. (2016). Investigation of the Impact of emotional intelligence efficacy on teachers' multicultural attitudes. *Journal of Education and Practice*, 7(11), 141-157. <https://files.eric.ed.gov/fulltext/EJ1099455.pdf>
- Atik, S., & Celik, O. T. (2020). An Investigation of the relationship between school principals' empowering leadership style and teachers' job satisfaction: The role of trust and psychological empowerment. *International Online Journal of Educational Sciences*, 12(3). <https://doi.org/10.15345/iojes.2020.03.014>
- Avalos-Bevan, B., & Bascopé, M. (2017). Teacher informal collaboration for professional improvement: Beliefs, contexts, and experience. *Education Research International*, 2017. <https://doi.org/10.1155/2017/1357180>
- Aygün, M. (2021). Analysis of the relationship between job satisfaction and organizational trust of physical education and sports teachers. *Journal of Pedagogical Research*, 5(1), 203-215. <https://doi.org/10.33902/JPR.2021167583>
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148. [https://doi.org/10.1207/s15326985ep2802\\_3](https://doi.org/10.1207/s15326985ep2802_3)
- Bandura, A. (1997). Self-efficacy: The exercise of control (pp. 3-604). New York: W.H. Freeman and Company.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52(1), 1-26.
- Banerjee, N., Stearns, E., Moller, S., & Mickelson, R. A. (2017). Teacher job satisfaction and student achievement: The roles of teacher professional community and teacher collaboration in schools. *American Journal of Education*, 123(2). <https://doi.org/10.1086/689932>
- Bassett-Jones, N., & Lloyd, G. C. (2005). Does Herzberg's motivation theory have staying power? *Journal of Management Development*, 24(10), 929-943. <https://doi.org/10.1108/02621710510627064>
- Bektaş, F., Kılınç, A. Ç., & Gümüş, S. (2022). The effects of distributed leadership on teacher professional learning: mediating roles of teacher trust in principal and teacher motivation. *Educational studies*, 48(5), 602-624.
- Bolam, R., McMahon, A., Stoll, L., Thomas, S., Wallace, M., Greenwood, A., ... & Smith, M. (2005). *Creating and sustaining effective professional learning communities* (Vol. 637). Research report.
- Boyacı, A., Karacabey, M. F., & Bozkuş, K. (2018). The role of organizational trust in the effect of leadership of school administrators on job satisfaction of teachers= Okul Yöneticilerinin Liderliğinin Öğretmenlerin İş Doyumuna Etkisinde Örgütsel



Güvenin Rolü. *Educational Administration: Theory & Practice*, 24(3), 437-482.  
<https://doi.org/10.14527/kuey.2018.011>

Bozman Sr, C. E. (2011). *The effects of principals' leadership styles, teacher efficacy, and teachers' trust in their principals on student achievement*. ProQuest LLC. 789 East Eisenhower Parkway, PO Box 1346, Ann Arbor, MI 48106.

Brewer, E., & McMaha-Landers, J. (2003). The relationship between job stress and job satisfaction of industrial and technical teacher educators. *Journal of Career and Technical Education*, 20(1). <https://doi.org/10.21061/jcte.v20i1.622>

Brewster, C., & Railsback, J. (2003). Building Trusting Relationships for School Improvement: Implications for Principals and Teachers. By Request Series.

Bryk, A. S., & Schneider, B. (2003). Trust in schools: A core resource for school reform. *Educational leadership*, 60(6), 40-45.

Byrne, B. M., & Van de Vijver, F. J. (2010). Testing for measurement and structural equivalence in large-scale cross-cultural studies: Addressing the issue of nonequivalence. *International Journal of Testing*, 10(2), 107-132.  
<https://doi.org/10.1080/15305051003637306>

Capraro, R. M., Capraro, M. M., Scheurich, J. J., Jones, M., Morgan, J., Huggins, K. S., ... & Han, S. (2016). Impact of sustained professional development in STEM on outcome measures in a diverse urban district. *The Journal of Educational Research*, 109(2), 181-196. <https://doi.org/10.1080/00220671.2014.936997>

Carmeli, A. (2003). The relationship between emotional intelligence and work attitudes, behavior and outcomes: An examination among senior managers. *Journal of Managerial Psychology*, 18(8), 788-813.  
<https://doi.org/10.1108/02683940310511881>

Carpenter, B. D., & Sherretz, C. E. (2012). Professional development school partnerships: An instrument for teacher leadership. *School-University Partnerships*, 5(1), 89-101

Casanova, D. C. G., & Azzi, R. G. (2015). Personal and collective efficacy beliefs scales to educators: Evidences of validity. *Psico-USF*, 20(3), 399-409.  
<https://doi.org/10.1590/1413-82712015200303>

Celik, V., & Karakus, M. (2012). Emotional intelligence and affect based job outcomes: A multilevel study on school administrators and teachers. *Energy Education Science and Technology Part B: Social and Educational studies*, 4(3), 1673-1688.

Chakravorty, A., & Singh, P. (2020). Work/family interference and burnout among primary school teachers: the moderating role of emotional intelligence. *Decision*, 47(3), 251-264.

- Chan, C. M., Chang, S. M., Chong, Y. S., & Tang, C. U. (2015). *The influence of job stress, burnout and job satisfaction among primary school teachers in Ipoh* [Doctoral dissertation, UTAR].
- Chen, P., Lee, C. D., Lin, H., & Zhang, C. X. (2016). Factors that develop effective professional learning communities in Taiwan. *Asia Pacific Journal of Education*, 36(2), 248-265. <https://doi.org/10.1080/02188791.2016.1148853>
- Chigeda, F., Ndofirepi, T. M., & Steyn, R. (2022). Continuance in organizational commitment: The role of emotional intelligence, work-life balance support, and work-related stress. *Global Business and Organizational Excellence*, 42(1), 22-38. <https://doi.org/10.1002/joe.22172>
- Chiva, R., & Alegre, J. (2008). Emotional intelligence and job satisfaction: the role of organizational learning capability. *Personnel Review*, 37(6), 680-701. <https://doi.org/10.1108/00483480810906900>
- Choong, Y. O., & Ng, L. P. (2022). The effects of trust on efficacy among teachers: The role of organizational citizenship behaviour as a mediator. *Current Psychology*, 1-14.
- Çoban, Ö., Özdemir, N., & Bellibaş, M. Ş. (2023). Trust in principals, leaders' focus on instruction, teacher collaboration, and teacher self-efficacy: Testing a multilevel mediation model. *Educational Management Administration & Leadership*, 51(1), 95-115. <https://doi.org/10.1177/1741143220968170>
- Cohen, J. (1992): Quantitative methods in psychology: A power primer. In *Psychology Bulletin*.
- Cohen, L., Manion, L., Morrison, K., & Morrison, R. B. (2007). *Research methods in education*. Routledge.
- Colomeischi, A. A., & Colomeischi, T. (2014). Teachers' attitudes towards work in relation with emotional intelligence and self-efficacy. *Procedia-Social and Behavioral Sciences*, 159, 615-619. <https://doi.org/10.1016/j.sbspro.2014.12.435>
- Cranston, J. (2011). Relational trust: The glue that binds a professional learning community. *Alberta Journal of Educational Research*, 57(1), 59-72.
- Creswell, J. W. (2009). Editorial: Mapping the Field of Mixed Methods Research. *Journal of Mixed Methods Research*, 3(2), 95-108. <https://doi.org/10.1177/1558689808330883>
- Creswell, J. W. (2014). *Educational Research: Planning, Conducting*. Pearson Education Limited.

- Curci, A., Lanciano, T., & Soleti, E. (2014). Emotions in the classroom: The role of teachers' emotional intelligence ability in predicting students' achievement. *The American Journal of Psychology*, 127(4), 431-445. <https://doi.org/10.5406/amerjpsyc.127.4.0431>
- Da'as, R. (2021). School principals' skills and teacher absenteeism during Israeli educational reform: Exploring the mediating role of participation in decision-making, trust and job satisfaction. *Journal of Educational Change*, 22(1), 53-84. <https://doi.org/10.1007/s10833-020-09385-0>
- D'Amico, A., Geraci, A., & Tarantino, C. (2020). The relationship between perceived emotional intelligence, work engagement, job satisfaction, and burnout in Italian school teachers: An exploratory study. *Psihologijske Teme*, 29(1), 63-84. <https://doi.org/10.31820/pt.29.1.4>
- Derk, T. N. (2019). Appraising 'professional learning communities'(PLCs) for Malaysian schools through the lens of sociocultural theory: A critical review of literature with implications for research and practice. *Malaysian Journal of ELT Research*, 16(2).
- Dickey, K. A. (2012). *An analysis of the relationship between 3rd grade teachers' emotional intelligence and classroom management styles and implications on student achievement in Title I elementary schools: A correlational study* [Doctoral dissertation, South Carolina State University]. <https://search.proquest.com/openview/199865667d6d84a2fdfe6f98577f7db4/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Donohoo, J. (2018). Collective teacher efficacy research: Productive patterns of behaviour and other positive consequences. *Journal of Educational Change*, 19(3), 323-345. doi: 10.1007/s10833-018-9319-2
- DuFour, R. (2004). What is a "professional learning community"? *Educational leadership*, 61(8), 6-11. <http://www.siprep.org/uploaded/ProfessionalDevelopment/Readings/PLCs.pdf>
- DuFour, R. & Eaker, R. (2009). *Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement*. Bloomington, Indian: Solution Tree Press.
- DuFour, R., & Reason, C. S. (2016). *Professional learning communities at work and virtual collaboration: On the tipping point of transformation*. Solution Tree Press.
- Edinger, S. K., & Edinger, M. J. (2018). Improving teacher job satisfaction: The roles of social capital, teacher efficacy, and support. *The Journal of Psychology*, 152(8), 573-593. <https://doi.org/10.1080/00223980.2018.1489364>
- Edwards-Groves, C., Grootenboer, P., & Ronnerman, K. (2020). Facilitating a culture of relational trust in school-based action research: Recognising the role of middle leaders. In C. Edwards-Groves, A. Olin, & G. Karlberg-Granlund (Eds.), *In Partnership and recognition in action research* (pp. 53-70). Routledge. London.

- Eells, R. J. (2011). Meta-analysis of the relationship between collective teacher efficacy and student achievement. [Doctoral dissertations, Loyola University Chicago]. [https://ecommons.luc.edu/luc\\_diss/133](https://ecommons.luc.edu/luc_diss/133)
- Erdem, M., İlğan, A., & Uçar, H. İ. (2014). Relationship between learning organization and job satisfaction of primary school teachers. *International Online Journal of Educational Sciences*, 6(1). <https://doi.org/10.15345/iojes.2014.01.002>
- Er, E. (2024). The relationship between principal leadership and teacher practice: Exploring the mediating effect of teachers' beliefs and professional learning. *Educational Studies*, 50(2), 166-185. <https://doi.org/10.1080/03055698.2021.1936458>
- Evans, L. (2010). *New Theoretical Perspectives on Job Satisfaction and Motivation: Challenging Herzberg and Linking with Professional Development*. [Paper presentation]. ECER, Helsinki.
- Extremera, N., Mérida-López, S., Sánchez-Álvarez, N., & Quintana-Orts, C. (2018). How does emotional intelligence make one feel better at work? The mediational role of work engagement. *International journal of environmental research and public health*, 15(9), 1909. <https://doi.org/10.3390/ijerph15091909>
- Flood, L. D., & Angelle, P. S. (2017). Organizational influences of collective efficacy and trust on teacher leadership. *International Studies in Educational Administration (Commonwealth Council for Educational Administration & Management (CCEAM))*, 45(3).
- Fong, B. (2015). *Job satisfaction and dissatisfaction factors influencing contract renewal of generation Y and non-generation Y teachers working at international schools in Asia*. [Doctoral Dissertation, Liberty University] <https://digitalcommons.liberty.edu/doctoral/1101/>
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/35622/b1378752.0001.001.pdf>
- Gao, Y., Shi, J., Niu, Q., & Wang, L. (2013). Work–family conflict and job satisfaction: Emotional intelligence as a moderator. *Stress and Health*, 29(3), 222-228. <https://doi.org/10.1002/smi.2451>
- Garivani, F., Devin, H. F., & Farbood, D. (2016). Investigating the relationship between group emotional intelligence with collective self-efficacy and teamwork effectiveness. *Human & Social Studies*, 2, 133-144. <https://doi.org/10.1515/hssr - 2016-0018>
- Gawel, J. E. (1997). Herzberg's theory of motivation and Maslow's hierarchy of needs. *Practical Assessment, Research & Evaluation*, 5(11), 3. <http://PAREonline.net/getvn.asp?v=5&n=11>

- Geer, C. H., & Morrison, J. Q. (2008). The impact of the collective efficacy of a school community on individual professional development outcomes. *Mid Western Educational Researcher*, 21(4).
- Gefen, D., Straub, D., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the association for information systems*, 4(1). <https://doi.org/10.17705/1CAIS.00407>
- Ghavifekr, S., & Pillai, N. S. (2016). The relationship between school's organizational climate and teacher's job satisfaction: Malaysian experience. *Asia Pacific Education Review*, 17(1), 87-106. <https://doi.org/10.1007/s12564-015-9411-8>
- Gil-Flores, J. (2017). The role of personal characteristics and school characteristics in explaining teacher job satisfaction. *Revista de Psicodidáctica (English ed.)*, 22(1), 16-22. <https://doi.org/10.1387/RevPsicodidact.15501>
- Goddard, Y. L., Goddard, R. D., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record*, 109(4), 877-896.
- Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal*, 37(2), 479-507. <https://doi.org/10.3102/00028312037002479>
- Goddard, R. D., Salloum, S. J., & Berebitsky, D. (2009). Trust as a mediator of the relationships between poverty, racial composition, and academic achievement: Evidence from Michigan's public elementary schools. *Educational Administration Quarterly*, 45(2), 292-311. <https://doi.org/10.1177/0013161X08330503>
- Goddard, R. D., Tschannen-Moran, M., & Hoy, W. K. (2001). A multilevel examination of the distribution and effects of teacher trust in students and parents in urban elementary schools. *The Elementary School Journal*, 102(1), 3-17. <https://doi.org/10.1086/499690>
- Goleman, D. (1996). Emotional intelligence. Why it can matter more than IQ. *Learning*, 24(6), 49-50. <https://eric.ed.gov/?id=EJ530121>
- Goleman, D. (1998). *Working with Emotional Intelligence*. Bantam.
- Goleman, D. (2006). *Emotional intelligence*. Bantam
- Gómez-Leal, R., Holzer, A. A., Bradley, C., Fernández-Berrocal, P., & Patti, J. (2022). The relationship between emotional intelligence and leadership in school leaders: A systematic review. *Cambridge Journal of Education*, 52(1), 1-21.
- Görgens-Ekermans, G., & Brand, T. (2012). Emotional intelligence as a moderator in the stress-burnout relationship: a questionnaire study on nurses. *Journal of Clinical Nursing*, 21(15-16), 2275-2285. <https://doi.org/10.1111/j.1365-2702.2012.04171.x>

- Gray, J. A., & Summers, R. (2015). International professional learning communities: The role of enabling school structures, trust, and collective efficacy. *International Education Journal: Comparative Perspectives*, 14(3), 61-75.  
<https://files.eric.ed.gov/fulltext/EJ1086795.pdf>
- Gray, J., Kruse, S., & Tarter, C. J. (2016). Enabling school structures, collegial trust and academic emphasis: Antecedents of professional learning communities. *Educational Management Administration & Leadership*, 44(6), 875-891.  
<https://doi.org/10.1177/1741143215574505>
- Gray, J., Mitchell, R., & Tarter, C. J. (2014). Organizational and relational factors in professional learning communities. *Planning & Changing*, 45.
- Hassan, M., Bin Nadeem, A., & Akhter, A. (2016). Impact of workplace spirituality on job satisfaction: Mediating effect of trust. *Cogent Business & Management*, 3(1), 1189808. <https://doi.org/10.1080/23311975.2016.1189808>
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage publications.
- Hairon, S., & Dimmock, C. (2012). Singapore schools and professional learning communities: Teacher professional development and school leadership in an Asian hierarchical system. *Educational Review*, 64(4), 405-424.  
<https://doi.org/10.1080/00131911.2011.625111>
- Hallam, P., Dulaney, S., Hite, J., Smith, H. (2014). Trust at ground Zero: Trust and collaboration within the professional learning community. In: Van Maele, D., Forsyth, P., Van Houtte, M. (Eds), *Trust and School Life* (pp. 145-70). Springer, Dordrecht. [https://doi.org/10.1007/978-94-017-8014-8\\_7](https://doi.org/10.1007/978-94-017-8014-8_7)
- Hanafi, W. N., Mohamad, M., & Hanapiyah, Z. (2017). Measuring the influence of emotional intelligence towards teacher job performance. *International Journal of Business Management*, 2(7), 15-27.
- Hardin, J. (2010). *A study of social cognitive theory: The relationship between professional learning communities and collective teacher efficacy in international school settings*. Capella University.
- Hargreaves, E., Berry, R., Lai, Y. C., Leung, P., Scott, D., & Stobart, G. (2013). Teachers' experiences of autonomy in continuing professional development: Teacher learning communities in London and Hong Kong. *Teacher development*, 17(1), 19-34.  
<https://doi.org/10.1080/13664530.2012.748686>
- Hassan, M. A. A., Hashim, Z., Ishak, R., & Mukhter, M. S. (2022). A review of exploratory factor analysis (EFA) of professional learning community in primary schools in Malaysia. *Jurnal ILMI*, 11(1), 34-42.

- Hassan, M. A. A., Musa, K., Hashim, Z., & Habidin, N. F. (2020). Implementation Of professional learning community among teachers in Malaysia. *International Journal of Education, Psychology and Counselling (IJEPC)*, 5(34), 137-146.
- Hassan, R., Ahmad, J., & Boon, Y. (2019). Instructional leadership practice and professional learning community in the southern zone of Malaysia. *Universal Journal of Educational Research*, 7(12A), 42-50.
- Hassan, S. N. S., Robani, A., & Bokhari, M. (2015). Elements of self-awareness reflecting teachers' emotional intelligence. *Asian Social Science*, 11(17), 109.
- Hattie, J. (2011). *Visible Learning for Teachers: Maximizing Impact on Learning* (1<sup>st</sup> ed.). Routledge. <https://doi.org/10.4324/9780203181522>
- Hattie, J. (2015). The applicability of Visible Learning to higher education. *Scholarship of Teaching and Learning in Psychology*, 1(1), 79-91.
- Hee, O. C., Shukor, M. F. A., Ping, L. L., Kowang, T. O., & Fei, G. C. (2019). Factors influencing teacher job satisfaction in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 9(1), 1166-1174.
- Henseler, J., Ringle, C.M. & Sarstedt, M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science* 43, 115–135 (2015). <https://doi.org/10.1007/s11747-014-0403-8>
- Herzberg, F. (1959). *Motivation to Work*. Routledge.
- Herzberg, F. (1965). The motivation to work among Finnish supervisors. *Personnel Psychology*. <https://doi.org/10.1111/j.1744-6570.1965.tb00294.x>
- Herzberg, F. (1974). Motivation-hygiene profiles: Pinpointing what ails the organization. *Organizational dynamics*, 3(2), 18-29. [https://doi.org/10.1016/0090-2616\(74\)90007-2](https://doi.org/10.1016/0090-2616(74)90007-2)
- Hickman, C., & Jureia, A. E. (2017). *An analysis of the relationship of the emotional intelligence of special education teachers and special education student achievement*. ProQuest LLC. <https://eric.ed.gov/?id=ED582520>
- Hidayat, R., & Elizabeth Patras, Y. (2022). The Effect of Organizational Trust and Job Satisfaction on Teachers' Organizational Citizenship Behaviour in Private Senior High Schools. *Jurnal Manajemen Pendidikan Islam*, 6(04), 1049-1063.
- Hipp, K. K., & Huffman, J. B. (2003). Professional Learning Communities: Assessment—Development--Effects. ERIC. <https://eric.ed.gov/?id=ED482255>
- Hipp, K. K., Huffman, J. B., Pankake, A. M., & Olivier, D. F. (2008). Sustaining professional learning communities: Case studies. *Journal of Educational Change*, 9(2), 173-195. <https://doi.org/10.1007/s10833-007-9060-8>

- Hjertø, K. B., & Paulsen, J. M. (2017). Learning outcomes in leadership teams: The multilevel dynamics of mastery goal orientation, team psychological safety, and team potency. *Human Performance, 30*(1), 38-56. <https://doi.org/10.1080/08959285.2016.1250765>
- Ho, D., Lee, M., & Teng, Y. (2016). Exploring the relationship between school-level teacher qualifications and teachers' perceptions of school-based professional learning community practices. *Teaching and Teacher Education, 54*, 32-43. <https://doi.org/10.1016/j.tate.2015.11.005>
- Ho, R. (2006). *Handbook of Univariate and Multivariate Data Analysis and Interpretation with SPSS* (1st ed.). Chapman and Hall/CRC. <https://doi.org/10.1201/9781420011111>
- Hogg, T. S. (2013). *Teacher trust in leadership, professional learning community, and student achievement: An analysis of statewide survey data*. University of Missouri-Columbia.
- Hord, S.M. (1997). Professional learning communities: Communities of continuous inquiry and improvement. ERIC, 1-72. <https://eric.ed.gov/?id=ED410659>
- Hord, S. M. (2009). Professional learning communities. *Journal of staff development, 30*(1), 40-43.
- Hord, S. M., Abrego, J., Moller, G., Olivier, D. F., Pankake, A. M., & Roundtree, L. (2010). *Demystifying professional learning communities: School leadership at its best*. R&L Education.
- Hosseingholizadeh, R., Amrahi, A., & El-Farr, H. (2020). Instructional leadership, and teacher's collective efficacy, commitment, and professional learning in primary schools: a mediation model. *Professional Development in Education, 1*-18.
- House, R. J., & Wigdor, L. A. (1967). Herzberg's dual-factor theory of job satisfaction and motivation: A review of the evidence and a criticism. *Personnel Psychology, 20*(4), 369-390. <https://doi.org/10.1111/j.1744-6570.1967.tb02440.x>
- Hoxby, C. M. (2003). School choice and school productivity. Could school choice be a tide that lifts all boats? In *The economics of school choice* (pp. 287-342). University of Chicago Press.
- Hoy, W.K. & Tschannen-moran, M. (2003). Omnibus T-scale. <https://www.waynehoy.com/faculty-trust/>
- Hoy, W. K., Gage III, C. Q., & Tarter, C. J. (2006). School mindfulness and faculty trust: Necessary conditions for each other? *Educational Administration Quarterly, 42*(2), 236-255. <https://doi.org/10.1177/0013161X04273844>



- Hsu, P. C., Thuy, T. T. H., & Chen, R. S. (2021). Female preschool teachers' perceptions of mobile communities and teacher self-efficacy for professional development: The mediating effects of trust and interaction via mobile apps. *The Asia-Pacific Education Researcher*, 31, 1-8. <https://doi.org/10.1007/s40299-020-00545-7>
- Huang, T. H., Ting, S. C., & Chen, B. C. (2021). The Impacts of Principal's Transformational Leadership and Environmental Obstacles on Teachers' Job Satisfaction: The Mediation of Professional Learning Community. *Education Journal*, 49(2), 191-215.
- Idi, V. J. A., Abdullah, Z., & Kenayathulla, H. B. (2021). A review of empirical research on professional learning communities in Malaysia (2010-2020): Findings and themes. *Geografia-Malaysian Journal of Society & Space*, 17(2), 176-190.
- Ignat, A. A., & Clipa, O. (2012). Teachers' satisfaction with life, job satisfaction and their emotional intelligence. *Procedia-Social and Behavioral Sciences*, 33, 498-502. <https://doi.org/10.1016/j.sbspro.2012.01.171>
- Ismail, K., Ishak, R., & Kamaruddin, S. H. (2020). Professional learning communities in Malaysian schools: A contemporary literature review. *Universal Journal of Educational Research*, 8(4), 1535-1541. <https://doi.org/10.13189/ujer.2020.080447>
- Ismail, K., Ishak, R., & Kamaruddin, S. H. (2022). Validating professional learning communities practice model in a Malaysian context. *European Journal of Educational Research*, 11(1), 393-402. <https://doi.org/10.12973/eu-jer.11.1.393>
- Ismail, K., Nopiah, Z. M., & Rasul, M. S. (2020). Emotional intelligence and work performance among vocational teachers. *Journal of Technical Education and Training*, 12(3), 106-117.
- Ismail, S. N., Abdullah, Z., & Mustapha, R. (2019). The practice of professional learning community in trust schools, transformation schools and high performing schools in Selangor Malaysia. *International Journal of Advanced Science and Technology*, 28(16), 1853-1868.
- Jackson, C. W. (2008). *An analysis of the emotional intelligence and personality of principals leading professional learning communities*. University of North Texas. <https://pdfs.semanticscholar.org/eb67/5bcb17edfd85ed222531eb86dcf22b4d2378.pdf>
- Jafar, M. F., Yaakob, M. F. M., Awang, H., Zain, F. M., & Kasim, M. (2022). Disentangling the toing and froing of professional learning community implementation by reconnecting educational policy with school culture. *International Journal of Instruction*, 15(2).
- Jusoh, R. (2012). Job satisfaction of new teachers in Malaysia: Understanding challenges and experiences of leaving the profession [Doctoral dissertation, Colorado State University].

- Kabilan, M. K., & Veratharaju, K. (2013). Professional development needs of primary school English-language teachers in Malaysia. *Professional development in education, 39*(3), 330-351.
- Kalkan, F. (2016). Relationship between professional learning community, bureaucratic structure and organisational trust in primary education schools. *Educational Sciences: Theory & Practice, 16*(5). <https://doi.org/10.12738/estp.2016.5.0022>
- Karacabey, M. F., Bellibaş, M. Ş., & Adams, D. (2022). Principal leadership and teacher professional learning in Turkish schools: Examining the mediating effects of collective teacher efficacy and teacher trust. *Educational Studies, 48*(2), 253-272. <https://doi.org/10.1080/03055698.2020.1749835>
- Kareem, O. A. (2020). Professional learning communities in Peninsular Malaysia: comparing day secondary school and national religious secondary school.
- Katz, J. (2015). Implementing the three block model of universal design for learning: Effects on teachers' self-efficacy, stress, and job satisfaction in inclusive classrooms K-12. *International Journal of Inclusive Education, 19*(1), 1-20. <https://doi.org/10.1080/13603116.2014.881569>
- Khan, M. H., Razak, A. Z. A., & Kenayathulla, H. B. (2021). Professional learning community, trust, and teacher professional development in Malaysian secondary schools. Komuniti Pembelajaran Profesional, kepercayaan, dan perkembangan profesional guru di sekolah menengah di Malaysia, *Jurnal Pendidikan Malaysia 46*(1), 25-37. <http://dx.doi.org/10.17576/JPEN-2021-46.01-03>
- Khany, R., & Tazik, K. (2016). On the relationship between psychological empowerment, trust, and Iranian EFL teachers' job satisfaction: The case of secondary school teachers. *Journal of Career Assessment, 24*(1), 112-129. <https://doi.org/10.1177/1069072714565>
- Khalid, F., Joyes, G., Ellison, L., & Karim, A. (2013). Teachers' involvement in communities of practice: An implication with regard to the current approach of teachers' professional development in Malaysia. *Asian Social Science, 9*(16), 102.
- Khor, P. (2019). The public school system: Moving forward together. *Malaysiakini*. <https://www.malaysiakini.com/news/490237>
- Khun-inkeeree, H., Yaakob, M. F. M., WanHanafi, W., Yusof, M. R., & Omar-Fauzee, M.S. (2021). Working on perception of primary school teacher on organizational climate and their job satisfactions. *International Journal of Instruction, 14*(3), 567-582. <https://doi.org/10.29333/iji.2021.14333a>
- Kin, T. M. (2020). Examining professional learning communities in national-type Chinese primary schools in Perak, Malaysia.

- Klassen, R. M., Usher, E. L., & Bong, M. (2010). Teachers' collective efficacy, job satisfaction, and job stress in cross-cultural context. *The Journal of Experimental Education*, 78(4), 464-486. <https://doi.org/10.1080/00220970903292975>
- Klassen, R. M., Tze, V. M., Betts, S. M., & Gordon, K. A. (2011). Teacher efficacy research 1998–2009: Signs of progress or unfulfilled promise?. *Educational Psychology Review*, 23(1), 21-43. <https://doi.org/10.1007/s10648-010-9141-8>
- Konrad, S. Č., & Gabrijelčič, M. K. (2014). The importance of emotional intelligence in a teacher's professional development. *2014 letnik* 29, 13.
- Kouhsari, M., Chen, J., & Amirian, S. K. (2022). The effect of principal emotional intelligence on teacher performance: mediating roles of organizational Trust and professional learning Community. *Leadership and Policy in Schools*, 1-15.
- Krishnan, H., & Awang, S. R. (2020). Role of emotional intelligence in teaching. *Jurnal Kemanusiaan*.
- Kruse, S.D., Louis, K.S. (1993). An emerging framework for analyzing school-based professional community. <https://eric.ed.gov/?id=ED358537>
- Kruse, S., Louis, K. S., & Bryk, A. (1994). Building professional community in schools. *Issues in restructuring schools*, 6(3), 67-71.
- Kurland, H., & Hasson-Gilad, D. R. (2015). Organizational learning and extra effort: The mediating effect of job satisfaction. *Teaching and Teacher Education*, 49, 56-67. <https://doi.org/10.1016/j.tate.2015.02.010>
- Kumar, R. (2018). Research methodology: A step-by-step guide for beginners. Sage.
- Lam, B. H., & Yan, H. F. (2011). Beginning teachers' job satisfaction: The impact of school-based factors. *Teacher Development*, 15(3), 333-348. <https://doi.org/10.1080/13664530.2011.608516>
- Law, Kenneth S., Chi-Sum Wong, and Lynda J. Song (2004). The construct and criterion validity of emotional intelligence and its potential utility for management studies. *Journal of Applied Psychology* 89(3) 483. <https://doi.org/10.1037/0021-9010.89.3.483>
- Lazenby, S., McCulla, N., & Marks, W. (2022). The further professional development of experienced principals. *International Journal of Leadership in Education*, 25(4), 533-547.
- Lee, J. C. K., Zhang, Z., & Yin, H. (2011). A multilevel analysis of the impact of a professional learning community, faculty trust in colleagues and collective efficacy on teacher commitment to students. *Teaching and Teacher Education*, 27(5), 820-830. <https://doi.org/10.1016/j.tate.2011.01.006>

- Lee, Y. H., Kwon, H. H., & Richards, K. A. R. (2019). Emotional intelligence, unpleasant emotions, emotional exhaustion, and job satisfaction in physical education teaching. *Journal of Teaching in Physical Education, 38*(3), 262-270. <https://doi.org/10.1123/jtpe.2018-0177>
- Lee, Y. H., R. Richards, K. A., & Washburn, N. S. (2020). Emotional intelligence, job satisfaction, emotional exhaustion, and subjective well-being in high school athletic directors. *Psychological Reports, 123*(6), 2418–2440. <https://doi.org/10.1177/0033294119860254>
- Li, M., Pérez-Díaz, P. A., Mao, Y., & Petrides, K. V. (2018). A multilevel model of teachers' job performance: Understanding the effects of trait emotional intelligence, job satisfaction, and organizational trust. *Frontiers in Psychology, 9*, 2420. <https://doi.org/10.3389/fpsyg.2018.02420>
- Li, T., Saklofske, D. H., Bowden, S. C., Yan, G., & Fung, T. S. (2012). The measurement invariance of the Wong and Law Emotional Intelligence Scale (WLEIS) across three Chinese university student groups from Canada and China. *Journal of Psychoeducational Assessment, 30*(4), 439-452. <https://doi.org/10.1177/0734282912449449>
- Libbrecht, N., Beuckelaer, A. D., Lievens, F., & Rockstuhl, T. (2014). Measurement invariance of the Wong and Law emotional intelligence scale scores: Does the measurement structure hold across Far Eastern and European countries? *Applied Psychology, 63*(2), 223-237. <https://doi.org/10.1111/j.1464-0597.2012.00513.x>
- Lindahl, C. (2014). *School leadership, trust and teacher job satisfaction. Is it a potential strategy for raising student achievement* [Doctoral dissertation, The Florida State University]. ProQuest Dissertations and Theses Global <https://doi.org/103.18.0.17>
- Ling, T. P., Pihie, Z. A. L., Asimirin, S., & Fooki, F. S. (2015). The influence of transformational school leadership on teacher efficacy in Malaysian secondary school teachers. *International Journal of Social Science Research, 3*(2), 73-85.
- Little, J. W. (2012). Professional community and professional development in the learning-centered school. In *Teacher learning that matters* (pp. 42-64). Routledge.
- Loughland, T., & Nguyen, H. T. (2020). Using teacher collective efficacy as a conceptual framework for teacher professional learning—A case study. *Australian Journal of Education, 64*(2), 147-160. <https://doi.org/10.1177/00049441209089>
- Loughland, T., & Ryan, M. (2020). Beyond the measures: the antecedents of teacher collective efficacy in professional learning. *Professional Development in Education, 48*(2), 343-352. <https://doi.org/10.1080/19415257.2020.1711801>
- Louis, K. S., & Marks, H. M. (1998). Does professional community affect the classroom? Teachers' work and student experiences in restructuring schools. *American Journal of Education, 106*(4), 532-575.

- Louis, K. S., Marks, H. M., & Kruse, S. (1996). Teachers' professional community in restructuring schools. *American Educational Research Journal*, 33(4), 757-798. <https://doi.org/10.3102/00028312033004757>
- Lu Q and Mustafa Z (2021) Toward the impact of EFL teachers' self-efficacy and collective efficacy on students' engagement. *Front. Psychol.* 12:744586. doi: 10.3389/fpsyg.2021.744586
- Ma, L., Resendes, M., Scardamalia, M., & Dobbie, K. (2019). The knowledge building network pilot project: An exploration of emergent designs to enhance collective teacher efficacy. <https://repository.isls.org/handle/1/4509>
- Madigan, D. J., & Kim, L. E. (2021). Towards an understanding of teacher attrition: A meta-analysis of burnout, job satisfaction, and teachers' intentions to quit. *Teaching and Teacher Education*, 105, 103425. <https://doi.org/10.1016/j.tate.2021.103425>
- Mansor, A. N., Abdullah, R., & Jamaludin, K. A. (2021). The influence of transformational leadership and teachers' trust in principals on teachers' working commitment. *Humanities and Social Sciences Communications*, 8(1), 1-9. <https://doi.org/10.1057/s41599-021-00985-6>
- Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27(4), 267-298. [https://doi.org/10.1016/S0160-2896\(99\)00016-1](https://doi.org/10.1016/S0160-2896(99)00016-1)
- Mayer, J. D., Caruso, D. R., & Salovey, P. (2016). The ability model of emotional intelligence: Principles and updates. *Emotion Review*, 8(4), 290-300. <https://doi.org/10.1177/1754073916639667>
- Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Emotional Intelligence: Theory, findings, and implications. *Psychological Inquiry*, 15(3), 197-215. [https://doi.org/10.1207/s15327965pli1503\\_02](https://doi.org/10.1207/s15327965pli1503_02)
- Mayer, J. D., Salovey, P., Caruso, D. R., & Sitarenios, G. (2001). Emotional intelligence as a standard intelligence.
- Mei Kin, T., & Abdull Kareem, O. (2021). An Analysis on the implementation of professional learning communities in Malaysian secondary schools. *Asian Journal of University Education*, 17(1), 192-206.
- Mérida-López, S., Bakker, A. B., & Extremera, N. (2019). How does emotional intelligence help teachers to stay engaged? Cross-validation of a moderated mediation model. *Personality and Individual Differences*, 151, 109393.
- Mérida-López, S., & Extremera, N. (2017). Emotional intelligence and teacher burnout: A systematic review. *International Journal of Educational Research*, 85, 121-130. <https://doi.org/10.1016/j.ijer.2017.07.006>

- Mérida-López, S., & Extremera, N. (2020). The interplay of emotional intelligence abilities and work engagement on job and life satisfaction: Which emotional abilities matter most for secondary-school teachers? *Frontiers in Psychology, 11*, 563634. <https://doi.org/10.3389/fpsyg.2020.563634>
- Mérida-López, S., & Extremera, N. (2020). When pre-service teachers' lack of occupational commitment is not enough to explain intention to quit: Emotional intelligence matters!. *Revista de Psicodidáctica (English ed.)*, 25(1), 52-58. <https://doi.org/10.1016/j.psicoe.2019.05.001>
- Mérida-López, S., Sánchez-Gómez, M., & Extremera, N. (2020). Leaving the teaching profession: Examining the role of social support, engagement and emotional intelligence in teachers' intentions to quit. *Psychosocial Intervention, 29*(3), 141-151.
- Ministry of Education. (n.d.). *Education*. <https://www.moe.gov.my/en/education>.
- Ministry of Education. (2015). Executive Summary Malaysia Education Blueprint 2013-2025 (Preschool to Post-Secondary Education). [online] [http://www.moe.gov.my/cms/upload\\_files/articlefile/2013/articlefile\\_file\\_003114.pdf](http://www.moe.gov.my/cms/upload_files/articlefile/2013/articlefile_file_003114.pdf)
- Mohamad, M., & Jais, J. (2016). Emotional intelligence and job performance: A study among Malaysian teachers. *Procedia Economics and Finance, 35*, 674-682. [https://doi.org/10.1016/S2212-5671\(16\)00083-6](https://doi.org/10.1016/S2212-5671(16)00083-6)
- Moller, S., Mickelson, R. A., Stearns, E., Banerjee, N., & Bottia, M. C. (2013). Collective pedagogical teacher culture and mathematics achievement: Differences by race, ethnicity, and socioeconomic status. *Sociology of Education, 86*(2), 174-194. <https://doi.org/10.1177/0038040712472911>
- Moolenaar, N. M., Slegers, P. J., & Daly, A. J. (2012). Teaming up: Linking collaboration networks, collective efficacy, and student achievement. *Teaching and Teacher Education, 28*(2), 251-262. <https://doi.org/10.1016/j.tate.2011.10.001>
- Moore, B. (2009). Emotional intelligence for school administrators: a priority for school reform? *American Secondary Education, 20*-28. <http://www.jstor.org/stable/41406313>
- Morrissey, M. S. (2000). Professional learning communities: An ongoing exploration. <http://egusdsecondaryed.pbworks.com/f/PLCs+An+Ongoing+Exploration.pdf>
- Mu, G. M., Liang, W., Lu, L., & Huang, D. (2018). Building pedagogical content knowledge within professional learning communities: An approach to counteracting regional education inequality. *Teaching and Teacher Education, 73*, 24-34. <https://doi.org/10.1016/j.tate.2018.03.006>

- Muñoz, M. A., & Branham, K. E. (2016). Professional learning communities focusing on results and data-use to improve student learning: The right implementation matters. *Planning & Changing, 47*.
- Murphy-Graham, E., & Lample, J. (2014). Learning to trust: Examining the connections between trust and capabilities friendly pedagogy through case studies from Honduras and Uganda. *International Journal of Educational Development, 36*, 51-62. <https://doi.org/10.1016/j.ijedudev.2014.01.001>
- Musah, M. B., Rahman, R. E. A., Tahir, L. M., Al-Hudawi, S. H. V., & Daud, K. (2018). Headteacher-teacher relationship and its effect on teacher's trust in Malaysian high performing schools. *International Journal of Educational Management, 32*(3), 479-497.
- Mustafa, M. Z., Buntat, Y., Razzaq, A. R. A., Daud, N., & Ahad, R. (2014). Emotional intelligent and job satisfaction among technical and vocational teachers: A case study on Malaysia southern zone technical and vocational college. *Business Management Dynamics, 3*(9), 1.
- Mustaffa, S., Nasir, Z., Aziz, R., & Mahmood, M. N. (2013). Emotional intelligence, skills competency and personal development among counselling teachers. *Procedia-Social and Behavioral Sciences, 93*, 2219-2223. <https://doi.org/10.1016/j.sbspro.2013.10.191>
- Naderi Anari, N. (2012). Teachers: emotional intelligence, job satisfaction, and organizational commitment. *Journal of Workplace Learning, 24*(4), 256-269. <https://doi.org/10.1108/13665621211223379>
- Nasra, M. A., & Heilbrunn, S. (2016). Transformational leadership and organizational citizenship behavior in the Arab educational system in Israel: The impact of trust and job satisfaction. *Educational Management Administration & Leadership, 44*(3), 380-396. <https://doi.org/10.1177/174114321454997>
- Neghabi, S., Yousefi, M., & Rezvani, M. (2011). Emotional intelligence and entrepreneurial behavior; development of personal aspects of intentions model. *Proceedings of the International Conference on Information and Finance, 21*, 27-31. IACSIT Press.
- Ninković, S., Florić, O. K., & Đorđić, D. (2022). The effect of teacher trust in colleagues on collective teacher efficacy: Examining the mediating role of the characteristics of professional learning communities. *Teaching and Teacher Education, 119*, 103877. <https://doi.org/10.1016/j.tate.2022.103877>
- Olivier, D. F., & Hipp, K. K. (2006). Leadership capacity and collective efficacy: Interacting to sustain student learning in a professional learning community. *Journal of School Leadership, 16*(5), 505-519. <https://doi.org/10.1177/105268460601600504>

- Olivier, D. F., Hipp, K. K., & Huffman, J. B. (2010). Assessing and analysing schools as professional learning communities. *Demystifying Professional Learning Communities: School Leadership at its Best*. Lanham, MD: Rowman & Littlefield Education.
- Olivier, D. F., Hipp, K. K., & Huffman, J. B. (2010). Professional learning community assessment-revised. *Demystifying Professional Learning Communities: School leadership at its best*. Lanham, MD: Rowman & Littlefield Education.
- Olivier, D. F., & Huffman, J. B. (2016). Professional learning community process in the United States: Conceptualization of the process and district support for schools. *Asia Pacific Journal of Education*, 36(2), 301-317. <https://doi.org/10.1080/02188791.2016.1148856>
- Ouellette, R. R., Frazier, S. L., Shernoff, E. S., Cappella, E., Mehta, T. G., Mariñez, Lora, A., ... & Atkins, M. S. (2018). Teacher job stress and satisfaction in urban schools: Disentangling individual-, classroom-, and organizational level influences. *Behavior Therapy*, 49(4), 494-508. <https://doi.org/10.1016/j.beth.2017.11.011>
- Peláez-Fernández MA, Mérida-López S, Sánchez-Álvarez N and Extremera N (2021) Managing Teachers' Job Attitudes: The Potential Benefits of Being a Happy and Emotional Intelligent Teacher. *Front. Psychol.* 12:661151. doi:10.3389/fpsyg.2021.661151
- Perera, L. D. H., & Asadullah, M. N. (2019). Mind the gap: What explains Malaysia's underperformance in Pisa? *International Journal of Educational Development*, 65, 254-263. <https://doi.org/10.1016/j.ijedudev.2018.08.010>
- Pierce, S. (2014). Examining the relationship between collective teacher efficacy and the emotional intelligence of elementary school principals. *Journal of School Leadership*, 24(2), 311-335. <https://doi.org/10.1177/1052684614024002>
- Pietarinen, J., Pyhältö, K., Soini, T., & Salmela-Aro, K. (2013). Reducing teacher burnout: A socio-contextual approach. *Teaching and Teacher Education*, 35, 62-72. <https://doi.org/10.1016/j.tate.2013.05.003>
- Platsidou, M. (2010). Trait emotional intelligence of Greek special education teachers in relation to burnout and job satisfaction. *School Psychology International*, 31(1), 60-76. <https://doi.org/10.1177/0143034309360436>
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531-544. <https://doi.org/10.1177/01492063860120040>
- Polatcan, M., & Cansoy, R. (2019). Examining Studies on the Factors Predicting Teachers' Job Satisfaction: A Systematic Review. *International Online Journal of Education and Teaching*, 6(1), 116-134.



- Pyhältö, K., Pietarinen, J., & Soini, T. (2015). Teachers' professional agency and learning—from adaption to active modification in the teacher community. *Teachers and Teaching*, 21(7), 811-830. <https://doi.org/10.1080/13540602.2014.995483>
- Rahman, N. L. A., Mokhtar, M., & Ali, D. F. (2021). 21st Century Professional Learning for Teachers in Malaysia. Editorial Board ICTLD 2021 Proceedings.
- Rashid, A. R. A., & Latif, S. A. (2021). The relationship between distributive leadership and teachers' collective efficacy. *International Journal of Academic Research in Business and Social Sciences*, 11(6), 1–12.
- Rauf, P. A., Ali, S. K. S., & Noor, N.A. M. (2017). The relationship between models of teachers professional development and teachers' instructional practices in the classrooms in the primary schools in the state of Selangor, Malaysia. *International Journal of Education, Psychology and Counseling*, 2(5), 120-132.
- Rauf, P. A., Ali, S. K. S., Aluwi, A., & Noor, N. A. M. (2018). The effect of school culture on the management of professional development in secondary schools in Malaysia. *MOJES: Malaysian Online Journal of Educational Sciences*, 2(3), 41-52.
- Razali, M., Hamid, A. H. A., & Mansor, A. (2022). Professional learning communities in the context of small school in Malaysia: A preliminary survey. *Journal of Positive School Psychology*, 1838-1853.
- Reeves, P. M., Pun, W. H., & Chung, K. S. (2017). Influence of teacher collaboration on job satisfaction and student achievement. *Teaching and Teacher Education*, 67, 227-236. <https://doi.org/10.1016/j.tate.2017.06.016>
- Ritz, R., Burris, S., Brashears, T., & Frazee, S. (2013). The effects of a time management professional development seminar on stress and job satisfaction of beginning Agriscience teachers in West Texas. *Journal of Agricultural Education*, 54(3), 1-14. <https://doi.org/10.5032/jae.2013.03001>
- Robertson, D. S. (2011). *The relationship of teachers' perceptions of collective efficacy and perceptions of professional learning communities*. [Doctoral dissertation, Gardner-Webb University]. ProQuest Dissertations and Theses Global.
- Rogowska, A. M., & Meres, H. (2022). The Mediating role of job satisfaction in the relationship between emotional intelligence and life satisfaction among teachers during the COVID-19 Pandemic. *European Journal of Investigation in Health, Psychology and Education*, 12(7), 666-676. <https://doi.org/10.3390/ejihpe12070050>
- Ross, J. A., Hogaboam-Gray, A., & Gray, P. (2004). Prior student achievement, collaborative school processes, and collective teacher efficacy. *Leadership and Policy in Schools*, 3(3), 163-188. <https://doi.org/10.1080/15700760490503689>\$16.00

- Roth, S. M. (2014). Improving teaching effectiveness and student learning through the use of faculty learning communities. *Kinesiology Review*, 3(4), 209-216. <https://doi.org/10.1123/kr.2014-0059>
- Ruth, D. (2014). Teaching strategy: Reflections on professional practice. *Teaching in Higher Education*, 19(3), 254-265. <https://doi.org/10.1080/13562517.2013.860100>
- Saad, K. A. (2019). Peer coaching in Malaysia: Exploring the implementation of a professional learning communities programme for arabic language secondary school teachers. [Doctoral dissertation, Liverpool John Moores University] ProQuest Dissertations and Theses Global.
- Saad, K. A., Walsh, B. A., Mallaburn, A., & Brundrett, M. (2017). Exploring the implementation of A professional learning communities in Malaysian schools. *International Journal of Education, Psychology and Counselling*, 2(5), 1-18.
- Sahito, Z., & Vaisanen, P. (2020). A literature review on teachers' job satisfaction in developing countries: Recommendations and solutions for the enhancement of the job. *Review of Education*, 8(1), 3-34. <https://doi.org/10.1002/rev3.3159>
- Saidin, K., Yaacob, A., & Nasir, N. S. A. (2020). Collective efficacy and teacher collective efficacy. *Oxford Research Encyclopedia of Education*. <https://doi.org/10.1093/acrefore/9780190264093.013.667>
- Salami, S. O. (2010). Conflict resolution strategies and organizational citizenship behavior: The moderating role of trait emotional intelligence. *Social Behavior and Personality: An International Journal*, 38(1), 75-86. <https://doi.org/10.2224/sbp.2010.38.1.75>
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality*, 9(3), 185-211. <https://doi.org/10.2190/DUGG-P24E-52WK-6CDG>
- Salovey, P. E., & Sluyter, D. J. (1997). *Emotional development and emotional intelligence: Educational implications*. Basic Books.
- Schneider, T. R., Lyons, J. B., & Khazon, S. (2013). Emotional intelligence and resilience. *Personality and Individual Differences*, 55(8), 909-914. <https://doi.org/10.1016/j.paid.2013.07.460>
- Schwabsky, N., Erdogan, U., & Tschannen-Moran, M. (2020). Predicting school innovation: The role of collective efficacy and academic press mediated by faculty trust. *Journal of Educational Administration*, Vol. 58 No. 2, pp. 246-262. <https://doi.org/10.1108/JEA-02-2019-0029>
- Selangor State Education Department. <https://www.moe.gov.my/pendidikan/pendidikan-rendah>

- Senge, P.M. (1990). *The fifth discipline: The art and practice of the learning organization* (1<sup>st</sup> ed.). New York, NY: Doubleday/Currency.
- Shaha, S. H., & Ellsworth, H. (2013). Predictors of success for professional development: Linking student achievement to school and educator successes through on-demand, online professional learning. *Journal of Instructional Psychology*, 40.
- Shelby, L. B. (2011). Beyond Cronbach's alpha: Considering confirmatory factor analysis and segmentation. *Human Dimensions of Wildlife*, 16(2), 142-148.  
<https://doi.org/10.1080/10871209.2011.537302>
- Singh, S. K. (2007). Role of emotional intelligence in organizational learning: An empirical study. *Singapore Management Review*, 29(2), 55-74.  
[https://www.researchgate.net/profile/Sanjay\\_Singh70/publication/258848003\\_Role\\_of\\_Emotional\\_Intelligence\\_in\\_Organisational\\_Learning\\_An\\_Empirical\\_Study/links/5759875208ae9a9c954f059e/Role-of-Emotional-Intelligence-in-Organisational-Learning-An-Empirical-Study.pdf](https://www.researchgate.net/profile/Sanjay_Singh70/publication/258848003_Role_of_Emotional_Intelligence_in_Organisational_Learning_An_Empirical_Study/links/5759875208ae9a9c954f059e/Role-of-Emotional-Intelligence-in-Organisational-Learning-An-Empirical-Study.pdf)
- Shen, H. J., Basri, R., & Asimiran, S. (2018). Relationship between job stress and job satisfaction among teachers in private and international school in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 8(12), 275-286. <http://dx.doi.org/10.6007/IJARBSS/v8-i12/5012>
- Siswanto, S., & Yuliana, I. (2022). Linking transformational leadership with job satisfaction: the mediating roles of trust and team cohesiveness. *Journal of Management Development*, 41(2), 94-117. <https://doi.org/10.1108/JMD-09-2020-0293>
- Spector, P. E. (1985). Measurement of human service staff satisfaction: Development of the job satisfaction survey. *American Journal of Community Psychology*, 13(6), 693-713. <https://doi.org/10.1007/BF00929796>
- Stearns, E., Banerjee, N., Mickelson, R., & Moller, S. (2014). Collective pedagogical teacher culture, teacher–student ethno-racial mismatch, and teacher job satisfaction. *Social Science Research*, 45, 56-72.  
<https://doi.org/10.5406/amerjpsyc.127.4.0431>
- Stegall, D. A. (2011). Professional learning communities and teacher efficacy: A correlational study. *Unpublished dissertation, University of North Carolina*.
- Stoll, L. (2004). Developing professional learning communities: Messages for learning networks. *International Perspectives on Networked Learning*, 33(37). Retrieved from <https://leocontent.acu.edu.au/file/e15c9dc6-4eb2-542b-dbf1-2af04d69cb60/1/professional%20learning%20communities.pdf>
- Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional learning communities: A review of the literature. *Journal of Educational Change*, 7(4), 221-258. <https://doi.org/10.1007/s10833-006-0001-8>

- Stoll, L., McMahon, A., & Thomas, S. (2006). Identifying and leading effective professional learning communities. *Journal of School Leadership, 16*(5), 611-623. <https://doi.org/10.1177/105268460601600511>
- Tahir, L. M., & Musah, M. B. (2020). Implementing professional learning community in rural Malaysian primary schools: exploring teacher feedback. *International Journal of Management in Education, 14*(4), 422-451.
- Tahir, L. M., Said, M. N. H. M., Ali, M. F., Samah, N. A., Daud, K., & Mohtar, T.H. (2013). Examining the professional learning community practices: An empirical comparison from Malaysian universities clusters. *Procedia-Social and Behavioral Sciences, 97*, 105-113. <https://doi.org/10.1016/j.sbspro.2013.10.210>
- Takahashi, S. (2011). Co-constructing efficacy: A “communities of practice” perspective on teachers’ efficacy beliefs. *Teaching and Teacher Education, 27*(4), 732-741. <https://doi.org/10.1016/j.tate.2010.12.002>
- Talebizadeh, S. M., Hosseingholizadeh, R., & Bellibaş, M. Ş. (2021). Analyzing the relationship between principals’ learning-centered leadership and teacher professional learning: The mediation role of trust and knowledge sharing behavior. *Studies in Educational Evaluation, 68*, 100-970. <https://doi.org/10.1016/j.stueduc.2020.100970>
- Tan, Y. S. M., & Caleon, I. S. (2016). Problem finding in professional learning communities: A learning study approach. *Scandinavian Journal of Educational Research, 60*(2), 127-146. <https://doi.org/10.1080/00313831.2014.996596>
- Tasker-Mitchell, A., & Attoh, P. A. (2020). The mediating effect of faculty trust in principals on the relationship between servant leadership practices and organizational health. *Journal of School Leadership, 30*(4), 297-336. <https://doi.org/10.1177/1052684619884784>
- Tayag, J. R. (2020). Professional learning communities in schools: Challenges and opportunities. *Universal Journal of Educational Research, 8*(4), 1529-1534. <https://doi.org/10.13189/ujer.2020.080446>
- Teague, G. M., & Anfara Jr, V. A. (2012). Professional learning communities create sustainable change through collaboration. *Middle School Journal, 44*(2), 58-64. <https://doi.org/10.1080/00940771.2012.11461848>
- Thelwell, R. C., Lane, A. M., Weston, N. J., & Greenlees, I. A. (2008). Examining relationships between emotional intelligence and coaching efficacy. *International Journal of Sport and Exercise Psychology, 6*(2), 224-235. <https://doi.org/10.1080/1612197X.2008.9671863>

- Thien, L. M., Lim, S. Y., & Adams, D. (2021). The evolving dynamics between instructional leadership, collective teacher efficacy, and dimensions of teacher commitment: what can Chinese independent high schools tell us? *International Journal of Leadership in Education*, 1-23.  
<https://doi.org/10.1080/13603124.2021.1913236>
- Thien, L. M., Liu, S., Yee, L. Q., & Adams, D. (2021). Investigating a multiple mediated-effects model of instructional leadership and teacher professional learning in the Malaysian School Context: A partial least squares analysis. *Educational Management Administration & Leadership*, 17411432211009892.
- Tiong, N. D. (2016). *Connecting professional learning communities, teacher self-efficacy and collective teacher efficacy: A mixed methods exploratory study of teacher communities in Malaysian schools*. University of Cambridge Faculty of Education Working Paper.
- Tobia, E. F., & Hord, S. M. (2012). I am a professional. *The Learning Professional*, 33(3), 16.
- Toole, J. C., & Louis, K. S. (2002). The role of professional learning communities in international education. In *Second International Handbook of Educational Leadership and Administration* (pp. 245-279). Springer, Dordrecht.
- Trace, N. E. L. (2016). *The relationship among teacher job satisfaction, trust in the principal, and principal support* [Doctoral dissertation, The College of William and Mary]. ProQuest Dissertations and Theses Global.
- Tschannen-Moran, M., Hoy, A. W., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202-248.  
<https://doi.org/10.3102/00346543068002202>
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783-805.  
[https://doi.org/10.1016/S0742-051X\(01\)00036-1](https://doi.org/10.1016/S0742-051X(01)00036-1)
- Tschannen-Moran, M. (2003). Transformational leadership and trust. In Miskel, C. & Wayne, K.H. (Eds.) *Studies in Leading and Organizing Schools*, 157-169.
- Tschannen-Moran, M., & Barr, M. (2004). Fostering student learning: The relationship of collective teacher efficacy and student achievement. *Leadership and Policy in Schools*, 3(3), 189-209. <https://doi.org/10.1080/15700760490503706>\$16.00
- Tschannen-Moran, M. (2014). The Interconnectivity of Trust in Schools. In: Van Maele, D., Forsyth, P., Van Houtte, M. (eds) *Trust and School Life*. Springer, Dordrecht.  
[https://doi.org/10.1007/978-94-017-8014-8\\_3](https://doi.org/10.1007/978-94-017-8014-8_3)
- Tschannen-Moran, M., & Chen, J. A. (2014). Focusing attention on beliefs about capability and knowledge in teachers' professional development. *Handbook of professional development in education: Successful models and practices, PreK-12*, 246-264.

- Tschannen-Moran, M., Salloum, S. J., & Goddard, R. D. (2014). Context matters: The influence of collective beliefs and shared norms. *International Handbook of Research on Teachers' Beliefs*, 301-316.  
[https://www.researchgate.net/profile/Megan\\_Tschannen-Moran/publication/274707096\\_Context\\_Matters\\_The\\_Influence\\_of\\_Collective\\_Beliefs\\_and\\_Shared\\_Norms/links/552681aa0cf21e126f9de400/Context-Matters-The-Influence-of-Collective-Beliefs-and-Shared-Norms.pdf](https://www.researchgate.net/profile/Megan_Tschannen-Moran/publication/274707096_Context_Matters_The_Influence_of_Collective_Beliefs_and_Shared_Norms/links/552681aa0cf21e126f9de400/Context-Matters-The-Influence-of-Collective-Beliefs-and-Shared-Norms.pdf)
- Tschannen-Moran, M., Gareis, C.R. (2017). Principals, Trust, and Cultivating Vibrant Schools. In: Leithwood, K., Sun, J., Pollock, K. (eds) *How School Leaders Contribute to Student Success. Studies in Educational Leadership, vol 23. Springer, Cham.* [https://doi.org/10.1007/978-3-319-50980-8\\_8](https://doi.org/10.1007/978-3-319-50980-8_8)
- Usikalu, O., Ogunleye, A. J., & Effiong, J. (2015). Organizational trust, job satisfaction and job performance among teachers in Ekiti state, Nigeria. *Elixir Leadership Management*. 81.
- Vaiskarami, H. A., Ghadampour, E., & Mottaghinia, M. R. (2017). Omnibus T-Scale (OTS): The evaluation of validity and reliability of staff in primary schools. *Journal of Applied Psychological Research*, 8(1), 31-48.  
<https://doi.org/10.22059/JAPR.2017.62604>
- Valente, S., Veiga-Branco, A., Rebelo, H., Lourenço, A. A., & Cristóvão, A. M. (2020). The relationship between emotional intelligence ability and teacher efficacy. *Universal Journal of Educational Research*, 3(8), 916-923. <http://hdl.handle.net/10198/21615>
- Van Maele, D., & Van Houtte, M. (2012). The role of teacher and faculty trust in forming teachers' job satisfaction: Do years of experience make a difference? *Teaching and Teacher Education*, 28(6), 879-889. <https://doi.org/10.1016/j.tate.2012.04.001>
- Van Maele, D., & Van Houtte, M. (2015). Trust in school: a pathway to inhibit teacher burnout? *Journal of Educational Administration, Vol. 53*(1), 93-115.  
<https://doi.org/10.1108/JEA-02-2014-0018>
- Vaske, J. J., Beaman, J., & Sponarski, C. C. (2017). Rethinking internal consistency in Cronbach's alpha. *Leisure Sciences*, 39(2), 163-173.  
<https://doi.org/10.1080/01490400.2015.1127189>
- Veretennik, E. and Kianto, A. (2020), The impact of trust and information networks on teachers' job satisfaction. *Kybernetes*, 49(1), 200-228. <https://doi.org/10.1108/K-04-2019-0298>
- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, 24(1), 80-91.  
<https://doi.org/10.1016/j.tate.2007.01.004>

- Vesely, A. K., Saklofske, D. H., & Leschied, A. D. (2013). Teachers—The vital resource: The contribution of emotional intelligence to teacher efficacy and well-being. *Canadian Journal of School Psychology, 28*(1), 71-89. <https://doi.org/10.1177/0829573512468855>
- Vesely-Maillefer, A.K., Saklofske, D.H. (2018). Emotional Intelligence and the Next Generation of Teachers. In: Keefer, K., Parker, J., Saklofske, D. (eds) *Emotional Intelligence in Education. The Springer Series on Human Exceptionality*. Springer, Cham. [https://doi.org/10.1007/978-3-319-90633-1\\_14](https://doi.org/10.1007/978-3-319-90633-1_14)
- Vikaraman, S. S., Mansor, A. N., & Hamzah, M. I. M. (2018). Influence of ethical leadership practices in developing trust in leaders: A pilot study on Malaysian secondary schools. *International Journal of Engineering & Technology, 7*(3.30), 444-448.
- Voelkel Jr, R. H. (2011). *A case study of the relationship between collective efficacy and professional learning communities*. [Doctoral dissertation, University of California, San Diego and California State University, San Marcos]. ProQuest Dissertations and Theses Global.
- Voelkel Jr, R. H. (2022). Causal relationship among transformational leadership, professional learning communities, and teacher collective efficacy. *International Journal of Leadership in Education, 25*(3), 345-366. <https://doi.org/10.1080/13603124.2019.1690699>
- Voelkel Jr, R. H., & Chrispeels, J. H. (2017). Understanding the link between professional learning communities and teacher collective efficacy. *School Effectiveness and School Improvement, 28*(4), 505-526. <https://doi.org/10.1080/09243453.2017.1299015>
- Wahlstrom, Kyla L., and Karen Seashore Louis. "How teachers experience principal leadership: The roles of professional community, trust, efficacy, and shared responsibility. *Educational Administration Quarterly, 44*(4),458-495. <https://doi.org/10.1177/0013161X08321502>
- Webb, R., Vulliamy, G., Sarja, A., Hämäläinen, S., & Poikonen, P. L. (2009). Professional learning communities and teacher well-being? A comparative analysis of primary schools in England and Finland. *Oxford Review of Education, 35*(3), 405-422. <https://doi.org/10.1080/03054980902935008>
- Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). Professional learning in the learning profession: A status report on teacher development in the US and abroad. Technical Report. *National Staff Development Council*.

- Whitman, D. S., Van Rooy, D. L., Viswesvaran, C., & Kraus, E. (2009). Testing the second-order factor structure and measurement equivalence of the Wong and Law Emotional Intelligence Scale across gender and ethnicity. *Educational and Psychological Measurement, 69*(6), 1059-1074.  
<https://doi.org/10.1177/0013164409344498>
- Wong, C. S., & Law, K. S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *The Leadership Quarterly, 13*(3), 243-274.  
[https://doi.org/10.1016/S1048-9843\(02\)00099-1](https://doi.org/10.1016/S1048-9843(02)00099-1)
- Wijayati, D. T., Kautsar, A., & Karwanto, K. (2020). Emotional intelligence, work family conflict, and job satisfaction on junior high school teacher's performance. *International Journal of Higher Education, 9*(1), 179-188.
- Wolfe, C. R. (2010). Behaviors that develop mutual trust and its association with job satisfaction [Doctoral dissertation, Virginia Tech].
- Wong, C. S., Wong, P. M., & Peng, K. Z. (2010). Effect of middle-level leader and teacher emotional intelligence on school teachers' job satisfaction: The case of Hong Kong. *Educational Management Administration & Leadership, 38*(1), 59-70.  
<https://doi.org/10.1177/1741143209351831>
- Yilmaz, K. (2008). The relationship between organizational trust and organizational commitment in Turkish primary schools.  
<https://openaccess.dpu.edu.tr:8443/xmlui/handle/20.500.12438/5906>
- Yin, H., Keung, C. P. C., & Tam, W. W. Y. (2022). What facilitates kindergarten teachers' intentions to implement play-based learning?. *Early Childhood Education Journal, 50*(4), 555-566. <https://doi.org/10.1007/s10643-021-01176-3>
- Yin, H. B., Lee, J. C. K., & Zhang, Z. H. (2013). Exploring the relationship among teachers' emotional intelligence, emotional labor strategies and teaching satisfaction. *Teaching and Teacher Education, 35*, 137-145.  
<https://doi.org/10.1080/03055698.2012.666339>
- Yin, H., & Zheng, X. (2018). Facilitating professional learning communities in China: Do leadership practices and faculty trust matter? *Teaching and Teacher Education, 76*, 140-150. <https://doi.org/10.1016/j.tate.2018.09.002>
- Yin, H., To, K. H., Keung, C. P. C., & Tam, W. W. Y. (2019). Professional learning communities count: Examining the relationship between faculty trust and teacher professional learning in Hong Kong kindergartens. *Teaching and teacher education, 82*, 153-163. <https://doi.org/10.1016/j.tate.2019.03.019>
- Yoke, L. B., & Panatik, S. A. (2015). Emotional intelligence and job performance among school teachers. *Asian Social Science, 11*(13), 227.



- Yoo, H., & Jang, J. (2022). Effects of professional learning communities on teacher collaboration, feedback provision, job satisfaction and self-efficacy: Evidence from Korean PISA 2018 data. *Compare: A Journal of Comparative and International Education*, 1-18.
- Yozgat, U., Yurtkoru, S., & Bilginoğlu, E. (2013). Job stress and job performance among employees in public sector in Istanbul: examining the moderating role of emotional intelligence. *Procedia-Social and Behavioral sciences*, 75, 518-524. <https://doi.org/10.1016/j.sbspro.2013.04.056>
- Yucel, I., & Bektas, C. (2012). Job satisfaction, organizational commitment and demographic characteristics among teachers in Turkey: Younger is better? *Procedia-Social and Behavioral Sciences*, 46, 1598-1608. <https://doi.org/10.1016/j.sbspro.2012.05.346>
- Yuen O. C., Nordin, Y. J., Yusof, H. B., Moorthy, K., & Ai Na, S. (2018). The mediating effect of trust on the dimensionality of organisational justice and organisational citizenship behaviour amongst teachers in Malaysia. *Educational Psychology*, 38(8), 1010-1031.
- Zambo, R., & Zambo, D. (2008). The impact of professional development in mathematics on teachers' individual and collective efficacy: The stigma of underperforming. *Teacher Education Quarterly*, 35(1), 159-168.
- Zeinabadi, H., & Salehi, K. (2011). Role of procedural justice, trust, job satisfaction, and organizational commitment in organizational citizenship behavior (OCB) of teachers: Proposing a modified social exchange model. *Procedia-Social and Behavioral Sciences*, 29, 1472-1481. <https://doi.org/10.1016/j.sbspro.2011.11.387>
- Zhang, J., Huang, Q., & Xu, J. (2022). The relationships among transformational leadership, professional learning communities and teachers' job satisfaction in China: What Do the Principals Think? *Sustainability*, 14(4), 2362. <https://doi.org/10.3390/su14042362>
- Zhang, J., Huang, Q., & Ye, J. (2022). Investigating the mediating effects of professional learning communities on the relationship between leadership practices and teacher collective efficacy: a perspective of Chinese principals. *Cambridge Journal of Education*, 1-22.
- Zhang, J., Yin, H., & Wang, T. (2020). Exploring the effects of professional learning communities on teacher's self-efficacy and job satisfaction in Shanghai, China. *Educational studies*, 1-18. <https://doi.org/10.1080/03055698.2020.1834357>
- Zhang, J., & Yuan, R. (2020). How can professional learning communities influence teachers' job satisfaction? A mixed-method study in China. *Teachers and Teaching*, 26(3-4), 229-247. <https://doi.org/10.1080/13540602.2020.1806049>

- Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197-206. <https://doi.org/10.1086/651257>
- Zhao, Y., Lu, Z., Cheng, X., & Li, J. (2022). The Effect of Organizational Trust on Turnover Intention of Rural Kindergarten Teachers: The Mediating Role of Teaching Efficacy and Job Satisfaction. *International Journal of Environmental Research and Public Health*, 19(19), 12403.
- Zheng, X., Yin, H., Liu, Y., & Ke, Z. (2016). Effects of leadership practices on professional learning communities: The mediating role of trust in colleagues. *Asia Pacific Education Review*, 17(3), 521-532. <https://doi.org/10.1007/s12564-016-9438-5>
- Zonoubi, R., Rasekh, A. E., & Tavakoli, M. (2017). EFL teacher self-efficacy development in professional learning communities. *System*, 66, 1-12. <https://doi.org/10.1016/j.system.2017.03.003>