The supervisory behaviour preference of Thailand's in-service teachers

Author:
Akkaraputtapong, Panya

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The supervisory behaviour preference of Thailand's in-service teachers

Panya Akkaraputtapong

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Thailand's education is undergoing a reform to enhance its quality and equity, and teachers are a driving force of this reform movement. No study has yet captured the nationwide perspective of Thailand's in-service teachers on supervisory behaviours, although these behaviours have an impact on their professional learning and career attitudes. To promote teachers' professional development also involves the differentiation of supervisory approaches that suit individual teachers. Such a supervisory provision is suggested to address teachers' personality among other characteristics, but the relationship strengths and directions between personality and teachers' supervisory behaviour preference are still unclear.

This study sought to explore the preference of Thailand's in-service teachers for supervisory behaviours and to comprehensively examine the influence of personality on this preference using a convergent mixed methods design. There were 460 teachers responding to the quantitative strand and 384 to the qualitative strand. The quantitative data were collected by closed questions with the Analytic Hierarchy Process method and analysed through mean calculation and multiple regression analysis. The qualitative data were gathered by open-ended questions in the sentence completion form and analysed via content analysis and correlation analysis. The qualitative findings are used to verify and amplify the quantitative findings.

The study's findings suggested that teachers preferred collaborative, capable and considerate supervisors. These supervisors positively impacted on their attitudes towards the supervision process, the supervisors, and their professional development. Extraversion versus Introversion and Thinking versus Feeling personality domains significantly influenced the teachers' supervisory behaviour preference, and the former domain had a greater influence than the latter. Extraverted teachers preferred nondirective behaviours, whereas introverted teachers preferred directive behaviours and capable supervisors. Thinking teachers preferred collaborative behaviours, while Feeling teachers preferred benevolent supervisors and either directive or nondirective behaviours. These findings support and extend the notions of differentiated supervision and educational leadership. They can also be adapted to redesign Thailand's standards for school leaders and used as a guideline to inform supervisory behaviours that are more responsive to a teacher's personality.

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ABSTRACT

Thailand's education is undergoing a reform to enhance its quality and equity, and teachers are a driving force of this reform movement. No study has yet captured the nationwide perspective of Thailand's in-service teachers on supervisory behaviours, although these behaviours have an impact on their professional learning and career attitudes. To promote teachers' professional development also involves the differentiation of supervisory approaches that suit individual teachers. Such a supervisory provision is suggested to address teachers' personality among other characteristics, but the relationship strengths and directions between personality and teachers' supervisory behaviour preference are still unclear.

This study sought to explore the preference of Thailand's in-service teachers for supervisory behaviours and to comprehensively examine the influence of personality on this preference using a convergent mixed methods design. There were 460 teachers responding to the quantitative strand and 384 to the qualitative strand. The quantitative data were collected by closed questions with the Analytic Hierarchy Process method and analysed through mean calculation and multiple regression analysis. The qualitative data were gathered by open-ended questions in the sentence completion form and analysed via content analysis and correlation analysis. The qualitative findings are used to verify and amplify the quantitative findings.

The study's findings suggested that teachers preferred collaborative, capable and considerate supervisors. These supervisors positively impacted on their attitudes towards the supervision process, the supervisors, and their professional development. Extraversion versus Introversion and Thinking versus Feeling personality domains significantly influenced the teachers' supervisory behaviour preference, and the former domain had a greater influence than the latter. Extraverted teachers preferred nondirective behaviours, whereas introverted teachers preferred directive behaviours and capable supervisors. Thinking teachers preferred collaborative behaviours, while Feeling teachers preferred benevolent supervisors and either directive or nondirective behaviours. These findings support and extend the notions of differentiated supervision and educational leadership. They can also be adapted to redesign Thailand's standards for school leaders and used as a guideline to inform supervisory behaviours that are more responsive to a teacher's personality.

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

AHP	Analytic Hierarchy Process
COO	Cook's Distance
MBTI	Myers-Briggs Type Indicator
OEC	Office of the Education Council
OECD	Organisation for Economic Co-operation and Development
OER	Office of Education Reform
OPS	Office of the Permanent Secretary
SBPA	Supervisory Behaviour Preference Assessment
SIBQ	Supervisory Interpersonal Behaviours Questionnaire for Working with Individuals: A Scenario
TCT	Teachers Council of Thailand
VIF	Variance Inflation Factor

CHAPTER 1:
INTRODUCTION

This chapter provides the introduction to this study. It briefly outlines research problems, purposes and aims, theoretical framework, research questions, methodology, and key terms. The significance of this study is also discussed.

1.1   Problem Statement

School supervision is critically important to the professional development of in-service teachers, as it is a job-embedded learning activity provided to improve their professional practice (Sullivan & Glanz, 2013). Literature suggests that supervision should be differentiated in response to the individual difference in teachers (Brandon & Derrington, 2019; Glickman et al., 2018; Zepeda, 2017). There is, however, a dearth of understanding about teachers' personalities in relation to their preference for supervisory behaviours, which echoes the need for further studies through a robust methodology. This is especially necessary in Thailand where teachers do not have adequate support for their continuing professional development; a nationwide perspective on school supervision had never been explored.

The promotion of teachers' professional development through school supervision requires an understanding of teachers' individual differences with regard to their preference for supervisory behaviours. Teachers are adults who have different backgrounds, motivations, needs, interests, and goals from a group of youths (Knowles et al., 2011). Supervisory efforts made for teacher professional development are differentiated by the response expressed by individual teachers (Brandon & Derrington, 2019). Such a practice has been found in high achieving schools (Bouchamma, 2012; Mette et al., 2017) and reported to positively impact on student learning (Oliveras-Ortiz & Simmons, 2019). School supervisors should consider the teacher's supervisory preference to enhance the teacher's receptive response and motivation

toward supervision, which will facilitate the supervision implementation. The provision of teachers' preferred supervision can incorporate behaviours that supervisors perform towards teachers during the supervision process. Supervisory behaviours have been found to be associated with job satisfaction expressed by teachers (Evans, 2016) and job retention (Clifton, 2010). Appropriate supervisory behaviours also increase the supervision effectiveness, since they can support the teachers' learning engagement during supervision and establish a positive supervisory relationship (Sullivan & Glanz, 2013; Zepeda, 2017). Differentiated supervisory behaviours would thus enable individual teachers to develop a positive attitude towards their career that would allow for effective professional knowledge and skills to be acquired from school supervision. This necessitates the exploration of individual differences among teachers in association with their supervisory behaviour preference. The knowledge of such an association is useful for the provision of school supervision that effectively fosters the professional development of each teacher.

Several personal characteristics of teachers have been found to affect their preference for supervisory behaviours, but what is known about these characteristics might not be enough to capture the teachers' preference. Teachers with dissimilar personal characteristics differ in their supervisory preferences (Bouchamma et al., 2017), professional needs (Brandon & Derrington, 2019; Sims & Jerrim, 2020), and learning styles (Vermunt & Endedijk, 2011). The acknowledgment of teachers' personal characteristics could enable school supervisors to accommodate their supervisory behaviours to suit each teacher's preference, as well as address their professional needs and learning requirements. This would enhance supervision success and teacher professional development through increasing teacher motivation and the learning experience. The teachers' preference for supervisory behavioural approaches has been shown to be associated with various personal characteristics, including degree level, subject area of expertise (Akinniyi, 1987), grade level of teaching (Clemente, 1990; Fraser, 1980; Johnson, 1989; Wagner, 1999), and years of teaching experience (Akinniyi, 1987; Dodd, 2006; Fraser,

1980; Wagner, 1999). These characteristics, however, may not completely explain the teachers' preference due to incongruent results from previous research. The recognition of these attributes would not be adequate to select a supervisory behavioural approach that matches the preference of each teacher. Alternative personal characteristics of teachers should be explored to extensively determine their preference for supervisory behavioural approaches.

Personality is another personal characteristic linking to the teachers' supervisory behaviour preference that is to be examined. This attribute was proposed to represent a range of teachers' individual differences (Sergiovanni, 2009; Sergiovanni & Starratt, 1993); it was recommended for consideration in supervisory practices of school leaders (DiPaola & Hoy, 2014; Marczely, 2002; Sergiovanni, 2009). It was reported that the acknowledgement of a teacher's personality can promote the effectiveness of teacher professional development programs (Burch, 2016) and that this characteristic plays a part in the success of supervision implementation (Greene, 1992). Personality characteristics were also found to affect the teachers' learning preference (Conti & McNeil, 2011; Van Daal et al., 2014), as well as impact on people's communication styles (Hullman et al., 2010; Leung & Bond, 2001). Supervisory behaviours are how supervisors act toward teachers during a supervision meeting (Glickman et al., 2018) and how they engage with the teacher during the learning process (Zepeda, 2017). The provision of teachers' preferred supervisory behaviours is based on personality, and how it supports various communication styles and learning preferences of individual teachers. Teachers would acquire professional knowledge and skills from the supervision process through enhancing their learning and information transmission between supervisors and themselves. This emphasises the importance of knowing how a teacher's personality relates to their preference for supervisory behaviours. There is, however, limited research on this topic. The literature review suggests that only two studies have attempted to examine this topic (Clemente, 1990; Johnson, 1989), resulting in an unclear understanding of the relationship between the two variables. A more comprehensive understanding of this relationship can be applied, together

with those of other personal characteristics to determine the differentiation of approaches to supervisory behaviours that better facilitate teachers' professional development.

The relationship of a teacher's personality to his/her supervisory behaviour preference is under-studied. Johnson's (1989) and Clemente's (1990) studies, albeit with some limitations, reported that different supervisory behaviour preferences exist among teachers with different personalities. Limitations of these studies include evidence on a superficial relationship between teachers' personalities and the supervisory preference that failed to clarify the strength of the relationship and the direction of the two variables. Correlational, predictive, and causal relationships have not been investigated. The analysed personality data were merely on a nonmetric scale, which is a less precise measurement than a metric scale like one at the interval and ratio level (Hair et al., 2010). Teachers' preference data were either on an ordinal or interval scale, which offered less information than ratio scaled data (J. A. Lee, 2017). The relationship was also explored through quantitative measures, which hindered the teachers' voice by prescriptive frameworks of the studies (Creswell & Clark, 2018). A more robust research methodology is therefore required to pinpoint the influence of teachers' personalities on their supervisory behaviour preference. One such approach is a mixed method study that can apply a higher level of data measurement and multi-modal analysis to determine the variable relationship comprehensively.

Thailand teachers' professional development needs to be enhanced to improve the country's education quality. Thailand has been through several reforms to improve its education quality since the nineteenth century (Sangnapaboworn, 2018), but its students' learning achievement remains poor in the international and intranational levels. The results of OECD Programme for International Student Assessment (PISA) 2012 showed that Thai students performed below average and fell behind those in some other Southeast Asia countries, and most Thai students also scored less than 50% in various subjects on the Ordinary National

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Educational Tests (ONET; Organisation for Economic Co-operation and Development [OECD], 2016). Inequality in education still exists in Thailand (Fry, 2018a) despite the increase of student enrolment rate in basic education (OECD, 2016). Children in rural areas still have poorer learning achievement than those in urban areas (OECD, 2016). Thai students' performance, especially those from disadvantaged backgrounds, can increase through enhanced teaching performance of Thai in-service teachers. Teachers' professional skills and practices impact on student learning, although their impact may be less than that of social and structural factors beyond the school level (Loughland & Thompson, 2016). Thai in-service teachers' professional development needs to be expanded and comprehensively supported, so that they can be a driving force of the country's education reform and thus the improvement of Thai students' learning achievement.

The continuing professional development of teachers in Thailand is inadequately facilitated; school supervision is an important activity to ameliorate this issue. Professional development among teachers has been a focal point in planning for education reform in Thailand (Sangnapaboworn, 2018). There is clear acknowledgement of the teacher's role in the enhancement of student learning (Office of the Education Council [OEC], 2017a). Improvements have been made in the areas of teacher preparation, teacher licensing system, and teacher induction programs (OECD, 2016), but teachers' ongoing professional development in Thailand is inadequate to support their ongoing growth and development. Supervision can be used as a tool to foster teachers' development (Marzano et al., 2011), but Thailand's educational supervisors at the educational district level cannot provide adequate support for the teachers' pedagogical improvement ("Independent board proposes restoring", 2019; Shaeffer, 2018). It is recommended that the development of Thai in-service teachers needs to offer school-based and job-embedded learning opportunities, as well as to provide better support from school leaders (OECD, 2016). This suggests the importance of school supervision, because it is a school-based and job-embedded activity that is provided by school leaders and is related to teachers'

professional learning. The activity has been found to positively impact on the professional development of Thai in-service teachers in different educational districts (Philaphan, 2016; Prungchaiyaphum, 2018; Tasanagorakool, 2017; Thongbai, 2015). It was also found that supervisory behaviours of Thai school leaders associated with the teachers' performance (Mekkhao, 2014), their job satisfaction (Somboon, 2014), teaching behaviours (Chokepaisarn, 2010), and professional competency (Tasanagorakool, 2017). To enhance Thai teachers' continuing professional development, effective supervision at the school level is required, which involves the provision of appropriate supervisory behaviours.

There is a gap in Thailand-based research on supervisory behaviours at the school level, which should be addressed for improving the practice of Thai school leaders. Studies have reported that some Thai school leaders applied supervisory behavioural approaches that contradicted the expectation of their teachers (Siriphonwutthichai, 2014). The leaders were perceived as fault finders, that is, they did not make any contribution to their teachers' professional growth (S. Sharma et al., 2011), therefore, they were required to become more collaborative, friendly and reasonable in their approach towards teachers (Leartprapruet, 2005; Mekkhao, 2014). These results imply that school leaders in Thailand need to improve their supervisory behaviours towards teachers. This improvement requires an understanding about supervisory behaviours at Thai schools more than what is currently known. The existing studies mostly emphasised the performance level of supervisory behaviours (Champa, 2016; Leartprapruet, 2005; Songngamsub, 1989) and its link to other variables, including leader experiences and school sizes (Champa, 2016), the school's effectiveness (Leartprapruet, 2005; Mekkhao, 2014), and teacher practices (Champa, 2016; Leartprapruet, 2005; Songngamsub, 1989). None of the studies seemed to have investigated the preference of Thai teachers for supervisory behaviours in educational learning, nor has its relationship with teachers' personalities been explored. The knowledge about the personality-supervisory behaviour preference relationship in Thai in-service teachers would be useful for the provision of

appropriate supervisory behaviours for both teachers and school leaders. The understanding of teachers' preference for supervisory behaviours could also benefit the development of a general guideline for school supervision in Thailand that would improve the working lives of teachers, as well as the effectiveness of the school.

The above statements have argued for more research on supervisory behaviours at the school level. School supervisors can facilitate individual teacher's professional development through the provision of preferred supervisory behaviours that recognise the teacher's personality. The practice would enhance the teacher's motivation towards supervision, his/her learning experience during the process, and supervisory communication. There needs to be further examination into the relationship between teachers' personalities and their preference for supervisory behaviours, not only to clarify the strength and direction of the relationship, but also to express the teachers' voice, which is important for developing and expanding on their working lives. Thailand's school leaders also have to improve their supervisory behaviours to better support the ongoing professional development of their teachers, who play an integral role in the country's education reform movement. The improvement in leaders' communication skills would be benefited by an understanding of the preference by Thai in-service teachers for supervisory behaviours and its relationship with teachers' personalities; but these areas have not yet been explored in Thailand-based research. This study therefore is aimed at addressing these gaps by applying a convergent mixed methods research approach to explore the preference of Thailand's in-service teachers for supervisory behaviours and to examine how the relationship of this preference is relevant to their personality.

1.2   Purpose and Aims

The purpose of this study was to inquire into Thailand's in-service teachers' perspectives on supervisory behaviour preference and to gain a comprehensive understanding of the association between teachers' personalities and their supervisory behaviour preference. The study was

aimed to apply a convergent mixed methods research procedure to: (i) explore the preference of Thailand's in-service teachers for supervisory behaviours; and (ii) investigate the influence of personality on the supervisory behaviour preference of Thailand's in-service teachers.

1.3 Research Questions

Two research questions provided a focus for this study:

1.   What is the preference of Thailand's in-service teachers for supervisory behaviours?

2.   How does personality influence the supervisory behaviour preference of Thailand's in-service teachers?

1.4 Theoretical Framework

The theoretical framework of this study involved two constructs: (i) supervisory behaviours; and (ii) personality. The supervisory behaviour construct was sourced from approaches within the supervisors' interpersonal behaviour, as proposed by Glickman and colleagues (2018). The personality construct was framed by the Myers-Briggs Type Indicator (MBTI) model, which was developed by Katharine Briggs and Isabel Myers (I. B. Myers et al., 2009) and has been an underlying construct for personality assessment since 1942 (The Myers-Briggs Company, 2020).

The supervisory behaviour construct of Glickman and colleagues (2018) consists of four supervisory behavioural approaches: (i) Directive Control; (ii) Directive Informational; (iii) Collaborative; and (iv) Nondirective. The Directive Control approach allows supervisors to make decisions and determine actions for teachers to follow. The Directive Informational approach requires supervisors to act as the major source of information and to provide alternatives for teachers to choose and follow. In the Collaborative approach, supervisors and teachers share equal control over any decision-making when addressing supervisory issues. The

Nondirective approach enables teachers to be responsible for their own decision-making, however, the supervisor can help to reflect on their thinking. These four approaches to supervisory behaviours are distinct alternatives that school supervisors should select from to differentiate their supervision practice in response to individual differences in teachers.

The supervisory behaviour construct (Glickman et al., 2018) was applied by researchers in the area. Its precedent comprised of three supervisory approaches that excluded the Directive Informational approach. The three-approach framework was used to measure the teachers' supervisory behaviour preference (Akinniyi, 1987; Clemente, 1990; Wagner, 1999), school leader self-perception (Akinniyi, 1987) and preference (Adams, 2007) for their supervision. The present construct was also utilised to explore the expectations and perceptions on supervisory behaviours of Thailand's teachers (Siriphonwutthichai, 2014). Such a construct was deemed appropriate to guide the measurement of supervisory behaviour preference in this study.

The MBTI personality model (I. B. Myers et al., 2009) involves four dichotomous domains, each of which includes two opposite personality types to gauge people's personality in four aspects. The four domains are: (i) Extraversion versus Introversion; (ii) Sensing versus Intuition; (iii) Thinking versus Feeling; and (iv) Judging versus Perceiving. The Extraversion versus Introversion domain reflects how individuals focus their attention. The Sensing versus Intuition domain represents how they take in information. The Thinking versus Feeling domain refers to how they make decisions. The Judging versus Perceiving domain relates to how they deal with the outer world. It has been postulated that an individual prefers one personality type in each domain, and these preferences underlie their interests, needs, values, and motivation (Kaplan & Saccuzzo, 2009).

The MBTI model is a suitable construct for this study, firstly, because the personality construct has a strong theoretical rationale for origins and differences of personality types (Pittenger, 2005) that are rooted in functions of the human mind, as well as its readiness to act in

a certain way (I. B. Myers et al., 2009). This theoretical background could offer critical information to explain the effect of each personality type on the teachers' supervisory behaviour preference. Secondly, the four-domain structure of the MBTI model has been proven to be distinct from one another (I. B. Myers et al., 2009), and this distinction is greater than that of the Big Five dimensions (Jackson et al., 1996), which is another well-known model. The application of the MBTI model would provide distinctive personality characteristics that represent the teachers' individual difference effectively. Finally, the MBTI construct can be used to identify people's personality without criticising their flaws (I. B. Myers et al., 2009); it is predominantly utilised for counselling and staff development (Furnham et al., 2003; D. G. Myers, 2013). These features are highly compatible to this study's focus, which was to recognise teachers' personalities and to differentiate supervisory behaviours that can foster their professional development. The personality variable of this study can be appropriately framed by the MBTI personality model.

It is highly appropriate to scope the investigated variables of this study within Glickman and colleagues' (2018) approaches to supervisory behaviours and the MBTI personality model (I. B. Myers et al., 2009), as illustrated in Figure 1.1.

Figure 1.1

Theoretical Framework Diagram
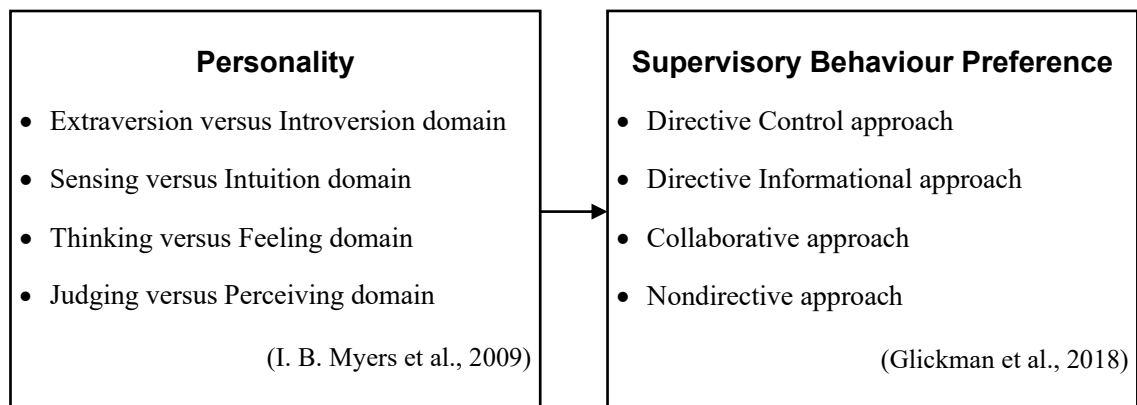
1.5 Methodology

This study used a convergent mixed methods research design. A mixed method study allows researchers to better understand the studied topic because it combines differing strengths of quantitative and qualitative methods and suppresses weaknesses incurred by the sole implementation of either one of them (Creswell & Clark, 2018). This study applied the convergent design with a questionnaire variant (Creswell & Clark, 2018) where the quantitative and qualitative data were parallelly gathered by the research survey and underwent separate analyses. Results from two datasets were merged during the interpretation process, in which the qualitative results were used to validate and amplify the quantitative results.

The study's participants were Thailand's in-service teachers who teach in the basic education levels (K to 12). They were selected through a multistage cluster random sampling process according to regions and schools. Cluster sampling allows researchers to administrate the research project efficiently, especially when it is not feasible to acquire the entire list of the research population (Babbie, 2016). A study's sample reflects a better representation of the population when selected randomly than conveniently (Suter, 2012). The sample size was determined by the Krejcie and Morgan Table, resulting in 384 participants with a confidence level of 95% and margin of error at ±5%.

The research measurement comprised of three sections (Appendix D). The first section included demographic questions to provide the description of the study's sample. The remaining two sections involved two instruments: (i) MBTI Form G (Thai translated version); and (ii) Supervisory Behaviour Preference Assessment (SBPA). The MBTI instrument included closed questions to quantitatively measure teachers' personalities. SBPA was the researcher's self-developed instrument to measure the teachers' supervisory behaviour preference quantitatively and qualitatively. The quantitative part was a modification of Glickman and colleagues' (2018) Supervisory Interpersonal Behaviours Questionnaire for Working with Individuals: A Scenario

(SIBQ) with an application of the Analytic Hierarchy Process (AHP) method. The qualitative part contained open questions in a sentence completion form. Closed questions enable researchers to efficiently collect data integral to the study framework (Corbetta, 2003) from a large sample size (Roulston, 2008a). The AHP method is a pairwise comparison method for decision-making (Saaty & Vargas, 2012). This method generates clarified information about the preferences of research participants, more than a traditional questionnaire method (Sato, 2009), such as the Likert scale. It also yields data on a ratio scale (Doong, 2002) which provides the highest level of data measurement precision (Hair et al., 2010). Open questions in a sentence completion form can capture distinct perceptions of respondents that reflect their own feelings and experiences regarding the studied topic (Burrell & Nicolini, 2017).

Several data analyses were performed to address the research questions of this study. Quantitative data were analysed using mean calculations and multiple regression analysis; qualitative data were analysed through a concept-driven and data-driven approach to content analysis. The content analysis results were quantified and further analysed using response percentage estimations and a point-biserial correlation analysis. The teachers' preference for supervisory behaviours was gauged by the means and response percentages. The relationship of teachers' personalities to their supervisory behaviour preference was explored through multiple regression and point-biserial correlation analysis.

1.6   Definitions of Key Terms

Personality: A unique psychological characteristic of individuals that initiates and guides
   behaviours (R. N. Sharma & Chandra, 2003). In this study, personality was determined
   by the Myers-Briggs Type Indicator (MBTI) personality model (I. B. Myers et al.,
   2009).

Extraversion versus Introversion domain (E-I): A personality aspect that reflects the
   orientations of individuals' energy or a way they focus their attention (I. B. Myers et al.,
   2009).

Sensing versus Intuition domain (S-N): A personality aspect that reflects the processes of individuals' perception or a way they take in information (I. B. Myers et al., 2009).

Thinking versus Feeling domain (T-F): A personality aspect that reflects the processes of individuals' judging of a way they make a decision (I. B. Myers et al., 2009).

Judging versus Perceiving domain (J-P): A personality aspect that reflects a way individuals deal with the outside world (I. B. Myers et al., 2009).

Extraversion type (E): A personality characteristic that refers to those who are likely to focus their attention on people and things (McIntire & Miller, 2007; I. B. Myers et al., 2009).

Introversion type (I): A personality characteristic that refers to those who are likely to focus their attention on concepts, ideas, impressions, and internal experiences (McIntire & Miller, 2007; I. B. Myers et al., 2009).

Sensing type (S): A personality characteristic that refers to those who tend to take in information through the five senses (McIntire & Miller, 2007; I. B. Myers et al., 2009).

Intuition type (N): A personality characteristic that refers to those who tend to take in information with the reliance on meanings, relationships, possibilities, and insights (McIntire & Miller, 2007; I. B. Myers et al., 2009).

Thinking type (T): A personality characteristic that refers to those who are inclined to make decisions based on logical consequences (McIntire & Miller, 2007; I. B. Myers et al., 2009).

Feeling type (F): A personality characteristic that refers to those who are inclined to make decisions based on personal or social values (McIntire & Miller, 2007; I. B. Myers et al., 2009).

Judging type (J): A personality characteristic that refers to those who are likely to use the Thinking or Feeling process to deal with their surroundings, and prefer to have things decided, planned, and well ordered (McIntire & Miller, 2007; I. B. Myers et al., 2009).

Perceiving type (P): A personality characteristic that refers to those who are likely to use the Sensing or Intuition process to deal with their surroundings, and prefer to be

spontaneous, be flexible, and miss nothing (McIntire & Miller, 2007; I. B. Myers et al., 2009).

Supervisory Behaviours: Interpersonal actions of a school leader or supervisor who performs to teachers during the supervision process. There are four approaches to supervisory behaviours, (i) Directive Control; (ii) Directive Informational; (iii) Collaborative; and (iv) Nondirective (Glickman et al., 2018).

Supervisory Behaviour Preference: The fondness for one type of supervisory behaviour more than others.

Directive Control approach: A supervisory behavioural approach whereby the supervisor make decisions on what the teacher is expected to do, which clearly determines the action for the teacher to follow (Glickman et al., 2018).

Directive Informational approach: A supervisory behavioural approach whereby the supervisor is the teacher's main source of information, who provides restricted choices from which the teacher can choose to follow (Glickman et al., 2018).

Collaborative approach: A supervisory behavioural approach whereby the supervisor attempts to understand the teacher's point of view and share with him/her an equal control over the decision-making process through discussion (Glickman et al., 2018).

Nondirective approach: A supervisory behavioural approach whereby the supervisor acts as a sounding board to help the teacher's thought processes in making decisions (Glickman et al., 2018).

1.7   Significance of the Study

On a theoretical level, the study provides a comprehensive understanding of the relationship between teachers' personalities and their supervisory behaviour preference. The teachers' preference was measured using a method that provides a higher level of data measurement accuracy and determines this preference more clearly than previous research. The personality data were analysed on a higher measurement scale. The findings clarifies the personality-supervisory behaviour preference relationship in terms of its strength and direction, which have

not yet been explicated. The relationship was also more insightfully explained through the teacher's own voice on this matter. Such findings can describe whether it is important to recognise a teacher's personality in the selection of suitable approaches to supervisory behaviours for individual teachers. This knowledge is beneficial for the notion of differentiating supervision to foster individual professional development of teachers.

This study also uncovered the preference of Thailand's in-service teachers for supervisory behaviours. These findings contribute to the understanding of the nationwide perspective of Thai teachers on in-school supervision, which has not been previously explored. They also recognise effective qualities of school leaders or supervisors that can potentially impact on teachers, and can be useful for the development of a school supervision or leadership model.

On a practical level, the findings on the influence of personality on the teachers' supervisory behaviour preference could also be developed into teaching guidelines for school supervisors. This guideline will help supervisors to improve their supervisory behavioural approaches that are better suit to individual teachers and to effectively enhance the teachers' professional development. The supervisory preference of teachers identified from this study also contributes to the leadership practice in Thailand, since teacher supervision is an ongoing duty of school leaders. Such information can be adapted to improve Thailand's standards for school leaders and the Thai school leadership curriculum, which would enhance the quality of school leaders throughout the country. The following chapter presents a review of literature related to the investigated variables of this study.

CHAPTER 2:
LITERATURE REVIEW

This chapter critically reviews the existing literature across areas that are relevant to this study. It begins with explaining the history of school supervision perspectives, differentiated supervision, and supervisory behaviours, followed by literature on teacher personality and differentiated supervisory behaviours, the dispositional approach to personality, and the MBTI model. The review suggests that supervisory behavioural approaches are to be differentiated in response to teachers' personal characteristics to enhance their professional development at the school level. These personal characteristics include teacher personality. The gaps in research on this area are also discussed. It is important to note that there are literatures on mentoring and coaching for teacher professional development. The terms *mentoring* and *coaching* seem to either replace the term *supervision* or be recognised as a vehicle for teacher supervision. The reviews related to supervision in this chapter involve the literature that uses the term *supervision*.

2.1   History of School Supervision

Supervision is an activity conducted by individuals to ensure that tasks under their responsibility are correctly undertaken (Supervision, n.d.). There have been different views on supervision at the school level since the nineteenth century, and the developmental view seems appropriate to be adopted by school supervisors in today's educational environment.

The etymology of the word *supervision* is from a combination of two Latin words *super* (meaning *over*) and *videre* (meaning *see*), which means to *oversee* (Kadushin & Harkness, 2002). The term supervision is used interchangeably with clinical supervision and instructional supervision in educational literature (Zepeda, 2017). School supervision is explained as an activity that oversees school actions (Sergiovanni et al., 2014). Its purpose is to ensure that

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school actions facilitate student learning success (Sergiovanni & Starratt, 2007), which is the ultimate goal of schooling and education (Marzano et al., 2011). A school action that is the focus of school supervisors is instruction (Sergiovanni et al., 2014), and teachers are the main target because they are the ones who deliver instructions to students.

In the nineteenth century, school supervision was inspectorial. The process was performed by educational administrators in the school system (Starratt, 2003). These administrators were initially from external organisations that inspected whether teachers followed the guidelines of educational authorities (Starratt, 2003). The task was then passed on to school principals due to the growing number of schools (Starratt, 2003). General school supervision performed by external authorities shifted to *in-school* supervision implemented by the school administrators (Tesfaw & Hofman, 2014). One may argue that the inspectorial system of supervision is too hierarchical in nature and officious to be applied in the present day. Having to follow given orders may limit teachers' instructional creativity and reduce their commitment to student learning.

In the first half of the twentieth century, school supervision was affected by two competing views of schooling: (i) scientific; and (ii) humanistic (Marzano et al., 2011). The scientific view focused on controlling, accountability, and efficiency (Sergiovanni & Starratt, 2007). It is similar to the inspectorial view in that teachers were seen as those who must abide by given protocols and guidelines (Sergiovanni & Starratt, 2007). School supervision was scientifically exercised using standard measurements and data analyses to assess the prescribed practices. The humanistic view emphasised on human progress, social development, and democratic values (Marzano et al., 2011). School supervision was seen as a non-rigid process of communicative interaction between teachers and supervisors (Starratt, 2003). Supervisors were supposed to account for teachers' rights and feelings (Sergiovanni & Starratt, 2007). Scientific supervision does not offer much autonomy to teachers, which may cause them to burnout

(Skaalvik & Skaalvik, 2010), diminish their job satisfaction, and obstruct their willingness to produce good teaching (Pearson & Moomaw, 2006); whereas humanistic supervision might hinder the achievement of school goals as teacher satisfaction levels could be over-emphasised. Neither of these supervision perspectives seemed appropriate to be employed at the school level.

An alternative perspective on supervision arose at the end of the twentieth century. Supervision theorists and researchers in the 1980s articulated a developmental perspective whereby supervision was seen as a developmental process (Marzano et al., 2011). Developmental supervisors continuously assessed and unified goals of individual teachers and other school stakeholders to ensure that school actions were completed to achieve these goals (Burns & Yendol-Hoppey, 2016). This supervision perspective also emphasised the professional growth of teachers (Reiman & Thies-Sprinthall, 1998) and proposed that supervisory approaches should be differentiated in response to teachers' needs, teachers' characteristics, and supervisory situations (Glickman et al., 2018).

The developmental perspective of supervision is promising for school implementation. The idea is around the midpoint on the continuum of scientific and humanistic views (Reiman & Thies-Sprinthall, 1998), which is a balance between regulative task-oriented supervision and permissive human-oriented supervision. This means that school goals could be achieved without teacher burnout, and teacher satisfaction could be properly accommodated. Studies also reported that teachers' professional development positively impact on student learning (Andersson & Palm, 2017; Meissel et al., 2016; Polly et al., 2015), which is the ultimate goal of schooling. School supervision that focuses on the professional development of teachers would therefore enhance the success of a school.

The aim of school supervision is to enhance student learning that is mainly impacted by teachers' instructional practices. Developmental supervision seems to be a suitable model for supervision training at the school level. School supervision should address the needs of teachers

and foster their professional development. This study therefore suggests that teacher supervision is a fundamental process for teacher development, because it focuses on the differentiation of supervisory approaches to suit individual teachers. Literature reviews on differentiated supervision is provided in the next section.

2.2   Differentiated Supervision

School supervision has been considered as a means to enhance professional practice of teachers. Teacher professional development can be fostered through teacher supervision that acknowledges individual differences of teachers. School supervisors can differentiate their supervisory efforts based on teachers' performances, but they also have to acknowledge teachers' personal characteristics.

Teacher professional development is a focal point of school supervision which has various implementations. School leaders, which include principals and those in administrative positions, have numerous competing tasks but 'none is as important as the work that centers on teacher development and growth' (Zepeda, 2017, p. 19). This essential work can be done through teacher supervision, or what some may call instructional supervision (DiPaola & Hoy, 2014; Zepeda, 2017). Teacher supervision has been considered as a means to hold teachers accountable for their job and help them improve their performance (Marshall, 2013). Effective supervision can increase teachers' expertise and thus increase student learning achievement, the ultimate goal of schooling (Marzano et al., 2011). Teacher supervision involves supports leaders provide for teachers through a wide range of activities. These are, for example, classroom observations, action research, coaching (Zepeda, 2017), peer coaching, lesson study group, book study group, and portfolio assessment (Sullivan & Glanz, 2013). It is however stated that supervisors must perform classroom observations (Zepeda, 2017). This activity offers supervisors opportunities to become more involved in teachers' instructional life (Zepeda, 2017)

and enables them to effectively identify teachers' problems, understand the causes, and make suggestions to address those problems (DiPaola & Hoy, 2014).

Several suggestions have been made in regard to effective teacher supervision. First, supervisors and teachers should have a mutual understanding of how good teaching is (Marshall, 2013), and expectations on teachers' instruction should be clear at the beginning (DiPaola & Hoy, 2014). Second, supervisors need to be in classroom as frequently as possible to provide frequent feedback on teachers' practice (Marshall, 2013). The given feedback should also be engaging (Marshall, 2013), be constructive (DiPaola & Hoy, 2014), and focus on specific teaching strategies or behaviours (Marzano et al., 2011). Third, teacher supervision should not be fault finding, predicated, or triggered by unfavourable reports (Zepeda, 2017) nor it should focus solely on teachers' performance which results in a list of behaviours that they have to correct (Zepeda & Ponticell, 1998). It should, instead, be implemented in a nonthreatening way (DiPaola & Hoy, 2014) where supervisors should value teachers' work, recognise their abilities, respect them as professionals, and empower them to control their own improvement (Zepeda & Ponticell, 1998). Fourth, the supervisory supports should not be only adequate for teachers' instructional need (DiPaola & Hoy, 2014) but also provide them with learning opportunities to enhance their own professional development (Zepeda, 2017). Finally, teacher supervision should also be responsive to teachers' concerns and aspirations, as supervision that arises from supervisors' need would make the teachers anxious and could lead to them avoiding interacting with their supervisors (Acheson & Gall, 1997).

School supervision that fosters teachers' professional development needs to be differentiated in response to their individual differences. Supervisory efforts made for teachers can be varied in several forms. School supervisors can perform clinical supervision to intensively observe and thoroughly analyse a teacher's lesson or conduct administrative monitoring to briefly visit a teacher's classroom and give immediate feedback on one specific

concern (Glatthorn, 1984). There are differential interpersonal behaviours to be applied for teachers during supervision, which range from directive to nondirective behaviours (Glickman et al., 2018). Supervision responsibility can also be distributed to the teachers' peers or to the teachers themselves using action research or portfolio assessments (Sullivan & Glanz, 2013; Zepeda, 2017). There is however no one-size-fits-all form of supervision. Teachers are adults who have a wide range of backgrounds, motivations, needs, interests, and goals (Knowles et al., 2011). It is less effective to utilise a single form of supervision and expect it to work for all teachers (Marczely, 2002). School leaders have been suggested to differentiate their supervision according to teachers' individual differences (Glatthorn, 1984; Glickman et al., 2018; Zepeda, 2017), and this differentiation is stated to genuinely enhance teachers' professional development (Brandon & Derrington, 2019). Studies also show that differentiated supervision positively affects students' achievement (Oliveras-Ortiz & Simmons, 2019) and associates with the school's success (Bouchamma, 2012; Mette et al., 2017). School supervisors are to acquire information concerning the differences of teachers and carefully select appropriate supervisory efforts for each of them. The teachers' individual professional development will be effectively facilitated, and this would result in the augmentation of the school's instructional quality.

School supervisors can provide supervisory approaches based on teacher performance. They may assess teachers' pedagogical knowledge, content knowledge, and teaching effectiveness. Teachers who have low levels of these aspects could be intensively supervised through frequent classroom observations and supervisory meetings (Anderson et al., 2014). School leaders can distribute the responsibility of supervision to experienced teachers or experts to support those teachers who need to improve their pedagogical approach and subject content beyond the leader's expertise (Lochmiller, 2019). Supervisors may also use directive supervisory behaviours for teachers whose level of adult development and commitment to student learning are low, while applying nondirective supervisory behaviours for those at higher levels (Glickman et al., 2018). The provision of supervision in response to teacher knowledge

and effectiveness is said to foster the school's instructional quality (Oliveras-Ortiz & Simmons, 2019), but this differentiation focuses only on the supervisor's perspective. It lacks the consideration of the teachers' perspective on supervision, which has not been well emphasised in the literature (Bouchamma et al., 2017). Some teachers may dislike being intensive supervised, even though they have shown a low performance level. Some may even feel uncomfortable when supervised by their peers, while others may progress well when working on their own. Some teachers may dislike directive supervisory behaviours, despite their low level of adult development. To ignore teachers' supervisory preferences would diminish teachers' receptiveness and motivation toward supervision and make the process less effective.

Differentiating supervisors may address teachers' supervisory preference through the consideration of teachers' personal characteristics. Personal characteristics seemed to impact on teachers' attitudes about supervision. Teachers in a non-permanent position were likely to associate with school supervision more than tenured teachers (Kalule & Bouchamma, 2013). Secondary-level teachers tended to prefer school supervisors who delegated supervisory power and foster knowledge by sharing among teachers, more than teachers at other levels (Bouchamma et al., 2017). Male teachers tended to favour supervisors who were available to help or advise them when needed, more than female teachers (Fraser, 1980). The subject area of expertise was found to influence the teacher's preference for a supervisor walking through the classroom (Akkaraputtapong, 2014). Less experienced teachers were also reported to appreciate the classroom walkthrough practice (Akkaraputtapong, 2014), while more experienced teachers were inclined to accept the mutual exchange of ideas with supervisors (Fraser, 1980). These results affirmed the link of teachers' personal characteristics to their views on supervision. Effectively differentiated supervisory approaches should then be applied to respond to teachers' differences in personal characteristics. Such a practice would allows supervisors to provide supervisory approaches that suit the individual teacher's preference, which would enable them to be more participative in the supervision process to increase the success rate of supervision.

To recognise teachers' personal characteristics in supervision can also address their individual needs for professional development. Teachers who were certified through a fast-track preparation program (Elliott et al., 2010) or came from an industrial background (Anderson et al., 2014) have been reported to find teaching more difficult than their counterparts. Beginning, mid-career, and veteran teachers stated facing different professional challenges and aspirations (Brandon & Derrington, 2019). Older teachers were found to have more confidence in their ability to perform a given task than their younger peers (Bouchamma et al., 2017; Campbell, 1996), while young teachers tended to demand greater professional preparation. It was shown that the subject area and gender affected teachers' feeling about their teaching preparedness (Ross et al., 1996). Female teachers were more likely than their male counterparts to want more professional development than they received (OECD, 2009). Primary teachers were found to feel less prepared for their lessons compared to secondary teachers (Sims & Jerrim, 2020). The education degree also impacted on teacher confidence in teaching (Campbell, 1996) and perceived success within their classes (Ross et al., 1996). These results suggest that teacher professional developmental needs are varied based on teacher personal characteristics. Different professional development needs require different approaches to supervision. The differentiation of supervisory approaches based on teachers' personal characteristics would thus help supervisors to support the individual teacher's need for professional development.

Differentiated supervision in response to teachers' personal characteristics would further support differential learning preferences of individual teachers. Teachers' personal characteristics are likely to be associated with their learning styles and educational beliefs. Teachers are different in their adopted learning patterns (Vermunt & Endedijk, 2011). Their differences in age, educational background, and career stage have been suggested to cause variations in their learning preference and the distinction in how they make meaning from what they have experienced (Drago-Severson, 2004). It has been reported that male teachers are more likely to believe in teaching as a direct transmission of knowledge, compared with female

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teachers (OECD, 2009). Mathematics and science teachers were found to believe that teaching is to allow learners to think and acquire knowledge on their own, more than teachers in other subjects (OECD, 2009). These teaching beliefs may impact on the teachers' preference for their own learning, as teachers' instructional preference has been found to correlate with their learning style (Robin & Harris, 1998) and belief about learning (Sosu & Gray, 2012). It can be implied that personal characteristics have an effect on teachers' learning preference. Teacher supervision is a process where teachers engage in learning dialogues for the purpose of their professional improvement (Sullivan & Glanz, 2013); supervisory styles that are applied can affect their learning engagement during the process (Zepeda, 2017). To help teachers obtain the most out of the supervision process, a differentiation of supervisory styles is required that is in accordance with teachers' personal characteristics to support their learning.

It can be concluded that teacher supervision has to be differentiated based on teachers' individual difference to foster their professional development. Differentiating supervisors need to recognise teachers' personal characteristics in the selection of suitable supervisory approaches for individual teachers, because teachers' personal characteristics relate to their view on supervision, professional needs, and learning patterns. By addressing teachers' personal characteristics, the success of the supervision process through enhancing teacher motivation and learning experience would increase. This study was thus interested in how the relationship of teachers' personal characteristics affect their preference for supervisory behaviours. The literature on supervisory behaviours is reviewed in the following section.

2.3   Supervisory Behaviours

Differentiated supervisory approaches for teacher professional development can be in terms of supervisory behaviours. Such behaviours are interpersonal actions that school leaders or designated supervisors perform towards teachers during the supervision process (Glickman et al., 2018). This section includes three subsections that provide the literature reviews: (i)

importance of supervisory behaviours; (ii) supervisory behavioural approaches; and (iii)

personal characteristics and the teachers' supervisory behaviour preference.

2.3.1 Importance of Supervisory Behaviours

Supervisory behaviours impact on teachers in several aspects. School leaders or designated

supervisors need to provide appropriate supervisory behaviours for teachers, since it can

enhance the teachers' performance and the effectiveness of supervision. Suggestions have been

made with regard to the implementation of supervisory behaviours.

The behaviours of school leaders or supervisors affect teachers' attitudes towards their

teaching career. The improvement of supervisory interactions between supervisors and teachers

can facilitate the nature of the school as a workplace (Bacharach & Mitchell, 1992). Supervisory

behaviours are reported to correlate with employees' job stress and their attention towards

allocated duties (Gilbreath & Karimi, 2012). Studies have found that school leaders' behaviours

are associated with teachers' job satisfaction (Evans, 2016) and job retention (Clifton, 2010).

Human relations behaviours tend to ensure teachers are satisfied with their teaching duties, their

school leaders, school management, and policy implementation (Evans, 2016). School leaders

who express respect, trust, and friendliness are more likely to retain teachers in the profession;

while those who focus mainly on school results and production are inclined to experience a

higher turnover rate of teachers (Clifton, 2010). Behaviours that relate to the fulfilment of

teachers' needs, promotion of teachers' autonomy, pedagogy guidance, conflict avoidance, and

control of duties also impact on the teachers' view on the school climate (Alhajeri, 2011), which

represents the teachers' feeling for their workplace. Key factors that contribute to the school

climate are student performance and morale, school physical environment, and instructional

support (Alhajeri, 2011). The discrepancy between supervisory behaviour preferences of

teachers and their supervisors also tend to increase anxiety for teachers (Stein, 1985). School

leaders who fail to negotiate their supervisory behaviours with teachers could aggravate the

anxiety level of teachers (Stein, 1985). School leaders therefore need to carefully consider their supervisory behaviours toward teachers, and to perform behaviours that suit the teacher's preference. This will foster positive attitudes about work and enable the teacher to conduct his/her duties more effectively.

Supervisory behaviours have affected teachers' learning. Some supervisory behaviours can facilitate teachers' meaningful learning through genuine participation in supervisory discussions, for example, listening, reflecting, and clarifying (Sullivan & Glanz, 2013). In constrast, some behaviours may suppress teachers' learning during the supervision process, since they diminish their involvement in the discussion and impede effective and appropriate responses from teachers. Such adverse behaviours include criticising, ordering, threatening, preaching, lecturing, diverting, reassuring, withdrawing, and sarcasm (Sullivan & Glanz, 2013). It has been suggested that supervisory behaviours should match the conceptual level of each teacher in order to intensify the teachers' learning engagement during the supervision process (Zepeda, 2017). When teacher learning is enhanced by appropriate supervisory behaviours, teachers can acquire the knowledge and skills from the supervision process to result in improved professional development.

Suitable supervisory behaviours can also enhance the effectiveness of supervision through a healthy supervisory relationship. It has been proposed that appropriate supervisory behaviours impact the relationship between the supervisor and teacher (Zepeda, 2017), as well as reduce the interpersonal barrier between them (Sullivan & Glanz, 2013), therefore, resultant of a positive supervisory relationship (Glickman et al., 2018). Such a positive relationship has been found to affect the success in supervision implementation (Greene, 1992), possibly because a healthy supervisory relationship develops positive attitudes towards supervisory activities (Caspi & Reid, 2002) that allows the teacher to become satisfied with, and receptive to, the supervisor's efforts (Kadushin & Harkness, 2002). Teachers with positive feelings would

be more attentive and willing to cooperate in supervision, resulting in the opportunity to acquire professional knowledge and skills from the activity.

Some recommendations have been made in the literature about how to perform supervisory behaviours in teacher supervision. First, school supervisors should use purposeful supervisory behaviours, which means their behaviours should contribute to their own decision-making or teachers in the supervisory activity (Glickman et al., 2018). These behaviours include listening, clarifying, encouraging, reflecting, presenting, problem solving, negotiating, directing, standardising, and reinforcing (Glickman et al., 2018). Second, supervisors may try to use behaviours that promote supervisor-teacher communications that will close the interpersonal gap between the two parties (Sullivan & Glanz, 2013). They can use listening together with nonverbal clues to enhance teachers' open responses; clarifying and reflecting could break down any misunderstanding between them (Sullivan & Glanz, 2013). Finally, supervisors should study various interpersonal behaviours and exercise the approaches that work best with individual teachers and their circumstances (Glickman et al., 2018). The applied approaches may be contingent on teachers' capabilities (Glickman et al., 2018; McCarthy & Quinn, 2010; Zepeda, 2017) and their personal characteristics (DiPaola & Hoy, 2014; Glickman et al., 2018). Supervisors may also evaluate supervisory situations, such as the teacher's commitment to the supervised issue (DiPaola & Hoy, 2014; Glickman et al., 2018), his/her responsibility for solving the problem, and the urgency to address the subject (Glickman et al., 2018). All these factors should be considered when selecting a supervisory behavioural approach for each teacher.

Supervisory behaviours are essential to teacher supervision. They impact on teachers' career attitudes, their learning experiences, and their relationship with supervisors. Appropriate supervisory behaviours will enable teachers to perform their job more effectively and to gain added benefit from the supervision process that will improve their professional practice. It is

suggested that school supervisors should acquire a range of approaches to supervisory behaviours and differentiate them according to individual differences among teachers. These differences include the teachers' personal characteristics. This study has thus placed an emphasis on how teachers' personal characteristics affect their preference for supervisory behavioural approaches. The understanding of this area can help supervisors to select and use a suitable supervisory behavioural approach for each teacher. The following subsections review literature on supervisory behavioural approaches that school supervisors may apply to their practice, as well as explain the research on the link of teachers' personal characteristics to their preference for these approaches.

2.3.2 Supervisory Behavioural Approaches

A range of supervisory behavioural approaches have appeared in the literature during the past four decades. It is arguable that there are four approaches from which school supervisors can choose from when interacting with teachers during supervision: (i) Directive Control; (ii) Directive Informational; (iii) Collaborative; and (iv) Nondirective; as proposed by Glickman and colleagues (2018). The four approaches have been acknowledged by several other scholars in the field (DiPaola & Hoy, 2014; Gebhard, 1984; Sullivan & Glanz, 2013; Unal, 2013; Zepeda, 2017), although different terms are used. Each approach is suggested for different teachers under various circumstances.

Directive Control approach

The first supervisory behavioural approach is Directive Control, also labelled the Directive model (Gebhard, 1984), Directive behaviour (Unal, 2013), and Director style (DiPaola & Hoy, 2014). A school supervisor who applies the Directive Control approach will provide straightforward and concrete assistance for teachers. The supervisor has the absolute control to indicate teachers' problematic issues, decide on the solutions, and identify expected results and assessment methods for the progress on those issues (Glickman et al., 2018). Directive Control

supervisors need to possess more knowledge and experience than teachers (DiPaola & Hoy, 2014), especially on supervised issues. When supervised issues reach beyond the supervisor's expertise, the supervisor may pass on their supervisory role to a master teacher or an external expert who is experienced and knowledgeable in those specific issues.

There exists a critique of the Directive Control approach in the literature. This approach is argued to unnecessarily suppress a teacher's learning, as the teacher would not be genuinely involved in the discussion during supervision (Sullivan & Glanz, 2013). This approach might also induce negative humanistic consequences and a contradiction to the notion that teachers should be fully responsible for their own classroom issues (Gebhard, 1984). There are however arguments that support the necessity of the Directive Control approach. The approach is said to be suitable for novice teachers who lack experience and for those teachers who have limited interest in their students' learning (DiPaola & Hoy, 2014). These teachers should be supervised with highly directive behaviours to develop more knowledge and commitment to their professional practices before less directive behaviours can be applied. The Directive Control approach is also recommended for situations where problematic issues need to be resolved immediately and where supervisors have limited time to meet with teachers (Glickman et al., 2018). It is thus arguable that the Directive Control approach to supervisory behaviours is necessary. School supervisors can use this approach, not only for inexperienced teachers, but also for experienced teachers who prefer to be directly guided with structured plans for their professional improvement. Some teachers may be more comfortable with a clear suggestion from supervisors than others, regardless of their teaching experience.

Directive Informational approach

The second supervisory behavioural approach is Directive Informational. This approach is sometimes called the Alternative model (Gebhard, 1984), Guidance behaviour (Unal, 2013), or Educator style (DiPaola & Hoy, 2014). The Directive Informational approach is slightly

different from the Directive Control approach, in that still observe and indicate teachers' problematic issues, but they do not point out the solution for teachers (Glickman et al., 2018). Supervisors are the teachers' information source who provides several alternative solution plans from which teachers can select to address their problems (Glickman et al., 2018). School supervisors who employ the Directive Informational approach should be seen by the teacher as credible and willing to be responsible for any solution selected by the teacher (Glickman et al., 2018). This approach offers teachers more responsibility in supervision than the Directive Control approach, because teachers are allowed to choose a solution plan that they think is achievable and suitable for them.

There have been some arguments with regard to the use of the Directive Informational approach in the literature. Suitable conditions for the approach application are similar to those for the Directive Control approach. It has been proposed for the application to be applied to teachers who are struggling with new pedagogical techniques (DiPaola & Hoy, 2014) and in situations where time is limited and concrete actions need to be taken (Glickman et al., 2018). The Directive Informational approach has also been suggested for beginning teachers instead of the Directive Control approach, because it promotes the teachers' constructive learning through authentic participation (Sullivan & Glanz, 2013). It has been argued that some beginning teachers may not have understood their circumstances or capabilities sufficiently enough to decide which of the given alternative solutions is appropriate for them. Such a situation could also occur with experienced teachers who have been assigned to a new subject or experience a change to their grade level of teaching. Supervisors may need to use the Directive Control approach to provide a solution that best matches these teachers' situations and capabilities.

Collaborative approach

The Collaborative approach is the third approach to supervisory behaviours. This approach is also known as the Collaborator style (DiPaola & Hoy, 2014). Collaborative supervisory

behaviours shift the decision-making responsibility from the supervisor's end to the midpoint between supervisors and teachers. Teachers are encouraged to express their own ideas, in conjunction with opinions offered by supervisors (Glickman et al., 2018). Problematic issues to be addressed and their solutions can emerge from the discussion and from the mutual agreement of both parties (Glickman et al., 2018). Collaborative supervisors are expected to make an effort to comprehend what teachers are communicating with them about for them to truly engage in the discussion (DiPaola & Hoy, 2014). The Collaborative approach offer teachers more control over their professional improvement than the Directive Control and Directive Informational approaches.

The literature has suggested that the Collaborative approach may benefit teachers more than the Directive Control and Directive Informational approaches, but it may not suit all teachers. The Collaborative approach is proposed to provide more effectively enhance teachers' meaningful learning than the Directive Informational approach (Sullivan & Glanz, 2013), since teachers are allowed a greater opportunity to express and discuss their thinking with supervisors. This approach also better supports teachers' autonomy, which is found to positively impact their professional development (Xu, 2015). The Collaborative approach however should not be used with all teachers. It has been stated that this approach is for experienced teachers with the expertise and skill that relate to the discussed issues (DiPaola & Hoy, 2014), not for novice teachers for whom the Directive Control or Directive Informational approaches are more suitable. Some teachers also possibly feel uncomfortable when sharing their opinions with supervisors (Gebhard, 1984), regardless of their knowledge and skills. Some teachers ,may even find it difficult to express their comments about supervisors' opinions, and would agree with those ideas despite truthfully rejecting them. These teachers may require other behavioural approaches for effective supervision.

Nondirective approach

Another supervisory behavioural approach is Nondirective. This approach is also called the Self-Directed approach (Sullivan & Glanz, 2013) or Professional style (DiPaola & Hoy, 2014). The key point of the Nondirective approach is that teachers are in charge of making decisions during the supervision process without intervention from their supervisors. The approach gives teachers full control to identify their problematic issues, propose and select the solutions, and assess the results (Glickman et al., 2018). Supervisors only act as a mirror by reflecting the teachers' thoughts and helping them to clearly form their own solution regarding the issue (Glickman et al., 2018). The Nondirective approach offers teachers the highest responsibility for their professional development compared to the Directive Control, Directive Informational, and Collaborative approaches.

There are some caveats attached to the use of the Nondirective approach. When applying the Nondirective approach, it has been argued that it enhances teachers' constructive learning during supervision (Sullivan & Glanz, 2013) more than the other three approaches. This approach can also promote teachers' trust in their supervisors, allows them to realise their own responsibility for student learning (Gebhard, 1984). The Nondirective approach, however, requires teachers to develop their own ideas and actions (DiPaola & Hoy, 2014) with greater independence than the other three approaches. Therefore, the Nondirective approach is recommended for experienced teachers who have much knowledge, interest, and commitment to student learning (DiPaola & Hoy, 2014) or for less experienced but creative and promising teachers (Sullivan & Glanz, 2013). It has also been reported that some teachers felt nervous and isolated under supervision with nondirective behaviours (Gebhard, 1984). They may have been encouraged to improve their professional practice by the direct advice from supervisors or to progress well through working collaboratively with their supervisors. To supervise these teachers, school supervisors may be required to apply such behaviours as those associated with the Directive Control, Directive Informational, or Collaborative approaches.

One more approach is stated in the literature, but it should not be considered a distinct supervisory behavioural approach. This approach is called Creative, as proposed by Gebhard (1984), who suggested that supervisors can primarily use the Directive Informational approach until the teacher acquires more experience and is able to develop his/her own ideas before switching to the Nondirective approach. It is also possible to initially use the Nondirective approach to obtain the teacher's trust before following by the Collaborative approach. Supervisors were also advised to apply knowledge from different fields to provide more effective supervision or turn the supervision responsibility to professional experts, teachers' peers, or the teachers themselves. It can be critiqued that the Creative approach is not a distinct supervisory behavioural approach; it is merely an integration of approaches that supervisors use to assess teachers' characteristics and to employ some of the other four approaches accordingly. To apply knowledge from other fields in this approach, an add-on to the four approaches is likely to occur. One of these four approaches can also be used, although the supervision responsibility is passed on to someone else. The Creative approach only provides alternative methods to apply the approaches to supervisory behaviours. It should not be distinguished from the Directive Control, Directive Informational, Collaborative, or Nondirective approaches.

It can be summarised that there are four supervisory behavioural approaches, as defined by Glickman and colleagues (2018): (i) Directive Control; (ii) Directive Informational; (iii) Collaborative; and (iv) Nondirective. Each approach is appropriate for different situations and various groups of teachers. To differentiate supervisory efforts requires the recognition of the teachers' perspective on supervision based on their personal characteristics, as argued in Section 2.2. It is thus important to understand how teachers' personal characteristics influence their preference for these supervisory behavioural approaches. This will help supervisors to adapt their supervisory behaviours to individual teachers, which would result in supervision that better support the professional development of each teacher. Previous research on how teachers'

personal characteristics associate with their supervisory behaviour preference is reviewed in the next subsection.

2.3.3 Personal Characteristics and the Teachers' Supervisory Behaviour Preference

The teachers' supervisory behaviour preference has been explored in relation to teacher personal characteristics. The previous research on supervisory behaviour preference of in-service teachers showed that several attributes were associated with the teachers' preference, although the topic has not been much explored since the 2000s. These attributes included the education level, subject area expertise, grade level of teaching, and years of teaching experience, but little is known about these characteristics to adequately and comprehensively describe the teachers' preference for approaches to supervisory behaviours.

The relationship between teachers' education level and subject area expertise to their supervisory behaviour preference is uncertain. Akinniyi (1987) reported a significant relationship between teachers' degree level to their collaborative behaviour preference and the subject area expertise to the directive behavioural preference. Teachers with a higher level of educational attainment were found to prefer collaborative supervisory behaviours more than those with lower educational accomplishment. Those who taught mathematics, science, language, and social studies also differed in their preferences for directive behaviours. Akinniyi's (1987) study, however, indicated insignificant the relationship of two characteristics toward the nondirective behaviour preference; each characteristic had a significant relationship with the teachers' preference for only one type of supervisory behaviour. Another study showed that teachers with different degree levels or taught various subjects insignificantly differed in their preferences for directive, collaborative, or nondirective supervisory behaviours (Johnson, 1989). Teachers' education level and subject area expertise may not completely identify their preference for supervisory behavioural approaches, given the limited relationships and insignificant results found in previous studies.

The grade level of teaching seems to have a better association with the teachers' supervisory behaviour preference than the degree level and subject area expertise, but it cannot explain the preference for all supervisory behavioural approaches. Teachers working in higher grade levels indicated that they preferred supervisors who provided them with a written summary of each observational visit compared with those in lower grade levels (Fraser, 1980). This suggests that higher grade level teachers may have a greater preference for directive supervisory behaviours than lower grade level teachers. The suggestion aligns with results from other studies (Clemente, 1990; Johnson, 1989; Wagner, 1999). It was also reported that secondary teachers had a significantly higher preference for directive supervisory behaviours than elementary teachers (Johnson, 1989). Elementary teachers also likely preferred directive behaviours less than collaborative and nondirective behaviours (Clemente, 1990; Wagner, 1999), although their preference was not compared with secondary teachers. Provided that no contradicting results from previous studies were found, teachers' grade levels of teaching might explain their preference for supervisory behavioural approaches better than the teacher's education level and subject area expertise. This attribute may however describe only the teachers' preference for the Directive Control or Directive Informational approaches not the Collaborative and Nondirective approaches, since it was found to have a significant relationship to only the preference for directive supervisory behaviours.

Teachers' years of teaching experience appeared to form the strongest relationship with the teachers' supervisory behaviour preference compared to the degree level, subject area expertise, and grade level of teaching. Akinniyi (1987) found that teachers' experience had a positive relationship with their preference for collaborative supervisory behaviours. This is in accord with Fraser's (1980) study where experienced teachers were reported to prefer the mutual exchange of ideas with supervisors as colleagues. Fraser's (1980) results also showed that beginning teachers preferred supervisors to help them to understand their students, which supported Wagner's (1999) study that indicated that teachers with 10 or less years of experience

tended to favour directive behaviours from supervisors. Dodd (2006) also reported that teachers with three or less years of experience preferred collaborative behaviours to directive or nondirective behaviours, whereas teachers with four to 10 years of experience preferred directive behaviours to the others. These results imply that the relationship between teachers' years of teaching experience and their supervisory behaviour preference is stronger than their education level, subject area expertise and grade level of teaching, given their association with a wide range of supervisory behavioural approaches.

There are however contradicting results among previous studies regarding how the number of years of teaching experience relate to the teachers' supervisory behaviour preference (Akinniyi, 1987; Dodd, 2006; Fraser, 1980; Wagner, 1999). Akinniyi (1987), Fraser's (1980), and Wagner's (1999) results suggested that highly experienced teachers were inclined to prefer the Collaborative approach, while less experienced teachers might prefer Directive Control or Directive Informational approaches. This suggestion is counteracted by the inference drawn from Dodd's (2006) results. It can be inferred from Dodd's (2006) results that more experienced teachers would prefer Directive Control or Directive Informational approaches, while less experienced teachers might prefer the Collaborative approach. The years of teaching experience, therefore, can be used to explain teachers' preferences for Directive and Collaborative approaches, but the lack of a consensus in previous findings could lead one to argue that the years of teaching experience cannot provide absolute information about these preferences.

Existing research has shown that teachers' preference for supervisory behaviours relates to their degree level, subject area expertise, grade level of teaching, and years of teaching experience. Some of these personal characteristics may explain teacher preference to a greater extent than one another, but they do not comprehensively describe their preference for all supervisory behavioural approaches. Other personal characteristics should then be considered in the differentiation of supervisory behavioural approaches that suit the preference of individual

teachers. One such characteristic is personality, of which the literature is reviewed in the next section.

2.4   Teacher Personality and Differentiated Supervisory Behaviours

School supervisors can differentiate their supervisory behavioural approaches in response to teachers' personalities in addition to other personal characteristics. This section provides literature reviews on the importance of recognising a teacher's personality, followed by a critique of the existing research on the relationship between teacher personality and their preference for supervisory behavioural approaches. It is argued that more research is needed in this area.

2.4.1   Teacher Personality Recognition

It has been suggested in extant literature that teachers' personalities are to be recognised when providing supervisory efforts that effectively foster their professional development. Supervisory behavioural approaches should be differentiated in response to an individual teacher's personality, as the attribute relates to his/her learning preference and communication style.

Personality plays an important role in teacher professional development through school supervision. Professional development facilitators are expected to understand the personalities of those teachers being supported in their educational development so that suitable approaches can be implemented (Crew, 2016). It was also reported that the acknowledgement of teachers' personalities can promote the effectiveness of teacher professional development programs (Burch, 2016). Supervision that promotes teachers' professional growth should then account for teachers' personalities in its implementation. This argument is well supported in the literature. It was found that the individual personality of teachers affects the success of a supervision program (Greene, 1992). Educational supervision scholars have also advocated that school supervisors need to acknowledge different personalities of teachers to provide appropriate

supervisory efforts for each of them (DiPaola & Hoy, 2014; Marczely, 2002; Sergiovanni, 2009; Sergiovanni & Starratt, 1993). Such a provision is stated to enable teachers to response positively to the supervision process (Sergiovanni, 2009), promote the interpersonal activities between teachers and their supervisors (Hauser, 2005), and effectively improve teachers' professional practice (DiPaola & Hoy, 2014). The recognition of teachers' personalities is arguably essential to the supervision process. School supervisors are to differentiate their supervisory efforts in response to the teacher's personality to effectively facilitate his/her professional development. Supervisory efforts that can be differentiated include the approaches to supervisory behaviours.

One important role of the teacher's personality in the differentiation of supervisory behaviours is that it may lie in its relationship with teachers' learning strategies and beliefs. Previous studies have demonstrated that personality characteristics affect teachers' preferences for learning in a well-planned and structured activity (Conti & McNeil, 2011), learning through a process of trial and error (Conti & McNeil, 2011; Van Daal et al., 2014), or learning under their self-regulation (Van Daal et al., 2014). Some personality characteristics were found to impact on the teachers' belief in the facilitation of learners' autonomy in teaching (Brown, 2000; Decker & Rimm-Kaufman, 2008), while some influenced their belief in structured and orderly teaching activities (Cetinkaya, 2006). Certain personality characteristics were also reported to be associated with the teachers' belief that learners should be controlled, and conforming to the system (Brown, 2000). These teaching beliefs probably reflect the teachers' views about their own learning. The previous results suggested that teachers with different personality characteristics differ in their learning preferences, and the learning engagement of each teacher can be fostered by different supervisory behaviours (Zepeda, 2017). The teacher's personality may thus be considered to provide a supervisory behavioural approach that suits the learning preference of individual teachers.

To recognise the teacher's personality in the differentiation of supervisory behaviours can enhance the teacher's learning during the supervision process. Teachers who have different learning patterns and beliefs perhaps progress well under different supervisory behavioural approaches. Teachers who like well-planned and orderly learning activities and those who support learners' conformity to the system may learn well under a directive behavioural approach, because the supervisors take control in the supervision process and provide clear and straightforward solutions for them (Glickman et al., 2018). Teachers who like to self-regulate their learning, as autonomous learning believers, might learn better with the Nondirective approach, because they are allowed to independently express their ideas and solutions about their issues (Glickman et al., 2018). Given the effect of teachers' personalities on their learning preference, its recognition would allow supervisors to select a supervisory behavioural approach that effectively enhances the teacher's learning experience. This could help that teacher to acquire the professional knowledge and skills from the supervision process effectively.

The acknowledgement of teachers' personalities in the provision of supervisory behavioural approaches can also promote the communication between supervisors and teachers. Studies have shown that personality characteristics affect how an individual communicates with others (Hullman et al., 2010; Leung & Bond, 2001). For example, influenced communication styles include the use of direct and precise verbal expressions, the openness in communication, the ability to understand others' feelings (Hullman et al., 2010; Leung & Bond, 2001), the tendency to be silent, the ability to infer others' meanings (Leung & Bond, 2001), and the composure during communication (Hullman et al., 2010). These results suggest that teachers' personalities may affect their communication styles during supervision. Each supervisory behavioural approach might suit different communication styles. The Directive Control approach may be appropriate for teachers who are inclined to be silent, the Directive Informational approach may be for those who are less inclined to be silent but not able to disclose their ideas, the Collaborative approach may be for those who are open in

communication, and the Nondirective approach may be for those who are able to infer the supervisor's meaning. It is therefore arguable that the recognition of teachers' personalities would enable supervisors to apply supervisory behavioural approaches that match the communication style of individual teachers. This could establish a more effective supervisory communication which will enhance the transmission of knowledge and ideas between supervisors and teachers.

It is concluded that teachers' personalities need to be recognised in the differentiation of supervisory behaviours, which would enable school supervisors to provide supervisory behavioural approaches that match the learning preferences and communication styles of individual teachers. This could enhance the success of supervision through the facilitation of the teacher's learning experience during the process and the effective communication between supervisors and teachers. It is therefore necessary that school supervisors understand the relationship between teachers' personalities and their preference for supervisory behavioural approaches. The research on this matter is reviewed and discussed in the following subsection.

2.4.2   Research on Teacher Personality and Supervisory Behaviour Preference

In-service teachers' personalities have been investigated in relation to their supervisory behaviour preference. The findings evidence that personality characteristics impact on the teachers' preference for supervisory behavioural approaches, but further exploration is needed to comprehensively explain the relationship between the two variables.

Two studies in the literature examined the link between in-service teachers' personalities and their supervisory behaviour preference (Clemente, 1990; Johnson, 1989). Johnson (1989) reported that teachers who had high and low scores in some personality types likely differed in their preferences for directive and collaborative supervision. They found that directive supervision was more likely preferred by teachers with high scores in Sensing, Sensing Judging, and Sensing Perceiving types but less likely preferred by those with high scores in

Intuition Feeling types. Collaborative supervision was more likely preferred by teachers with low scores in Thinking, Sensing Perceiving, and Intuition Feeling types. Clemente (1990) also discovered trends in the teachers' supervisory behaviour preference based on their personality. She concluded that Sensing Perceiving type teachers likely preferred nondirective supervision, those Sensing Judging types seemed to favour directive supervision, and those Intuition Feeling types and Intuition Thinking types preferred collaborative supervision. The results from these two studies imply that teachers' preference for supervisory behaviours is affected by their personality.

It is however arguable that Johnson's (1989) and Clemente's (1990) studies have some limitations. First, their data comparisons and results seem incomprehensive. Johnson (1989) compared a group of teachers with high scores to those with low scores in the same personality type. Comparison among those with high scores in different types would have offered more meaningful information, although teachers with low scores in one personality type possibly had high scores in other types. Clemente (1990) applied the Self-Selection Index to assess how the percentages of sampled teachers in each personality type who preferred a supervisory style were higher or lower than the expected percentages of those in the population. The preferences among teachers in different types were not compared. Such a comparison would have identified whether teachers with different personalities differed in their preferences. Moreover, both studies did not indicate the association strengths between these variables, which would have informed how much teachers in one personality type might prefer a certain supervisory behavioural approach. The preference order within and among each personality group was unclear. To clarify relationship strengths and the directive between personality types and the teachers' preference would have required correlation, multiple regression, or causation analysis.

Second, both studies analysed personality data of teachers at the non-metric level. They categorised participants into groups of different personality types and compared their

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preferences. The non-metric data provided a less precise measurement (Hair et al., 2010) and offered less information about the variable (J. A. Lee, 2017) than metric data, similar to those at the interval level and ratio level. For a greater understanding of the subject, personality data need to be analysed at a metric level.

Third, the measurement of the teachers' supervisory behaviour preference was either on an ordinal scale or interval scale. Johnson (1989) measured the preference data by using an ordinal scale where respondents were to choose their preferred supervisory approaches based on different task areas. Clemente (1990) used a seven-point rating scale and ranking system that yielded interval data and ordinal data, respectively. Ordinal and interval scales offer less accurate measurements and less meaningful information than ratio scales (J. A. Lee, 2017). The application of a ratio scale to measure the teachers' supervisory behaviour preference will provide a better understanding of this variable.

Finally, only quantitative data were analysed in the two studies, which limited the comprehension of the personality-supervisory behaviour preference relationship. Quantitative data cannot represent the participants' voice on the topic (Creswell & Clark, 2018). The context or setting of the research was not fully understood, and the researchers rarely discussed their own perspective and bias on the issue (Creswell & Clark, 2018). These weaknesses can be overcome by a qualitative approach that is limited in its capacity for generalisability (Creswell & Clark, 2018). The combination of both quantitative and qualitative approaches, using a mixed methods design, would offer a comprehensive understanding of the relationship between teachers' personalities and their supervisory behaviour preference. The views of teachers with different personalities on their preference could be thoroughly explained, and the results of the variable relationships could be generalised to the population.

It is arguable that previous research does not comprehensively explain the relationship between teachers' personalities and their supervisory behaviour preference. There needs to be a

study that precisely and comprehensively explores this association. The present study thus utilised a mixed methods research design that analysed personality data at a metric level and measured the preference data on a ratio scale, as well as investigated the views of teachers on this matter. The information from this study's results would guide school supervisors to differentiate their supervisory behaviours based on teachers' personalities effectively. The next section provides the literature review on the construct that framed the personality variable of this study.

2.5 Dispositional Personality Model: Myers-Briggs Type Indicator or Big Five

This section introduces the dispositional personality approach as a broad concept to underlie the teacher's personality in this study. It also provides the rationale for the selection of the MBTI model as a suitable dispositional construct to scope the study's personality variable, and to compare it with the competing model.

The personality variable of this study was grounded on the dispositional personality approach. Psychologists have explained the term 'personality' as psychological qualities (Gerrig et al., 2009) that are formulated by genetic and social factors (McShane & Glinow, 2013); these qualities are associated with an individual's behavioural pattern (Lilienfeld et al., 2015). There are various approaches to personality theories in the field of psychology, for example, an attempt was made to explain and predict an individual's actions (Aiken, 1999), therefore, the dispositional approach is appropriate for this study concept. The dispositional approach assumes that each person is unique, each possessing a particular set of internal characteristics that drive their emotions, thoughts, and behaviours (Pennington, 2003). These characteristics are mostly invariable and consistent (Chamorro-Premuzic, 2015), that is, they seldom change over a long period of time and across different situations. The proposed personality characteristics can be emphasised independently of one another or combined to describe a wider behaviour of

individuals (Pennington, 2003). This study approached personality as an individual characteristic of teachers to be recognised in supervisory behaviour differentiation. To scope a teacher's personality within a dispositional theory, a set of personality characteristics is provided that would represent the teacher's individual difference and potentially explain their preference for supervisory behavioural approaches across circumstances.

Dispositional personality theories can be divided into those based on type and trait constructs (Chamorro-Premuzic, 2015). The type construct assesses personality in a categorical fashion (Chamorro-Premuzic, 2015). It places distinct personality categories into wherever individuals are classified (Gerrig et al., 2009; Gregory, 2007). An individual is either classified as one type or another. Examples of personality type constructs are the Type A and Type B personality theory, Block's personality type, Carl Jung's typology, and the MBTI model (Chamorro-Premuzic, 2015). Note that the MBTI model was developed and extended from Carl Jung's typology (McGuiness, 2004). The trait construct defines personality in an ordinal fashion (Chamorro-Premuzic, 2015). It involves personality components that are continuous variable amounts among individuals (Giordano, 2008). Each person possesses the same trait but at different levels. Examples of personality trait constructs are Gray's personality theory, Eysenck's Gigantic Three, Cattell's 16 Personality Factors, and the Five Factor Model or the Big Five (Chamorro-Premuzic, 2015). Well-known personality type and trait constructs are the MBTI model and the Big Five (Furnham et al., 2003; Lundgren et al., 2017).

The Big Five is a trait-based construct that proposes five major universal dimensions of personality (Chamorro-Premuzic, 2015): (i) Neuroticism, describing people as highly anxious, insecure, depressed, and temperamental; (ii) Extraversion, describing people as outgoing, talkative, energetic, and sociable; (iii) Openness to Experience, describing people as imaginative, creativeness, perceptiveness, and autonomous; (iv) Agreeableness, describing people as trusting, helpful, considerate, and flexible; and (v) Conscientiousness, describing

people as organised, dependable, methodical, and industrious (McShane & Glinow, 2013). These five dimensions are claimed to be key terms commonly used to describe people's personalities (D. G. Myers, 2013; Pennington, 2003).

The MBTI model is a type-based construct that comprises of four dichotomous domains of personality (I. B. Myers et al., 2009). The Extraversion versus Introversion domain refers to people's orientations of energy, either towards their outer world (Extraversion type) or their inner world (Introversion type). The Sensing versus Intuition domain refers to how people perceive information, either through their five senses (Sensing type) or based on their insight and subjective experiences (Intuition type). The Thinking versus Feeling domain refers to people's decision-making process, relying on either rationales and logical consequences (Thinking type) or emotional responses and personal or social values (Feeling type). The Judging versus Perceiving domain refers to how people deal with the other world, preferring either decisiveness and closure (Judging type) or flexibility and spontaneity (Perceiving type). The MBTI model posits that an individual tends to be placed in one of the alternative types in each personality domain (McGuiness, 2004), therefore, behaving consistently with their type (Bayne, 2003).

The MBTI model is a more appropriate construct than the Big Five to scope teachers' personalities in this study. First, this study could benefit from the strong theoretical view of the MBTI model, more than the Big Five, due to its lack of a theoretical basis. The Big Five was developed from factor analysis studies on language used to describe people (Pennington, 2003); it did not evolve within an explicit psychological theory (McAdams, 1992). No theoretical rationale was made for the origin of its dimensions (Burger, 2011; Chamorro-Premuzic, 2015) or its existence in human personality (Pennington, 2003). The root of the Big Five structure in statistical mechanism offers limited understanding of human personality (Block, 2010). It was critiqued that the model cannot fully explain the subtlety and complexity of the human

personality (Burger, 2011), nor can it 'provide compelling causal explanations for human behaviour and experience' (McAdams, 1992, p. 329). The Big Five would be unable to provide theoretical explanations for the relationship of its personality dimensions to the teachers' supervisory behaviour preference, which is the subject of this study.

The structure of MBTI domains is based on theoretical assumptions of the perception and judgement functions of the human mind, as well as its readiness to act in a certain way (I. B. Myers et al., 2009). Each MBTI personality type has its theoretical explanation, for example, the Sensing and Intuition types originate from alternative functions of mental perception, and Thinking and Feeling types are opposite functions of mental judgment. It is stated that the strong theoretical structure of the MBTI model provides casual explanations for the link between personality and behaviour (Pittenger, 2005). This study would thus benefit from the MBTI model, since its strong theoretical background could offer critical information to explain the effect of personality types on the teachers' supervisory behaviour preference.

Second, the MBTI model seems to provide more differential personality characteristics than the Big Five. It has been reported that all Big Five dimensions are positively and significantly intercorrelated when the Neuroticism score is reversed (Chamorro-Premuzic, 2015). The combinations of some Big Five dimensions are proposed to establish broader personality dimensions (Block, 2010). This includes the fusion of reversed Neuroticism, Conscientiousness, and Agreeableness, and the integration of Extraversion and Openness to Experience. It is also shown that Neuroticism and Openness to Experience are not effectively replicable languages, and they can be eliminated (De Raad et al., 2010). This suggests that the Big Five dimensions lack distinction and may not capture differences in teachers' personalities. The distinction among the four MBTI domains by contrast is strongly supported by several confirmatory factor analyses, as reviewed by I. B. Myers et al. (2009). It is also reported that the MBTI model fits the response data significantly greater than the Big Five even when the

Neuroticism dimension is excluded (Jackson et al., 1996). The greater model fitness implies that the four MBTI domains may be the better representative of the difference in people's personality compared to the Big Five dimensions. The application of the MBTI model would therefore provide this study with distinctive personality characteristics that better represent the teachers' individual difference.

Finally, the MBTI model is more suitable for the context of this study than the Big Five. The Big Five is predominantly used in academic research (Furnham et al., 2003; Moutafi et al., 2003), possibly because it consists of the trait in nature, which offers continuous variables that can be examined by a wide range of statistical techniques (Quenk, 1993). The trait in nature, however, has a downside in practice because it could lead people to judge others according to their trait levels (I. B. Myers et al., 2009; Quenk, 1993). Trait levels that are too high or too low could be analysed as abnormal or deficient in certain abilities. The Big Five is useful for clinical disorder examinations, psychological therapy, and employment selection or promotion (Burger, 2011), but the value attached to its traits may cause discomfort to those who are being assessed for other purposes, such as professional development, which is emphasised in this study.

MBTI is a less threatening model than the Big Five. It categorises people into one of two opposing types in a dichotomy to which they belong, however, to be included in one type does not mean a lack in the other type (I. B. Myers et al., 2009). For people to learn that they are in the Intuition type is considered more comforting than knowing that they have a high level of the Neuroticism trait (Pittenger, 2005). Most people agree with their MBTI type profile and use it as a guideline to understand the types of co-workers and tasks that are suitable for their personality (D. G. Myers, 2013). Given the nonthreatening nature of the MBTI model, teachers would be receptive to their personality type identified by this model more than the Big Five model. MBTI has also been a distinctly popular model in practise (Lilienfeld et al., 2015; McShane & Glinow, 2013). The model is not only suitable for educational settings (Kise, 2017;

Levitt, 2011) but is mostly used to assess personality for counselling and staff development (Furnham et al., 2003; D. G. Myers, 2013). It is arguable that the MBTI model is a better choice of construct to measure teachers' personalities for the purpose of their professional development, compared to the Big Five. This study focused on the facilitation of teacher professional development through differentiated supervisory behavioural approaches based on teachers' personalities. To apply the MBTI model instead of the Big Five would thus be appropriate for the framework of this study.

It can be summarised that the dispositional approach to personality theories aligns with the concept of this study. The approach offers a set of personality characteristics that represent individual differences in teachers and how they influence their preference of supervisory behavioural approaches. The most well-known dispositional personality constructs are the MBTI model and the Big Five. It is however argued that the MBTI model has a stronger theoretical background, a greater distinction among its personality characteristics, and it is more practical for this study's context than the Big Five. The MBTI model is therefore deemed appropriate to frame the personality variable of this study. The following section provides the literature review on the MBTI personality framework and existing research on teachers' MBTI personality and other variables that are relevant to their supervisory behaviour preference.

2.6 Myers-Briggs Type Indicator (MBTI) Personality

The MBTI is a personality model that has been adopted in various applied fields, including education (I. B. Myers et al., 2009). This section reviews the MBTI personality framework used to measure teachers' personalities in this study. It then discusses previous research that is relevant to links of MBTI personality types to the teaches' preference for supervisory behavioural approaches.

2.6.1 MBTI Personality Framework

The MBTI model is structured upon a theoretical assumption about how people experience the world. The literature suggests a range of people's behaviours driven by MBTI personality types and supports the construct ability to distinguish teachers from one another.

The MBTI model was developed by Myers and Briggs based on Carl Jung's typology (I. B. Myers et al., 2009). The model postulates that we all have specific preferences for the way we construe our experiences; these preferences underlie our interests, needs, values, and motivation (Kaplan & Saccuzzo, 2009). Carl Jung's typology involves three personality domains that describe individuals' personality through their preferred way to focus their energy, to perceive the surrounding information, and to judge or make decisions (McShane & Glinow, 2013). Myers and Briggs interpreted the typology and created another domain that identified the way in which people preferred to deal with the outer world (Pittenger, 1993). There are four domains in the MBTI personality structure. These personality domains are assumed to be the four main aspects on how an individual experiences the world (Kaplan & Saccuzzo, 2009) and have been an underlying construct for personality assessment since 1942 (The Myers-Briggs Company, 2020).

Myers and her colleagues (2009) explained that the four domains can be classified into orientation and function classes. The orientation class includes Extraversion versus Introversion (E-I) and Judging versus Perceiving (J-P) domains. The E-I domain refers to people's orientation of energy towards either the outer world of people and things (Extraversion type) or the inner world of concepts, impressions, and internal experiences (Introversion type). The J-P domain reflects people's orientation when dealing with the outer world towards either decisiveness and closure (Judging type) or flexibility and spontaneity (Perceiving type). The function class involves Sensing versus Intuition (S-N) and Thinking versus Feeling (T-F) domains. The S-N domain reflects people's perception of functions, either through the five

senses (Sensing type) or based on their insight and subjective experience (Intuition type). The T-F domain refers to people's judgement of functions that rely on either rationales and logical consequences (Thinking type) or emotional responses and personal or social values (Feeling type). These four domains are dichotomous. A person is assumed to prefer two alternative types in each domain. These preferences have influence on how that person pays attention to, and draws conclusions from, their surroundings. Typical behaviours that are likely possessed by individuals in alternative personality types of each MBTI domain are presented in Tables 2.1-2.4.

Table 2.1

Typical Behaviours of MBTI Personality Types in Extraversion Versus Introversion Domain

Extraversion	Introversion
Be oriented mainly to the outer world[d].	Be oriented mainly to the inner world[d].
Focus on people, events, activity, and things[b].	Focus on thoughts, ideas, impressions, and feelings[b].
Communicate more easily by talking[b].	Communicate better by writing[b].
Pay attention to a wide range of topic during communication[d].	Pay attention to one problem at a time during communication[d].
Sociable, expressive, and ready to take initiative in work and relationship[c].	Reserved, contained, and taking initiative only when the issue is very important to them[c].
Start from taking action to thinking and back to taking action[e].	Start from thinking to talking action and back to thinking[e].
Learn better by doing or discussing[d], for example through simulations, peer teaching[e], group projects, and trial-and-error method[a].	Learn better by mental practice[d] for example through lecture formats, individual projects, and reflection[a].

[a]Bayne (1995). [b]McGuiness (2004). [c]I. B. Myers (1998), [d]I. B. Myers et al. (2009). [e]I. B. Myers and Myers (1995).

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Table 2.2

Typical Behaviours of MBTI Personality Types in Sensing Versus Intuition Domain

Sensing	Intuition
Observe facts or happenings through one or more of the five senses[d].	Be attending to meanings, relationships, possibilities, and insights beyond the conscious mind[e].
Trust experience[d] and focus on the present and past[b].	Trust inspiration[d] and focus on the future[b].
Be generally contented and live life observantly with a desire for enjoyment[e].	Be generally restless and live life expectantly with a desire for inspiration[e].
Need to see the parts to understand the whole[b].	Need to see the whole to understand the parts[b].
Desire well-thought-out and detailed plans[d].	Desire challenges and possibilities[d].
Ask *what* and *how* questions and prefer practical, realistic messages during communication[d].	Ask *why* questions and prefer imaginative, creative messages during communication[d].
Observe and remember specifics[e]	Remember specifics when they relate to a pattern[e].
Have a concrete conceptual learning style[e] and like learning through step-by-step methods and specific instructions[a].	Have an abstract conceptual learning style[e] and like learning through theory-oriented and creativity-supported methods[a].

[a]Bayne (1995). [b]McGuiness (2004). [c]I. B. Myers (1998), [d]I. B. Myers et al. (2009). [e]I. B. Myers and Myers (1995).

Table 2.3

Typical Behaviours of MBTI Personality Types in Thinking Versus Feeling Domain

Thinking	Feeling
Decide impersonally on the basic of logical consequences[d].	Decide primarily on the basis of personal or social values[d].
Focus on justice, fairness, goals, and tasks[b].	Focus on mercy, compassion, people, and relationship[b].
Appear to test others' knowledge when communicate[d].	Strive for harmony in the interaction when communicate[d].
Tend to be tough-minded[d], not easily agreeing with others' conclusions and thinking they may be wrong[e].	Tend to be tender-hearted[d], agreeing with others' conclusions and thinking they may be right[e].
Require fair treatment based on the existing standards[e] and want everyone to be equally treated[d].	Require compliments and attention[e] and want everyone to be individually treated[d].
Likely make decisions impersonally[d].	Likely make decisions based on the personal likes or dislikes of themselves or others[d].
Often be able to logically arrange facts and ideas to state the subject[e].	Often have difficulties to know where to start a statement or to arrange their ideas of what they want to say[e].
Have logical and systematic learning styles and like learning in a challenging atmosphere[a].	Like learning topics that they care about, especially in a harmonious atmostphere[a].

[a]Bayne (1995). [b]McGuiness (2004). [c]I. B. Myers (1998), [d]I. B. Myers et al. (2009). [e]I. B. Myers and Myers (1995).

Table 2.4

Typical Behaviours of MBTI Personality Types in Judging Versus Perceiving Domain

Judging	Perceiving
Use Thinking or Feeling **(Judging processes)** when dealing with the surroundings[d].	Use Sensing or Intuition **(Perceiving processes)** when dealing with the outer world[d].
Focus on reaching the goal[b] and aim to be right[e].	Focus on experiencing life[b] and aim to miss nothing[e].
Likely to be scheduled, systematic, and methodical[c].	Likely to be spontaneous, flexible, and open-ended[c].
Prefer having things decided, planed, and orderly as immediately as possible[e].	Prefer keeping decisions open as much as possible[e].
Like to control events and enjoy working on one project at a time[b].	Like to respond to the moment and enjoy working on several projects at once[b].
Dislike overly long descriptions and procedures[d].	Want space to make own decisions[d].
Be stressed when working within too much flexible time frames or deadlines[d].	Be stressed by having to work within a time frame or deadline[d].
Tend to be independent learners who like structure and motivation[d].	Tend to be dependent learners who like tactile and loud noise learning stimulus[d].

[a]Bayne (1995). [b]McGuiness (2004). [c]I. B. Myers (1998), [d]I. B. Myers et al. (2009). [e]I. B. Myers and Myers (1995).

It was noted by Myers and her colleagues (2009) that the preference for an alternative type of any MBTI domain is independent of preferences on the other. The four preferred personality types can further structure 16 combinations to result in 16 personality types, namely, ESFP, ESTP, ENFP, ENTP, ENFJ, ESFJ, ENTJ, ESTJ, ISFJ, ISTJ, INFJ, INTJ, ISTP, INTP, ISFP, and INFP. The preference for one personality type of a MBTI domain does not indicate that the other type of that particular domain is never used. Individuals who prefer the Sensing function may sometimes rely on the Intuition function for which they have a less preference, although the Intuition function might not be typical for them.

Previous studies have implied that the MBTI personality construct can be used to determine teachers' individual differences (Liang, 2007; Ly, 2011; Perry & Ball, 2004; Redford, 1998). It was found that teachers, both pre-service and in-service, in different subject areas tended to have different MBTI personality types (Perry & Ball, 2004; Redford, 1998). Arts or English teachers were more likely to be Intuition (N), Feeling (F), and Perceiving (P) types,

whereas Science or Mathematics teachers seemed to be opposing types, that is, Sensing (S), Thinking (T), and Judging (J). University teachers with different MBTI personality pair types, and a combination of two personality types from different domains, were indicated to have different emotional intelligence skills (Liang, 2007). Those Sensing Thinking (ST) type teachers had a higher degree of interpersonal skills than those typecast as Intuition Feeling (NF). Intuition Thinking (NT) teachers appeared to possess more leadership skills than Sensing Feeling (SF) and NF teachers. MBTI type differences were also found to be associated with difference in teachers' habitual styles against psychological distress (defence styles; Ly, 2011). It was reported that the Extraversion (E) type and Intuition (I) type had opposite correlations to a defence style, similar to T and F types. Given the previous findings, the MBTI personality framework is arguably able to describe individual differences among teachers. The construct may also relate to the teachers' preference for supervisory behavioural approaches.

This study therefore measured teachers' personalities based on four MBTI domains: (i) Extraversion versus Introversion; (ii) Sensing versus Intuition; (iii) Thinking versus Feeling; and (iv) Judging versus Perceiving. These personality domains were examined in relation to the teachers' preference for supervisory behavioural approaches; results could be explained using typical behaviours of each personality type. Note that the MBTI personality is normally reported as a whole profile comprising the preferred personality type of each domain. This study however administrated the personality data as four separate domains, not in the whole profile format. The former approach could provide the data on a metric scale, whereas the latter would yield the data on a nonmetric scale. The metric scaled data offered a more precise measurement (Hair et al., 2010) and wider range of statistical techniques (Quenk, 1993). Each MBTI domain also represents different personality aspects of individuals. To separately consider each domain would enable the researcher to compare and understand how these personality aspects differ in their influences on supervisory behaviour preference. Existing research relevant to how MBTI domains would associate with teacher preference is discussed in the next subsection.

2.6.2   Teacher MBTI Personality and Supervisory Behaviour Preference

Results from extant research are related to the relationship between MBTI personality types and the teachers' preference for supervisory behavioural approaches. These findings can be used to hypothesise the preferred supervisory behavioural approaches of teachers in each MBTI personality type. Hypothesises on these preferences are provided according to the four MBTI domains in the following part of this subsection.

Extraversion versus Introversion domain

Extraverted teachers might not prefer directive supervisory behaviours, whereas introverted teachers might do the opposite. Studies found that extraverted teachers do not prefer transactional leadership (Amponsah & Asamani, 2015), and the Extraversion trait of those in other professions positively correlate with their preference for transformational (Moss & Ngu, 2006) and participative (Bertsch et al., 2017) leadership styles. Note that these studies applied the Big Five and not the MBTI model, but the Extraversion dimension of the Big Five has been demonstrated to positively correlate with the Extraversion type of the MBTI model (Furnham et al., 2003; Klinkosz & Iskra, 2010). Leadership preference also relates to supervisory preference, as supervision is a duty of an organisational leader. The supervisory behaviour preference of teachers identified as a MBTI Extraversion type could then be implied by these results. Transactional leaders emphasise 'management by exception in setting standards and monitoring deviations from these standards' (Amponsah & Asamani, 2015, p. 3), which means that employees or teachers are normally excluded from making any organisational decision. This responsibility resembles directive supervisory behaviours where little accountability is offered to teachers whose actions are determined from the supervisor's viewpoint. Transformational leaders, by contrast, are open to others' opinions on how to solve a problem (Moss & Ngu, 2006), which is similar to participatory leaders who involve followers' ideas to make organisational decisions (Razik & Swanson, 2010). The two leadership styles are comparable to supervisory behaviours that foster a high level of teacher responsibility. It is therefore

hypothesised that extraverted teachers may prefer supervisory behaviours offered in Collaborative or Nondirective approaches and not those in Directive Control or Directive Informational approaches. Introverted teachers might prefer the two directive approaches to the others, since the Introversion type is opposite to the Extraversion type.

Sensing versus Intuition domain

The Sensing teachers may prefer directive supervisory behaviours. Johnson (1989) reported that teachers in this category were more likely to prefer directive supervision. It is important to note that Johnson's (1989) study applied the personality model of David Keirsey that was developed based on the MBTI model, comprising of the same eight personality types. Their results were considered comparable to those from the MBTI model application hereafter. Other studies found that Sensing teachers were more likely to prefer a well-planned learning course with feedback for self-assessment (Conti & McNeil, 2011); they favoured a training-like development program with its curriculum and plans selected by the developer (found in the ST type; Redford, 1998). They were also likely to believe that students are to be controlled and need to learn to conform to the system (Brown, 2000), which probably reflected their belief in directive supervision. These previous results suggest that Sensing teachers may prefer supervisors who apply directive behaviours and provide a structured plan for them to follow, such as using Directive Control or Directive Informational approaches.

Intuition teachers may not prefer directive supervisory behaviours. Studies reported that this type of teacher is less likely to prefer directive supervision (found in the NF type; Johnson, 1989), but more likely preferring collaborative supervision (found in NT and NF types; Clemente, 1990). It was found that they tended to prefer a self-directed development approach (found in the NF type; Redford, 1998) which is comparable to nondirective supervision. They were also more likely to account for student ideas and choices of learning activities (Brown, 2000), as well as promote teacher-student equality (found in the NF type; Jones, 2005) when

teaching, which could reflect their preference for collaborative supervision. It can be hypothesised from these results that Intuition teachers may not prefer directive supervisory behaviours; they possibly prefer supervisory behaviours with which they can share their ideas concerning problematic issues or take the responsibility to address them. Such behaviours match those in Collaborative or Nondirective approaches, not Directive Control and Directive Informational approaches.

Thinking versus Feeling domain

Thinking teachers probably do not prefer supervisors to perform non-directive behaviours. One study indicated that Thinking teachers likely prefer collaborative supervision (found in the NT type; Clemente, 1990), although another study found that they less likely preferred the approach (Johnson, 1989). It was found that teachers in this type tended to have a step-by-step teaching approach where a detailed lesson plan is closely followed (found in the ST type; Cetinkaya, 2006). They likely preferred a learning environment that is well-planned with feedback to keep them on track and to support their creativity (Conti & McNeil, 2011). They also favoured a development program with its contents and plans readily provided for them (found in the ST type; Redford, 1998). These results imply that Thinking teachers may prefer supervisors who provide clear plans and detailed solutions to address their issues and allow them to think and express their ideas about the issues. Such preferences match supervisory behaviours in Directive Control, Directive Informational, or Collaborative approaches, but not the Nondirective approach.

Feeling teachers could prefer supervisory behaviours that are not directive. A study reported that teachers less likely preferred directive and collaborative supervision (found in the NF type; Johnson, 1989), although another indicated their probable preference for collaborative supervision (found in the NF type; Clemente, 1990). They also tended to favour a self-directed approach to staff development (found in the NF type; Redford, 1998) and learn well when they

are actively engaged in a learning task (Conti & McNeil, 2011). These results suggest the Feeling teachers' preference for nondirective supervisory behaviours. Other studies also showed that Feeling teachers inclined to have a student-centred approach to teaching (found in SF and NF types; Cetinkaya, 2006) and believed that teachers are learning facilitators (found in the NF type; Jones, 2005). Such teaching orientation probably reflects on how they like to be trained and supervised, which implies their preference for nondirective behaviours. It is thus hypothesised that teachers of the Feeling type might prefer supervisory behaviours that provide them with extra responsibility for addressing their problems like those identified in the Nondirective approach category.

Judging versus Perceiving domain

Judging teachers might prefer directive supervisory behaviours, while Perceiving teachers may favour nondirective behaviours. It was reported that teachers of the Judging type likely preferred directive supervision (found in the SJ type; Clemente, 1990). They seemed to benefit from learning in a well-organised program that provides feedback on their study progress (Conti & McNeil, 2011), which implies their preference for directive supervision. Teachers of the Perceiving type, by contrast, tended to prefer nondirective supervision (found in the SP type; Clemente, 1990) and were likely to enjoy learning in an environment that supports their creativity and tangible experience (Conti & McNeil, 2011). The preferred learning condition reflects their preference for nondirective behaviours in supervision.

A study also found that leaders in the Perceiving type were more likely to practise transformational leadership than those of the Judging type (Hautala, 2006). Transformational leadership is relevant to supervisory behaviours that are not directive, however, those who like to perform a certain leadership style may prefer to receive it from their superiors. These previous results suggest that Judging teachers would prefer their supervisors to take on extra responsibility in the supervisory discussion, whereas Perceiving teachers would prefer the extra

responsibility themselves than their supervisors in the discussion. It is thus hypothesised that such supervisory behaviours as those in Directive Control or Directive Informational approaches may be preferred by Judging teachers, and those using the Nondirective approach could be preferred by Perceiving teachers.

All hypotheses of the supervisory behaviour preference of teachers in each MBTI personality type offered here requires more empirical warrants. They have been built on previous studies that provided only limited information. Most results were derived from a pair type framework, combining two MBTI personality types from different domains, which may not explicitly explain the preferences of each individual type (Brown, 2000; Cetinkaya, 2006; Clemente, 1990; Johnson, 1989; Jones, 2005; Redford, 1998). Some are merely relevant findings that concern teachers' educational beliefs (Brown, 2000; Cetinkaya, 2006; Jones, 2005), teachers' learning preferences (Conti & McNeil, 2011; Redford, 1998), or leadership style attitudes of teachers (Amponsah & Asamani, 2015) and people in other professions (Bertsch et al., 2017; Hautala, 2006; Moss & Ngu, 2006). Some studies applied a personality model that corresponded to the MBTI model (Amponsah & Asamani, 2015; Bertsch et al., 2017; Johnson, 1989; Moss & Ngu, 2006), but the results may not completely explain the type of MBTI personality behaviours. Some are also from studies that had methodological limitations as reviewed in Section 2.4.2 (Clemente, 1990; Johnson, 1989), despite a strong focus on the teachers' supervisory behaviour preference. To assert these hypothesises more empirical evidence from further studies is required.

It is concluded from this section that the MBTI personality construct is highly applicable for this study. The framework could represent an individual difference in teachers, which can be used to determine their preference for supervisory behavioural approaches. Results from previous research suggested that teachers with different MBTI personality types might prefer

different approaches to supervisory behaviours. This assumption, however, needs more evidence, which will be provided by this study.

2.7   Summary

Chapter 2 has reviewed relevant literature of supervisory behaviours and teachers' personalities which are the study's areas of interest. The literature review gave prominence to the developmental supervision perspective where supervision is a process required to foster teachers' professional development. It highlighted the importance of differentiated supervisory efforts in relation to teachers' personal characteristics since they relate to their views on supervision, as well as the impact upon their professional needs and learning preferences. The differentiated efforts can be those of supervisory behaviours as they have an effect on teachers' career attitudes, teachers' professional learning, and supervision success. The chapter then explored the existing approaches to supervisory behaviours and propounded that Directive Control, Directive Informational, Collaborative, and Nondirective are the four distinct approaches that school supervisors may alter to suit individual teachers. The chapter further probed into previous research on teachers' personal characteristics and their supervisory behaviour preference, followed by the role of the teacher's personality in supervision. It was argued that supervisory behavioural approaches differentiated according to each teacher's personality, which would enhance their learning experience and increase the effectiveness of professional knowledge transmission during the supervision process.

There are gaps in the research on the association of teachers' personal characteristics and their supervisory behaviours preference. This review has critiqued that further personal characteristics of teachers need to be explored with regard to their preference for supervisory behavioural approaches; one potential characteristic is personality. The existing research however seems to provide inadequate understanding about how a teacher's personality relates to his/her preference for a supervisory behavioural approach. Therefore, a more robust study is

required to explicate this relationship in terms of its strength and direction, as well as to capture the teacher's voice on this matter. The MBTI model also justifiably scopes the personality variable in this exploration. The following chapter presents the background of this research.

CHAPTER 3:
THE RESEARCH CONTEXT

This study is aimed to investigate the supervisory behaviour preference of Thailand's in-service teachers in the basic education system. This chapter introduces the study context of Thailand. It begins with a brief overview of Thailand's geography, followed by explaining the cultural norms of Thai society. The national culture provides a more profound understanding of this study's results, as it impacts on teachers' views on supervision. The chapter also explains Thailand's basic educational system and reviews related literature that highlight the need for Thai in-service teachers' educational improvement and associated necessities to investigate the teachers' preference for supervisory behaviours. The literature includes Thailand's history of education reform, teachers' professional development, in-school supervisory behaviours, and school leadership standards.

3.1   Geographical Information

Thailand is the fourth largest country of the Southeast Asian region (Fry, 2018b). The country is located in the region's centre and is bordered by Laos to the north and east, Malaysia to the south, Myanmar to the west, and Cambodia to the southeast (Hafner et al., n.d.). It plays an important role in the economic growth of the Southeast Asian region and is categorised as an upper-middle income country with a Gross Domestic Product (GDP) growth per annum forecasted to be an average of 3.6% from 2016 to 2020 (OECD, 2016).

Thailand occupies an area of 513,115.02 square kilometres with a population of 65,819,646 people (Office of the Permanent Secretary [OPS], 2017). The country's geographical regions include the North, South, East, West, Northeast, and Centre (Hafner et al., n.d.). These regions differ in their traditions, dialects, landscapes, and administrative entities (Hafner et al., n.d.). Most Thai people speak Thai (Dutt & Mukhopadhyay, 1996), the country's

official language (Tapanya, 2012). Ninety-five percent of the population observe Buddhism, while the rest practise Christianity, Islam, Hinduism, Confucianism, or Taoism (Campiranon & Phayakvichien, 2016). Buddhist beliefs and practices are deeply-rooted in Thais' daily lives and rituals (Na Chiangmai, 2016). The religion offers them 'a moral code of conduct, the rationale, and provides them with a system of guidance to discipline the mind and body' (Dutt & Mukhopadhyay, 1996, p. 254).

This study used six geographical regions of Thailand as primary clusters for its participant sampling. Participants were randomly selected based on schools in each region. The research measurement was translated into the Thai language, since it is the country's official and predominant language spoken by Thai people. Major customs in the Thai culture that could influence Thai teachers' perception and behaviour towards supervision is discussed in the next section.

3.2   Thai Culture

Thailand's culture is different from cultures of Anglo countries, as implied by data on national cultural dimension indices (Hofstede et al., 2010). Notable culture traits embodied in the Thai society includes its high-powered differential, social smoothing relationship orientation, grateful relationship orientation, strong uncertainty avoidance and a high sense of collectivism. These cultural norms provide an understanding of how Thai teachers might feel and behave about school supervision.

Thailand has a high-powered differential culture which is reflected in its strongly hierarchical and bureaucratic society (Hallinger & Kantamara, 2000; Harada, 2017). Power differential is a cultural dimension that refers to the degree to which 'less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally' (Hofstede et al., 2010, p. 61). Thais believe that, based on Buddhist teaching, their

social status at birth is delineated by *karma* from their previous lives (Hallinger & Kantamara, 2000). They are taught to accept their status in society from a young age, and they are usually content with their place in the cultural hierarchy (Hallinger & Kantamara, 2000). Thais also respect organisational ranks or positions that are normally associated with age and experience (Harada, 2017). This can be observed in the expressions and communications between those of different ranks and statuses (Hallinger & Kantamara, 2000). Organisational leaders in high-power-differential countries such as Thailand tend to be autocratic (Hofstede et al., 2010), but subordinates could either be highly dependent on their autocratic leaders or reject such a leadership style, but they do not openly demonstrate this rejection (Hofstede et al., 2010).

Thai society is also oriented towards social smoothing relationships (Komin, 1988; Servaes, 2017) by placing a high value on social relations more than productivity (Hallinger & Kantamara, 2000). Thais are influenced by their Buddhist principles to be 'friendly, modest, and conflict-avoiding' (Servaes, 2017, p. 56). They are accepting and kind to fellow people, and do not express any displeasure, criticism, or anger (Soontayatron, 2014). This cultural norm can be represented by Thai notions of *kreng jai* and *mai pen rai. Kreng jai* is described as respectful fear (Wyatt & Promkandorn, 2012) which relates to one's anxiety over his/her behaviour to not upset others. The term normally refers to Thais' attitude towards their superiors (Henderson et al., 1971). *Mai pen rai* means never mind or take it easy (Servaes, 2017). It is Thais' common saying in interpersonal communications. These words sometimes have only a superficial value. Thais tend to say *mai pen rai* even when in a situation where they are troubled by others. (Harada, 2017). *Kreng jai* and *mai pen rai* are highly typical words used by Thai people to maintain harmonious social relations with others.

The trait to embrace grateful relationships is also embodied in the Thai culture. According to Servaes (2017), Thai society involves relations on the grounds of moral kindness (Servaes, 2017). Thais value *phu mee pra-khun* or those who demonstrate or offer moral

kindness towards them (Servaes, 2017). They feel obligated to pay respect and return the favour to *phu mee pra-khun*; those who lack gratitude are seen as despicable and punishable by moral justice principles (Servaes, 2017). For example, mothers and teachers are regarded as *phu mee pra-khun* in the Thai culture due to their unconditional love and moral example towards their children and students (Servaes, 2017). Thai students are taught to pay respect and offer gratitude to their mothers and teachers, especially on Mother's Day and Teacher's Day where honour ceremonies are widely performed throughout the country.

Thai society has a strong uncertainty avoidance culture (Hallinger & Kantamara, 2000). Uncertainty avoidance is 'the extent to which members of a culture feel threatened by ambiguous or unknown situations' (Hofstede et al., 2010, p. 192). Thai people feel comfortable with stability and routines, tending not to cause any conflict nor take initiative at work to reduce uncertainty (Hallinger & Kantamara, 2000). They also rely heavily on experts for their knowledge and prefer to follow rules and regulations, and the direction provided for them (Hallinger & Kantamara, 2000).

Thai culture is also highly collectivist (Hallinger & Kantamara, 2000). Collectivism 'pertains to societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty' (Hofstede et al., 2010, p. 92). Thai people are members of an extended family whose actions are normally based on a collective consciousness rather than an individual one (Hallinger & Kantamara, 2000). Each person likes to act in the group's interest, even if it is not for their best interest.

Thailand's cultural norms may impact upon Thai teachers' attitudes and actions in relation to supervision. The strong power differential society implies that most Thai school leaders are likely to be authoritarian or directive supervisors who take control over decision-making during supervision. Some Thai teachers might prefer this directive supervisory style

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whilst others may only tolerate it. The orientation towards harmonious social relationships, the strong uncertainty avoidance culture, and high collectivism also suggest that Thai teachers would not have the courage to express their supervisory preference to their supervisors. They might not wish to cause conflict between themselves and their supervisors and/or to disagree with the school's mission. Thai teachers may accept any given supervisory behavioural style even if the given style is troublesome, makes them feel uncomfortable, and does not suit their way of learning. This necessitates the exploration of Thai in-service teachers' preference for supervisory behaviours. The results could genuinely reflect on how they would like to be supervised and help school supervisors to better support teachers' professional development. This study focused on teachers in Thailand's basic education system. A brief explanation of this system is provided in the next section.

3.3   Basic Education System

Thailand classifies its education into formal, non-formal, and informal (OEC, 2017a). The formal education system determines learning curricula, objectives, methods, duration, and evaluation for its completion (OPS, 2017). This includes basic education and higher education (OPS, 2017). This section reviews Thailand's basic education system as the context of this study.

Thailand's basic education comprises of pre-elementary or kindergarten, elementary, lower secondary, and upper secondary levels (OPS, 2017). The kindergarten program ranges from two to three years, after which kindergarten graduates undergo a six-year course at the elementary level, a three-year course at the lower secondary level, and another three-year course at the upper secondary level. All Thai children receive free basic education from kindergarten to upper secondary levels, however, compulsory education covers only elementary and lower secondary levels (OEC, 2017a). There were approximately 11.6 million students registered in Thailand's basic education system in the academic year 2017, of which approximately 79.5%

studied in the public sector and 20.5% in the private sector (OEC, 2018). In 2015, 673,663 teachers were registered in the basic education system, which resulted in a student/teacher ratio of 17 to 1 (OEC, 2016).

Each level of education has different aims (OPS, 2017). The instructional activities of the kindergarten level aim to develop students' physical, mental, intellectual, and emotional skills required for further study at the elementary level. The elementary level focuses on fundamental numeracy and literacy skills, as well as the cultivation of desirable behaviours in students. The lower secondary course continues to develop the students' knowledge, skills, and ethics. It also aims to have students explore their needs, interests, and aptitudes, which will enable them to achieve their appropriate careers. There are two tracks in the upper secondary level: general stream; and (ii) vocational stream (OPS, 2017). The general stream aims to develop students based on aptitude, interest, and potential for higher education, while the vocational stream prepares students for the labour market through the development of occupational knowledge and skills.

Thailand's basic education system still needs improvement at the present time, although many attempts at education reform have been made since the nineteenth century. The achievements and problems regarding these reforms are presented and discussed in the following section.

3.4   Education Reforms

Thailand's education has been through various reforms to improve its quality and equity. These reforms can be divided into three phases: (i) reign of King Chulalongkorn the Great (King Rama V); (ii) aftermath of student rebellion in 1973; and (iii) enactment of the 1999 National Education Act (Fry & Bi, 2013; Sangnapaboworn, 2018). Success has been achieved, and problematic issues have arisen from attempting these reforms.

King Rama V instituted the first major reform in Thailand's education system. He wanted Thailand's bureaucratic system to become modernised to avoid Western colonisation (Fry & Bi, 2013) and to prepare Thai people for the modernisation of education (Sangnapaboworn, 2018). During his reign (1868-1910), the Department of Education was founded, followed by the launch of the country's first education plan (OEC, 2017a). A national curriculum for elementary, secondary, and higher education was drafted but not completed (Sangnapaboworn, 2018). Training schools for teachers were established along with the development of textbooks for teaching the Thai language and morality (Sangnapaboworn, 2018). English language teaching was initiated and available for those who passed the elementary education (Fry & Bi, 2013). There was also the establishment of formal schools at temple sites to provide additional education (Sangnapaboworn, 2018). Not long after King Rama V's reign, the provision of higher education was realised in 1916 by the foundation of Thailand's first national university (Chulalongkorn University), which led to elementary education becoming compulsory for Thai children in 1921 (OEC, 2017a). There was, however, a critique that educational resources were overly concentrated in Bangkok and other main cities, resulting in a highly centralised education system (Fry & Bi, 2013).

The second wave of education reform took place in the 1970s. In 1973, a student rebellion raised Thais' awareness of their participation in the country's administration, leading to a demand for reforms in education (Sangnapaboworn, 2018). Several education reform issues were proposed by appointed committees throughout the decade (Sangnapaboworn, 2018). These issues concerned the administration and management of education (Fry & Bi, 2013), education system, curriculum and teaching, teacher professional development, administrative power decentralisation, and private education promotion (Sangnapaboworn, 2018). Although the proposed reforms were rejected at ministerial meetings (Sangnapaboworn, 2018), some reform issues were accomplished during this period:

- Transfer of rural primary education administration from the Ministry of Interior to the Ministry of Education.

- Foundation of the National Primary Education Commission (Fry & Bi, 2013).

- Change in education system from a 4-3-3-2 to a 6-3-3 structure (OEC, 2017a) – from four year elementary, three year lower secondary, three year upper secondary, and two year pre-university schooling (Timtiampet, 1985) to six year elementary, three year lower secondary, and three year upper secondary schooling.

- Revision of curricula to promote student thinking and problem-solving skills.

- Expansion of education to rural areas by establishing kindergartens and opportunity expansion schools – *rongrian kayai ogat* (Sangnapaboworn, 2018).

The third phase of education reform in Thailand occurred from 1999 until present day. It was a major reform that emanated from the Asian economic crisis in 1997 (Fry & Bi, 2013). Thailand's education system experienced serious problems regarding student enrolment and achievement, teachers' professional development, and the education administration. There was a nationwide demand for education reform to turn Thailand into a learning society, so that the country could compete and survive in the era of globalisation (Sangnapaboworn, 2018). This demand was addressed by the promulgation of the National Education Act – the first education law in Thailand's history – in 1999, followed by the foundation of the Office of Education Reform (OER; Sangnapaboworn, 2018). The OER then proposed an enactment of related laws and the action plan for implementing education reform was based on the Act (Sangnapaboworn, 2018), which caused concern about the transformation of the entire education system in Thailand.

Thailand's education reform in the past two decades has not reached its goals due to the country's political instability (Sangnapaboworn, 2018). The country had undergone several changes in its national government, including six prime ministers and more than 20 ministers of education (Sangnapaboworn, 2018). Some government administration did not focus on the

education policy, and some ministers of education either ignored the reform movement or disrupted its implementation (Sangnapaboworn, 2018). A few education reform proposals were formulated by the government but they were not successfully enacted. The proposals either were rejected by high-ranking officials who were afraid of change or they could not be entirely implemented within the same administration and subsequently discontinued by the next government in power (Sangnapaboworn, 2018).

Essential reforms were implemented in Thailand's education system despite experiencing political instability:

- Extension of compulsory education from six to nine years.

- Permission for families and entrepreneurs to provide education.

- Provision of facilities for disabled students in learning with others.

- Separation of the Ministry of Education from the departments related to religion, art, culture, and sports (Sangnapaboworn, 2018).

- Formulation of basic education curriculum that emphasises the learner-centred approach to teaching (Ministry of Education, n.d.).

- 12-year free education project which was later expanded to 15 years (Fry, 2018a).

- Establishment of regional education offices and provincial education offices to administrate the education at the local levels (OEC, 2017a).

- An increase of the teacher education program length from four to five years to augment the pre-service teachers' knowledge and experience (Sangnapaboworn, 2018).

A range of education reform elements were also flagged in the National Scheme of Education B. E. 2560-2579, the 20-year plan of national education from 2017 to 2036, which included four fundamental objectives; (i) to improve the quality and efficiency of the education provision system; (ii) to develop the desirable citizenship, morals, skills, and capabilities in Thai people;

(iii) to transform Thai society into a learning society with morals and ethics; and (iv) to remedy inequities in the country (OEC, 2017b). To date, no concrete evidence of the plan's achievements have been realised.

Thailand's education system requires improvement despite many attempts at education reform, its expansion in providing professional development (Fry, 2018a), and increasing the student enrolment rate in basic education (OEC, 2018). Although there is improvement in the Thai education system, student achievement remains poor at the national and international levels. Inequality in the country's education also still exists (Fry, 2018a). The majority of Thai students scored under 50% in several subjects on the Ordinary National Educational Tests (OECD, 2016). The results of OECD Programme for International Student Assessment 2012 showed that Thai student performance was below average and fell behind those in some other Southeast Asia countries, such as Singapore and Vietnam (OECD, 2016). Children from disadvantaged backgrounds also had fewer opportunities and poorer performance in education compared to those in higher sections of society (OECD, 2016). It was noted that 'too many poor children do not attend school altogether, and too many fail to reach the minimum standards needed for full participation in society' (OECD, 2016, p. 3). This points out that there persists the necessity to enhance the quality and equity of Thailand's education system. This initiative requires the expanded provision of professional development for Thai teachers. The review on teacher professional development in Thailand is provided in the following section.

3.5   Teacher Professional Development

The teaching profession is highly respected and honoured in Thai society (Fry, 2018a). Thai people feel that they owe teachers a debt of gratitude for their efforts, knowledge and morals (Malikhao, 2017). It is a tradition for Thai students to pay respect to their teachers, whether current and former teachers, on Teacher's Day every year (Fry, 2018a) when honour ceremonies for teachers are held at schools across the country.

To enter the teaching profession in Thailand, the achievement of professional standards is required. It has been mentioned by the Teachers Council of Thailand (TCT) that those who pursue the profession need to acquire at least a bachelor's degree in education or the equivalent, and to meet the knowledge standards with a minimum one year of practical training in schools (TCT, 2013a). These requirements can be accomplished by completing the teacher education program that is available at the bachelor's and master's degree levels (OEC, 2017a).

Teacher professional development has been a focal point in Thailand's attempts at education reform over several decades (Sangnapaboworn, 2018). Thai governments acknowledge the essential role of teachers as 'they play an important role in developing the learning process and enhancing the quality of students' learning' at the school level (OEC, 2017a, p. 101). The quality of the teaching profession has been augmented through changes in the length of the teacher education course, teacher licensing system, and teacher induction program (OECD, 2016); but there remains various issues that need to be addressed. Thai teachers have to endure difficult working conditions at school (Fry, 2018a), where they are offered little opportunity to advance their career. They are usually assigned to duties unrelated to teaching, as well as inappropriately allocated to teach subjects outside their expertise. Professional training for Thai in-service teachers is also not effective for their development as learning facilitators.

The continuing professional development of Thai in-service teachers did not seem to be sufficiently promoted, which resulted in Thai in-service teachers reporting that they were insufficiently prepared for the country's education reforms (OECD, 2016). The reform of teachers' ongoing professional development remains in the National Scheme of Education B. E. 2560-2579 (OEC, 2017b). In 2016, OECD suggested that the content of Thai teachers' professional development should relate to skills required to work towards the achievement of reform goals. Opportunities for development should recognise the needs of the teacher and the

school, as well as emphasise school-based and job-embedded learning of teachers. It also highlighted that Thai in-service teachers needed greater support from their school leaders.

Thai school leaders can foster in-service teacher professional development through teacher supervision. The process is a school-based and job-embedded professional learning opportunity for teachers, since it is a school activity that is aimed to improve teacher instructional practices for the enhancement of student learning (Sullivan & Glanz, 2013). Teacher supervision could effectively address the needs of schools and teachers because school leaders will gain an understanding of the school goals and will be able to closely observe teachers' professional issues and practices. Supervision practices positively impact on Thai teachers' performance, professional ethics (Prungchaiyaphum, 2018), learning management effectiveness (Philaphan, 2016), and teaching competency (Tasanagorakool, 2017; Thongbai, 2015). It was also suggested that supervision should be differentiated (Hemmabutr, 2012) and continuously implemented (Che-mudo, 2016; Hemmabutr, 2012) to effectively improve Thai teachers' professional practices.

The professional development of Thai in-service teachers can be supported through the provision of differentiated supervisory behaviours in response to their personality. It was stated that appropriate supervisory behaviours promote the teachers' learning engagement during the supervision process (Zepeda, 2017). It has been reported that supervisory behaviour is a causal factor of professional competency of Thai school teachers (Tasanagorakool, 2017). Studies also showed that Thai teachers' personalities influence their professional practices (Kaeosriha, 2015; Kwankijwongthron, 2015) and career attitudes (Lekthum, 1992), which might relate to their cooperation and attention to a given professional development effort, such as supervision. This implies that personality could affect Thai teachers' preference for supervisory behaviours. To enhance Thai teachers' on-going professional development, school leaders need to careful

consider their supervisory behaviours and to perform supervisory behaviours that suit the teacher's personality.

Teachers are a key element in reforming the Thai education system. Their teaching practices impact upon student learning, although they have less influence than that of social and structural factors beyond the school level (Loughland & Thompson, 2016), for example, family socio-economic status and school funding. Thai in-service teachers' professional skills and practices need to be comprehensively supported, so that they can be the driving force of the country's education reform movement. For the enhancement of Thai teachers' ongoing professional development, efforts could be made to improve the school leader's behaviour during teacher supervision, such as altering supervisory behaviours in response to the preference of individual teachers based on their personality. This study is thus focused on the relationship between Thai teachers' personalities and their preference for supervisory behaviours. The next section provides the background of educational supervision in Thailand, which suggests a necessity to emphasise the supervisory practice at the school level.

3.6   Educational Supervision

Educational supervision in Thailand has occurred since the middle of the twentieth century. It has been however at the state and educational district levels, which may not sufficiently facilitate Thai in-service teachers' professional development.

Thailand has acknowledged the role of educational supervision in its education quality improvement. The educational background explained by Kongsakhon (2020) suggests educational supervision has been implemented in Thailand for about 68 years. The first educational supervisory division was founded as recommended by the United Nations Educational, Scientific and Cultural Organization or UNESCO in 1952. Experts in different subject areas were selected and trained to work as educational supervisors at the state level.

Their duties were to assist, suggest, and improve the learning and teaching effectiveness of Thai educational institutes so that quality students could be produced for Thai society. The supervision task was then expanded through the establishment of educational supervisory divisions at the provincial level in 1960 to oversee the education tasks in each of 73 provinces. Thereafter, there were various transformations of the administrative structure within the Ministry of Education from 1967 to 2010, which caused changes in the supervisors' affiliations. The major change would be in 2003 due to the promulgation of the National Education Act in 1999. The state and provincial supervisors were assigned to work under the administration of Education Service Area Offices as a task group for supervision, monitoring, and evaluation of the educational provision in each educational district. Note that there are 225 education districts nationwide (OEC, 2017a).

The change in 2003 negatively impacted the whole system of Thailand's educational supervision. There was a lack of cohesion between the supervisory implementations at the state and educational district levels. The development of supervision is each district went in different directions. These resulted in weakness of supervision in Thailand's basic education system (Education Supervision Development Center, n.d.). Two state agencies have thus been established to address this problem. The Education Supervision Development Center was founded in 2011 to coordinate supervision tasks between the state and educational districts and to support the supervision process at the districts for the enhancement of basic education quality (Education Supervision Development Center, n.d.). This was followed by the establishment of the Educational Supervisory Division of the Office of Basic Education Commission in 2017. This division's role is to provide plans and directions for the supervisory system in basic education and to develop the educational supervisors' competency (Education Supervision Development Center, n.d.).

To improve the professional practice of Thai in-service teachers cannot rely solely on the supervision of educational supervisors at the district level. The supervisors in the Education Service Area Offices may not effectively provide pedagogical support for in-service teachers. They are overwhelmed by office paperwork, not sufficiently trained to become instructional leaders, and have limited budget to visit schools under their responsibility (Shaeffer, 2018). The Independent Committee for Education Reform notes that most educational supervisors only follow up on projects assigned to schools from government authorities ("Bot itsara sanoe fuen", 2019), therefore spending little time to foster teachers' professional development. The number of educational supervisors also limit their supervision capacity. There are approximately 5,000 supervisors in all 225 educational districts ("Bot itsara sanoe fuen", 2019) overseeing 99,422 schools and 673,663 teachers (OEC, 2016), that is about one supervisor to 20 schools and to 135 teachers. One knowledgeable and skillful supervisor might not be able to frequently observe classrooms of a hundred of teachers in twenty different schools, nor could he/she effectively monitor and foster individual improvement of the teachers' professional practice. Thai school leaders need to conduct in-school supervision to provide more professional development support for their schoolteachers. The literature on supervisory behaviours at the school level in Thailand is reviewed in the following section.

3.7   In-School Supervisory Behaviours

Thai teachers' professional development can be supported by school leaders through their supervisory role. Supervisory behaviours are interpersonal behaviours of supervisors (school leaders) towards teachers during the supervision process. They are essential to teachers' learning and attitudes toward their profession and would lead to the enhancement of the teachers' professional growth when suitably applied (as argued in Chapter 2, Section 2.3.1). It appears that Thailand's school leaders still need to improve their supervisory behaviours and that more studies are required regarding this matter.

Supervisory behaviours have been found to play an important role in Thailand's education system, but there exist some pitfalls in the current practice. Behaviours of Thailand's school supervisors have been found to correlate with various school effectiveness variables, including the ability to solve in-school problems, development of students' morals (Karod, 2007), students' learning achievement, schools' ability to adapt and develop (Karod, 2007; Somboon, 2014), and extracurricular activity performance (Jaithaingkul, 2013). It was indicated that supervisory behaviours impact on the performance of Thai teachers (Mekkhao, 2014), professional competency (Tasanagorakool, 2017), and job satisfaction (Somboon, 2014). Behaviours such as creating relationships with teachers and promoting their participation in addressing problems were reported as positive changes in teachers' professional behaviours (Chokepaisarn, 2010). But improvement is still required for supervisory behaviours of Thai school leaders, although some have been indicated to apply a range of supervisory behavioural approaches (Champa, 2016; Jaithaingkul, 2013; Siriphonwutthichai, 2014). Some school leaders were reported to perform supervisory behavioural approaches that contradicted the approaches expected by their teachers (Siriphonwutthichai, 2014). Some were required to improve their supervisory behaviours, for example, to be more collaborative, friendly, and just (Leartprapruet, 2005; Mekkhao, 2014). Some leaders were also found to be fault finders who offered no contribution to the teacher's professional growth (S. Sharma et al., 2011). These issues suggest a need to address supervisory behaviours practised at the school level.

There was also a gap in the research on supervisory behaviours in Thailand's schools. Some studies focused on performance levels of school leaders' supervisory behaviours through the perception of school leaders (Champa, 2016), teachers (Songngamsub, 1989), or both (Leartprapruet, 2005). Other studies explored differences between the viewpoints of school leaders and teachers on conducted supervisory behaviours (Leartprapruet, 2005). Further studies have investigated links between supervisory behaviours and other variables, such as the leader's experience and school size (Champa, 2016), extracurricular activity performance (Jaithaingkul,

2013), the school effectiveness (Karod, 2007; Somboon, 2014), and teachers' practices (Chokepaisarn, 2010; Mekkhao, 2014). The findings of extant studies is that teachers' expectation or preference for supervisory behaviours have been under-researched. There appears to be only one study that has reported on teachers' expectation regarding their supervisors' behaviours (Siriphonwutthichai, 2014), but its results were based on schools under the authority of an educational foundation, therefore, it is not a representative sample of the national population. There has not been a nationwide study on Thai in-service teachers' preference for supervisory behaviours, nor a study on the relationship between this preference and the teacher's personality.

More research is needed to examine the supervisory behaviour preference of Thai teachers and the link of their personality to this preference. The knowledge about the personality-supervisory behaviour preference relationship in Thai teachers would help school leaders to provide appropriate and effective supervisory behaviours for each teacher (as argued in Chapter 2, Section 2.4.1). The understanding of the preference of Thailand's teachers for supervisory behaviours will also be advantageous, since it could be used to establish a general guideline for supervising teachers that is more engaging to the teacher. The information may also facilitate Thailand's policymakers to frame comprehensive standards for the country's school leaders. The discussion on Thailand's school leadership is provided in the next section.

3.8   School Leadership Standards

School leaders play an essential role in Thailand's educational transformation (Hallinger, 2018), but they have been criticised for their failure to implement changes in teaching and learning at the school level (Hallinger, 2018). The cause of their lack of instructional leadership is arguably in the preparation system for leaders (Hallinger, 2018), which includes the design of professional standards used to guide those in the position. The standards have been assessed as being unreflective of the leader's role of instructional reformers (OECD, 2016). Although a new

set of school leadership standards have recently been formulated, they do not clearly support the key role of school leaders in the professional development of teachers who are at the forefront of school education.

Those who pursue the profession of educational administrators or school leaders in Thailand are required to meet the knowledge and professional experience standards (TCT, 2013a). The TCT determines that Thai school leaders shall have attained the minimum educational requirement of a bachelor's degree in educational administration or the equivalent. They are to acquire knowledge concerning professional development, instructional leadership, educational administration and management, evaluation of curriculum and instruction, student activities and affairs, educational quality assurance, and professional morality and ethics (TCT, 2013a). The substances and competencies regarding each knowledge are also identified. Professional development knowledge involves the spirit, ideology, professionalism, knowledge management, and research of the school leader profession (TCT, 2013b). Instructional leadership knowledge concerns leadership behaviours, educational resource mobilisation, teacher supervision, and risk and conflict management (TCT, 2013b). A school leader is also required to have at least five years of teaching experience or experience in teaching, and to have worked in an educational administrative position for at least two years (TCT, 2013a).

Having entered the profession, Thai school leaders must perform their administrative duties in accordance with professional performance standards. The TCT (2013a) determines that school leaders should perform their tasks to facilitate the development of their profession and the development of personnel, learners, and the community. They are to implement high quality and feasible school plans, apply innovation to improve outcome quality, and systematically improve and report the results of the educational quality of the school. Leaders are also required to distinguish themselves as role models and constructively cooperate with school stakeholders.

It is important to note that the performance standard of school leaders aims for the same target as those of education administrators who work at the educational district level.

Thailand's current school leadership standards were taken and revised from those implemented in 2005 (TCT, 2013a), however, they do not reflect the leaders' responsibility to enhance school education. The 2005 standards were assessed to be 'vaguely worded' and 'do not sufficiently reflect some of the major instructional and school management function of the [school leaders'] role' (OECD, 2016, p. 220). The recent standards do incorporate the instructional role of school leaders, including knowledge standards to involve Instructional Leadership and the Curriculum, Teaching, and Learning Evaluation subjects; but the experience and performance standards remain unchanged. The performance standards are very similar to those of the teacher profession that comprise of ambiguous statements, as pointed out in previous standards by OECD (2016). They are also similar for school leaders and education administrators, despite the difference in the administration at school and educational district levels. It is arguable that performance standards and knowledge standards do not specifically reflect the instructional role of school leaders, nor do they distinguish their responsibilities from those of the teacher and education administrators. This may limit the performance appraisal process to a superficial level of the leaders' practices and might result in negligence when partaking in the instructional leadership role.

Performance standards should explicitly describe the school leader's duties, such as those relating to the professional development of in-service teachers. The improvement of teachers' professional practices would positively affect school instruction and hence student learning. Thai in-service teachers require additional support for their continued professional development, especially from school leaders. A clear and detailed explanation of such a role would not only encompass full recognition of teachers' professional development from Thai

school leaders, but also guide leaders toward enhancing their capacity to effectively facilitate teachers' professional growth.

3.9   Summary

Chapter 3 explains the background of the education system in Thailand which is the context of this study. It describes the country's geographical and cultural norms, as well as related the cultural norms to supervisory situation. This chapter also explains Thailand's basic education system, followed by its attempt to reform education throughout the past century. It was argued that there persists a need to improve the quality and equity of the country's education system, despite efforts for reform. The professional development of Thai in-service teachers was discussed and pointed out as an essential element in the education reform movement. It was also been disputed that the professional development of Thai in-service teachers is inadequately supported and can be fostered by their school leaders through the development of supervision guidelines.

The last three sections in Chapter 3 presented the background of Thai educational supervision, reviewed supervisory behaviours at the school level, and discussed the national standards for school leaders. The supervisory support from government at the educational district level is not sufficient to effectively improve Thai teachers' professional practice. It was posited that supervisory behaviours of Thai leaders affect teachers' professional development, but improvement is still required in practices carried out by leaders. It was also critiqued that the nationwide view of Thai teachers on such behaviours remains unknown and Thailand's standards for school leaders do not reflect their role of teacher development. This presents an urgent need to extensively investigate the teachers' preference for supervisory behaviours. The results could be used to guide the behaviours of Thai school leaders, and be adapted for redesigning the national standards for the teaching profession. This study, therefore, was aimed to explore Thai in-service teachers' preference for supervisory behaviours by using a mixed

methods research approach. Additionally, details on the personality influence on this preference are provided in the next chapter.

CHAPTER 4:
METHODOLOGY

The first three chapters have presented the arguments for the significance of this research study, which focussed on Thai in-service teachers' perspectives on in-school supervision and the association of teacher's personality with their supervisory behaviour preference. The study utilised a mixed-methods methodology. This chapter begins by explaining the study's aims and research questions, followed by a brief review of the selected research design, study population, and sampling procedure. It also details the rationale for the research instruments, data collection methods, and data analyses.

4.1   Study Aims and Research Questions

The study's aim was to investigate the preference of Thailand's in-service teachers for supervisory behaviours and their individual preference based on personality. To achieve the aim, the research answered two research questions:

1.   What is the preference of Thailand's in-service teachers for supervisory behaviours?

2.   How does personality influence the supervisory behaviour preference of Thailand's in-service teachers?

The next section describes the research design that was employed in this study to address these questions.

4.2   Research Design

This study employed a convergent mixed methods research design (Creswell & Clark, 2018) to explore the preference of Thai in-service teachers for supervisory behaviours and the influence of personality on their preference. In this design, quantitative and qualitative data were

concurrently collected and separately analysed to gain a comprehensive understanding of the subject.

A mixed methods research approach in social sciences (Creswell, 2015) combines both quantitative and qualitative methods (Creswell & Clark, 2018; Mertens & McLaughlin, 2004) in the process of data gathering, analysis, and interpretation (Creswell, 2015; Watkins & Gioia, 2015). Such an approach enriches the understanding of the studied phenomenon (Scoles et al., 2014; Watkins & Gioia, 2015) and provides conclusive results, as opposed to the sole reliance on one research methodology (Creswell & Clark, 2018; Mertens & McLaughlin, 2004; Scoles et al., 2014). It allows researchers to obtain generalisable findings with the participant's voice as a representation (Creswell & Clark, 2018) to comprehensively answer research questions through 'inductive and deductive reasoning' (Watkins & Gioia, 2015, p. 12), and to gain further evidence on problems emanating from the study (Creswell & Clark, 2018). By exploring the teachers' preference for supervisory behaviours through two methods (quantitative and qualitative), a better understanding of their preference and its relationship to teacher personality was achieved, as opposed to a single method only. The approach enabled the researcher to simultaneously apply a high level of quantitative data measurements for precise and meaningful information about teachers' supervisory preference, perform statistical analyses to clarify the strength of each relationship and direction between this preference and teacher personality, and to capture the teachers' own voice on this subject beyond the study's prescriptive framework.

The current research used a convergent design with the questionnaire variant proposed by Creswell and Clark (2018). In this design alternative, quantitative and qualitative data were comparably collected via close-ended and open-ended questions and analysed separately. The results were then merged during the interpretation phase so that qualitative findings were used to validate the quantitative results, to enable a rich account of the research problem. This convergent design was recommended for the purpose of method triangulation where

quantitative results are compared and contrasted with qualitative results to develop a greater understanding of the research subject (Creswell & Clark, 2011). The convergent mixed methods design also has practical features. Firstly, it is suitable for those who are new to mixed methods research as there is a clear distinction between the quantitative and qualitative approaches. There is no need to relate the results from each approach until the analysis or interpretation stage of the study (Watkins & Gioia, 2015). Secondly, it allows researchers to conduct their study efficiently since both datasets are gathered at once (Creswell & Clark, 2018). Researchers can reduce the time and cost spent during the data collection process. The application of this convergent design allowed this study to validate results on the preference of Thai in-service teachers for supervisory behaviours and its association with their personality through method triangulation, as well as provided a deep understanding of teachers' preference. The design was deemed appropriate for this researcher who had not conducted a mixed methods research before. It was also a time- and cost-efficient approach for this nationwide study as data collection was to be self-administered by the researcher in different regions of Thailand. The research design of this study is demonstrated in Figure 4.1.

Several methods of data collection and analysis were involved in the quantitative and qualitative strands of this study. The teachers' personalities were measured through closed questions (quantitative data) and their preference for supervisory behaviours was measured using both closed questions compliant with the AHP method (quantitative data) and open-ended items in a sentence completion form (qualitative data). Both datasets on the teachers' preference were analysed separately. The quantitative data analyses included mean calculations and multiple regression analysis. The qualitative data were analysed using content analysis, followed by response percentage estimations and point-biserial correlation analysis. The teachers' preference for supervisory behaviours was gauged by means and response percentages.

Figure 4.1

Research Design of the Study
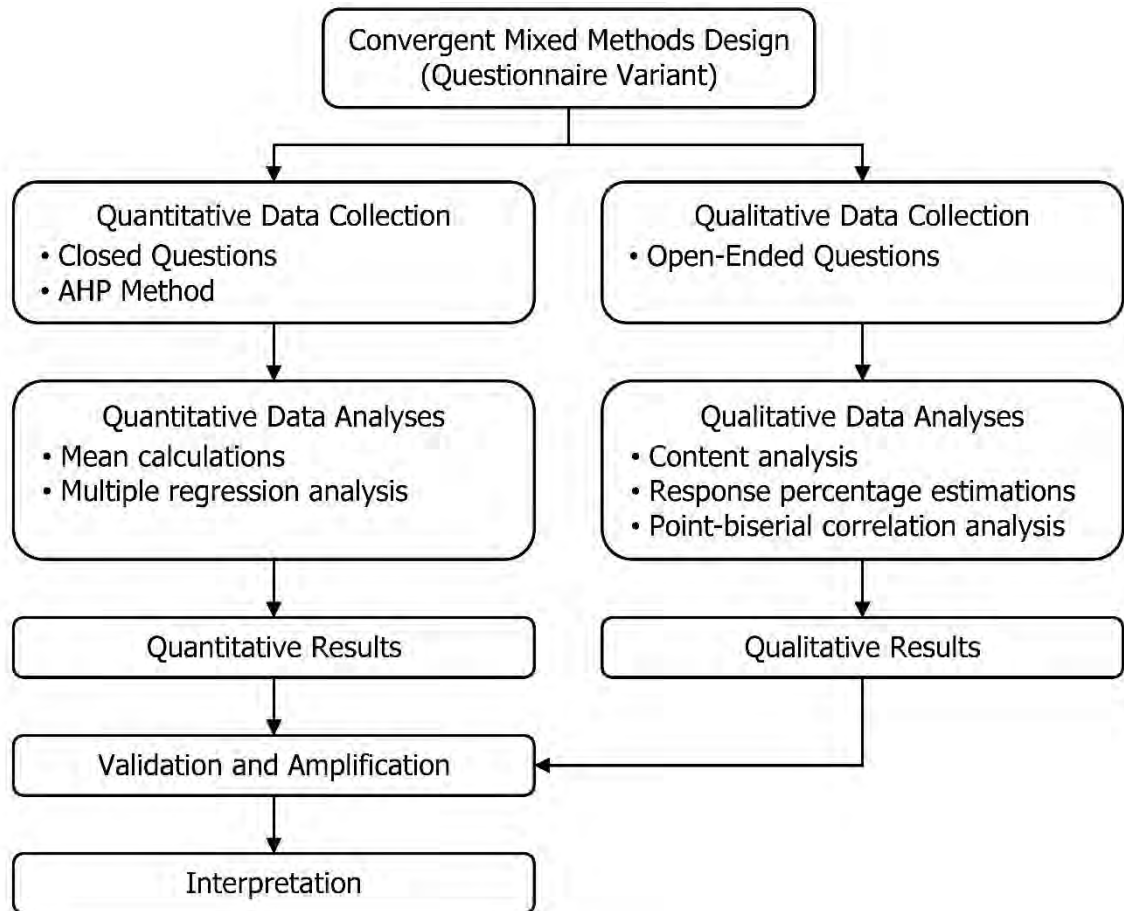
The relationship of the teacher's personality to his/her supervisory behaviour preference was explored through multiple regression and point-biserial correlation analyses. Results from the qualitative strand were used to validate and amplify those from the quantitative strand. The applied methods of data collections and analysis are further explained and justified in the following sections.

4.3   Population and Sample

The population of this study was Thailand's in-service teachers in basic education levels (K to 12), of which they totalled 673,663 in the academic year 2015 (OEC, 2016). The research participants were selected through multistage cluster random sampling according to regions and schools. Random sampling is a selection process where each element in a population has the same opportunity to be selected (Babbie, 2016). Random sampling provides added support to the representation of a sample population and more generalisable findings than convenient sampling (Suter, 2012). The method also eliminates any bias by the researcher on participant selection (Babbie, 2016).

Multistage cluster sampling was used for this study. This design initially sampled natural groups (clusters) and further sub-sampled members in each cluster (Babbie, 2016). Cluster sampling is suggested when a researcher needs to select a sample from a population that is hardly divided into individual elements (Suter, 2012). It allows a research study to be administrated efficiently, especially when it is not feasible to acquire an entire list of the population (Babbie, 2016). Multistage cluster sampling was an appropriate approach to select this study's sample, since it was not feasible for the researcher to obtain the full list of Thailand's in-service teachers.

The sample size was determined by applying the Krejcie and Morgan Table, which resulted in 384 participants, with a confidence level of 95% and a margin of error rate of ±5%. This sample size was also suitable to conduct multiple regression analysis. Such an analysis requires 10 to 15 participants for each independent variable (Field, 2013). There were potentially 25 independent variables involved in this analysis, therefore, at least 375 participants were required for the sample. The sample size of 384 teachers achieved the required number of participants for the study's multiple regression analysis.

To sample the study's population, Thai in-service teachers were primarily clustered into six geographic regions: Centre, North, South, East, West, and Northeast. These regions differ in their cultural traditions and administrative entities (Hafner et al., n.d.) by which teachers may have different perspectives on in-school supervisory behaviours. To include teachers of each region provided a sample that well represented the Thai teacher population. After all six regions were selected, teachers in each region were clustered by schools. The schools in each region were randomly sampled until the sampled teacher number reached the point of equal proportion to other regions, that is, at least 64 teachers.

4.4   Data Collection

Two variables were examined in this study: (i) teachers' personalities; and (ii) the teachers' supervisory behaviour preference. The personality variable was quantitatively measured by the MBTI instrument through closed questions. The teachers' supervisory behaviour preference was measured by both quantitative and qualitative methods. The variable was quantitatively measured via closed questions with an application of the AHP method, in conjunction with Glickman and colleagues' (2018) SIBQ. It was also qualitatively examined using open-ended items in the form of sentences. This section provides a description of the study's data collection methods, instruments, and the data collection procedure.

4.4.1   Quantitative Data Collection Method

Closed questions were used to quantitatively assess teachers' personalities and their supervisory behaviour preference. A closed question, or a close-ended question (Fink, 2003) requires respondents to provide their answer within a predetermined range, as defined by the researcher (Corbetta, 2003; Lavrakas, 2008; Roulston, 2008a), who will either explicitly offer multi-choice answers for selection or implicitly define the range of answers without a specific option (Roulston, 2008a).

The closed question method is appropriate to the study's investigation. The method is said to limit the data on measured variables (Traugott, 2004), since the respondents' own thoughts outside the researcher's frame cannot be expressed (Corbetta, 2003; Oliver, 2010; Roulston, 2008a). There are, however, several advantages offered by this data collection method. First, it enables researchers to extract certain facts regarding the topic (Roulston, 2008a). Second, the pre-established choices ease the difficulty of answering for respondents who may not recall their experiences (Corbetta, 2003) or who are unable to express their thoughts (Fink, 2003). The closed question method also prevents respondents from giving answers that are irrelevant (Ornstein, 2013), vague, or ambiguous (Corbetta, 2003) since the same scope of reference is specified (Corbetta, 2003). Finally, the method is highly suitable for studies with a large group of participants (Corbetta, 2003; Fink, 2003; Roulston, 2008a), as the cost and time constraints is less than other methods, such as open-ended questions (Traugott, 2004) and interviews. The utilisation of closed questions in this study allowed the researcher to efficiently gather data that was clearly integral to variable constructs from a large sample, as expected in the study.

The AHP method was also employed to metrically investigate teachers' preferences for supervisory behaviours. The method was originally a pairwise comparison method for decision-making (Saaty & Vargas, 2012). It concerns the sequential pairwise comparisons of each alternative to all others in a set of given criteria and a 9-point rating scale to identify their relative importance based on the respondent's opinion (D. Lee et al., 2000).

The AHP method is a robust approach to measuring the teachers' supervisory behaviour preference. This method is recommended for educational research studies that estimate preference intensities among a set of more than two alternatives (D. Lee et al., 2000). It can generate a clarification of preferences for investigated alternatives more accurately than the traditional questionnaire method (Sato, 2009). Respondents are able to assess their preferences

through comparisons between two items at a time, which is more efficient than the allocation of preferences directed to each item of the set. An individual can clearly value their preference between two alternatives than trying to estimate their preference among three or more choices at once (D. Lee et al., 2000). The method also yields ratio scaled data that provide a more meaningful and accurate information than those from a traditional rating scale measurement (Doong, 2002). When a criterion is rated from 1 to 5, where '1' refers to 'strongly disagree' and '5' refers to 'strongly agree', it is uncertain that the ranges among these numbers are equal. It is also unclear how much weaker or stronger one number is compared to other numbers. Researchers cannot assume that a total score of 50 is two times stronger than a total score of 25. Such ambiguities can be removed by the administration of the AHP method, as its result data are on a ratio scale. Ratio scaled data represent a higher level of measurement precision than interval scaled data (Hair et al., 2010), such as those from the traditional 5-rating scaled measurement. The application of the AHP method provided this study with precise quantitative data on the teachers' supervisory behaviour preference.

To derive the participant's preference score for each supervisory behavioural approach through using the AHP method, the researcher modified the steps of decision analysis, as proposed by Mu and Pereyra-Rojas (2017), and exercised the following procedure:

1. Each participant was asked to compare each supervisory behavioural approach with each of the others and reflect their preference intensities regarding each pair. The AHP method suggested applying Saaty's (2012) pairwise comparison scale for decision-making, which ranged from 1 to 9, to value the judgment from both choices, being 'equally important' to one being 'extremely more important' than the other (Table 4.1). The application of Saaty's scale, however, can cause some difficulties to a preference measurement since it is not straightforward for respondents to understand (Meißner & Decker, 2009). This study applied a simpler scale called the bipolar scale developed by Meißner and Decker (2009) to simultaneously measure the directions and intensities of

the supervisory behaviour preference. The bipolar scale is in a 9-point-scale format where one half of the scale mirrors the other (Table 4.2). Such mirrored values of four preference strengths are more understandable and distinct than values on Saaty's (2012) scale, where nine levels are used to identify how one choice is more important than the other. When two preference approaches were being compared, the participant was to select a point on the scale to express which approach they preferred, and by how much. As shown in Table 4.3, the first comparison expresses that Approach B is absolutely preferred to Approach A, whereas the comparison number 5 shows that Approach B is strongly preferred to Approach D.

Table 4.1

Saaty's (2012) Pairwise Comparison Scale for Decision-Making

Verbal judgment	Equal importance	Weak importance	Moderate importance	Moderate plus importance	Strong importance	Strong plus importance	Very strong importance	Very, very, strong importance	Extreme importance
Scale level	1	2	3	4	5	6	7	8	9
Numeric value	1	2	3	4	5	6	7	8	9

Table 4.2

Meißner and Decker's (2009) Bipolar Scale

Verbal Judgment	Absolutely prefer the left	Strongly prefer the left	Considerably prefer the left	Weakly prefer the left	Indifferent	Weakly prefer the right	Considerably prefer the right	Strongly prefer the right	Absolutely prefer the right
Scale level	1	2	3	4	5	6	7	8	9
Numeric value	9.00	5.20	3.00	1.73	1.00	1/1.73	1/3.00	1/5.20	1/9.00

Table 4.3

Example of Pairwise Comparison of Analytic Hierarchy Process

No.	Approach	Absolutely prefer the left	Strongly prefer the left	Considerably prefer the left	Weakly prefer the left	Indifferent	Weakly prefer the right	Considerably prefer the right	Strongly prefer the right	Absolutely prefer the right	Approach
1	A									x	B
2	A								x		C
3	A						x				D
4	B				x						C
5	B		x								D
6	C					x					D

2.   Each participant's answers were transformed into preference values using the numeric values on Meißner and Decker's (2009) bipolar scale. This developed a comparison matrix of the four approaches. numeric values and their reciprocals were added to corresponding cells. The example of this matrix is demonstrated in Table 4.4. If 'absolutely prefer the right' was selected when Approach A (left) is compared with Approach B (right), value '1/9.00' would be filled in the A-B cell (row A, column B). The B-A cell, being the inverse cell, would then be filled with value '9.00', the reciprocal value of 1/9.00. Value '1.00' meaning 'indifferent' would also be instantly applied in A-A, B-B, C-C and D-D cells, since each approach was compared with itself.

Table 4.4

Pairwise Comparison Matrix With Preference Values

Approach preference	A	B	C	D
A	1.00	1/9.00	1/5.20	1/1.73
B	9.00	1.00	1.73	5.20
C	5.20	1/1.73	1.00	1.00
D	1.73	1/5.20	1.00/1.00	1.00

3.   Preference (priority) weights for each approach were calculated using the eigenvector solution. The pairwise comparison matrix of each participant was normalised by the division of each relative preference value by the sum of its column values. Mean values in each row of the normalised matrix were then estimated. These means represented preference weights for approaches in their rows. Such weights were relative preference scores of each participant, and the maximum score is 1.000. As shown in Table 4.5, the relative preference scores are 0.060, 0.543, 0.249 and 0.147 for Approaches A, B, C and D, respectively. This means that Approach B is preferable to Approach A by 9.05 times, Approach C by 2.18 times, and Approach D by 3.69 times.

Table 4.5

Pairwise Comparison Matrix With Preference Weights

Approach preference	A	B	C	D	Preference weight
A	1.00	1/9.00	1/5.20	1/1.73	0.060
B	9.00	1.00	1.73	5.20	0.543
C	5.20	1/1.73	1.00	1.00	0.249
D	1.73	1/5.20	1.00/1.00	1.00	0.147

The AHP method for decision-making requires consistency of the pairwise comparison matrix through the estimation of the consistency ratio (Saaty & Vargas, 2012). A revision or removal

of the matrix is to be made when its consistency ratio is not within an acceptable range. This study accounted for all resultant matrixes regardless of its inconsistency, because individuals cannot perfectly estimate their values, especially on intangible items, even with a given scale (Saaty, 2003). Teachers can be cardinally inconsistent with their preference for supervisory behaviours. All participating teachers and their relative preference scores were therefore included for the study's data analysis to reflect the real situation.

4.4.2 Qualitative Data Collection Method

Qualitative data on the teachers' supervisory behaviour preference were obtained via open-ended questions. also referred to as open questions (Fink, 2003) or indirect questions (Roulston, 2008b), being research items that allow respondents to freely answer based on their own point of reference to the question without any pre-set choices (Albudaiwi, 2017; Roulston, 2008b). Such items can be formulated differently, such as unstructured questions, word associations, thematic apperception tests, sentence completion questions, storytelling, or picture completion exercises (Burrell & Nicolini, 2017). This study employed sentence completion questions, whereby incomplete sentences were provided for the respondent to complete. This format can draw out a distinct response that reflects the respondent's feeling, opinion and experience regarding the studied topic (Burrell & Nicolini, 2017). By applying sentence completion questions, the researcher is able to capture the teachers' own perception towards their preference for supervisory behaviours.

Responses to open questions are a beneficial data source (Kronberger & Wagner, 2000). The open-ended format can be difficult for some respondents to provide answers (Burrell & Nicolini, 2017; Ornstein, 2013) for researchers to administrate and analyse the data (Burrell & Nicolini, 2017; Fink, 2003; Frey, 2004). It does, however, offer rich and diverse data on the studied topic. Such data enable researchers to holistically and comprehensively look at the interested topic beyond their scope of understanding (Albudaiwi, 2017). This could lead to the

discovery of innovative interesting aspects that require further exploration (Albudaiwi, 2017; Burrell & Nicolini, 2017). Open response data can also be transformed to complement closed response data (Kronberger & Wagner, 2000), offering quotable material that is useful for the results report (Fink, 2003). The combination of open questions and closed questions to investigate the teachers' preference provided a comprehensive source of data that expanded the researcher's understanding of the subject.

4.4.3 Instruments

The measurement of this study was implemented via a research survey that comprised of three sections. The first section involved demographic questions used to identify the respondent's gender, age, education level, subject area expertise, grade level of teaching, years of teaching experience, and school region. Such questions provided the description of the sample and information of possible extraneous variables. The other two sections of the survey included two instruments: (i) MBTI Form G was translated into the Thai version and used to investigate teachers' personalities; and (ii) SBPA was developed by the researcher to measure the teachers' preference for supervisory behaviours, which are described and presented in the following subheadings.

Myer-Briggs Type Indicator (MBTI) instrument

The MBTI instrument is a widely utilised measurement developed from Jungian theory to assess individuals' personality (I. B. Myers et al., 2009). It has been predominantly used in various educational research studies that have focused on teachers' personalities, for example, those of Brown (2000), Sechler (2000), Perry and Ball (2004), Jones (2005), Hauser (2005), Cetinkaya (2006), Conti and McNeil (2011), Ly (2011), Gutwein (2015), and Alexander (2017). MBTI measures personality in four separate dichotomies: (i) Extraversion versus Introversion (E-N); (ii) Sensing versus Intuition (S-N); (iii) Thinking versus Feeling (T-F); and (iv) Judging versus Perceiving (J-P). The E-I dichotomy reflects the way individuals focus their energy, the S-N

dichotomy involves how individuals take in information, the T-F dichotomy refers to the way individuals make a decision or judgment, and the J-P dichotomy concerns how people deal with the other world (McIntire & Miller, 2007). The measurement result will categorise the respondent into four personality types according to their preferred alternative of each dichotomy (I. B. Myers et al., 2009).

The MBTI instrument is a valid personality assessment tool. Myers and her colleagues (2009) attest that the instrument is able to indicate personality types consistent with Jungian theory, its item structure is plausible, and its scores also reflect the related outcomes from other existing measures. The developers revealed its basis of evidence was from several studies: (i) plots of MBTI preference scores against the external variable confirm the dichotomous nature of the scales; (ii) theoretical definitions of MBTI scales are well supported by several studies on behavioural differences; (iii) distinction of the four MBTI personality scales (E-I, S-N, T-F, and J-P) is testified through a number of exploratory and confirmatory factor analyses; and (iv) correlations of MBTI preference scales with a range of scales in other instruments assert the meaning of the four dichotomies and typical behaviours related to them. Other scholars have also assessed the MBTI instrument and approved its construct validity (Carlyn, 1977), structural validity (Thompson & Borrello, 1986), and content validity (Tischler, 1994).

The internal and external reliabilities of the MBTI instrument have also been justified. The internal reliability is described as using split-half reliability and coefficient alpha estimates of four scales in the instrument. These estimates support the internal consistency of this instrument at a high level, since average values are approximately more than or equal to 0.9 (I. B. Myers et al., 2009). For the external reliability, test-retest reliabilities demonstrate the consistency of MBTI results over time at levels much greater than by chance (I. B. Myers et al., 2009). A change in a personality type of subjects takes place only when the preference clarity of their initial results is low (I. B. Myers et al., 2009). The MBTI instrument was also assessed

through the meta-analytic reliability generalisation study of Capraro and Capraro (2002). Their study included 50 coefficient alpha and 20 test-retest estimates of the instrument reported in 70 studies from 1998 to September 2001. The meta-analysis illustrated that the MBTI instrument is likely to yield acceptable reliability results across all studies, since the coefficient alpha and test-retest estimates averaged above 0.8.

Three forms of the MBTI instrument were translated into the Thai language by a Thai psychology scholar and an organisation. Form G was translated by Phongphan Kerdpitak with the permission from its rightful holder in 1997 (Kaewkungwal, 2001). The translated version of Form M (revision of Form G) and Form Q were then developed (Schaubhut & Thompson, 2017). Form M was the revised version of Form G, and Form Q involved all items in Form M and 51 additional items that provided detailed explanations of each MBTI dichotomy (I. B. Myers et al., 2009). The Thai translated version of Form M was officially administrated by Potentia (Thailand) Co., Ltd. (2020), the authorised body in Thailand.

The Thai translated version of Form G, Form M, and Form Q were examined for their reliability with Thai respondents. Form G reliability was investigated by Mahiwan (2001) using the split-half method, whereas the reliability of Form M and Form Q were explored by Schaubhut and Thompson (2017) through coefficient alpha estimations. The reliability estimates of each personality scale of the three forms are demonstrated in Table 4.6. Note that the estimates of Form Q are additional items to those of Form M.

Table 4.6

Reliability Estimates of the Thai Translated MBTI Form G, M and Q

Personality scale	MBTI Form G[a]	MBTI Form M[b]	MBTI Form Q[b]
Extraversion versus Introversion **(E-I)**	.86	.83	.56
Sensing versus Intuition **(S-N)**	.76	.65	.37
Thinking versus Feeling **(T-F)**	.71	.81	.49
Judging versus Perceiving **(J-P)**	.80	.85	.60
Average	.78	.78	.51

[a]Mahiwan (2001). [b]Schaubhut and Thompson (2017)

The Thai translated Form G is appropriate for this study for several reasons. First, it is a self-assessment form that contains fewer items and takes less time to complete than Form Q. Second, Form G is more applicable than Form M. The researcher was advised by Potentia (Thailand) Co., Ltd. that Form M can only be managed by a certified individual. To be certified, one must undergo a four-day training program, costing approximately 3,920 AUD. The researcher would also need to purchase a copy of each instrument used in the study; to transform the instrument into other formats was forbidden. The use of Form G did not involve such problematic issues. Third, the average of Form G reliability estimates was almost similar to that of Form M, albeit with a higher value for the S-N scale. Finally, Form G has been utilised by several Thai researchers to capture the personalities of Thai participants in different occupations, such as bankers (Mahiwan, 2001), social workers (Sukasem, 2001), engineers (Tangsthien, 2003), business employees (Duangpattra, 2002; Thienchai, 2001), and nursing students (Anutharun & Romphoree, 2009). This wide application underlines the suitability of Form G for Thai people. The Thai translated MBTI Form G of Phongphan Kerdpitak was thus the most appropriate form for this study, given its high cost and time efficiency compared with other forms, its validity and reliability, and its suitability for Thai participants.

The MBTI Form G instrument involves 94 forced choice items, each of which has either two or three response options (Consulting Psychologists Press, n.d.). There are four groups of

items relevant to four personality dichotomies: E-I, S-N, T-F, and J-P. Each item scores either

of two alternatives in a dichotomy depending on the respondent's answer. This results in eight

personality types, including Extraversion, Introversion, Sensing, Intuition, Thinking, Feeling,

Judging, and Perceiving (Kaewkungwal, 2001). The number of instruments that represent each

personality dichotomy is shown in Table 4.7.

Table 4.7

Number of Items in Each Personality Dichotomy of MBTI Form G

Personality dichotomy	Number of items
Extraversion versus Introversion (E-I)	21
Sensing versus Intuition (S-N)	26
Thinking versus Feeling (T-F)	23
Judging versus Perceiving (J-P)	24
Total	94

In this study, eight MBTI personality type scores were equipped to obtain four personality

domain scores for research analysis and interpretation. The scores of two alternative personality

types in a dichotomy were transformed into positive and negative values, and then combined to

produce a personality domain score. The Extraversion type score was positive and the

Introversion type score was negative for the E-I dichotomy; the Sensing type score was positive

and the Intuition type score was negative for the S-N dichotomy; the Thinking type score was

positive and the Feeling type score was negative for the T-F dichotomy; and the Judging type

score was positive and the Perceiving type score was negative for the J-P dichotomy. Such a

transformation established four personality scales that indicated the respondent's preference for

each personality dichotomy. On each scale, positive values referred to the preference for the

first alternative in the dichotomy, while negative values indicated the preference for the other.

For example, a score of 13 in the S-N dichotomy represented the Sensing type preference, while

a score of -13 represented the Intuition type preference. There were four values resulting from each participant's response, and these values were considered their personality domain scores.

The researcher examined the reliability of Thai translated MBTI Form G on the study's scoring system and population. A pilot study was conducted of 30 Thailand's in-service teachers who were randomly sampled to resemble the study's population. The Cronbach alpha of each personality scale was calculated to estimate its reliability (Table 4.8).

Table 4.8

Reliability Estimates of Thai Translated MBTI Form G

Personality scale	Cronbach alpha	
	Pilot study (*N* = 30)	Actual study (*N* = 460)
Extraversion versus Introversion (E-I)	.65	.73
Sensing versus Intuition (S-N)	.67	.52
Thinking versus Feeling (T-F)	.73	.64
Judging versus Perceiving (J-P)	.81	.76
Average	.72	.66

The personality scales obtained a Cronbach alpha of approximately .7, despite one being close to .6; the average value was .72. It has been suggested that a highly reliable scale should have a Cronbach alpha of .75, and a moderately reliable scale should have Cronbach alpha values from .5 to .75 (Hinton et al., 2004). Cronbach alphas of this study's scales were either within or above the recommended range of moderate reliability. The average Cronbach alpha resultant from the actual study was .66, and each personality scale had a Cronbach alpha in the acceptable reliable interval. The responding time limit was also adequate for participants to complete this instrument. The Thai translated MBTI Form G instrument was deemed applicable and moderately reliable to assess teachers' personalities in this study. The Thai translated MBTI

Form G was the second part of the research measurement. The final part included the SBPA instrument, details of which are described in the next section.

Supervisory Behaviour Preference Assessment (SBPA)

The SBPA was developed by the researcher to measure the teachers' preference for supervisory behavioural approaches with both quantitative and qualitative data. The instrument contained two parts, including a pairwise comparison of supervisory behavioural approaches and open-ended items. Part One is a modification of Glickman and colleagues' (2018) SIBQ, in conjunction with the AHP method application. Part Two was newly-created to explore further into the teachers' preference.

The SIBQ of Glickman and colleagues (2018) was designed for supervisors to examine their preferred behavioural approach to supervision. Supervisors were required to read through a supervision scenario with four alternative options and to identify which option resembled their most frequent behaviours. These options represent four approaches to supervisory behaviours: (i) Directive Control (DC); (ii) Directive Information (DI); (iii) Collaborative (CL); and (iv) Nondirective (ND). The questionnaire is a valid measurement to be applied for this study, as it was developed on the grounds of Glickman and colleagues' (2018) approach to supervisors' interpersonal behaviours under which the supervisory behaviour construct of this study was scoped. The researcher modified the SIBQ instrument to suit the study's context and to obtain meaningful data. Some wording in the scenario was adapted to suit the study's participants who were teachers. The responded part was also altered with the application of the AHP method to collect more meaningful data. The respondents were to rate their preferences when each supervisory behavioural approach was compared to each of the others, instead of selecting their most frequently performed approach. The modified SIBQ was employed as SBPA Part One, producing results from the teacher's relative preference scores for each of the four supervisory behavioural approaches.

SBPA Part Two contained open-ended items in a sentence completion form. The respondents expressed their opinions and feelings with regard to their preferred supervisory behaviours. This part of the study required respondents to complete three sentences following three initiating phases: (i) For the improvement of my professional practices, I would like to be supervised by a supervisor who is … ; (ii) And treats me by … ; and (iii) Because this kind of supervisor would make me feel … The content of the three open-ended items was validated by two experts: PhD scholars who have been teaching and researching in in the field of teacher professional development for several years. Data from SBPA Part Two provided the researcher with insight into the supervisory behaviour preference of the sampled teachers.

SBPA Parts One and Two were translated into the participants' native language. To conduct a survey research, the instrument needs to be comprehensible to all respondents (Stoop & Harrison, 2012). The participants' own language should also be recognised (Fink, 2017) since the questionnaire translation can essentially increase the number of responses (Stoop & Harrison, 2012). Therefore, SBPA was translated into the Thai language, being the native language of the researcher and study participants prior to the examination of its validity and reliability.

The validity of the translated SBPA was examined. The modification or translation made to a valid instrument can be evaluated and validated by qualified experts (American Educational Research Association et al., 2014). The SBPA instrument had adopted the contents of SIBQ, which is a valid instrument, but the researcher modified the wording, altered the responses, translated the language, and added items, all of which required validation. The alterations made from SIBQ in SBPA Part One and the translation of the whole instrument were assessed by an expert. The expert was an associated professor in the field of educational supervision and curriculum development in Thailand and a reviewer for several Thai journals of education. Two parts of the Thai translated SBPA were considered valid, although minor

changes were suggested regarding the choice of words, clarify of the instructions, and the format of the pairwise comparison response. The rating response format was considered to be relatively new to Thailand's teachers and possibly cause confusion about how teachers would respond. The researcher followed the expert's recommendation and transformed the rating format into a multiple-choice system that yielded the same source of data. The final version of the instrument was valid to measure Thai teachers' preference for supervisory behaviours.

The SBPA reliability was assessed by Cronbach alpha estimations. The pilot sample consisted of 30 Thailand's in-service teachers who were asked to complete the translated SBPA. Part One items had a Cronbach alpha of .74, which suggested comparatively high reliability (Hinton et al., 2004). This estimate aligned with that of the actual study with a Cronbach alpha of about .75. Some of the participants were interviewed about their experience with the instrument. They expressed that the SBPA instrument was well arranged, and the given time to complete it was appropriate. There was also no difficulty with the pairwise comparison items in Part One, and the sentence complete form in Part Two was unambiguous and understandable. The SBPA was therefore a reliable instrument to measure the teachers' supervisory behaviour preference in this study.

4.4.4 Data Collection Procedure

A letter of invitation was sent to each of the schools selected through multistage cluster random sampling respectively to Thailand's regions: Centre, North, South, East, West, and Northeast. The letter explained the purpose of the research, the measurement procedure, and a request to collect research data from volunteer teachers. Upon the schools' agreement, the researcher self-administered the study's survey to each volunteer teacher. This approach was to describe the instrument itinerary and increase the response rate. The research measurement was available in both paper-based and electronic-based forms. The participants were able to choose either format, depending on convenience and preference. Data from both approaches were later

assembled and recorded in a Microsoft Office Excel document for data analysis. An alternative procedure was provided for schools where self-administration of the survey was not possible. Such schools were asked for their support by advertising information about the study and providing access to the online survey via the school's communication channels, so that interested teachers could participant in the study.

4.5 Data Analysis

Various data analyses were used according to data types collected in this study. The study's quantitative data included participant demographics, four personality domain scores, and four relative preference scores for supervisory behavioural approaches. The qualitative data consisted of participant open responses to the sentence completion form in SBPA Part Two. Responses related to their preference for supervisory behaviours. Frequencies and percentages were also calculated for participant demographics and personality types to provide a sample overview. Data analyses in this study were performed using IBM SPSS Statistics Version 25 and Microsoft Excel for Office 365. The study's research questions required both quantitative and qualitative data analyses, as explained in the following sections.

4.5.1 Quantitative Data Analyses

The quantitative data analyses included the mean calculation and multiple regression analysis. The mean calculation was used to assess the teachers' preference for supervisory behaviours. Multiple regression analysis was applied to examine the personality influence on their preference.

Mean calculation

The mean and standard deviations were calculated to describe the participants' preference for each of the four approaches to supervisory behaviours. The mean is an average of values that measures the central tendency of a continuous dataset (Field, 2013). The estimate is considered

a good representative of the whole dataset (Nickens, 2018a), but it can be affected by extreme values and non-normal distributions (Field, 2013), especially in a small sample size (Nickens, 2018a). The mean is suggested to be reported with a measure of variability that describes the dataset's distribution (Nickens, 2018b). A standard deviation is a widely used measure of variability (Nickens, 2018b). It is the average dispersion of a dataset (Field, 2013) that describes how each value in the dataset differs from the mean (Nickens, 2018b). The larger the standard deviation, the more dispersed the dataset is (Nickens, 2018b). It has been noted that a non-normal distribution of data can be neglected for a large sample size of 200 or more (Hair et al., 2010), thus a large standard deviation could be acceptable when the sample is big enough. To estimate the means of participants' relative preference scores, along with standard deviations, results in a more accurate description of the teachers' preference for supervisory behaviours.

Multiple regression

Multiple regression was also utilised for the quantitative data analysis. This analysis is one of the most common methods of multivariant data analysis (Hair et al., 2010) in which several independent variables (factors) are explored in relation to a single dependent variable. It has high applicability to research in various areas, including education (Cohen et al., 2003), where problems may involve predictions of an outcome from known data and/or an explanation to establish theoretical reasoning of a phenomenon (Hair et al., 2010). This statistical technique also provides several estimates that allow researchers to know the effect size of a factor on a dependent variable and to gauge how much the effect of each factor differs from one another (Cohen et al., 2003). These estimates can also explain the direction of the relationship of each factor to its dependent variable (Field, 2013). This study needed to examine the influence of various independent variables on each supervisory behavioural approach preference. Their influence on strengths and directions were also needed to be identified. The application of multiple regression analysis was thus considered appropriate for this study.

Multiple regression analysis was used to assess the influence of personality in two aspects. The first aspect was to examine the predictive power of four personality domains for teachers' preferences for each supervisory behavioural approach. Four multiple regression models were formulated for this examination. The dependent variable of each model was one of the scores for the Directive Control approach preference (SBP_DC), Directive Informational approach preference (SBP_DI), Collaborative approach preference (SBP_CL), and Nondirective approach preference (SBP_ND). Independent variables of each model formed the personality scores of the Extraversion versus Introversion domain (D_EI), Sensing versus Intuition domain (D_SN), Thinking versus Feeling domain (D_TF), and Judging versus Perceiving domain (D_JP). Model names were used after the approach preference they predicted: the SBP_DC_A model to predict SBP_DC, the SBP_DI_A model to predict SBP_DI, the SBP_CL_A model to predict SBP_CL; and the SBP_ND_A model to predict SBP_ND. The Blockwise Entry (or Hierarchical) method was also performed in the model analysis. This method sequentially entered the independent variables, allowing the predictive power of each to be observed while previous ones were under control (Pallant, 2016). It provided the information of how a preference for a certain approach to supervisory behaviours could be predicted by the four personality domains, as well as by each of them.

The second aspect was to assess the extent to which the overall personality can predict the teachers' preference when compared to demographic variables. Participant demographics were included as potential predictors, together with the overall personality for the prediction of each approach preference. Four multiple regression models were formulated for four approach preferences: (i) SBP_DC_B model to predict SBP_DC; (ii) SBP_DI_B model to predict SBP_DI; (iii) SBP_CL_B model to predict SBP_CL; and (iv) SBP_ND_B model to predict SBP_ND. The independent variables of each model were personality (PERS), gender (GEN), age (AGE), years of experience (EXP), education level (EDU), subject area of expertise (SUBJ), grade level of

teaching (LEV), and school region (REG). Note that PERS represents all four personality domains.

Dummy variables were developed prior to the analysis. A dummy variable is a binary metric variable formulated to represent a category of a nonmetric variable using values of one and zero (Hair et al., 2010). The required number of dummy variables is one less than the number of categories included in the nonmetric variable (Field, 2013). In other words, if there are six categories in the variable, five dummy variables are needed. Nonmetric variables in this study were GEN, EDU, SUBJ, LEV, and REG. The number of their categories were two, three, 10, three, and six, respectively. A total of 19 dummy variables were examined as potential predictors, namely DUM_GEN, DUM_EDU1, DUM_EDU2, DUM_SUBJ1, DUM_SUBJ2, DUM_SUBJ3, DUM_SUBJ4, DUM_SUBJ5, DUM_SUBJ6, DUM_SUBJ7, DUM_SUBJ8, DUM_SUBJ9, DUM_LEV1, DUM_LEV2, DUM_REG1, DUM_REG2, DUM_REG3, DUM_REG4, and DUM_REG5.

The Blockwise Entry method was also applied to methodically enter each independent variable into the multiple regression models. D_EI, D_SN, D_TF, and D_JP were entered into each model initially to represent PERS, followed by AGE and then EXP. The groups of dummy variables representing each nonmetric variable were then separately inputted into the model. The dummy variable of GEN (Dum_GEN) went in first, followed by EDU (Dum_EDU1 - 2), SUBJ (Dum_SUBJ1 - 9), LEV (Dum_LEV1 - 2), and REG (Dum_REG1 - 5). Such a procedure allowed the researcher to acquire a single predictive power of each interested independent variable for comparison simultaneously.

The researcher applied the three-step multiple regression analysis procedure proposed by Pallant (2016): (i) analysis assumption evaluation; (ii) model evaluation; and (iii) independent variable evaluation. The explanations of each step are provided in the following sub-subsections.

Analysis assumption evaluation

A multiple regression model is required to meet several assumptions to validate its parameters and result generalisability. These assumptions concern the sample size, multicollinearity, outliers, normality of residuals, linearity, homoscedasticity, and independence of residuals (Pallant, 2016). The sample size and multicollinearity assumptions concern the measures that do not relate to the dependent variable. Other assumptions relate to residuals, which are measures that define how much the actual values of the dependent variable differ from the predicted values (Pallant, 2016).

The sample size assumption requires that the number of participants or cases needs to be adequately large to obtain a reliable regression model. A large sample size can increase the statistical power as it decreases sampling errors (Hair et al., 2010). For multiple regression analysis, it is suggested that the number of participants should range from 10 to 15 for each independent variable (Field, 2013). Given that this study included four main independent variables (personality domains) and 21 additional independent variables (demographics), approximately 375 participants were needed.

The multicollinearity assumption refers to a condition in which an examined independent variable is highly correlated with other independent variables (Hair et al., 2010). A good multiple regression model does not comply with such a high correlation (Pallant, 2016). Multicollinearity reduces the regression coefficient trustworthiness, limits the size of predictive powers, and hinders the effect of individual predictors (Field, 2013). This assumption can be assessed through correlation coefficients among the variables, or Tolerance and Variance Inflation Factor (VIF) statistics of each independent variable (Pallant, 2016). Correlation coefficients should be less than 0.7, Tolerance values should be well above 0.2, and VIF values are to be well below 10 (Field, 2013). When multicollinearity occurs, the researcher may

remove the variables under such condition, combine them, or apply the model solely for prediction and avoid interpreting the regression coefficients (Hair et al., 2010).

The outlier assumption relates to responding cases that significantly differ from the majority of the data (Field, 2013). Some outliers may be influential cases that disproportionately affect the regression results (Hair et al., 2010). Outliers can be identified by the distribution of standardised residuals or z-scores. It is recommended that 95% of z-scores be between -1.96 and 1.96, 99% to lie within -2.58 and 2.58, and 99.9% to lie between -3.29 and 3.29 (Field, 2013). For z-scores to remain outside these scopes suggests that the multiple regression model does not fit well with the data and that cases with large z-scores may be the outliers (Field, 2013). Influential cases can be determined by Cook's Distance (COO) (Field, 2013). COO estimates 'the overall influence of a case on the [regression] model' (Field, 2013, p. 306) to identify whether there is any inappropriate influence caused by that case (Pallant, 2016). Outliers should be deleted only when they are seriously abnormal and unrepresentative of the population, or researchers may risk limiting the analysis generalisability (Hair et al., 2010). It is suggested that an outlier with the COO value under 1 is not necessarily deleted, as it has no substantial effect on the regression analysis (Stevens, 1996).

The normality of residual assumption refers to the normal distribution of multiple regression model residuals (Pallant, 2016). This means that there should not be many predicted values of the dependent variable that differ from actual values (Field, 2013). This assumption can be detected by the histogram and the normal probability plot of z-scores. The histogram should resemble a symmetrical bell-shape, and the normal probability plot should form a diagonal line (Field, 2013). The remedy for non-normal distribution involves data transformation, such as inverse, squared, or cubed (Hair et al., 2010). It should be noted that violation of this assumption only affects confidence intervals and significance tests of the model's parameters (regression coefficients) in a small sample, not in a large sample where

outliers matter more than normality (Field, 2013). A large sample size of 200 or more can neglect such a non-normality effect (Hair et al., 2010).

The linearity assumption requires predicted values of the dependent variable to form a straight-line relationship with the residuals (Pallant, 2016). It is the most important assumption because a multiple regression model is a linear design where the relationship between the dependent variable and independent variable(s) is expected to form a straight line (Field, 2013). To violate this assumption means that the model and its parameter estimates are invalid (Field, 2013). Linearity can be evaluated by a scatter plot of standardised predicted values against z-scores (ZPRED vs. ZRESID). The point dispersion should not form any nonlinear pattern otherwise nonlinearity can be indicated (Hair et al., 2010). Nonlinearity can be overcome by formulating a new variable to represent the nonlinear relationship or transforming the data of either or both variables by taking the squared (Hair et al., 2010).

The homoscedasticity assumption relates to homogeneity of the variance of residuals. The variance of residuals should be similar at each level of the independent variables (Field, 2013). Homoscedasticity can be diagnosed using the ZPRED vs. ZRESID scatter plot. Cloud dots are expected to be evenly spaced without a funnel-shaped form (Field, 2013). Failure to meet this assumption biases the confidence intervals and significance tests of the regression coefficients, as in the normality assumption, but regression coefficients themselves are still valid (Field, 2013). This means the model can only explain the sample, not the population. Data transformation, such as the inverse or square root is suggested when homoscedasticity cannot be assumed (Hair et al., 2010).

The independence of residual assumption requires residuals of any two cases to be uncorrelated. This means the error in the dependent variable prediction of one case should not influence that of another case (Field, 2013). The dependence of residuals affects the validity of confidence intervals and significance tests of regression coefficients, similar to violating the

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normality and homoscedasticity assumptions. The independence of residuals can be determined by the Durbin-Watson test, which has a value of 2 to indicate that its residuals are uncorrelated and values under 1 or above 3 are of great concern (Field, 2013).

All these assumptions were assessed for each multiple regression model to ensure that its parameters were valid and that its findings could explain the population phenomenon. The model evaluation was then performed to investigate its predicting ability.

Model evaluation

The predictive powers in each model relate to the coefficient of determination (R^2) and coefficients of determination changes (ΔR^2). The R^2 and ΔR^2 values range from 0 and 1 (Hair et al., 2010), and to multiply them by 100 yields a percentage of the variance in the dependent variable that can be explained by the independent variable(s) (Field, 2013). The R^2 value demonstrates the amount of variance accounted for by all independent variables in the model (Pallant, 2016), while the ΔR^2 value illustrates the amount of variance explained by each independent variable (Field, 2013). In this study, the R^2 values of the SBP_DC$_A$, SBP_DI$_A$, SBP_CL$_A$, and SBP_ND$_A$ models indicated the powers of all personality domains to predict the teachers' preferences for each supervisory behavioural approach. Their ΔR^2 values explained how each personality domain could predict a certain approach preference. The R^2 values of the SBP_DC$_B$, SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ models demonstrated the predictive powers of the combination of personality and demographic variables. The ΔR^2 values of these models also allowed the researcher to compare the predictive power of personality with demographic variables.

Independent variable evaluation

Standardised regression coefficients (beta or β) were examined to explain the relationship between the personality domain and supervisory behavioural approach preferences. A regression coefficient (b) can be used to indicate the relationship strength and direction between

an independent variable and a dependent variable in a regression model. A multiple regression model has several independent variables that may be in different measurement units. All individual relationships in a multiple regression model need to be directly compared by their betas (Field, 2013), since betas are regression coefficients of each independent variable that conform to the same measurement unit. In this study, betas were estimated to compare the strength of their relationship to each approach preference and to gauge the relationship direction of each personality type to that preference. A higher beta showed a higher relationship strength. A positive beta indicated a positive relationship of the Extraversion, Sensing, Thinking, or Judging types to the preference, while a negative beta indicated the positive relationship of the Introversion, Intuition, Feeling, or Perceiving types. Note that the interpretation of relationship directions followed the operationalisation of personality domain scores in this study. Such relationship directions unfolded the likelihood of how teachers in each personality type would prefer or not prefer the approach.

4.5.2 Qualitative Data Analyses

The study's qualitative data were analysed through content analysis and correlation analysis. Content analysis was used to explore the teachers' preference for supervisory behaviours. Correlation analysis was utilised to investigate how this preference was influenced by their personalities.

Content analysis

The study's qualitative data were primarily analysed through content analysis. The analysis is suggested for an investigation of a large amount of textual material (Grbich, 2013), which will be described by using coding frame categorisation (Schreier, 2014). Content analysis possesses several assets. First, it is highly systematic, as researchers are required to thoroughly examine the data material and undergo steps in a definite order (Schreier, 2012). Second, it is a flexible method that allows researchers to use either a concept-driven approach or a data-driven

approach, or both to structure the material coding categories (Schreier, 2014). Third, the method can help to reduce the explored data by limiting it to certain aspects relevant to the research questions (Schreier, 2012). Finally, both qualitative and quantitative techniques can also be applied to this method to provide results in both numbers and descriptions (Grbich, 2013). The application of content analysis thus enabled the researcher to efficiently and effectively analyse the participants' open-ended responses. The results could provide both statistical evidence and a textual description beyond the researcher's prescriptive scope of supervisory behaviour preference.

This study applied concept-driven and data-driven approaches to content analysis. The concept-driven approach analysed data based on a theory or prior knowledge, while the data-driven approach accounted for all content in the material (Schreier, 2014). Participants were grouped according to their personality type (E, I, S, N, T, F, J, and P); their responses were classified into coding frame categories. The researcher read all responses repeatedly to generate a coding frame that covered all information in these responses. In line with Schreier's (2014) suggestion, the coding frame categories were structured through concept-driven and data-driven approaches. The main categories were developed based on the exploration scope of the study (concept-driven approach), and subcategories were generated inductively from the existing data in each response (data-driven approach). The researcher then coded the data after repeatedly reading through the responses and classifying their textual units into coding frame categories.

Furthermore, coded data were transformed into numeric data. Coded data from a qualitative analysis can be quantitatively reported by the quantification of the coded data into frequencies and percentages in coding categories (Schreier, 2014). A frequency and percentage in one category may be obtained through the count of responses where textual units are classified into that category (Creswell & Clark, 2018). These transformed qualitative data can also be incorporated into statistical analyses and integrated with quantitative findings in a mixed

methods study (Creswell & Clark, 2018). In this study, each emergent category was transformed into a dichotomous variable. The variable indicated the presence (scored as 1) or absence (scored as 0) of the category for each participant's response. Frequencies and percentages of responses with regard to each category were calculated to provide numeric information of the teachers' supervisory behaviour preference beyond the study's prescriptive theory. These measures were then statistically tested with correlation analysis.

Correlation analysis

Correlation analysis was employed to statistically investigate the association between the teachers' personalities and their supervisory behaviour preference based on emergent categories from content analysis. The point-biserial correlation coefficient (r_{pb}) was selected from a range of correlation coefficients, since the measure can indicate the relationship between a discrete dichotomous variable (no underlying continuum) and a metric variable (Field, 2013). The coefficient value determines the strength and direction of a relationship. This value ranges from -1 to +1 where -1 indicates a perfect negative association, 0 indicates no association, and +1 indicates a perfect positive association (Chao, 2017). It has been suggested that a correlation coefficient value of $\pm$.1 represents a small relationship strength between two variables, a value of $\pm$.3 suggests a medium strength, and a value of $\pm$.5 assumes a large strength (Field, 2013). The examined variables of this study involved personality domains measured in metric data and preference categories transformed into discrete dichotomous data. It was deemed appropriate to apply point-biserial correlation analysis to investigate their relationship.

There are assumptions to be evaluated prior to the point-biserial correlation analysis, so that the meaning of its estimates is valid. These assumptions related to the level of measurement, normal distribution, and linearity (Chao, 2017). The level of measurement assumption refers to accurate types of data on examined variables. The point-biserial correlation analysis requires one to be a dichotomous nominal variable and another to be a continuous

variable measured on either an interval or ratio scale (Chao, 2017). Other type of correlation analysis should be applied if two variables are not under such measurement condition.

The normal distribution assumption relates to the data distribution of a continuous variable, which is to be normally distributed for each level of the dichotomous variable (Chao, 2017). For this study, it meant that the personality domain scores in the presence level (1) and absence level (0) of each preference category should normally distribute. The researcher assessed this assumption by using the Shario-Wilk test, which showed whether data distribution was significantly different from a normal distribution (Field, 2013), thus the insignificant result assumed the normal distribution of the dataset. To violate this assumption, confidence intervals and significance tests of the analysis parameters will be affected (Field, 2013).

The linearity assumption concerns the linear relationship of two variables. It is suggested that two variables should be linearly related, otherwise the correlation model is invalid (Field, 2013). The linear relationship in a point-biserial correlation analysis can be assumed when data on each variable are normally distributed (Chao, 2017), but normal distribution concerns the data on an interval or ratio scale, not those on a nominal or ordinal scale (Hair et al., 2010). The point-biserial correlation analysis includes both a nominal variable and a continuous variable (on the interval or ratio scale). The normality examination may thus be needed only for data on a continuous variable to validate the linearity assumption. It is also important to note that a sample size of more than 200 participants can neglect the effects of non-normality (Hair et al., 2010).

In this study, variable pairs that achieved the analysis assumptions were estimated for their point-biserial correlation coefficients. The measures explained the relationship strengths between each personality domain and emergent preference categories. They also indicated the relationship direction that revealed the inclination of how teachers in each personality type preferred supervisory conditions in each emergent category.

4.6   Convergence of Quantitative and Qualitative Strands

The quantitative and qualitative data of this study were separately collected and analysed. The results from the two datasets were then integrated during interpretation where the qualitative analysis results were used to validate and amplify those from quantitative analyses. The teachers' preference for supervisory behaviours was interpreted via a comparison of the results from mean calculation of the relative preference scores for supervisory behavioural approaches and the results from content analysis of the participants' verbatim responses about supervisory preference. The influence of personality on teachers' supervisory behaviour preference was interpreted through a comparison of the results from multiple regression analysis where the supervisory preference was predicted by personality and the results from correlation analysis between personality and categories emerged from content analysis. The emergent categories, quantified data, and participants' verbatim communication unveiled the supervisory behaviour preference of teachers through their own voices. The correlation analysis results also offer further statistical evidence regarding the personality-supervisory preference relationship. The integration of quantitative results with qualitative results enabled the researcher to understand the study's topics more insightfully than the sole reliance on either one of them.

4.7   Ethical Issues

Ethics approval of this study was sought and granted by the Human Research Ethics committee of the University of New South Wales (Appendix A). The study's measurement caused no harm to the participants. Instead, it allowed them to understand their personality and be aware of available supervisory behavioural approaches that may suit them. Participation in the research was voluntary and participants' identities remained anonymous throughout the project. The confidentiality of data was secured as they were anonymously administrated. Data were only accessible to the researcher and supervisors.

4.8   Summary

This chapter has presented the research methodology applied in this study. The study utilised a convergent mixed methods research approach to gain a comprehensive understanding of Thai in-service teachers' preference for supervisory behaviours and to identify how their personality influences their preference. The closed and open question methodology was applied to quantitatively and qualitatively collect data. The research measurement involved the MBTI Form G instrument to assess teachers' personalities and the SBPA instrument to measure their supervisory behaviour preference. The SBPA, a modification of Glickman and colleagues' (2018) SIBQ, in conjunction with the AHP method, were utilised to gain precise and meaningful information on the subject matter. The MBTI and SBPA instruments were piloted and assessed to be valid for the measurement of this study's variables. Quantitative data were analysed through the mean calculation and multiple regression analysis. Qualitative data were analysed by content analysis and correlation analysis. In this study, qualitative results were used to validate and amplify the quantitative results. Results from two data sources are presented separately in the Chapters 5 and 6.

CHAPTER 5:
QUANTITATIVE RESULTS

The current study applied a mix methods design to investigate the preference of Thailand's in-service teachers for supervisory behaviours and how this preference is influenced by personality. This chapter presents the results from the quantitative data analyses in this study. These analyses included the frequency and percentage calculations to provide the sample's background information, the mean calculation to explain the teachers' preferences for supervisory behavioural approaches, and multiple regression analysis to describe the powers of personality domains to predict the teachers' preferences. These data analyses were performed using IBM SPSS Statistics Version 25. The interpretation of the results are also provided where appropriate.

5.1   Background Information

The background information of the research participants concerns their demographics and personality types. The participants were Thailand's in-service teachers in the basic education system (K to 12) selected through multistage cluster random sampling according to six Thailand's regions: Centre, North, South, East, West, and Northeast.

Five hundred and forty-six teachers responded to the research survey. The number of responses exceeded the determined sample size (384 participants), and each region had responses above the expected minimum number (64 participants). There were 130 teachers from the Centre region, 92 from the North, 95 from the South, 73 from the East, 86 from the West, and 70 from the Northeast. The collected responses were not all usable. Eighty-six of them provided inadequate data to analyse either personality domain scores or relative preference scores for supervisory behavioural approaches. Twenty-seven responses provided only the demographic information in Section One, 25 responses did not complete the personality

measurement in Section Two, and 34 responses did not answer the supervisory preference questions in Section Three. These errors in responses were removed, leaving 460 responses to undergo data analyses.

5.1.1 Demographics

Respondent teachers were asked to identify their gender, age, years of teaching experience, education level, subject area of expertise, grade level of teaching, and school region. The age and years of experience were later categorised into groups of 10-year intervals. The frequencies and percentages of these respondents' demographics are illustrated in Table 5.1.

Table 5.1

Frequencies and Percentages of Demographics (N = 460)

Demographics	Frequency	Percent
Gender		
Male	96	20.9
Female	364	79.1
Age (years)		
21-25	42	9.1
26-30	85	18.5
31-35	71	15.4
36-40	74	16.1
41-45	70	15.2
46-50	42	9.1
>50	76	16.5
Years of teaching experience		
0-5	145	31.5
6-10	89	19.3
11-15	64	13.9
16-20	41	8.9
21-25	53	11.5
26-30	31	6.7
>30	37	8.0

Demographics	Frequency	Percent
Education levels		
Bachelor's	279	60.7
Master's	178	38.7
Doctorate	3	0.7
Subject area of expertise		
Thai Language	67	14.6
Social Studies	56	12.2
Mathematics	81	17.6
Science	85	18.5
Foreign Language	73	15.9
Career and Technology	41	8.9
Physical Education	19	4.1
Arts and Music	24	5.2
Childhood Education	9	2.0
Guidance	5	1.1
Grade level of teaching		
Kindergarten	24	5.2
Primary	181	39.3
Secondary	255	55.4
School region		
Centre	107	23.3
North	84	18.3
South	84	18.3
East	51	11.1
West	75	16.3
Northeast	59	12.8

Some biases and dispersions were identified among the sample's demographics. Data were substantially inclined toward female (79.1%), bachelors' degree (60.7%), and secondary level of teaching (55.4%). Although the sample occupied a wide range of ages, most of the teachers were in their first 5 years of teaching (31.5%). The subject area of expertise and the school region obtained reasonably distributed data.

5.1.2 Personality Types

The MBTI Form G instrument was used to obtain the teachers' scores in four personality domains: (i) Extraversion versus Introversion (E-I); (ii) Sensing versus Intuition (S-N); (iii) Thinking versus Feeling (T-F); and (iv) Judging versus Perceiving (J-P). The researcher examined the domain scores and classified responding teachers into their personality types. The frequencies and percentages of each personality types in the sample are shown in Table 5.2.

There were almost equal numbers of participating teachers identified as Extraversion (44.6%) and Introversion (55.4%), despite a slightly higher number of introverts. Almost all sampled teachers were placed in Sensing (91.3%), while very few were in Intuition (8.7%). The majority of the sample were Thinking (73.5%) and Judging (82.0%) types, compared with Feeling (26.5%) and Perceiving (18.0%), respectively.

Table 5.2

Frequencies and Percentages in Each MBTI Personality Types (N = 460)

MBTI personality type	Frequency	Percent
Extraversion versus Introversion domain		
Extraversion	205	44.6
Introversion	255	55.4
Sensing versus Intuition domain		
Sensing	420	91.3
Intuition	40	8.7
Thinking versus Feeling domain		
Thinking	338	73.5
Feeling	122	26.5
Judging versus Perceiving domain		
Judging	377	82.0
Perceiving	83	18.0

5.2 Preference for Supervisory Behavioural Approaches

The participating teachers were given a supervision scenario and asked to compare their preferences among four alternatives that represented four supervisory behavioural approaches: (i) Directive Control (DC); (ii) Directive Informational (DI); (iii) Collaborative (CL); and (iv) Nondirective (ND). The AHP method was applied to derive their relative preference scores for the four approaches. The means and standard deviations of each score were calculated (Table 5.3).

Table 5.3

Means and Standard Deviations of Relative Preference Scores for Supervisory Behavioural Approaches

Supervisory behavioural approach	M ($N = 460$)	SD
Directive Control approach	0.1388	0.1321
Directive Informational approach	0.1885	0.0751
Collaborative approach	0.3980	0.1555
Nondirective approach	0.2747	0.1348

The preference scores shown in Table 5.3 are on a relative scale. The maximum score is 1.0000 which means the approach is absolutely preferred, and the minimum score is zero meaning the approach is not preferred at all. On average, the teachers preferred CL to the other three ($M =$ 0.3980, SD = 0.1555). The second preferred approach was ND ($M = 0.2747$, SD = 0.1348). DC was the least preferred approach ($M = 0.1388$, SD = 0.1321), despite the mean being quite close to that of DI ($M = 0.1885$, SD = 0.0751). The standard deviations showed relatively normal dispersions of the scores in CL, ND and DI preferences, but seemed to demonstrate a non-normal distribution of the score in DC. A data non-normal distribution has been suggested to be problematic for a small sample size of less than 200 participants (Hair et al., 2010). This study's sample size was 460, therefore, no concern was raised about the data distribution. The relative

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preference scores illustrated that CL was about 1.5 times more preferred than ND, twice more preferred than DI, and three times more preferred than DC.

5.3 Predictive Power of Personality for Supervisory Behaviour Preference

In this section, the power of personality to predict teachers' preferences for each supervisory behavioural approach was investigated. Multiple regression analyses utilising the Blockwise Entry method were performed to obtain information in two aspects: predictive powers of each personality domain for each supervisory approach preference; and (ii) comparisons between the predictive power of overall personality domains and that of demographic variables. The following two sections represent the analysis results of these two aspects.

5.3.1 Predictive Powers of Personality Domains

Four multiple regression models were formulated. Each model had one dependent variable among the relative preference scores for the Directive Control approach (SBP_DC), Directive Informational approach (SBP_DI), Collaborative approach (SBP_CL), and Nondirective approach (SBP_ND). The models were named as SBP_DC_A, SBP_DI_A, SBP_CL_A, and SBP_ND_A after their dependent variables. The four models had the same set of independent variables, which were the personality scores of the Extraversion versus Introversion domain (D_EI), Sensing versus Intuition domain (D_SN), Thinking versus Feeling domain (D_TF), and Judging versus Perceiving domain (D_JP). These formulated models were separately assessed, and their related results are reported in the following subsections.

Prediction for Directive Control approach preference: SBP_DC$_A$ model

This multiple regression model concentrated on how the Thailand's teachers' preference for the Directive Control approach to supervisory behaviours could be predicted by the four personality domains. The model had initially violated the assumption of homoscedasticity. This violation

was remedied through the transformation of SBP_DC data into their inverse, as suggested by Hair et al. (2010). The inverse variable was named as SBP_INV_DC and added to the model as a new dependent variable. The model was then renamed as SBP_INV_DC$_A$ to avoid any confusion. Evaluations of analysis assumptions, model, and independent variables were conducted for this re-formulated model, explained as follows.

Analysis assumption evaluation

The sample size and multicollinearity assumptions of this model were achieved. The recommended sample size for multiple regression analysis with four independent variables was at least 60, given that 15 cases were needed per variable (Field, 2013). The study's sample size well exceeded the guideline, as it totalled 460 participants. The model independent variables also had no multicollinearity issue, since all the correlations were well below 0.7, the highest being 0.235 (D_TF and D_JP correlations) and the lowest was 0.015 (D_EI and D_TF correlations). Each independent variable also obtained the Tolerance and VIF values very well under the recommended limits (Tolerance to be above 0.2 and VIF below 10). The multicollinearity estimates of the independent variables are shown in Table 5.4

Table 5.4

Multicollinearity Statistics of Independent Variables in SBP_INV_DC$_A$ Model

Independent variable	Correlations				Tolerance	VIF
	D_EI	D_SN	D_TF	D_JP		
D_EI	1.000	-.020	-.010	.130	.979	1.022
D_SN	-.020	1.000	-.079	.182	.949	1.054
D_TF	-.010	-.079	1.000	.237	.926	1.080
D_JP	.130	.182	.237	1.000	.884	1.131

Note that the sample size and multicollinearity assumptions did not relate to the dependent variable of the models. They apply only to the proportion of the participant number to the

model's independent variables and correlations among the independent variables. The SBP_INV_DC$_A$, SBP_DI$_A$, SBP_CL$_A$, and SBP_ND$_A$ models were from the same sample and had identical independent variables, therefore, the SBP_DI$_A$, SBP_CL$_A$, and SBP_ND$_A$ models also achieved two assumptions similar to the SBP_INV_DC$_A$ model. The researcher then omitted the evaluation of the sample size and multicollinearity assumptions for the SBP_DI$_A$, SBP_CL$_A$, and SBP_ND$_A$ models.

The outlier assumption of this model was assessed by the z-score distribution and COO values. From the measures in Table 5.5, the SBP_INV_DC$_A$ model slightly violated the z-score distribution guidelines. The z-score percentage in the -3.29 to 3.29 range was below the guideline by 0.12%, but the percentages in the other two ranges were above the recommended values. There was also no case with COO above 1. This meant that the overall influence of each case on the model did not cause any concern. The indicated outlier can thus be retained because it did not inappropriately influence the model coefficients.

Table 5.5

Frequencies and Percentages of Cases Based on Outlier Statistics of SBP_INV_DC$_A$ Model (N = 460)

z-scores -1.96 to 1.96		z-scores -2.58 to 2.58		z-scores -3.29 to 3.29		COO >1
f	%	f	%	f	%	f
441	95.87	459	99.78	459	99.78	0

The assumptions of normality of residuals, linearity, homoscedasticity, and independence of residuals were met. The z-score histogram obtained a relatively symmetrical bell shape, and the normal probability plot formed a diagonal straight line (Figure 5.1). This suggested the normal distribution of residuals. The scatter plot of regression standardised residuals (ZRESID) and the regression standardised predicted value (ZPRED) depicted neither a curve form nor a funnel shape, thus linearity and homoscedasticity assumptions were achieved (Figure 5.2). The

residuals were also independent from one another, since the Durbin-Watson value was at 1.994. Having achieved these assumptions, the model and its regression coefficients were assumed to be valid, as were confidence intervals and significance tests.
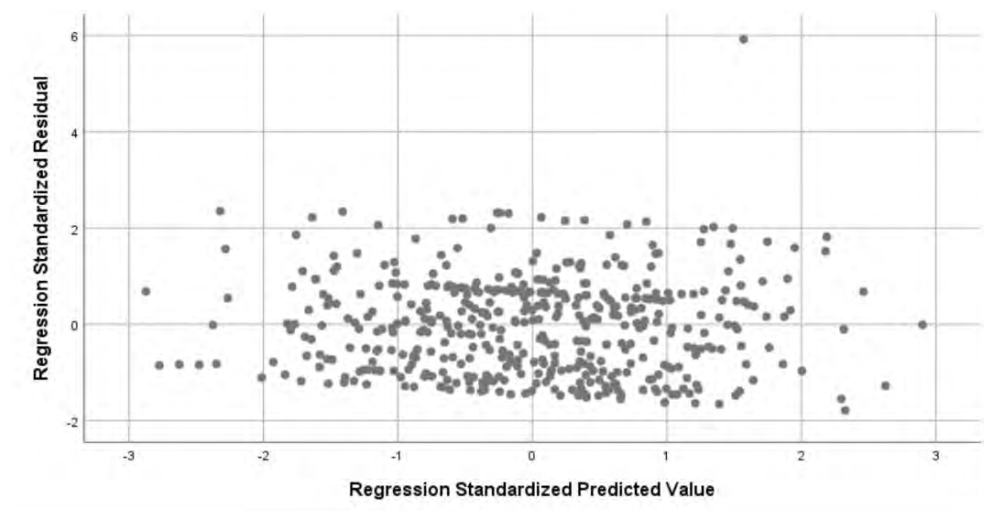
Figure 5.1

Histogram (Left) and Normal Probability Plot (Right) of Z-Scores of SBP_INV_DC$_A$ Model
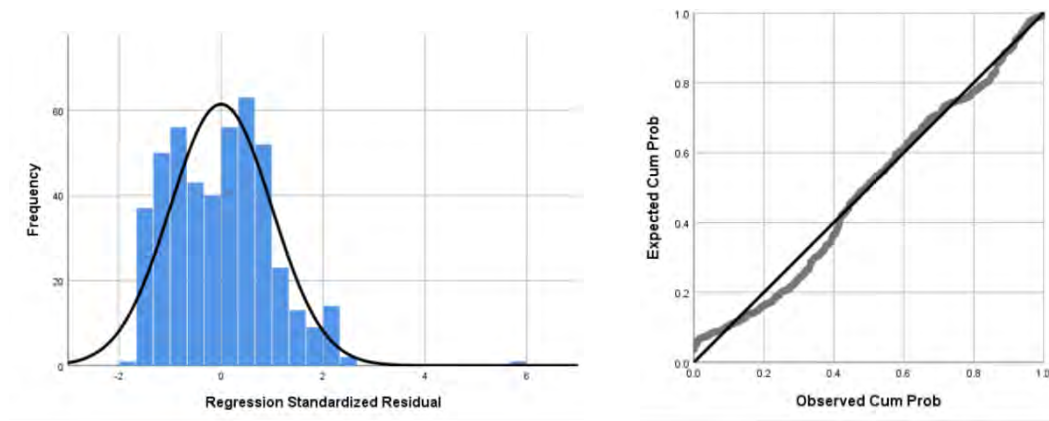
Figure 5.2

Scatter Plot of ZRESID and ZPRED of SBP_INV_DC$_A$ Model

According to the above evaluation, the SBP_INV_DC$_A$ model had met all multiple regression assumptions. These included the sample size, multicollinearity, outliers, as well as normality, homoscedasticity, linearity, and independence of residuals. It was therefore assumed that each case appropriately represented and legitimatised the population, model and regression coefficients, resulting in confidence intervals and significance tests being valid.

Model evaluation

In this step, coefficients of determination (R^2) and coefficients of determination changed (ΔR^2) of the SBP_INV_DC$_A$ model were estimated by means of the Blockwise Entry method of multiple regression. Independent variables D_EI, D_SN, D_TF, and D_JP were sequentially entered into the model. The R^2 value was measured to indicate how the Directive Control approach preference could be predicted by the overall personality domain, and ΔR^2 values were estimated to explain predictive abilities of each domain (Tables 5.6 and 5.7).

Table 5.6

Summary of SBP_INV_DC$_A$ Model

Independent variable	R^2	Std. error of the estimate	Change statistics				
			ΔR^2	F Change	df 1	df 2	Sig. F Change
D_EI	.014[a]	.1318163	.014	6.648	1	458	.010
D_SN	.016[b]	.1319511	.002	0.861	1	457	.354
D_TF	.027[c]	.1314275	.011	4.938	1	456	.027
D_JP	.027[d]	.1315642	.000	0.117	1	455	.732

[a]Predictors: (Constant) and D_EI. [b]Predictors: (Constant), D_EI, and D_SN. [c]Predictors: (Constant), D_EI, D_SN, and D_TF. [d]Predictors: (Constant), D_EI, D_SN, D_TF, and D_JP.

Table 5.7

ANOVA of SBP_INV_DC$_A$ Model

Model		Sum of Squares	df	Mean Square	F	Sig.
SBP_INV_DC$_A$	Regression	697.827	4	174.457	3.151	.014
	Residual	25193.532	455	55.370		
	Total	25891.359	459			

The overall personality domains could significantly explain 2.7% of the variance in the Directive Control approach inverse preference ($R^2 = .027$, F [4, 455] = 3.151, p = .014). D_EI obtained the highest predictive power. It significantly accounted for 1.4% of the inverse preference variance ($\Delta R^2 = .014$, F [1, 458] = 6.648, p = .010). This was followed by D_TF which significantly explained 1.1% of the variance at 95% confidence level ($\Delta R^2 = .011$, F [1, 456] = 4.938, p = .027). D_SN and D_JP did not have any significant predictive power for this preference.

Independent variable evaluation

To gauge the relationship of each personality domain to the Directive Control approach preference required standardised regression coefficients (betas or βs). The betas of each personality domains were measured and evaluated to indicate relationship strengths and directions. They also explained the likelihood of this preference based on each personality type. The SBP_INV_DC$_A$ model coefficients are demonstrated in Table 5.8

Table 5.8

Regression Coefficients of SBP_INV_DC$_A$ Model

Model		Unstandardised coefficients		β	t	Sig.
		b	Std. Error			
SBP_INV_DC$_A$	(Constant)	12.673	0.701		18.074	.000
	D_EI	0.096	0.037	.122	2.616	.009
	D_SN	-0.032	0.049	-.031	-0.663	.507
	D_TF	0.094	0.042	.107	2.233	.026
	D_JP	-0.012	0.036	-.017	-0.343	.732

D_EI and D_TF obtained a significant relationship with the approach inverse preference. The betas of D_EI and D_TF were .122 (p = .009) and .107 (p = .026). The positive betas indicated a positive relationship of two personality domains to the approach inverse preference. This meant that the level of approach inverse preference was likely to increase when scores on these domains increased. The values also suggested that extraverted teachers were inclined to prefer the Directive Control approach less so than introverted teachers, and Thinking teachers seemed to favour this approach less than Feeling teachers.

D_SN and D_JP had an insignificant relationship with the approach inverse preference. D_SN tended to gain a stronger relationship (β = -.031, p = .507) than D_JP (β = -.017, p = .732). Their betas suggested that D_SN and D_JP were inclined to have a negative relationship with this inverse preference, but their relationships were not justifiable. The likelihood of the approach preference based on Sensing, Intuition, Judging, and Perceiving types was also not assumable.

To conclude, the SBP_INV_DC$_A$ model investigation, and the set of personality domains could predict the preference for the Directive Control approach. The four domains jointly could significantly account for 2.7% of the variance in the preference (p = .014), but only two domains appeared to be preference predictors. The Extraversion versus Introversion domain

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was the best predictor that significantly accounted for 1.4% of the preference variance (p = .010), followed by the Thinking versus Feeling domain which significantly explained the 1.1% of the variance (p = .027). The Directive Control approach was also inclined to be preferred by Introversion and Feeling type teachers more than Extraversion and Thinking types.

Prediction for Directive Informational approach preference: SBP_DI$_A$ model

The SBP_DI$_A$ model demonstrated how Thailand's teachers' preference for the Directive Informational approach to supervisory behaviours could be predicted by Extraversion versus Introversion, Sensing versus Intuition, Thinking versus Feeling, and Judging versus Perceiving domains. Results of analysis assumptions, model, and independent variable evaluations are provided in the following sections.

Analysis assumption evaluation

The assessed assumptions involved the sample size, multicollinearity, outliers, normality of residuals, linearity of residuals, homoscedasticity of residuals, and independence of residuals. The sample size and multicollinearity assumptions of the SBP_DI$_A$ model were achieved along with those of the SBP_INV_DC$_A$ model, but other assumptions still needed to be diagnosed.

The outlier statistics of the SBP_DI$_A$ model are shown in Table 5.9. Estimates suggested that no significant outlier exists in this model. The z-score distribution in the three ranges (-1.96 to 1.96, -2.58 to 2.58, and -3.29 to 3.29) followed the recommended percentages. COO values of all cases were also under 1, which indicated that no undue influential case existed in the sample. The model coefficients were then considered valid.

Table 5.9

Frequency and Percentage of Cases Based on Outlier Statistics of SBP_DI$_A$ Model (N = 460)

z-scores -1.96 to 1.96		z-scores -2.58 to 2.58		z-scores -3.29 to 3.29		COO >1
f	%	*f*	%	*f*	%	*f*
448	97.39	460	100.00	460	100.00	0

The normal distribution and homoscedasticity of the model's residuals reasonably met the assumptions. The z-score histogram obtained a symmetrical bell-shape, although not perfectly, and the normal probability plot seemingly formed a diagonal line (Figure 5.3). This suggested that the distribution of the residuals was comparatively normal. The effect of non-normality can also be neglected for a large sample size of 200 or more cases (Hair et al., 2010), such as in this study. The scatter plot of ZRESID and ZPRED also supported the model linearity and homoscedasticity (Figure 5.4). The cloud dots dispersed quite randomly and evenly without forming a curvy or funnel-like shape. The confidence intervals and significance tests of the model's regression coefficients therefore stayed unaffected.
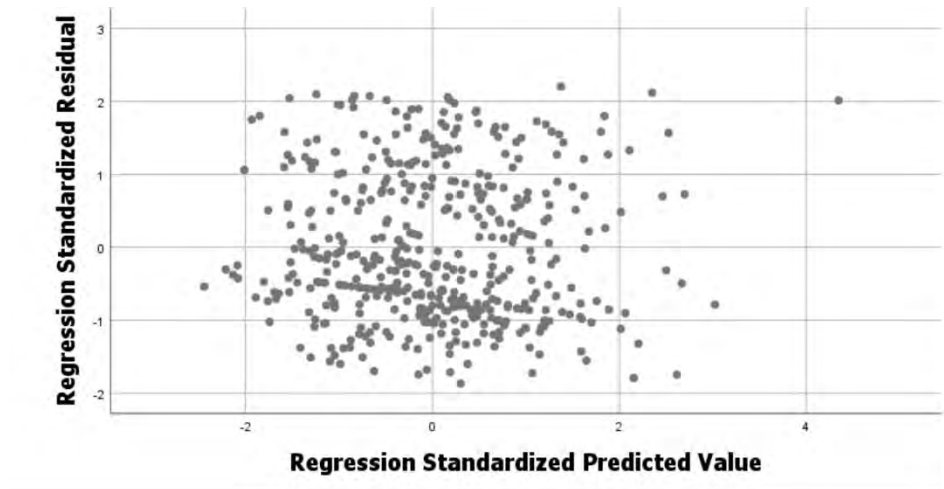
Figure 5.3

Histogram (Left) and Normal Probability Plot (Right) of Z-Scores of SBP_DI$_A$ Model
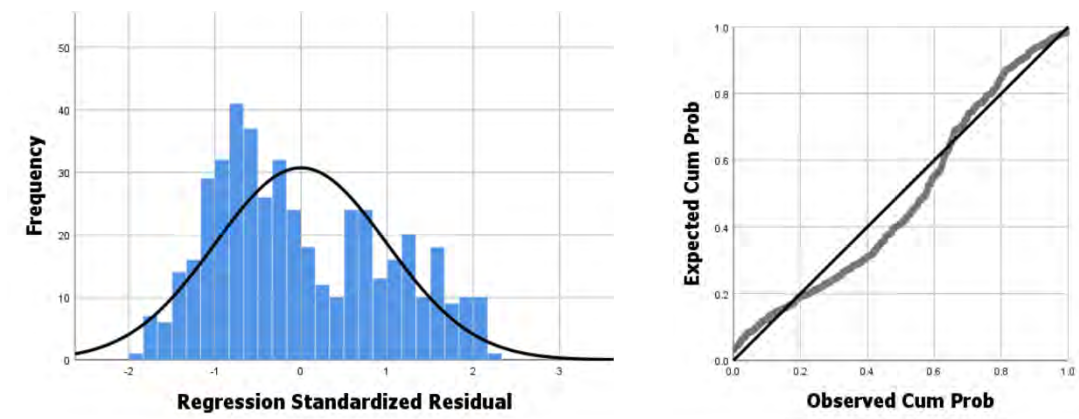
Figure 5.4

Scatter Plot of ZRESID and ZPRED of SBP_DI$_A$ Model

The model also achieved the residual independence assumption. The Durbin-Watson value was 2.071, which suggested that the model's residuals were considerably independent from one another. Such independency provided another justification for confidence intervals and significance tests of model coefficients.

The SBP_DI$_A$ model had met all the required assumptions for multiple regression analysis, which included the sample size, multicollinearity, and outliers, as well as the residual normality, linearity, homoscedasticity, and independency, provided the assumption achievement, model coefficients and the result generalisability were valid.

Model evaluation

In this step, the R^2 and ΔR^2 values of the SBP_DI model were estimated via the Blockwise Entry method of multiple regression. D_EI, D_SN, D_TF, and D_JP were sequentially entered into the model. The R^2 value was measured to indicate how the preference for the Directive Informational approach could be predicted by the overall personality domain, and ΔR^2 values

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were estimated to explain the predictive powers of each domain. The R^2, ΔR^2 values and related statistics are shown in Tables 5.10 and 5.11.

Table 5.10

Summary of SBP_DI$_A$ Model

Independent variable	R^2	Std. error of the estimate	Change statistics				
			ΔR^2	F change	$df\,1$	$df\,2$	Sig. F change
D_EI	.022[a]	.0743792	.022	10.291	1	458	.001
D_SN	.024[b]	.0743910	.002	0.855	1	457	.356
D_TF	.025[c]	.0744138	.002	0.719	1	456	.397
D_JP	.029[d]	.0743622	.003	1.633	1	455	.202

[a]Predictors: (Constant) and D_EI. [b]Predictors: (Constant), D_EI, and D_SN. [c]Predictors: (Constant), D_EI, D_SN, and D_TF. [d]Predictors: (Constant), D_EI, D_SN, D_TF, and D_JP.

Table 5.11

ANOVA of SBP_DI$_A$ Model

Model		Sum of squares	df	Mean square	F	Sig.
SBP_DI$_A$	Regression	.075	4	.019	3.376	.010
	Residual	2.516	455	.006		
	Total	2.591	459			

The preference for the Directive Informational approach could be predicted by the personality domain. The overall domains significantly explained approximately 3.0% of the variance in the preference at 99% confidence level ($R^2 = .029$, $F\,[4, 455] = 3.376$, $p = .010$). Only D_EI was a significant predictor. The domain accounted for 2.2% of the variance in the preference at a confidence level of 99.9% ($\Delta R^2 = .022$, $F\,[1, 458] = 10.291$, $p = .001$). The other three domains also acquired predictive powers, although not significant. The preference variance was explained at 0.3% by D_JP ($\Delta R^2 = .003$, $F\,[1, 455] = 1.633$, $p = .202$), 0.2% by D_SN ($\Delta R^2 = .002$, $F\,[1, 457] = .855$, $p = .356$), and 0.2% by D_TF ($\Delta R^2 = .002$, $F\,[1, 456] = .719$, $p = .397$).

Independent variable evaluation

In this evaluation, betas were estimated to explain the relationship of each personality domain to the Directive Informational approach preference, and preference inclinations of teachers in each personality type. The SBP_DI$_A$ model coefficients and related measures are shown in Table 5.12.

Table 5.12

Regression Coefficients of SBP_DI$_A$ Model

Model		Unstandardised coefficients		β	t	Sig.
		b	Std. error			
SBP_DI$_A$	(Constant)	0.193	0.007		27.504	.000
	D_EI	-0.001	0.000	-.140	-2.999	.003
	D_SN	0.000	0.000	-.027	-0.564	.573
	D_TF	0.000	0.000	.055	1.153	.250
	D_JP	0.000	0.000	-.063	-1.278	.202

Only D_EI obtained a significant relationship with the approach preference. The domain had a negative relationship with the preference at a confidence level of 99% (β = -.140, p = .003). The negative relationship suggested that introverted teachers are likely to prefer the Directive Informational approach more so than extraverted teachers.

D_SN, D_TF, and D_JP had an insignificant relationship with the approach preference. D_JP had the strongest relationship (β = -.063, p = .202) among the three domains. This was followed by D_TF (β = .055, p = .250) and D_SN (β = -.027, p = .573), respectively. Their betas indicated that the approach preference had a negative relationship with D_JP and D_SN and a positive relationship with D_TF, but these relationships could not be justified. The preference tendencies of teachers identified as Sensing, Intuition, Thinking, Feeling, Judging, and Perceiving types were also not assumable.

To conclude the SBP_DI$_A$ model investigation, the Directive Informational approach preference could be predicted by the personality domain. Generally, all domains could significantly explain about 3.0% of the variance in the preference (p = .010), of which the Extraversion versus Introversion domain alone accounted for 2.2% (p = .001). Only the Extraversion versus Introversion domain had a significant relationship with the approach preference. It was indicated that the Directive Informational approach was likely preferred by introverted teachers more so than extraverted teachers.

Prediction for Collaborative approach preference: SBP_CL$_A$ model

The SBP_CL$_A$ model was formulated to explore how the Thailand's teachers' preference for the Collaborative approach to supervisory behaviours could be predicted by the Extraversion versus Introversion, Sensing versus Intuition, Thinking versus Feeling, and Judging versus Perceiving domains. The assumptions, the model, and the independent variables were assessed in the following evaluations.

Analysis assumption evaluation

The assumptions to be assessed involved the sample size, multicollinearity, outliers, normality of residuals, linearity of residuals, homoscedasticity of residuals, and independence of residuals. It was not necessary to assess the sample size and multicollinearity because they had been assumed to be valid, along with the SBP_DC$_A$ model, but other assumptions were evaluated respectively.

Table 5.13

Frequency and Percentage of Cases Based on Outlier Statistics of SBP_CL$_A$ Model (N = 460)

z-scores -1.96 to 1.96		z-scores -2.58 to 2.58		z-scores -3.29 to 3.29		COO >1
f	%	*f*	%	*f*	%	*f*
458	99.57	460	100.00	460	100.00	0

According to measures in Table 5.13, no substantial outlier was found in this model. The z-score percentages in all three ranges complied with the guidelines. Also, no case was found to influence the model's coefficients, since COO values were all under 1, therefore, model parameters were justifiable.

The SBP_CL$_A$ model's residuals obtained a moderately normal distribution. The z-score histogram depicted a fairly symmetrical bell-like shape, and the normal probability plot formation almost aligned with a diagonal straight line (Figure 5.5). This suggested normal distribution of the model's residuals, not to mention that the effect of non-normality is negligible in a large sample of more than 200 cases (Hair et al., 2010), such as this study. The confidence intervals and significance tests of the model's coefficients thus stayed valid.

Figure 5.5

Histogram (Left) and Normal Probability Plot (Right) of the Z-Scores of SBP_CL$_A$ Model
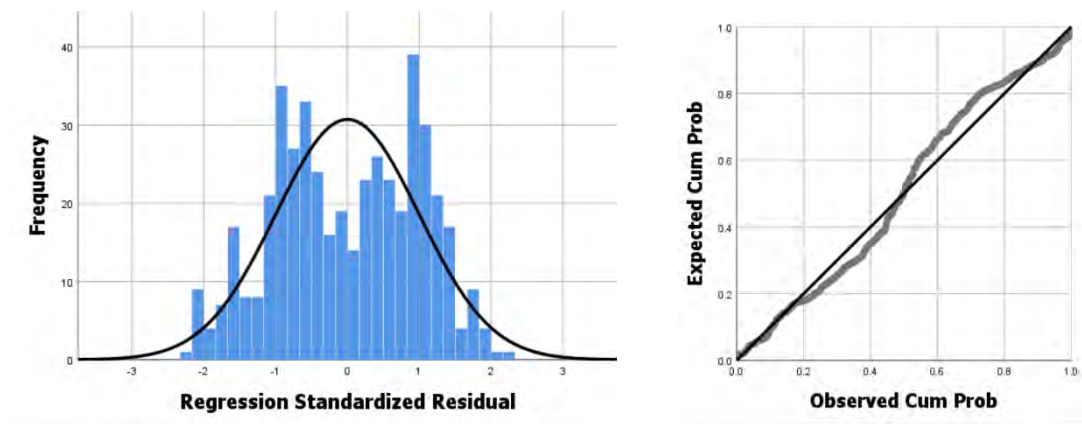
The scatter plot of ZRESID and ZPRED assumed the model linearity and homoscedasticity (Figure 5.6). The dot distribution was relatively random and even, and no curvy or funnel-like shape was formed. This validated the regression coefficients, as well as their confidence intervals and significance tests.

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Figure 5.6

Scatter Plot of ZRESID and ZPRED of SBP_CL$_A$ Model
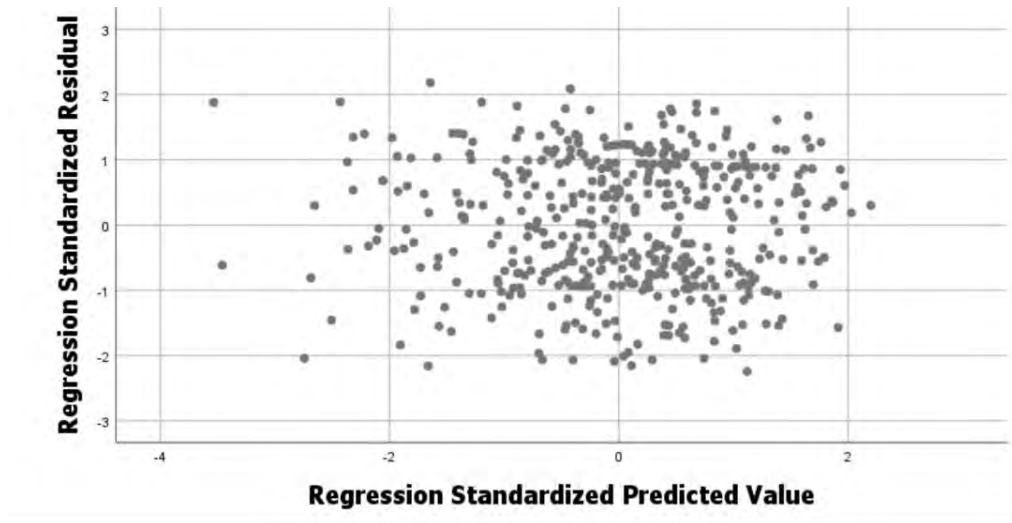
The SBP_CL$_A$ model also had independent residuals justified by the Durbin-Watson test. The Durbin-Watson value was estimated to be 2.052 which is at close proximity to 2, being the recommended value. It could be assumed that residuals were considerably uncorrelated to one another, and this warranted confidence intervals and significance tests of the model's coefficients.

The SBP_CL$_A$ model had achieved all multiple regression assumptions, including the sample size, multicollinearity, and outliers, as well as the residual normality, linearity, homoscedasticity, and independence. The model's parameters were valid, and results were referable to the population.

Model evaluation

The Blockwise Entry method was applied to estimate the R^2 and ΔR^2 values of the SBP_CL$_A$ model. Each personality domain was sequentially entered to the model as independent variables. The R^2 value was measured to indicate how preference for the Collaborative approach could be predicted by the overall personality domains, and ΔR^2 values were estimated to explain the

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predictive powers of each domain. Coefficients and related statistics are shown in Tables 5.14 and 5.15.

Table 5.14

Summary of SBP_CL$_A$ Model

Independent variable	R^2	Std. error of the estimate	Change statistics				
			ΔR^2	F change	df 1	df 2	Sig. F change
D_EI	.001[a]	.1556385	.001	0.255	1	458	.614
D_SN	.001[b]	.1557861	.000	0.133	1	457	.716
D_TF	.002[c]	.1558725	.001	0.493	1	456	.483
D_JP	.003[d]	.1559806	.001	0.368	1	455	.544

[a]Predictors: (Constant) and D_EI. [b]Predictors: (Constant), D_EI, and D_SN. [c]Predictors: (Constant), D_EI, D_SN, and D_TF. [d]Predictors: (Constant), D_EI, D_SN, D_TF, and D_JP.

Table 5.15

ANOVA of SBP_CL$_A$ Model

Model		Sum of squares	df	Mean square	F	Sig.
SBP_CL$_A$	Regression	.030	4	.008	0.312	.870
	Residual	11.070	455	.024		
	Total	11.100	459			

The approach preference was barely predicted by the personality domains. The overall domains could account for only 0.3% for the preference variance (R^2 = .003, F [4, 455] = .312, p = .870). There were three domains with equal predictive powers: (i) D_EI; (ii) D_TF; and (iii) D_JP, each explaining 0.1% of the variance on the preference. D_EI obtained ΔR^2 = .001, F (1, 458) = .255, p = .614, D_TF obtained ΔR^2 = .001, F (1, 456) = .493, p = .483, and D_JP obtained ΔR^2 = .001, F (1, 455) = .368, p = .544. D_SN did not contain any predicting ability for the approach preference (ΔR^2 = .000).

Independent variable evaluation

In this step, the betas of each personality domain were measured and the values were assessed to explore the relationship of each domain to the Collaborative approach preference and tendencies of teachers in each personality type to prefer the approach. The betas and related estimates of the SBP_CL$_A$ model are shown in Table 5.16.

Table 5.16

Regression Coefficients of SBP_CL$_A$ Model

Model		Unstandardised coefficients		β	t	Sig.
		b	Std. error			
SBP_CL$_A$	(Constant)	0.388	0.015		26.428	.000
	D_EI	0.000	0.001	.020	0.427	.670
	D_SN	0.000	0.001	.013	0.280	.780
	D_TF	0.000	0.001	.025	0.519	.604
	D_JP	0.000	0.001	.030	0.607	.544

All personality domains gained positive relationships with the approach preference, but none of them was significant. D_JP had the strongest relationship (β = .030, p = .544), followed by D_TF (β = .025, p = .604), D_EI (β = .020, p = .670), and D_SN (β = .013, p = .780), respectively. The resultant relationships were not justifiable, since no significant result was indicated. The preference inclinations for the Collaborative approach of the teachers in all personality types could not be assumed.

To conclude the SBP_CL$_A$ model investigation, the personality domains could not predict the Collaborative approach preference. The four domains accounted for only 0.3% of the preference variance (p = .870). The predictive powers and relationships derived from the model's coefficients insignificantly postulated the teachers' behaviours, although the model was valid and generalisable.

Prediction for Nondirective approach preference: SBP_ND$_A$ model

The SBP_ND$_A$ model concerned how the teachers' preference for the Nondirective behavioural approach could be predicted by the Extraversion versus Introversion, Sensing versus Intuition, Thinking versus Feeling, and Judging versus Perceiving domains. The assumptions, model, and independent variables were sequentially evaluated.

Analysis assumption evaluation

The assumptions to be assessed involved sample size, multicollinearity, outliers, normality of residuals, linearity of residuals, homoscedasticity of residuals, and independence of residuals. The sample size and multicollinearity of the SBP_ND$_A$ model were assumed valid, along with the SBP_DC$_A$ model, but other assumptions still needed to be diagnosed.

No important outlier was found in this model. The measures in Table 5.17 show that the z-score distribution conformed to the percentage guidelines in all diagnosed ranges (-1.96 to 1.96, -2.58 to 2.58, and -3.29 to 3.29). There was also no case with the COO value above 1. Therefore, it can be assumed that no undue influential case existed in the sample. The model coefficients were therefore justifiable.

Table 5.17

Frequency and Percentage of Cases Based on Outlier Statistics of SBP_ND$_A$ Model (N = 460)

z-scores -1.96 to 1.96		z-scores -2.58 to 2.58		z-scores -3.29 to 3.29		COO >1
f	*%*	*f*	*%*	*f*	*%*	*f*
437	95.00	460	100.00	460	100.00	0

The model residuals also had a normal distribution. The z-score histogram somewhat demonstrated a symmetrical bell-shape, and the normal probability plot seemed to form a diagonal line (Figure 5.7). These figures suggested that the residuals were normally distributed, not to mention that the non-normality effect can be ignored in a sample of more than 200 cases

(Hair et al., 2010) as in this study. Confidence intervals and significance tests of the regression coefficients stayed unaffected.

Figure 5.7

Histogram (Left) and Normal Probability Plot (Right) of the Z-Scores of SBP_ND$_A$ Model
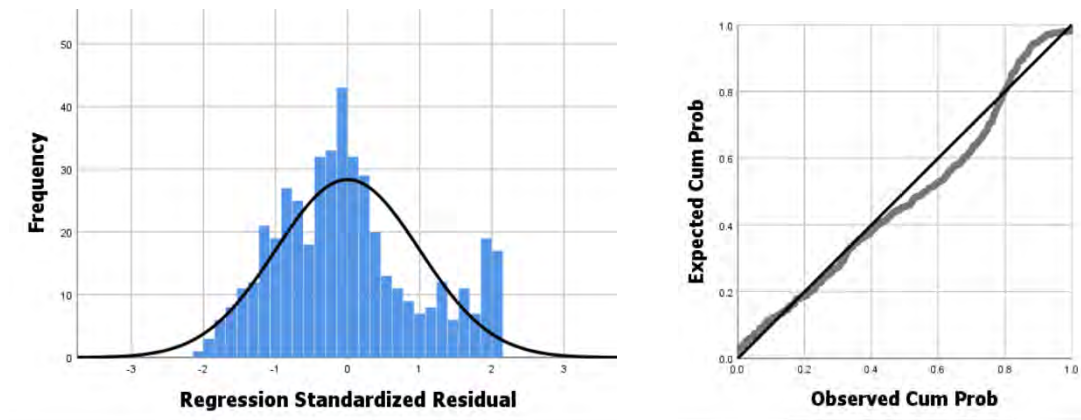
The SBP_ND$_A$ model achieved the linearity and homoscedasticity assumptions. The scatter plot of ZRESID and ZPRED (Figure 5.8) illustrated a random dot distribution. There was no form of curve or funnel appearing in the plot. These assumptions validated the regression coefficients, as well as their confidence intervals and significance tests.

Figure 5.8

Scatter Plot of ZRESID and ZPRED of SBP_ND$_A$ Model
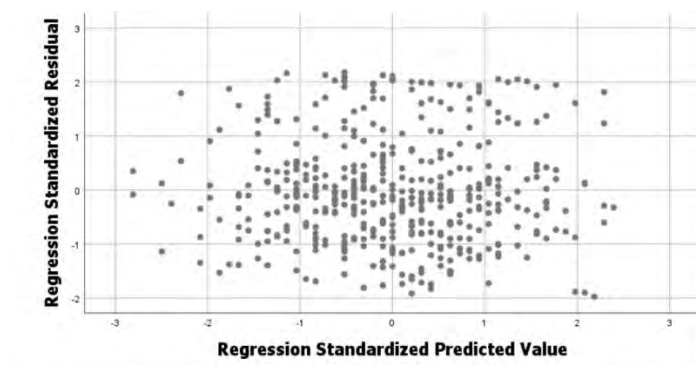
The Durbin-Watson test suggested the SBP_ND$_A$ model has independent residuals. The Durbin-Watson value was 2.012, which justified that the model's residuals were not correlated. The correlation concern was caused only by the value under 1 or above 3. Confidence intervals and significance tests of the regression coefficients were still valid.

The SBP_ND$_A$ model had achieved all the assumptions required in multiple regression analysis, which included the sample size, multicollinearity, and outliers, as well as the residual normality, linearity, homoscedasticity, and independence. Given such achievement, model coefficients were justifiable, and results could be referred to the population.

Model evaluation

In this evaluation, the R^2 and ΔR^2 values of the SBP_ND$_A$ model were estimated via the Blockwise Entry method of multiple regression. Independent variables D_EI, D_SN, D_TF, and D_JP were sequentially entered to the model. The R^2 value indicated how the preference for the Nondirective approach could be predicted by the overall personality domains, and ΔR^2 values indicated the predicting power of each domain. Such measures and related estimates are shown in Tables 5.18 and 5.19.

Table 5.18

Summary SBP_ND$_A$ Model

Independent variable	R^2	Std. error of the estimate	Change statistics				
			ΔR^2	F change	$df\,1$	$df\,2$	Sig. F change
D_EI	.017[a]	.1337805	.017	7.808	1	458	.005
D_SN	.017[b]	.1339230	.000	0.026	1	457	.871
D_TF	.018[c]	.1339692	.001	0.684	1	456	.409
D_JP	.018[d]	.1341087	.000	0.052	1	455	.819

[a]Predictors: (Constant) and D_EI. [b]Predictors: (Constant), D_EI, and D_SN. [c]Predictors: (Constant), D_EI, D_SN, and D_TF. [d]Predictors: (Constant), D_EI, D_SN, D_TF, and D_JP.

Table 5.19

ANOVA of SBP_ND$_A$ Model

Model		Sum of squares	df	Mean square	F	Sig.
SBP_ND$_A$	Regression	.153	4	.038	2.133	.076
	Residual	8.183	455	.018		
	Total	8.337	459			

The approach preference could not be significantly predicted by the overall personality domain but substantially predicted by one domain. The overall personality domains could explain 1.8% of the variance in the preference (R^2 = .018, F [4, 455] = 2.133, p = .076), however, it was not statistically significant. D_EI significantly accounted for 1.7% of the preference variance at 99% confidence level (ΔR^2 = .017, F [1, 458] = 7.808, p = .005). The other three domains obtained no significant predictive power. D_TF explained only 0.1% of the variance (ΔR^2 = .001, F [1, 456] = .684, p = .409). D_SN and D_JP did not have any predictive ability for the approach preference (both had ΔR^2 = .000).

Independent variable evaluation

In this step, the betas of each personality domain were estimated to investigate their relationships with the preference for the Nondirective approach and preference inclinations of teachers in each personality type. Such coefficients and related measures are shown in Table 5.20.

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Table 5.20

Regression Coefficients of the SBP_ND$_A$ Model

Model		Unstandardised coefficients		β	t	Sig.
		b	Std. error			
SBP_ND$_A$	(Constant)	0.274	0.013		21.659	.000
	D_EI	0.002	0.001	.128	2.731	.007
	D_SN	0.000	0.001	-.007	-0.142	.887
	D_TF	0.001	0.001	.036	0.738	.461
	D_JP	0.000	0.001	.011	0.228	.819

Only D_EI had a significant relationship with the approach preference. The domain had a positive relationship to the preference at 99% confidence level (β = .128, *p* = .007). This positive relationship suggested that the Nondirective approach was likely preferred by extraverted teachers more than introverted teachers.

D_SN, D_TF, and D_JP were indicated with no significant relationship to the approach preference. D_TF obtained the strongest relationship among the three domains (β = .036, *p* = .461). This was followed by D_JP (β = .011, *p* = .819) and D_SN (β = -.007, *p* = .887), respectively. D_TF and D_JP had a positive relationship with the approach preference, whereas D_SN had a negative relationship. These relationships were not justifiable, as no significant result was indicated. The preference inclinations based on the Sensing, Intuition, Thinking, Feeling, Judging, and Perceiving types were not assumable.

To conclude the SBP_ND$_A$ model investigation, the preference for the Nondirective approach was not significantly predicted by all four personality domains, but one. The set of domains accounted for 1.8% of the variance in the approach preference (*p* = .076), but D_EI alone could significantly explain 1.7% of the preference variance (*p* = .005). The D_EI regression coefficient suggested that extraverted teachers tended to prefer the approach more

than introverted teachers. Given that all analysis assumptions had been met, such results were considered valid and generalisable.

Provided the assessments of the SBP_DC$_A$, SBP_DI$_A$, SBP_CL$_A$, and SBP_ND$_A$ models, it is evident that the overall personality domains could significantly predict the teachers' preference for some supervisory behavioural approaches. The four domains together accounted for 2.7% of the variance in the Directive Control approach inverse preference ($R^2 =$ .027, $p =$ .014). They could explain about 3.0% of the variance in the Directive Informational approach preference ($R^2 =$ .029, p = .010). The domains could also explain 1.8% of the variances in the Nondirective approach preference, despite its statistically insignificance ($R^2 =$ .018, $p =$ .076).

Result summary

Two personality domains appeared to have significant predictive powers. The Extraversion versus Introversion domain was likely to be the best predictor, since it obtained more significant predictive powers for approach preferences than the others. The domain could explain 1.4% of the variance in the Directive Control inverse preference ($\Delta R^2 =$ .014, $p =$ .010), 2.2% of the variance in the Directive Informational approach preference ($\Delta R^2 =$ .022, $p =$ .001), and 1.7% of the variance in the Nondirective approach preference ($\Delta R^2 =$ .017, $p =$ .005). It was suggested that extraverted teachers tended to prefer the Nondirective approach more than introverted teachers, while introverted teachers were likely to prefer the Directive Control and Directive Informational approaches more than extraverted teachers. Another significant predictor was the Thinking versus Feeling domain. The domain could account for 1.1% of the variance in the Directive Control approach inverse preference ($\Delta R^2 =$ .011, p = .027). It was assumable that Feeling teachers likely preferred the Directive Control approach more than Thinking teachers. The Sensing versus Intuition and Judging versus Perceiving domains, however, obtained no substantial predictive powers for any approach preference.

The predictive powers of four personality domains for the teachers' supervisory behaviour preference had been explored. The comparison between the predictive power of overall personality domains and that of demographic variables is presented in the next section to provide a clearer understanding of the predicting ability of teachers' personalities.

5.3.2 Predictive Powers of Personality and Demographics

In this section, the predictive power of personality for the teachers' supervisory behaviour preference was examined in comparison to those of the demographics. Four multiple regression models were formulated: (i) SBP_DC_B; (ii) SBP_DI_B; (iii) SBP_CL_B; and (iv) SBP_ND_B to predict the preferences for Directive Control, Directive Informational, Collaborative, and Nondirective approaches, respectively. All four models contained the same independent variables, which were personality (PERS), gender (GEN), age (AGE), years of teaching experience (EXP), education level (EDU), subject area of expertise (SUBJ), grade level of teaching (LEV), and school region (REG).

Dummy coding and the Blockwise Entry method were conducted in the analysis. The researcher coded dummy variables to represent independent variables that were nonmetric. These variables included all demographics except AGE and EXP. The dummy coding for each nonmetric variable are demonstrated in Tables 5.21 to 5.25. The Blockwise Entry method was applied to orderly enter each of the independent variable into the multiple regression models. It began with PERS represented by four personality domain scores (D_EI, D_SN, D_TF, and D_JP), followed by AGE and EXP. The dummy variables that represented each nonmetric variable were then entered into the models. This began with Dum_EDU1 and Dum_EDU2 (representing EDU), followed by Dum_SUBJ1– 9 (representing SUBJ), Dum_LEV1 and Dum_LEV2 (representing LEV), and Dum_REG1–5 (representing REG).

Table 5.21

Dummy Coding for Gender (GEN)

	Dum_GEN
Male	0
Female	1

Table 5.22

Dummy Coding for Education Level (EDU)

	Dum_EDU1	**Dum_EDU2**
Bachelor's	0	0
Master's	1	0
Doctorate	0	1

Table 5.23

Dummy Coding for Subject Area of Expertise (SUBJ)

	Dum_SUBJ1	**Dum_SUBJ2**	**Dum_SUBJ3**	**Dum_SUBJ4**	**Dum_SUBJ5**	**Dum_SUBJ6**	**Dum_SUBJ7**	**Dum_SUBJ8**	**Dum_SUBJ9**
Thai Language	0	0	0	0	0	0	0	0	0
Social Studies	1	0	0	0	0	0	0	0	0
Mathematics	0	1	0	0	0	0	0	0	0
Science	0	0	1	0	0	0	0	0	0
Foreign Languages	0	0	0	1	0	0	0	0	0
Career & Technology	0	0	0	0	1	0	0	0	0
Physical Education	0	0	0	0	0	1	0	0	0
Arts & Music	0	0	0	0	0	0	1	0	0
Childhood Education	0	0	0	0	0	0	0	1	0
Guidance	0	0	0	0	0	0	0	0	1

Table 5.24

Dummy Coding for Grade Level of Teaching (LEV)

	Dum_LEV1	**Dum_LEV2**
Kindergarten	1	0
Primary	0	1
Secondary	0	0

Table 5.25

Dummy Coding for School Region (REG)

	Dum_REG1	**Dum_REG2**	**Dum_REG3**	**Dum_REG4**	**Dum_REG5**
Centre	0	0	0	0	0
North	1	0	0	0	0
South	0	1	0	0	0
East	0	0	1	0	0
West	0	0	0	1	0
Northeast	0	0	0	0	1

Multiple regression assumptions were preliminarily assessed for each model, and their predictive powers were assessed via the model evaluation. The following subsections report the results of these evaluation steps.

Analysis assumption evaluation

Analysis assumptions needed to be achieved to validate the SBP_DC_B, SBP_DI_B, SBP_CL_B, and SBP_ND_B models. These assumptions concerned the sample size, multicollinearity, outliers, normality of residuals, linearity, homoscedasticity, and independence of residuals (Pallant, 2016). The sample size, multicollinearity assumptions could be assessed at once for all formulated models, since these models had the same sample and independent variables. Other assumptions were separately evaluated for each model.

The sampled size required for multiple regression analysis depended on a number of independent variables. It was recommended that 10 to 15 cases were needed for each independent variable (Field, 2013). Each examined model had a total of 25 independent variables, including four personality variables and 21 demographic variables. Furthermore, 357 cases were required to perform the analysis. The study's sample size met the requirement, as it comprised 460 cases.

A remedy was applied to solve the multicollinearity issue among the original independent variables. Such issue referred to overly correlated independent variables, which can be assumed if their correlation coefficients exceed 0.7, Tolerance values are below 0.2, or VIF values are above 10 (Field, 2013). In the first attempt, the correlation coefficient between AGE and EXP had been well above 0.7 (0.925 to be exact). The researcher then resolved the issue by combining both variables into a new one called EXP_To_AGE. This variable represented the ratios of the number of years of teaching experience (EXP) to the age (AGE) of each participant. EXP_To_AGE was added as a new independent variable as a substitute for AGE and EXP for the four models. The multicollinearity assumption was then re-evaluated. The new evaluation showed that all correlation coefficients were under 0.7 (Table 5.26) and that no variable had Tolerance below 2.0 or VIF above 10 (Table 5.27). These statistics suggested an appropriate correlation among the new set of independent variables. The parameters of these four models were therefore assumed to be trustworthy.

The SBP_DC$_B$ model violated the homoscedasticity assumption since its scatter plot had likely funnelled out. The researcher remedied this violation by utilising the square root transformation process of the SBP_DC data, following Hair et al.'s (2010) guideline. The transformed data were named SBP_SQR_DC and added into the model as a dependent variable. The SBP_DC$_B$ model, together with the SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ models, were then

re-evaluated for the assumption of outliers, normality of residuals, linearity, homoscedasticity, and independence of residuals.

No excessive influential outlier was detected in all four models. From Table 5.28, the z-score percentages of the SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ models followed the guidelines in all three ranges, and their cases obtained the COO values under 1. It was assumed that the three models did not contain any outlier that affected the analysis. The SBP_DC$_B$ model obtained the z-score percentages below the suggested limits in the -1.96 to 1.96 and -2.58 to 2.58 ranges, but these percentages were relatively close to the baseline (approximately 1% and 3% under). There was also no case with the COO value above 1 in this model. This suggested that outliers in the SBP_DC$_B$ model did not overly influence the model's prediction. The researcher did not eliminate the outliers, since their removal would have undermined the sample size assumption and the result generalisability.

Table 5.26

Correlation Coefficients of Independent Variables in SBP_DC_B, SBP_DI_B, SBP_CL_B, and SBP_ND_B Models

	D_EI	D_SN	D_TF	D_SN	EXP_To_AGE	Dum_GEN	Dum_EDU1	Dum_EDU2	Dum_SUBJ1	Dum_SUBJ2	Dum_SUBJ3	Dum_SUBJ4	Dum_SUBJ5	Dum_SUBJ6	Dum_SUBJ7	Dum_SUBJ8	Dum_SUBJ9	Dum_LEV1	Dum_LEV2	Dum_REG1	Dum_REG2	Dum_REG3	Dum_REG4	Dum_REG5
D_EI	1																							
D_SN	0.082	1																						
D_TF	-0.533	-0.378	1																					
D_SN	-0.411	-0.201	-0.421	1																				
EXP_To_AGE	-0.045	-0.100	0.065	0.025	1																			
Dum_GEN	-0.019	0.071	-0.075	0.066	0.018	1																		
Dum_EDU1	-0.072	-0.146	0.159	-0.031	0.268	-0.031	1																	
Dum_EDU2	-0.055	-0.092	-0.015	0.123	0.081	0.042	-0.064	1																
Dum_SUBJ1	0.004	-0.076	-0.070	0.118	-0.005	-0.087	-0.064	-0.030	1															
Dum_SUBJ2	-0.039	-0.049	0.063	-0.007	0.054	-0.001	0.066	-0.037	-0.172	1														
Dum_SUBJ3	-0.081	-0.063	0.090	0.011	0.010	0.024	0.128	0.031	-0.177	-0.220	1													
Dum_SUBJ4	-0.016	-0.014	0.033	-0.015	-0.036	0.077	-0.027	0.039	-0.162	-0.201	-0.207	1												
Dum_SUBJ5	0.015	-0.068	0.018	0.002	-0.059	-0.046	0.002	-0.025	-0.116	-0.145	-0.149	-0.136	1											
Dum_SUBJ6	0.071	0.013	-0.042	-0.028	0.047	-0.135	-0.008	-0.017	-0.077	-0.096	-0.099	-0.090	-0.065	1										
Dum_SUBJ7	0.124	0.036	-0.055	-0.078	0.027	-0.144	-0.006	-0.019	-0.087	-0.108	-0.112	-0.102	-0.073	-0.049	1									
Dum_SUBJ8	0.066	0.057	-0.047	-0.042	-0.034	0.073	-0.048	-0.011	-0.053	-0.065	-0.067	-0.061	-0.044	-0.029	-0.033	1								
Dum_SUBJ9	-0.031	0.100	-0.068	0.053	-0.073	0.054	-0.040	-0.008	-0.039	-0.048	-0.050	-0.046	-0.033	-0.022	-0.025	-0.015	1							
Dum_LEV1	0.103	0.075	-0.046	-0.089	-0.111	0.120	-0.146	-0.019	-0.087	-0.057	-0.036	-0.102	0.030	0.000	-0.011	0.602	-0.025	1						
Dum_LEV2	0.068	0.060	-0.084	-0.003	0.004	0.096	-0.165	0.045	-0.041	0.001	-0.051	0.076	0.029	-0.011	-0.029	-0.114	-0.084	-0.189	1					
Dum_REG1	-0.011	0.025	-0.065	0.072	0.046	0.049	0.006	0.032	-0.038	0.047	-0.022	-0.051	0.030	0.043	0.041	-0.067	-0.050	-0.111	0.230	1				
Dum_REG2	0.022	0.016	-0.003	-0.027	-0.036	0.077	-0.098	0.032	-0.107	0.047	0.007	-0.020	0.089	-0.070	-0.010	0.096	0.005	0.345	0.034	-0.223	1			
Dum_REG3	-0.065	0.026	0.036	0.008	-0.072	0.011	0.004	-0.029	0.059	-0.036	-0.097	-0.002	0.035	0.066	0.042	-0.050	0.097	-0.052	-0.072	-0.167	-0.167	1		
Dum_REG4	0.040	0.004	0.018	-0.062	-0.053	0.024	0.084	-0.036	0.016	-0.065	-0.074	-0.047	-0.014	0.175	-0.051	0.108	0.067	0.002	-0.199	-0.209	-0.209	-0.156	1	
Dum_REG5	-0.004	-0.044	0.008	0.018	0.018	-0.011	0.082	0.050	-0.024	0.062	0.102	-0.024	-0.006	-0.080	0.027	-0.007	-0.040	-0.061	-0.149	-0.181	-0.181	-0.135	-0.169	1

Table 5.27

Tolerance and VIF Values of Independent Variables in SBP_DC$_B$, SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ Models

	D_EI	D_SN	D_TF	D_SN	EXP_To_AGE	Dum_GEN	Dum_EDU1	Dum_EDU2	Dum_SUBJ1	Dum_SUBJ2	Dum_SUBJ3	Dum_SUBJ4	Dum_SUBJ5	Dum_SUBJ6	Dum_SUBJ7	Dum_SUBJ8	Dum_SUBJ9	Dum_LEV1	Dum_LEV2	Dum_REG1	Dum_REG2	Dum_REG3	Dum_REG4	Dum_REG5
Tolerance	0.896	0.879	0.855	0.798	0.825	0.837	0.822	0.959	0.590	0.517	0.503	0.544	0.647	0.746	0.728	0.583	0.901	0.487	0.782	0.618	0.574	0.694	0.573	0.676
VIF	1.115	1.137	1.17	1.253	1.212	1.194	1.217	1.043	1.696	1.934	1.988	1.837	1.546	1.34	1.373	1.714	1.109	2.055	1.279	1.618	1.741	1.442	1.745	1.479

Table 5.28

Frequency and Percentage of Cases Based on Outlier Statistics of SBP_DC$_B$, SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ Models (N = 460)

Model	z-scores -1.96 to 1.96		z-scores -2.58 to 2.58		z-scores -3.29 to 3.29		COO >1
	f	%	*f*	%	*f*	%	*f*
SBP_DC$_B$	432	93.91	443	96.30	460	100.00	0
SBP_DI$_B$	448	97.39	459	99.78	460	100.00	0
SBP_CL$_B$	457	99.35	460	100.00	460	100.00	0
SBP_ND$_B$	447	97.17	460	100.00	460	100.00	0

The normality of residuals of each model was evaluated using z-score histograms and normal probability plots (Figures 5.9 to 5.12). The residuals of the SBP_DC$_B$ model seemed to have a non-normal distribution, since the histogram illustrated an unsymmetrical bell shape and the normal probability plot obtained a curvy line. The SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ models were assumed to have normal distributed residuals. Their histograms likely formed symmetrical bell shapes, and their normal probability plots showed almost straight diagonal lines. It was noted that the residual non-normality effect was not a concern for a large sample size of 200+ cases (Hair et al., 2010). The sample size of this study was 460, therefore, the non-normality of SBP_DC$_B$ model residuals can be overlooked. Confidence intervals and significance tests of the parameters of all models were thus justifiable.

Figure 5.9

Histogram (Left) and Normal Probability Plot (Right) of the Z-Scores of SBP_DC$_B$ Model
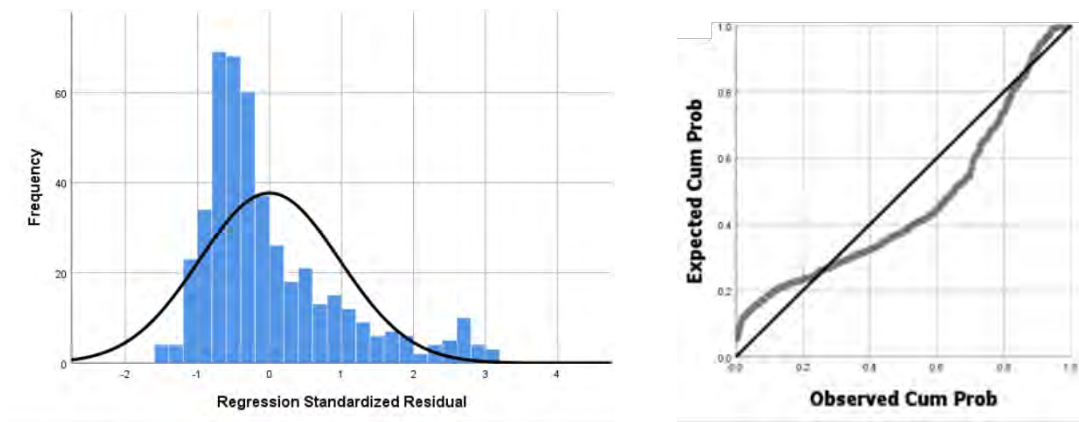
Figure 5.10

Histogram (Left) and Normal Probability Plot (Right) of the Z-Scores of SBP_DI$_B$ Model
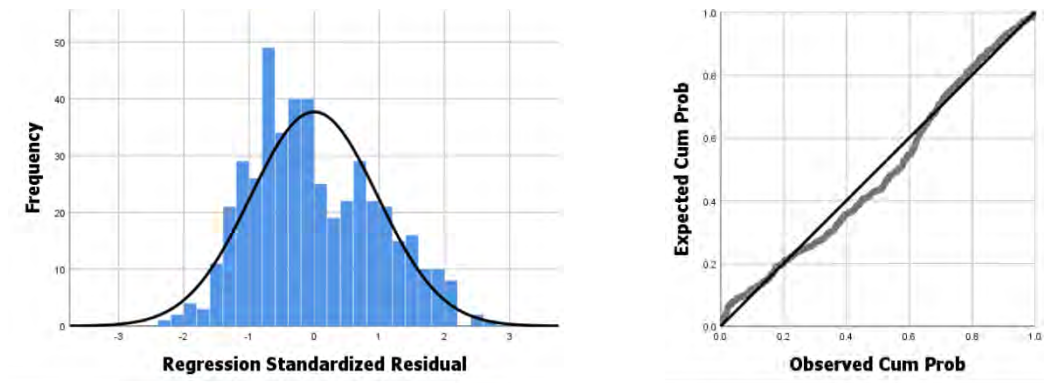
Figure 5.11

Histogram (Left) and Normal Probability Plot (Right) of the Z-Scores of SBP_CL$_B$ Model
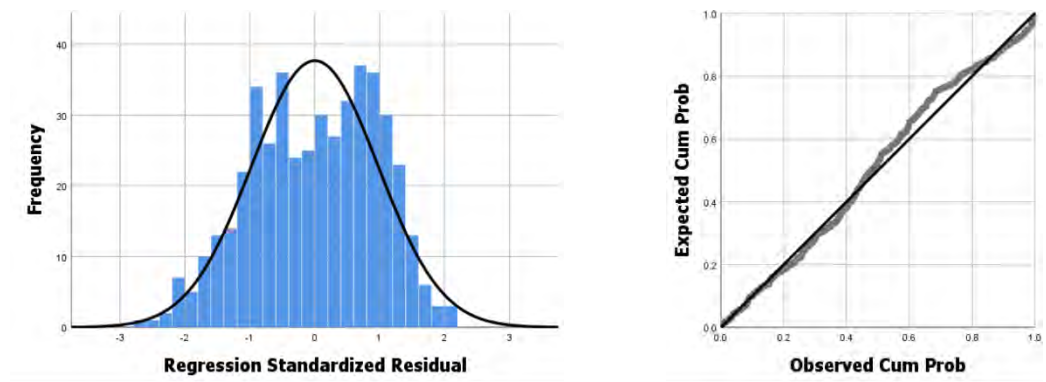
Figure 5.12

Histogram (Left) and Normal Probability Plot (Right) of the Z-Scores of SBP_ND$_B$ Model
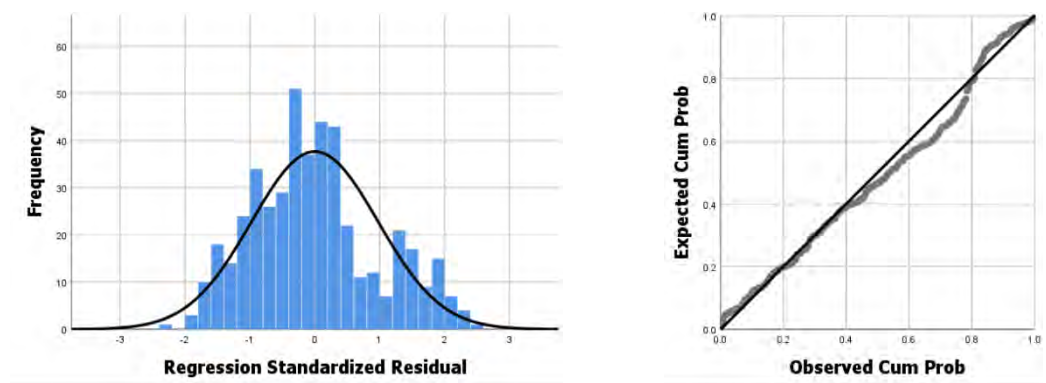
The linearity and homoscedasticity assumptions were also evaluated for each model, using the scatter plot of the ZRESID and ZPRED (Figures 5.13 to 5.16). All models met the two assumptions, as their scatter plots did not depict any curve form or funnel-like shape. This validated the confidence intervals and significance tests of all model parameters.

Figure 5.13

Scatter Plot of ZRESID and ZPRED of SBP_DC$_B$ Model
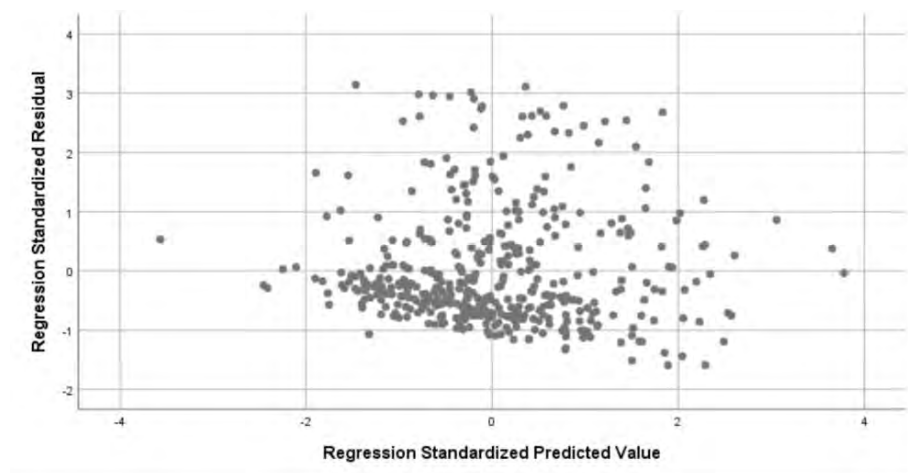
Figure 5.14

Scatter Plot of ZRESID and ZPRED of SBP_DI$_B$ Model
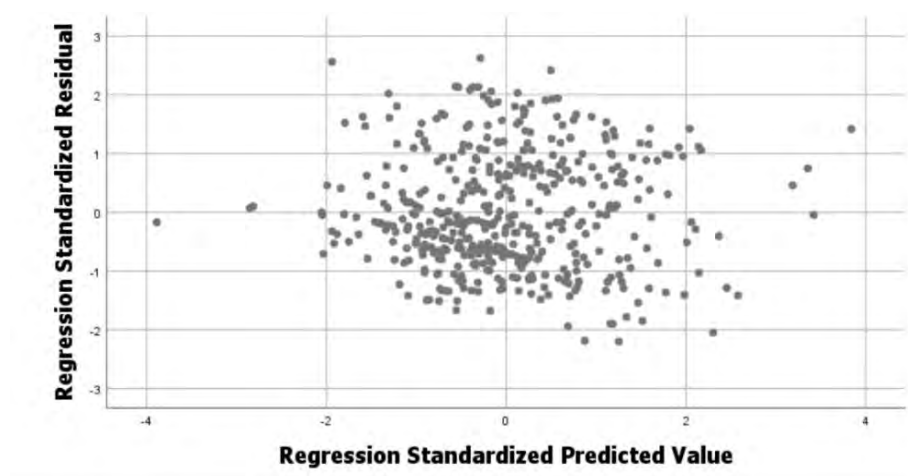
Figure 5.15

Scatter Plot of ZRESID and ZPRED of SBP_CL$_B$ Model
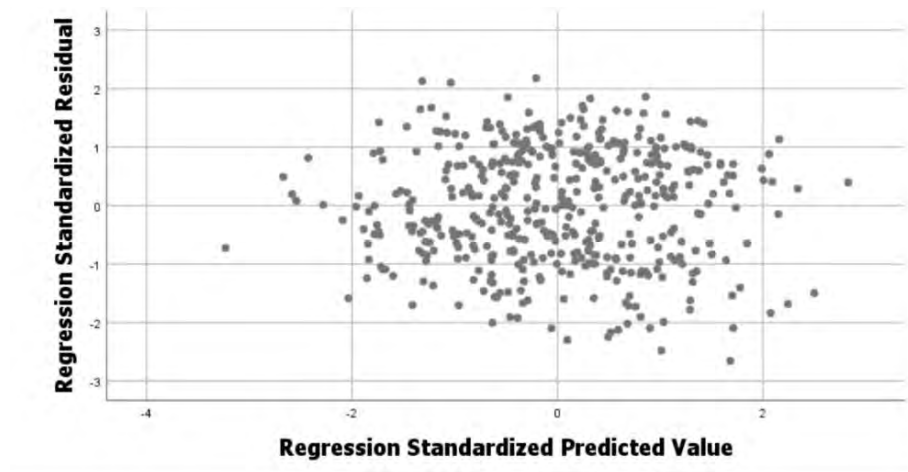
Figure 5.16

Scatter Plot of ZRESID and ZPRED of SBP_ND$_B$ Model
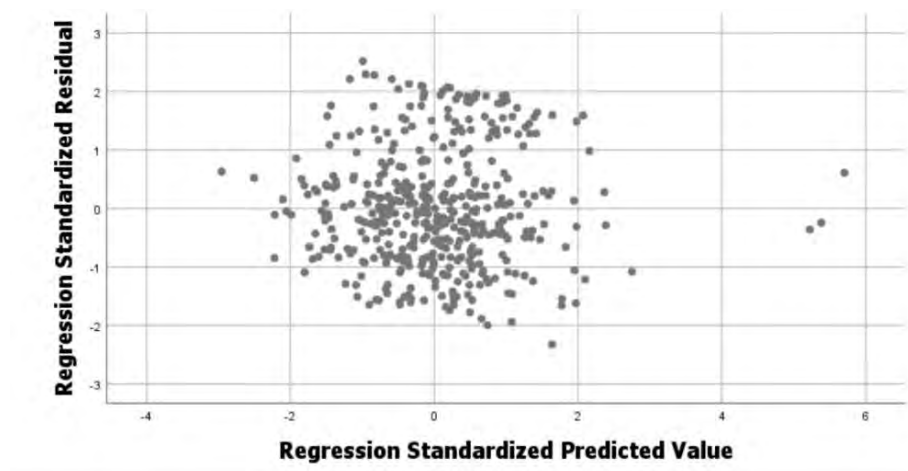
The Independence of residuals was also assumable for all models. The Durbin-Watson values of SBP_DC$_B$, SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ models were 2.151, 2.058, 2.073, and 1.998, respectively. All values followed the recommended value, which should be close to 2 and not under 1 or above 3. They indicated uncorrelated residuals in the four models. This validated each model's generalisability.

To conclude the analysis assumption evaluation, the SBP_DC_B, SBP_DI_B, SBP_CL_B, and SBP_ND_B models had achieved all the required assumptions. The four models had legitimated regression coefficients, unbiased confidence intervals and significance tests. Their prediction results were valid and generalisable. The model evaluation was then performed for these models; the results are presented in the next subsection.

Model evaluation

The SBP_DC_B, SBP_DI_B, SBP_CL_B, and SBP_ND_B models were assessed to indicate the ability of teachers' personalities and demographics to predict their preference for each supervisory behavioural approach. The R^2 values of each model were measured to assess how a certain approach preference was predicted by the overall group of interested variables, which consisted of the teacher's personality (PERS), teaching experience and age (EXP_To_AGE), education level (EDU), subject area of expertise (SUBJ), grade level of teaching (LEV), and school region (REG). The ΔR^2 values were estimated to indicate their individual predictive powers. This allowed the researcher to compare predicting powers among the explored variables.

According to R^2 values in Table 5.29, the SBP_DC_B and SBP_DI_B models obtained an overall significant predictive power. The personality and demographic variables could significantly explain 8.6% of the variance in the Directive Control approach preference at 95% confidence level ($R^2 = .086$, $F[24, 435] = 1.699$, $p = .022$) and approximately 13% of the variance in the Directive Informational approach preference at 99.9% confidence level ($R^2 = .128$, $F[24, 435] = 2.649$, $p < .001$).

Table 5.29

Coefficients of Determination of SBP_DC$_B$, SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ Models

Model	R^2	F	df 1	df 2	Sig. F
SBP_DC$_B$	.086	1.699	24	435	.022
SBP_DI$_B$	.128	2.649	24	435	.000
SBP_CL$_B$	.069	1.340	24	435	.132
SBP_ND$_B$	.077	1.520	24	435	.056

The SBP_ND$_B$ model had a higher predictive power than the SBP_CL$_B$ model, although both obtained insignificant R^2 values. The overall variables accounted for approximately 8% of the variance in the Nondirective approach preference at a nearly significant level (R^2 = .077, F [24, 435] = 1.520, p = .056), but they insignificantly explained the variance in the Collaborative approach preference (R^2 = .069, F [24, 435] = 1.340, p = .132).

Table 5.30

Coefficients of Determination Changes of SBP_DC$_B$, SBP_DI$_B$, SBP_CL$_B$, and SBP_ND$_B$ Models

Independent variable	Change statistics				
	ΔR^2	F change	df 1	df 2	Sig. F change
SBP_DC$_B$ model					
PERS	.019	2.166	4	455	.072
EXP_To_AGE	.002	0.797	1	454	.373
GEN	.001	0.414	1	453	.520
EDU	.009	2.044	2	451	.131
SUBJ	.033	1.735	9	442	.079
LEV	.014	3.368	2	440	.035
REG	.008	0.800	5	435	.550
SBP_DI$_B$ model					
PERS	.029	3.376	4	455	.010
EXP_To_AGE	.006	2.709	1	454	.100
GEN	.005	2.375	1	453	.124
EDU	.026	6.248	2	451	.002
SUBJ	.055	3.093	9	442	.001
LEV	.004	1.102	2	440	.333
REG	.002	0.225	5	435	.951

Independent variable	Change statistics				
	ΔR^2	F change	df 1	df 2	Sig. F change
SBP_CL_B model					
PERS	.003	0.312	4	455	.870
EXP_To_AGE	.003	1.335	1	454	.249
GEN	.006	2.652	1	453	.104
EDU	.020	4.704	2	451	.010
SUBJ	.025	1.309	9	442	.230
LEV	.005	1.224	2	440	.295
REG	.007	0.640	5	435	.669
SBP_ND_B model					
PERS	.018	2.133	4	455	.076
EXP_To_AGE	.000	0.012	1	454	.913
GEN	.007	3.202	1	453	.074
EDU	.013	2.966	2	451	.053
SUBJ	.026	1.369	9	442	.200
LEV	.008	1.908	2	440	.150
REG	.005	0.494	5	435	.781

The ΔR^2 values in Table 5.30 indicates that the Directive Control approach preference was significantly predicted by a demographic variable. LEV could explain 1.4% of the preference variance at 95% confidence level ($\Delta R^2 = .014$, $F[2, 440] = 3.368$, $p = .035$). SUBJ obtained the highest predictive power among insignificant predictors. It accounted for 3.3% of the preference variance ($\Delta R^2 = .033$, $F[9, 442] =$, $p = .079$). This was followed by PERS explaining approximately 2% of the preference variance ($\Delta R^2 = .019$, $F[4, 455] =$, $p = .072$). Apart from these variables, EDU gained a higher predictive ability than REG, EDU, EXP_To_AGE, and GEN, respectively.

The Directive Informational approach preference had three significant predictors: (i) SUBJ was the best predictor; (ii) followed by PERS; and (iii) EDU. SUBJ could explain 5.5% of the preference variance at 99.9% confidence level ($\Delta R^2 = .055$, $F[9, 442] = 3.093$, $p = .001$). PERS accounted for approximately 3% of the variance ($\Delta R^2 = .029$, $F[4, 455] = 3.376$, $p = .010$), and EDU explained 2.6% ($\Delta R^2 = .026$, $F[2, 451] = 6.248$, $p = .002$) of the variance, both

at 99% confidence level. Among the insignificant predictors, EXP_To_AGE had the strongest predictive power followed by GEN, LEV, and REG, respectively.

The Collaborative approach preference could be significantly predicted by one variable. It was indicated that EDU could substantially account for 2% of the preference variance at 99% confidence level ($\Delta R^2 = .020$, $F[2, 451] = 4.704$, $p = .010$). Other variables appeared to be insignificant predictors, among which SUBJ obtained the highest predictive power explaining 2.5% of the variance ($\Delta R^2 = .025$, $F[9, 442] = 1.309$, $p = .230$). This was followed by REG, GEN, LEV, EXP_To_AGE, and PERS, respectively.

The Nondirective approach preference obtained no significant predictor. EDU almost gained significant predictive power, accounting for 1.3% of the preference variance ($\Delta R^2 = .013$, $F[2, 451] = 2.966$, $p = .053$). Among other variables, SUBJ had the highest predictive ability, accounting for 2.6% of the variance ($\Delta R^2 = .026$, $F[9, 442] = 1.369$, $p = .200$). This was followed by PERS, LEV, GEN, REG, and EXP_To_AGE, respectively. Note that EXP_To_AGE had no predictive power for the approach preference ($\Delta R^2 = .000$).

Result summary

The predictive power comparison suggested that personality was likely a better predictor for the teachers' supervisory preference than most of the examined demographic variables. When comparing the significant predictive powers of each variable across the four approach preferences, EDU accounted for two preference variances (2% and 2.6%), while SUBJ, PERS, and LEV each could explain one preference variance (5.5%, 2.9%, and 1.4%, respectively). EXP_to_AGE, GEN, and REG did not gain any significant predictive power for any approach preference. On average, teachers' personalities seemed to predict their supervisory behaviour preference better than the grade level of teaching, gender, region, years of experience and age, but it was likely less predictive than the education level and subject area of expertise. It also appeared that the prediction accuracy for the teachers' supervisory preference was increased by

the combination of personality and demographics, especially the education level, subject area of expertise, and grade level of teaching, as the predictors.

5.4   Summary

This chapter has presented results from the study's quantitative data analyses. There were 460 participating teachers in the quantitative strand. The mean calculation of their relative preference scores indicated that Thai in-service teachers mayprefer collaborative supervisory behaviours. The respondents offered their preference for the Collaborative approach ($M =$ 0.3980, SD = 0.1555). This approach was preferred approximately one-and-a half times more than the Nondirective approach ($M = 0.2747$, SD = 0.1348), two times more than the Directive Informational approach ($M = 0.1885$, SD = 0.0751), and three times more than the Directive Control approach ($M = 0.1388$, SD = 0.1321).

Multiple regression analysis showed that personality had a predictive relationship to the teachers' supervisory behaviour preference. The overall personality domains statistically significantly accounted for 2.7% of the variance in the Directive Control approach inverse preference ($R^2 = .027$, $p = .014$) and approximately 3.0% of the variance in the Directive Informational approach preference ($R^2 = .029$, $p = .010$).

The Extraversion versus Introversion domain was the strongest significant predictor. It explained 1.4% of the variance in the Directive Control inverse preference ($\Delta R^2 = .014$, $p =$ .010), 2.2% of the variance in the Directive Informational approach preference ($\Delta R^2 = .022$, $p =$ .001), and 1.7% of the variance in the Nondirective approach preference ($\Delta R^2 = .017$, $p = .005$). The extraverted teachers tended to prefer the Nondirective approach more than introverted teachers who likely preferred the Directive Control and Directive Informational approaches more than extraverted teachers. Another significant predictor was the Thinking versus Feeling domain, which accounted for 1.1% of the variance in the Directive Control approach inverse

preference (ΔR^2 = .011, p = .027). The Feeling teachers likely preferred the Directive Control approach more than Thinking teachers.

It was found that the teachers' personalities likely predicted their supervisory behaviour preference better than the grade level of teaching, gender, region, years of experience, and age. The predictive power of personality seemed less than that of the education level and subject area of expertise. The combination of personality and demographic variables also appeared to increase the prediction accuracy for the teachers' supervisory preference.

The next chapter presents the study's results from the qualitative data analyses.

CHAPTER 6:
QUALITATIVE RESULTS

The present study used a mixed methods design to explore the preference of Thailand's in-service teachers for supervisory behaviours and how this preference is influenced by their personality. This chapter reports the results from the content analysis and correlation analysis of the qualitative data. The content analysis was conducted via Microsoft Excel for Office 365, and correlation analysis was performed using IBM SPSS Statistics Version 25. The teachers' supervisory preference categories emerged from content analysis, and the personality-supervisory preference relationship resulted from the correlation analysis, which are provided separately in the two following sections.

6.1　Emergent Categories of Teachers' Supervisory Preference

Qualitative data derived from teacher responses to the survey's open questions were analysed using content analysis (Chapter 4, Section 4.5.2). Concept-driven and data-driven approaches to content analysis were applied to build a coding frame. The concept-driven approach was primarily employed to structure the main categories based on explored aspects, which were the teachers' supervisory preference and their reasons. The subcategories were then inductively generated via a data-driven approach. This enabled the researcher to account for all parts of the analysed material. The researcher read through the entire material several times and generated a coding frame with three hierarchical levels. There were two main categories, seven subcategories, and 23 sub-subcategories. The coding frame structure, along with an example of coded terms, are presented in Table 6.1.

Table 6.1

Coding Frame for Content Analysis

Main category	Subcategories	Sub-subcategories	Examples of coded terms
Preference	Supervisor's character	Capable	experienced, specialized, context understanding, knowledgeable
		Friendly	friendly , reachable, quite close, smiling
		Logical	objective, realistic, reasonable, relying on facts, systematic thinking
		Confident	confident, act natural, calm
		Courteous	honouring, humble, polite, punctual, smart
		Of-Integrity	honest, just, sincere, straightforward
		Benevolent	gentle, kind, merciful, sympathetic
	Supervisor's intention	Willing-To-Help	devoting, supportive, willing to help, being serious
		Non-Judgmental	constructive, not criticizing, not forceful, optimistic, positive
	Supervisory behaviour	Directive	suggest, follow-up, give alternatives, concrete suggestion, provide examples, point out problems
		Collaborative	discussion, listening, brainstorming, encouraging, sharing ideas, open-minded, flexible
		Nondirective	asking questions, entrust teacher, challenge, help when asked, give freedom
		Reinforcing	cheer-up, compliment,
		Differentiating	diverse methods, individualising
Reason	Professional development	Encouraged-To-Develop	pleased/comfortable to solve problems, willing to improve, confident to develop, more self-confident, gain self-esteem
		Being-Improved	developed, learning, gain more knowledge, more experience, know own problems, well understand, gain the solutions

Main category	Subcategories	Sub-subcategories	Examples of coded terms
Reason	Supervision process	Welcoming	welcome the supervision, being really helped, beneficial, admit own mistakes, want to do often
		Confident-In-Process	trust, apply suggestions, confident in suggestions, confident in the process
		Attentive	more attentive, dare to speak, confident to share, willing to cooperate, being participated
		Comfortable-With-Process	feel comfortable, anxiety-free, not pressured, not stressed, not afraid, relaxed, fairy/well treated
		In-Good-Relationship	befriended, warm, safe, admire, impressed, being respectful, thankful
	Work	Willing-To-Work	encouraged to perform, work with fun, willing to work, empowered, comfortable to teach, teach with pleasure
		Confident-To-Work	confident in teaching, teach naturally

The emergent categories were quantified by the number of responses containing the relevant information. Seventy-six responses of the quantitative sample (460 participants) did not complete the open-ended questions or answer them with irrelevant information. There were 384 responses available for content analysis, that is, 83.48% of the total sample. The teachers' responses were coded according to the emergent categories. Each category was then transformed into a dichotomous variable indicating the presence or absence (scored as 1 or 0) of that category for each response. The response frequency and percentage of each emergent category were calculated (Table 6.2).

Table 6.2

Response Frequency and Percentage of Emergent Categories by Overall Sample (N = 384)

Category	Frequency	Percent
Preference		
Supervisor's character		
Capable	157	40.89%
Friendly	140	36.46%
Benevolent	83	21.61%
Of-Integrity	59	15.36%
Courteous	41	10.68%
Logical	38	9.90%
Confident	4	1.04%
Supervisor's intention		
Willing-To-Help	60	15.63%
Non-Judgmental	31	8.07%
Supervisory behaviour		
Directive	173	45.05%
Collaborative	142	36.98%
Nondirective	11	2.86%
Reinforcing	10	2.60%
Differentiating	7	1.82%
Reason		
Professional development		
Encouraged-To-Develop	66	17.19%
Being-Improved	21	5.47%
Supervision process		
Comfortable-With-Process	127	33.07%
Confident-In-Process	71	18.49%
In-Good-Relationship	71	18.49%
Welcoming	55	14.32%
Attentive	45	11.72%
Work		
Willing-To-Work	41	10.68%
Confident-To-Work	6	1.56%

Note. Some responses matched multiple categories.

The response portion unveiled the teachers' supervisory preferences and their reasons for these. In general, large percentages of teachers preferred supervisors who are capable (40.89%), followed by friendly (36.46%), and benevolent (21.61%) supervisors. They also favoured supervisory behaviours to be directive (45.05%) and collaborative (36.98%). The reasons generally offered by the teachers were that their preferred supervision would make them feel comfortable (33.07%) and confident of (18.49%) with the process. Teachers would also establish a good relationship with their supervisor (18.49%) and be encouraged to improve their professional practice (17.19%).

The first reason for each high-proportion preference was in the Comfortable-With-Process category, but some differences occurred in the second and third reasons. From Table 6.3, the teachers reasoned that their supervisor's capabilities (24.2%) and directive behaviours (19.08%) would make them feel confident in the process (20.38%) and willing to improve themselves (22.54%) while friendliness (24.71%), benevolence (19.28%), and collaborative behaviours (19.72) would establish a positive relationship attitude in the teachers. They also reasoned that a friendly supervisor would provide them with courage in their professional development (17.86%), a benevolent supervisor would give them confidence in the process (26.51%), and collaborative behaviours would attract their attention to the course (21.83%).

Table 6.3

Percentages of Responses in Reason Categories Based on High-Proportion Preference Categories by Overall Sample (N = 384)

Preference category	Reason category								
	Professional development		Supervision process					Work	
	Encouraged-To-Develop	Being-Improved	Welcoming	Confident-In-Process	Attentive	Comfortable-With-Process	In-Good-Relationship	Willing-To-Work	Confident-To-Work
Capable	20.38%[a]	8.92%	12.74%	24.20%[a]	13.38%	28.66%[a]	17.20%	10.19%	2.55%
Friendly	17.86%[a]	5.71%	10.71%	16.43%	13.57%	40.00%[a]	25.71%[a]	8.57%	0.71%
Benevolent	14.46%	0.00%	18.07%	26.51%[a]	6.02%	36.14%[a]	19.28%[a]	12.05%	0.00%
Directive	22.54%[a]	5.78%	12.14%	19.08%[a]	9.25%	30.64%[a]	18.50%	12.72%	2.31%
Collaborative	15.49%	3.52%	13.38%	18.31%	21.83%[a]	27.46%[a]	19.72%[a]	11.36%	2.27%

Note. Some responses matched multiple categories.

[a] Three highest percentages of the row.

The frequency and percentage of responses in the preference sub-subcategories were then estimated accordingly to personality types of teachers. These included Extraversion (E), Introversion (I), Sensing (S), Intuition (N), Thinking (T), Feeling (F), Judging (J), and Perceiving (P) types. The proportion of teacher responses in the two alternative types of each personality domain were compared to assess their difference in supervisory preference. The Extraversion proportion was compared to the Introversion proportion, Sensing to Intuition, Thinking to Feeling, and Judging to Perceiving. The response ratio of teachers in the personality type of each domain and their proportional differences are detailed in Tables 6.4, 6.6, 6.8, and 6.10.

Notable differences in supervisory preference between the two personality types of each domain were then identified. These notable differences were of preference categories that obtained difference proportions above the average. Percentages of each reason in the sub-subcategory for each notable difference were further explored in higher proportion groups (Tables 6.5, 6.7, 6.9 and 6.11). This offered an insightful understanding of how the supervisory preference of teachers in one personality type would differ from those in another type. Comparisons between two personality types of each domain are provided separately in subsequent sections of this thesis.

6.1.1 Extraversion and Introversion Types

The supervisory preferences of extraverts and introverts were notably different in the Supervisor's Character and Supervisory Behaviour categories (Table 6.4). The first reason for both types were mainly associated with the Comfortable-With-Process category. Extraverts offered their preferences in the Attentive and In-Good-Relationship categories, while introverts' preferences were also in the Confident-In-Process category (Table 6.5).

Table 6.4

Response Proportions in Preference Categories by Extraversion and Introversion Teachers

Preference category	Extraversion (*N* = 165)	Introversion (*N* = 219)	Group difference
Supervisor's character			
Capable	35.76%	44.75%	8.99%[a]
Friendly	38.79%	34.70%	4.08%[a]
Benevolent	20.00%	22.83%	2.83%[a]
Of-Integrity	16.36%	14.61%	1.75%
Courteous	10.30%	10.96%	0.66%
Logical	9.70%	10.05%	0.35%
Confident	1.21%	0.91%	0.30%
Supervisor's intention			
Non-Judgmental	8.48%	7.76%	0.72%
Willing-To-Help	15.76%	15.53%	0.23%
Supervisory behaviour			
Collaborative	42.42%	32.88%	9.55%[a]
Directive	43.03%	46.58%	3.55%[a]
Nondirective	4.24%	1.83%	2.42%
Differentiating	2.42%	1.37%	1.05%
Reinforcing	3.03%	2.28%	0.75%

Note. Some responses matched multiple categories.

[a] Difference percentages were above average.

Table 6.5

Percentages of Higher-Proportion-Group Responses in Reason Categories Based on Preference Category With Notable Differences Between Extraversion (N = 165) and Introversion (N = 219) Teachers

Preference category	Reason category								
	Professional development		Supervision process					Work	
	Encouraged-To-Develop	Being-Improved	Welcoming	Confident-In-Process	Attentive	Comfortable-With-Process	In-Good-Relationship	Willing-To-Work	Confident-To-Work
Extraversion									
Friendly	21.88%	6.25%	9.38%	17.19%	12.50%	37.50%[a]	25.00%[a]	10.94%	0.00%
Collaborative	17.14%	4.29%	15.71%	15.71%	21.43%[a]	27.14%[a]	17.14%	15.71%	2.86%
Introversion									
Capable	16.33%	10.20%	9.18%	26.53%[a]	16.33%	29.59%[a]	18.37%	9.18%	2.04%
Benevolent	10.00%	0.00%	14.00%	28.00%[a]	4.00%	42.00%[a]	22.00%	12.00%	0.00%
Directive	20.59%[a]	6.86%	9.80%	16.67%	9.80%	33.33%[a]	15.69%	12.75%	2.94%

Note. Some responses matched multiple categories.

[a] Two highest percentages of the row.

A larger proportion of extraverted teachers preferred collaborative supervisory behaviours (by 9.55%) and desired a friendly supervisor (by 4.08%). Most of them expressed that collaborative behaviours would comfort them (27.14%) and gain their attention (21.43%). A friendly supervisor would make them feel comfortable with the process (37.50%) and they felt positive about their supervisory relationship (25.00%). One teacher who was an extravert said:

> [I prefer] a supervisor who can collaboratively discuss the issue with me … [because it] would make me feel interested in the process and not nervous or anxious too much. (case ID127, E type)

Another also commented:

> [A supervisor who] treats me by friendly communication … would make me feel befriended or like a sibling and be comfortable, trusting, relaxed, and not stressed. (case ID048, E type)

A larger proportion of introverted teachers preferred their supervisor to be capable (by 8.99%), to perform directive behaviours (by 3.55%), and be benevolent (by 2.83%). They expressed that a capable supervisor (29.59%) and a benevolent supervisor (42.00%) would make the supervision process pleasant, as well as give them confidence in the course (26.53% and 28.00%, respectively). Directive behaviours would also ensure that teachers felt comfortable during the supervision process (33.33%), and be encouraged to improve their professional practice (20.59%). Introverted teachers stated:

> [I prefer] a supervisor who is experienced and providing practical and suitable suggestions and treats me by being merciful… [because it] would make me feel trusting, relaxed, and not stressed. (case ID179, I type)

> [I prefer] a supervisor who is providing me with alternative suggestions that can be well practiced … [because it] would make me feel comfortable and ready to address the problem and improve. (case ID070, I type)

6.1.2 Sensing and Intuition Types

The notable differences between the supervisory preferences of Sensing and Intuition teachers were found in all three preference subcategories (Table 6.6). Their preference reasons were generally in the Comfortable-With-Process, Confidence-In-Process, and Encouraged-To-Develop categories (Table 6.7).

Table 6.6

Response Proportions in Preference Categories by Sensing and Intuition Teachers

Preference category	Sensing ($N = 348$)	Intuition ($N = 36$)	Group difference
Supervisor's character			
Of-Integrity	14.66%	22.22%	7.57%[a]
Capable	41.38%	36.11%	5.27%[a]
Logical	10.34%	5.56%	4.79%[a]
Courteous	10.34%	13.89%	3.54%
Friendly	36.78%	33.33%	3.45%
Confident	1.15%	0.00%	1.15%
Benevolent	21.55%	22.22%	0.67%
Supervisor's intention			
Willing-To-Help	14.94%	22.22%	7.28%[a]
Non-Judgmental	8.05%	8.33%	0.29%
Supervisory behaviour			
Directive	44.25%	52.78%	8.52%[a]
Nondirective	2.59%	5.56%	2.97%
Differentiating	2.01%	0.00%	2.01%
Collaborative	37.07%	36.11%	0.96%
Reinforcing	2.59%	2.78%	0.19%

Note. Some responses matched multiple categories.

[a] Difference percentages were above average.

Table 6.7

Percentages of Higher-Proportion-Group Responses in Reason Categories Based on Preference Categories With Notable Difference Between Sensing (N = 348) and

Intuition (N = 36) Teachers

Preference category	Reason category								
	Professional development		Supervision process					Work	
	Encourage-To-Develop	Being-Improved	Welcoming	Confident-In-Process	Attentive	Comfortable-With-Process	In-Good-Relationship	Willing-To-Work	Confident-To-Work
Sensing									
Capable	19.44%	9.72%	13.89%	25.69%[a]	12.50%	27.08%[a]	17.36%	9.72%	2.08%
Logical	22.22%[a]	8.33%	11.11%	22.22%[a]	11.11%	33.33%[a]	19.44%	22.22%[a]	0.00%
Intuition									
Of-Integrity	25.00%[a]	0.00%	0.00%	25.00%[a]	12.50%	37.50%[a]	12.50%	0.00%	0.00%
Willing-to-Help	25.00%[a]	0.00%	0.00%	25.00%[a]	12.50%	37.50%[a]	12.50%	0.00%	0.00%
Directive	21.05%[a]	0.00%	5.26%	21.05%[a]	10.53%	26.32%[a]	15.79%	10.53%	5.26%

Note. Some responses matched multiple categories.

[a] Two highest percentages of the row.

A greater proportion of Sensing teachers preferred a capable (by 5.27%) and logical (by 4.79%) supervisor. Most of them responded that a capable supervisor (27.08%) and a logical supervisor (33.33%) would make them feel comfortable with the process. A capable supervisor would also give them confidence in the course (25.69%), and a logical supervisor would give them courage to develop themselves (22.22%), confidence in the process (22.22%), and the willingness to teach (22.22%). One Sensing teachers said:

> [I prefer] a supervisor who is experienced, working systematically … [and] being reasonable … [because it] would make me feel trusting and being treated fairly. (case ID331, S type)

Others expressed that they preferred a logical supervisor because it would make them 'feel pleasant and be more attentive and confidence to improve myself' (case ID053, S type) and 'feel trusting and pleased to work' (case ID303, S type).

A larger proportion of Intuition teachers preferred their supervisor to practise directive behaviours (by 8.52%), have integrity (by 7.57%), and have the intention to help them (by 7.28%). Most mentioned that a supervisor with directive behaviours, integrity, and full intention to help would make them feel comfortable (26.32%, 37.50%, and 37.50%, respectively) with, and confident in, the process (21.05%, 25.00%, and 25.00%, respectively). Such supervisory conditions would also provide them with encouragement for further professional development (21.05%, 25.00%, and 25.00%, respectively). One Intuition teacher said:

> [I prefer] a supervisor who is able to give good solution alternatives … [and] devoted to help … [because it] would make me feel pleased and be confident in improving myself. (case ID008, N type)

Others responded:

> [I prefer] a supervisor who is sincere, just, able to give suggestions … [because it] would make me feel that the supervision will result in a positive way. (case ID158, N type)

> [A supervisor having] a full intention to help with no bias … would make me feel comfortable to receive the supervision. (case ID178, N type)

6.1.3 Thinking and Feeling types

The notable difference in supervisory preferences between Thinking and Feeling teachers were in the Supervisor's Character and Supervisory Behaviour categories (Table 6.8).

Table 6.8

Response Proportions in Preference Categories by Thinking and Feeling Teachers

Preference category	Thinking ($N = 283$)	Feeling ($N = 101$)	Group difference
Supervisor's character			
Benevolent	19.08%	28.71%	9.63%[a]
Courteous	8.48%	16.83%	8.35%[a]
Of-Integrity	16.61%	11.88%	4.73%[a]
Friendly	37.46%	33.66%	3.79%
Logical	9.54%	10.89%	1.35%
Capable	40.64%	41.58%	0.95%
Confident	1.06%	0.99%	0.07%
Supervisor's intention			
Willing-To-Help	15.19%	16.83%	1.64%
Non-Judgmental	8.48%	6.93%	1.55%
Supervisory behaviour			
Directive	42.40%	52.48%	10.07%[a]
Collaborative	39.58%	29.70%	9.87%[a]
Nondirective	1.77%	5.94%	4.17%
Differentiating	1.41%	2.97%	1.56%
Reinforcing	2.83%	1.98%	0.85%

Note. Some responses matched multiple categories.

[a] The difference percentages were above average.

Teachers of both types stated their first preference reason in the Comfortable-With-Process category. The second reason was given by Thinking teachers involved in the Confident-In-Process and Attentive categories, whereas Feeling teachers were included in the Confident-In-Process, Encourage-To-Develop, and Willingness-To-Work categories (Table 6.9).

Table 6.9

Percentages of Higher-Proportion-Group Responses in Reason Categories Based on Preference Categories With Notable Differences Between Thinking (N = 283) and

Feeling (N = 101) Teachers

Preference category	Reason category								
	Professional development		Supervision process					Work	
	Encouraged-To-Develop	Being-Improved	Welcoming	Confident-In-Process	Attentive	Comfortable-With-Process	In-Good-Relationship	Willing-To-Work	Confident-To-Work
Thinking									
Of-Integrity	19.15%	8.51%	19.15%	21.28%[a]	8.51%	42.55%[a]	10.64%	8.51%	0.00%
Collaborative	16.07%	3.57%	11.61%	16.96%	25.00%[a]	28.57%[a]	22.32%	10.71%	0.89%
Feeling									
Courteous	11.76%	11.76%	5.88%	11.76%	5.88%	35.29%[a]	23.53%	35.29%[a]	0.00%
Benevolent	17.24%	0.00%	13.79%	27.59%[a]	3.45%	37.93%[a]	10.34%	20.69%	0.00%
Directive	15.09%	5.66%	9.43%	26.42%[a]	9.43%	26.42%[a]	9.43%	20.75%	3.77%

Note. Some responses matched multiple categories.

[a] Two highest percentages of the row.

It was found that a larger proportion of Thinking teachers preferred collaborative supervisory behaviours (by 9.87%) and one of-integrity supervisor (by 4.73%). Most Thinking teachers reasoned that collaborative behaviours (28.57%) and the supervisor's integrity (42.55%) would make them feel comfortable with the task of being supervision. They would also pay attention to the supervision process where collaborative behaviours were being applied (25.00%), and to gain confidence in the course administrated by an of-integrity supervisor (21.28%), as expressed by a Thinking teacher:

> [I prefer a supervisor who is] listening to my ideas, giving me chances to argue when disagreeing … [because it] would make me feel relaxed and ready to listen to any suggestions. (case ID228, T type)

It was also mentioned that a supervisor with integrity 'would make me feel comfortable, trusting, and happy' (case ID074, T type).

A larger proportion of Feeling teachers were found to favour directive supervisory behaviours (by 10.07%) and supervisors who were benevolent (by 9.63%) and courteous (by 8.35%). Most Feeling teachers stated that directive behaviours and a benevolent supervisor would be pleasant (26.42% and 37.93%, respectively) and give them confidence in the supervision process (26.42% and 27.59%, respectively), as explained by some Feeling teachers:

> [A supervisor] who provides suggestions with sympathy … would make me feel comfortable, not pressured, and happy. (case ID018, F type)

> [I prefer] a supervisor who is suggesting me the ways to improve myself and treats me by being sympathetic … [because it] would make me feel I could apply the suggestions into the teaching practices. (case ID027, F type).

A supervisor who was courteous would also comfort most Feeling teachers during the process, as well as encourage them to work (both at 35.29%), as they expressed:

> [I prefer a supervisor being] honouring, polite, and gentle when giving suggestions … [because it] would make me feel willing to teach with full potential. (case ID426, F type)

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[A supervisor who] treats me by being humble and polite … would make me feel not stressed. (case ID153, F type)

6.1.4 Judging and Perceiving Types

The supervisory preferences of Judging and Perceiving teachers were notably different in the Supervisor's Character category (Table 6.10). The first preference of teachers in both types fell within the Comfortable-with-Process category. The second reason given by Judging teachers were identified in the Confident-In-Process, Attentive, and Willingness-To-Work categories, while those of Perceiving teachers were placed in the In-Good-Relationship category (Table 6.11).

Table 6.10

Response Proportions in Preference Categories by Judging and Perceiving Teachers

Preference category	Judging ($N = 316$)	Perceiving ($N = 68$)	Group difference
Supervisor's character			
Of-Integrity	17.41%	5.88%	11.52%[a]
Friendly	35.13%	42.65%	7.52%[a]
Courteous	9.49%	16.18%	6.68%[a]
Logical	10.76%	5.88%	4.88%[a]
Capable	40.19%	44.12%	3.93%
Benevolent	21.52%	22.06%	0.54%
Confident	0.95%	1.47%	0.52%
Supervisor's intention			
Willing-To-Help	15.19%	17.65%	2.46%
Non-Judgmental	7.91%	8.82%	0.91%
Supervisory behaviour			
Collaborative	38.92%	27.94%	10.98%[a]
Reinforcing	3.16%	0.00%	3.16%
Nondirective	2.53%	4.41%	1.88%
Differentiating	1.58%	2.94%	1.36%
Directive	44.94%	45.59%	0.65%

Note. Some responses matched multiple categories.

[a] Difference percentages were above average.

Table 6.11

Percentages of Higher-Proportion-Group Responses in Reason Categories Based on Preference Categories With Notable Differences Between Judging (N = 316) and

Perceiving (N = 68) Teachers

Preference category	Reason category								
	Professional development		Supervision process					Work	
	Encouraged-To-Develop	Being-Improved	Welcoming	Confident-In-Process	Attentive	Comfortable-With-Process	In-Good-Relationship	Willing-To-Work	Confident-To-Work
Judging									
Logical	20.59%	8.82%	8.82%	26.47%[a]	8.82%	32.35%[a]	14.71%	23.53%	0.00%
Of-Integrity	16.36%	7.27%	18.18%	21.82%[a]	9.09%	38.18%[a]	14.55%	9.09%	0.00%
Collaborative	15.45%	4.07%	14.63%	17.89%	20.33%[a]	27.64%[a]	19.51%	14.63%	1.63%
Perceiving									
Friendly	17.24%	6.90%	13.79%	17.24%	17.24%	48.28%[a]	31.03%[a]	0.00%	3.45%
Courteous	0.00%	9.09%	9.09%	18.18%	9.09%	36.36%[a]	54.55%[a]	18.18%	0.00%

Note. Some responses matched multiple categories.

[a] Two highest percentages of the row.

It was found that a larger proportion of Judging teachers preferred a supervisor with integrity (by 11.52%), applied collaborative behaviours (by 10.98%), and able to think logically (by 4.88%). They generally reported that a supervisor's integrity would make them feel comfortable with (38.18%), and confident in (21.82%), the supervisory activity. Collaborative supervisory behaviours would comfort them (27.64%) and gain their attention (20.33%), As mentioned by Judging teachers:

> [I prefer] a supervisor who is giving straightforward opinions, brainstorming with me … [and] being transparent, sincere, and not secretive … [because it] would make me feel trusting, ready to open my mind, and wanting to share information. (case ID020, J type)

A logical supervisor would also ensure that most Judging teachers felt comfortable (32.35%) and confidence in the supervision process (26.47%):

> [I prefer] a supervisor who is seeing things reasonably … [because it] would make me feel comfortable and ready to listen' (case ID414, J type) and that '[a supervisor who] treats me by facts, accurate information … would make me feel I truly gain knowledge and solve the problem at its cause. (case ID025, J type)

A larger proportion of Perceiving teachers were found to desire a friendly (by 7.52%) and courteous (by 6.68%) supervisor. Most of them expressed that a friendly and courteous supervisor would make supervision a pleasant process (48.28% and 36.36%, respectively). A friendly and courteous approach could help to develop a positive attitude in Perceiving teachers about the supervisory relationship (31.03% and 54.55%, respectively). Comments from Perceiving teachers included:

> [I prefer a supervisor] being polite and friendly … [because it] would make me feel warmed and comfortable. (case ID333, P type)

> [A supervisor who] treats me by being as a true friend … would make me feel befriended. (case ID163, P type)

> [A supervisor who] honours ideas and actions of others … would make me feel impressed. (case ID422, P type)

The content analysis results indicated several differences in supervisory preferences between teachers with opposing personality types. For Extraversion and Introversion types, the extraverted teacher was more likely to prefer a friendly supervisor with collaborative behaviours, compared with an introverted teacher who seemed to prefer a capable and benevolent supervisor with directive behaviours. For Sensing and Intuition types, it appeared that Sensing teachers had more preference for a capable and logical supervisor, whereas Intuition teachers favoured directive supervisory behaviours and an of-integrity supervisor who was willing to help them. For Thinking and Feeling types, Thinking teachers were more likely to prefer an of-integrity supervisor with collaborative behaviours, while Feeling teachers may have preferred a courteous and benevolent supervisor who exercised directive behaviours. For Judging and Perceiving types, the Judging teacher was more inclined to accept a logical supervisor with integrity and collaborative behaviours, while Perceiving teacher more likely preferred a friendly and courteous supervisor.

This section has reported results from the study's content analysis. The preference categories emerged from this analysis were further examined for their statistical correlation with each personality domain. Results from the correlation analysis are presented in the next section.

6.2 Correlations Between Personality Domains and Emergent Preference Categories

A point-biserial correlation analysis was used to assess the statistical association of personality with the teachers' supervisory preference derived from the qualitative data. The point-biserial correlation coefficients (r_{pb}) were estimated to indicate the relationship degree and direction between each personality domain and dichotomous variable that represented the preference categories. The personality domains included Extraversion versus Introversion (D_EI), Sensing versus Intuition (D_SN), Thinking versus Feeling (D_TF), and Judging versus Perceiving (D_JP). The dichotomous variables were placed in the categories of Capable, Friendly, Logical,

Confident, Courteous, Of-Integrity, Benevolent, Willing-to-Help, Non-Judgmental, Directive, Collaborative, Nondirective, Reinforcing, and Differentiating.

The level of measurement, normal distribution, and linearity assumptions were evaluated for point-biserial correlation analysis. The measurement levels of variables were accurate, because each pair of variable examined comprised of one continuous variable (personality domains) and one dichotomous nominal variable (preference categories). The linearity assumption was assessed through the normal distribution of continuous variables. Note that the effect of non-normally distributed data can be ignored in a large sample size of more than 200 participants (Hair et al., 2010). This study's sample size was 384 participants, therefore, the data's non-normality, if occurred, would not have affected the linearity of this analysis.

Some variable pairs, however, violated the normal distribution assumption. This assumption was diagnosed using the Shario-Wilk test statistics, as demonstrated in Table 6.12. The test indicated that the distributions of D_EI and D_TF for the Absence and Presence levels of all preference categories were insignificantly different from normality. D_SN and D_JP distributions were however significantly different from normality for either both or one level of each preference category. This indicated that only variable pairs concerning D_EI and D_TF achieved the normal distribution assumption. The confidence intervals and significance tests of their point-biserial correlation coefficients were justifiable. Their results could be referred to the population.

Table 6.12

Shapiro-Wilk Test of Normality for Personality Domains and Preference Categories

Preference category		D_EI		D_SN		D_TF		D_JP	
		Statistic	df	Statistic	df	Statistic	df	Statistic	df
Supervisor's character									
Capable	Absence	.994	227	.981**	227	.993	227	.971**	227
	Presence	.989	157	.963**	157	.988	157	.942**	157
Friendly	Absence	.994	244	.979**	244	.992	244	.955**	244
	Presence	.990	140	.966**	140	.994	140	.968**	140
Logical	Absence	.994	346	.979**	346	.996	346	.963**	346
	Presence	.974	38	.920**	38	.977	38	.942*	38
Confident	Absence	.995	380	.976**	380	.996	380	.961**	380
	Presence	.867	4	.927	4	.823	4	.981	4
Courteous	Absence	.994	343	.973**	343	.996	343	.957**	343
	Presence	.975	41	.983	41	.978	41	.967	41
Of-Integrity	Absence	.994	343	.980**	325	.996	325	.961**	325
	Presence	.975	41	.962	59	.988	59	.935**	59
Benevolent	Absence	.994	343	.971**	301	.995	301	.963**	301
	Presence	.975	41	.983	83	.984	83	.950**	83
Supervisor's intention									
Willing-to-Help	Absence	.994	324	.983**	324	.996	324	.961**	324
	Presence	.984	60	.939**	60	.979	60	.953*	60
Non-Judgmental	Absence	.995	353	.978**	353	.995	353	.959**	353
	Presence	.963	31	.940	31	.973	31	.965	31
Supervisory behaviour									
Directive	Absence	.993	211	.975**	211	.992	211	.969**	211
	Presence	.996	173	.976**	173	.992	173	.947**	173
Collaborative	Absence	.992	242	.978**	242	.990	242	.960**	242
	Presence	.991	142	.963**	142	.982	142	.959**	142
Nondirective	Absence	.995	373	.981**	373	.994	373	.960**	373
	Presence	.922	11	.888	11	.960	11	.932	11
Reinforcing	Absence	.995	374	.975**	374	.996	374	.961**	374
	Presence	.937	10	.966	10	.963	10	.957	10
Differentiating	Absence	.994	377	.977**	377	.996	377	.962**	377
	Presence	.899	7	.904	7	.948	7	.851	7

*p < .05. **p < .01.

All pairs of personality domains and preference categories were then estimated for their point-biserial correlation coefficients (r_{pb}), as demonstrated in Table 6.13. The coefficients indicated significant correlations in six variable pairs. The Extraversion versus Introversion domain significantly correlated with one preference category. D_EI had a negative correlation with the Capable category at 95% confidence level (r_{pb} = -.120, p = .019), despite the small effect size. The negative correlation meant the preference level for capable supervisors likely decreased when the domain score increased. This suggested that extraverted teachers tended to prefer capable supervisors less than introverted teachers.

Table 6.13

Point-Biserial Correlation Coefficients Between Personality Domains and Preference Categories (N = 384)

Preference category	D_EI	D_SN	D_TF	D_JP
Supervisor's character				
Capable	-.120*	.029	.044	-.036
Friendly	.030	.007	.028	-.039
Logical	-.058	.020	-.030	.067
Confident	.045	-.040	-.001	.018
Courteous	-.034	-.054	-.083	-.131*
Of-Integrity	-.026	-.019	.086	.016
Benevolent	.011	.053	-.132**	.025
Supervisor's intention				
Willing-to-Help	.037	-.040	.063	-.036
Non-Judgmental	-.043	.089	.020	-.014
Supervisory behaviour				
Directive	-.070	-.029	-.042	.022
Collaborative	.067	-.020	.128*	.057
Nondirective	.040	-.092	-.151**	-.128*
Reinforcing	-.021	.009	.044	.097
Differentiating	.008	.039	-.025	-.031

*p < .05. **p < .01.

The Thinking versus Feeling domain significantly correlated with three preference categories, although the effect sizes were small. D_TF obtained negative correlations with the Benevolent (r_{pb} = -.132, p = .009) and Nondirective (r_{pb} = -.151, p = .003) categories at 99% confidence level. The increase of this domain score likely decreased preference levels for benevolent supervisors and nondirective supervisory behaviours. This suggested that Thinking teachers were inclined to prefer these supervisory conditions less than Feeling teachers. D_TF also positively correlated with the Collaborative category at 95% confidence level (r_{pb} = .128, p = .012). The preference level for collaborative supervisory behaviours tended to increase when the domain score increased, which suggested that Thinking teachers likely preferred such behaviours more than Feeling teachers.

The Judging versus Perceiving domain was also found to significantly correlate with two preference categories. D_JP had negative correlations with the Courteous category (r_{pb} = -.131, p = .01) and Nondirective (r_{pb} = -.131, p = .01) categories, despite the small effect size. The preference levels for courteous supervisors and nondirective supervisory behaviours likely decreased when the domain score increased. This suggested that Judging teachers inclined to prefer supervisory conditions less than Perceiving teachers. It is important to note that these correlations violated the normality assumption, thus their confidence intervals and significant tests were not justifiable. These results could therefore explain only the sample's behaviours, not the population.

The results from the point-biserial correlation analysis demonstrated significant correlations of the Extraversion versus Introversion and Thinking versus Feeling domains with some preference categories. It was suggested that introverted teachers might prefer capable supervisors more than extraverted teachers. Feeling teachers would desire benevolent supervisors and nondirective supervisory behaviours more than Thinking teachers. Thinking teachers might favour collaborative supervisory behaviours more than Feeling teachers, and

Perceiving teachers also likely preferred courteous supervisors and nondirective supervisory behaviours more than Judging teachers, but this assumption was limited to the study's sample.

6.3   Summary

This chapter has presented the results from this study's qualitative data. The content analysis yielded 23 emergent categories, including 14 supervisory preferences of Thai in-service teachers and nine reasons for their preference. Great percentages of teachers expressed their preference for capable, friendly, benevolent supervisors who perform directive and collaborative behaviours. They reasoned that the preferred supervisory condition would comfort and give them confidence in the supervision process. They would feel positive about the supervisory relationship and encouraged to improve their professional practices. The content analysis also indicated some notable differences in supervisory preference between those with opposite personality types.

The point-biserial correlation analysis indicated four significant correlations: (i) the Extraversion versus Introversion domain had a significantly negative correlation with the Capable category; (ii) the Thinking versus Feeling domain obtained a significantly negative correlation with the Benevolent category; (iii) the Thinking versus Feeling domain obtained a significantly negative correlation with the Nondirective category; and (iv) the Thinking versus Feeling domain obtained a significantly positive correlation with the Collaborative category. These results suggested that introverted teachers likely preferred capable supervisors more than the extraverted teachers. Thinking teachers tended to favour collaborative supervisory behaviours more than Feeling teachers. Feeling teachers were inclined to prefer benevolent supervisors and nondirective supervisory behaviours more than Thinking teachers. The Sensing versus Intuition and Judging versus Perceiving domains, however, had no significant correlation with any preference category. The following chapter will represent and discuss the quantitative and qualitative results, and their integration to address the research questions of this study.

CHAPTER 7:
DISCUSSION

This study applied a convergent mixed methods research design to explore the supervisory behaviour preference of Thailand's in-service teachers. The preference was examined to better understand the nationwide view on supervision by teachers. The teachers' individual preference based on their personality was also assessed to comprehensively explain the relationship between the two variables.

This chapter discusses two research questions by addressing related evidence from this study and debates how such evidence corroborates, contradicts, and contributes to what is currently known. It also involves the study's contribution to educational supervision and leadership literatures apart from those related to the research questions.

7.1   Research Question One

What is the preference of Thailand's in-service teachers for supervisory behaviours?

Research Question One sought to explore Thai in-service teachers' preference for supervisory behaviours. The question was addressed by merged results of teachers' aggregate responses to the quantitative and qualitative questions, which provided a comprehensive explanation of the teachers' preference. The quantitative strand concerned the average relative preference scores of four supervisory behavioural approaches: (i) Directive Control; (ii) Directive Informational; (iii) Collaborative; and (iv) Nondirective. The qualitative strand concerned the response proportion of emergent categories from content analysis. The following sections present the study's evidence that reveal, not only the preference for supervisory behaviours, but also supervisors' characters.

7.1.1 Teachers' Preference for Collaborative Supervisory Behaviours

The study's evidence suggested that Thailand's in-service teachers tend to prefer collaborative supervisory behaviours to other behaviours. The quantitative strand showed that the Collaborative approach produced an average relative preference score of approximately 0.40, which included Directive Control (0.14), Directive Informational (0.19), and Nondirective approaches (0.27) (Chapter 5, Section 5.2). The Collaborative approach was approximately three times more preferred than Directive Control, two times more than Directive Informational, and one-and-a-half times more than the Nondirective approach.

The evidence from the qualitative strand relatively confirmed the teachers' preference for collaborative behaviours of their supervisors. The teachers' open responses in relation to their supervisory behaviour preference were found predominantly in the Directive and Collaborative categories. The response proportion in the Collaborative category was less than that of the Directive category by 8.07% (Chapter 6, Section 6.1), however, 48 responses, being 12.50% of the sample, matched both categories. The Collaborative approach involved supervisors' directive behaviours, such as the presentation of their opinions about supervision issues (Glickman et al., 2018). If overlapping responses were limited to the Collaborative category, the proportion difference would be the opposite; the response proportion of the Directive category to the Collaborative category would be 32.55% to 36.98%. It could be assumed that most responses were in the Collaborative category, which refers to the teachers' preference for supervisors who are open-minded and flexible, listen to their ideas, or share ideas with them. The refined proportion, together with the quantitative evidence, assert that Thai in-service teachers prefer collaborative behaviours during a supervision process.

The teachers' preference for collaborative supervisory behaviours aligns with the existing literature. Collaborative behaviours have been reported to be the most preferred supervisory approach by teachers in various contexts, including high school teachers in

Wisconsin, USA (Akinniyi, 1987); special education teachers in Eastern Pennsylvania, USA (Dodd, 2006); school teachers in Oklahoma, USA (Johnson, 1989); and basic education teachers in Bangkok, Thailand (Leartprapruet, 2005). The study's evidence also corroborated with the results of Foels et al.'s (2000) and Kalargyrou and Woods' (2009) studies on leadership. These previous studies found that followers preferred democratic or participative leadership to autocratic leadership (Foels et al., 2000); followers expect their leaders to encourage collaborative relationships among the organisation's staff (Kalargyrou & Woods, 2009). Democratic leadership is comparable to collaborative supervisory behaviours, while autocratic leadership can be related to directive supervisory behaviours. This study therefore provides empirical support to teachers' fondness for collaborative supervisory practices.

The qualitative evidence further revealed the reasons why Thai in-service teachers preferred collaborative supervisory behaviours, of which mostly fell into the Attentive category (22.73% of the total responses [Chapter 6, Section 6.1]). Note that the Comfortable-in-Process category neglected to probe the specific reason for this preference, because its response proportions were the highest for all preference categories. This evidence asserts that the teachers would be attentive to supervision and willing to cooperate in the process, if treated with collaborative behaviours. Such an assertion has been supported by previous studies on collaborative supervision (Burns & Badiali, 2015; Lefevre, 2005; Tubsai, 2015). These studies have shown that collaborative practices in supervision makes supervisees feel listened to and included (Lefevre, 2005), eager to talk with their supervisors (Tubsai, 2015), and have the desire to continue the activity even after their issues are shoved (Showers & Joyce, 1996). It is important to note that these studies were concerned about social work student supervision (Lefevre, 2005), pre-service teacher supervision (Tubsai, 2015), and peer supervision among teachers (Showers & Joyce, 1996). This study, therefore, postulates that in-service teachers' attentive behaviours also appear under school leaders' collaborative supervision. It is also

assumed that such an association is likely to be true regardless of the supervisor's or supervisee's identity.

The linkage of the teachers' preference for collaborative supervision to their attention could be explained by teacher empowerment and commitment. Teacher empowerment positively associates with their commitment to school (Bogler & Somech, 2004; Gaziel, 2009); a way to facilitate their empowerment is to have teachers take part in the school's decision-making process (Gaziel, 2009). This should also be the case for any school situation, including the teacher supervisory activities. Collaborative supervisory behaviours allowed teachers to gain control over decision-making as an equal partner with supervisors (Glickman et al., 2018). The mutual responsibility for decision-making will perhaps empower teachers and lead to the development of their commitment to the supervision process. The teachers' commitment may then impact their willingness to participate in the activity with the desire to contribute more frequently. This assumption was based merely on the researcher's view. To verify such an assumption requires the exploration of the relationships among collaborative supervision, teachers' empowerment, and teachers' commitment.

The study's quantitative and qualitative evidence suggested that Thai in-service teachers are likely to prefer collaborative supervisory behaviours, and these behaviours would make them attentive to the supervision process. The teachers' attention to collaborative supervision could be explained by the connection between teacher empowerment and commitment. The study's evidence supported the existing literature and extends the understanding of supervisees' feelings under collaborative supervision practices beyond the social work students' and pre-service teachers' scenarios. It also proposed that supervisees' attention to collaborative behaviours might be true despite supervisees' and supervisors' identities. The following section presents and discusses the study's evidence on the teachers' preference for the supervisors' character.

7.1.2 Teachers' Preference for Capable and Considerate Supervisors

The qualitative evidence of this study uncovered Thailand's in-service teachers' preference for their supervisor's character, which is beyond the study's prescriptive scope. The study's results (Chapter 6, Section 6.1) demonstrated that most teachers' open responses fell into the Capable (40.89%), Friendly (36.46%), and Benevolent (21.61%) categories. Such evidence suggests that Thai in-service teachers would prefer their supervisors to be skilled, knowledgeable, and experienced. They are also likely to favour considerate supervisors who show friendliness, kindness, sympathy, and understanding toward them.

These supervisor character preferences accord with the results of related studies on educational supervision (Leartprapruet, 2005; Wanzare, 2013) and leadership (Döş & Savaş, 2015; Fish, 2016; Kalargyrou & Woods, 2009). Teachers have been reported to desire supervisors who are friendly (Leartprapruet, 2005), competent, and experienced in teaching (Wanzare, 2013). They expected effective school leaders to be knowledgeable, intelligent, and empathetic (Döş & Savaş, 2015). It has been found that teachers preferred transformational leadership (Fish, 2016) which involves school leaders being considerate of individual teachers (Hoy & Miskel, 2013). Employees in a higher education institute also mentioned that empathy and compassion were essential traits of effective leaders (Kalargyrou & Woods, 2009). The present study's evidence on the teachers' preference of capable and considerate school leaders reinforces the evidence from previous studies.

The study's evidence also sheds light on the teachers' reasons for supervisors' capability and consideration preference. The participating teachers' reasons for capable supervisor preference were mainly in the Confident-In-Process category (24.20% [Chapter 6, Section 6.1]), while their reasons to favour considerate supervisors were in the In-Good-Relationship category (22.00%; Table 7.1).

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Table 7.1

Percentages of Responses in Reason Categories Based on Friendly Category, Benevolent Category, and Their Integration (N = 384)

Preference category	Reason category								
	Professional development		**Supervision process**					**Work**	
	Encourage-To-Develop	**Being-Improved**	**Welcoming**	**Confident-In-Process**	**Attentive**	**Comfortable-With-Process**	**In-Good-Relationship**	**Willing-To-Work**	**Confident-To-Work**
Friendly	17.86% [a]	5.71%	10.71%	16.43%	13.57%	40.00% [a]	25.71% [a]	8.57%	0.71%
Benevolent	14.46%	0.00%	18.07%	26.51% [a]	6.02%	36.14% [a]	19.28% [a]	12.05%	0.00%
Integration (as Considerate)	17.00%	4.00%	13.00%	21.00% [a]	11.00%	38.00% [a]	22.00% [a]	10.50%	0.50%

Note. Responses in Friendly = 36.46%, Benevolent = 21.61%, and their integration = 52.08%. Some responses matched multiple categories.

[a] Three highest percentages of the row.

Note that the reasons for considerate supervisor preference were derived from the integration of responses in the Friendly and Benevolent categories. The top three Reason categories of these merged responses were (i) Comfortable-With-Process (38.00%); (ii) In-Good-Relationship (22.00%); and (iii) Confident-In-Process (21.00%). The discussed evidence also neglected the Comfortable-in-Process category, where response proportions stayed the highest for all Preference categories, to point out the difference between the capability and consideration preferences. This study thus posits that capable supervisors would bestow teachers with a feeling of trust towards their supervisors and confidence in the given suggestions. Considerate supervisors would ensure teachers felt befriended, warm, safe, and respected.

The teachers' confidence in supervision affected by capable supervisors and their positive attitude towards the supervisory relationship by considerate supervisors can be related to Lefevre's (2005) study. Her study on supervised students in social work education showed that incompetent supervisors made the students feel disappointed, causing their learning to be jeopardised. Friendly and nurturing supervisors enabled students to feel trusted and safe, a condition that would allow a healthy supervisory relationship to be established. The supervisees in Lefevre's (2005) study were social work students, while those of the current study are in-service teachers. The present evidence hence extends that supervisees' confidence in supervision and positive relationship attitudes would also be developed in in-service teachers through their interactions with capable and considerate supervisors.

The preference for capable supervisors to support Thailand's in-service teachers could be influenced by the uncertainty avoidance norm of Thai society. Thailand has a strong uncertainty avoidance society with members feeling uncomfortable with unknown situations (Hofstede et al., 2010). Thai people normally rely on experts and expert knowledge to maintain certainty and stability in their lives (Hallinger & Kantamara, 2000). Supervision involves changes to improve teachers' practices which could position teachers in a difficult and

ambiguous situation that can initiate anxiety. Thai in-service teachers may seek capable supervisors with whom they feel assured to successfully undertake through such a situation. They might not want to be ordered or controlled, but prefer to be treated as an equal, since they are likely to favour collaborative behaviours to directive behaviours (Section 7.1.1).

The preference for a considerate supervisor may be explained by the harmonious relationship valued by Thai people. Thailand's culture is oriented towards socially smooth relationships (Komin, 1988; Servaes, 2017), and valuing social relations more than productivity (Hallinger & Kantamara, 2000). Thai people are taught by the Buddhism philosophy to be friendly, modest (Servaes, 2017), and kind (Soontayatron, 2014) to fellow people. They typically feel *kreng jai* (respectfully fear to disturb others) and normally say *mai pen rai* (never mind) to maintain a harmonious relationship with others (Servaes, 2017). Thai people would also expect to be treated with mutual respect by others. Such a value could affect Thai in-service teachers' preference for considerate supervisors who demonstrate friendliness, kindness, mercy, and empathy towards them during supervision.

This study attests to Thailand's in-service teachers' preference for capable and considerate supervisors. The supervisor's capability and consideration would provide teachers with the confidence to develop positive feelings towards the supervisory relationship. This evidence extends that such supervision preference and emerged attitude exist in in-school supervision, as well as in the supervision of teacher education or social work education. One can also assume that these preferences of Thai schoolteachers are influenced by the Thai culture, which posits the impact of socio-culture on teachers' beliefs about supervision and relationship between themselves and leaders. Teachers' supervisory preference could therefore be varied among different socio-cultural contexts and may be the same among similar socio-cultural contexts. These postulations are however built on qualitative evidence that needs to be validated by quantitative evidence from further studies and evidence of the preference of teachers in other

countries with similar or different cultural norms to Thailand. The next section discusses the potential impact of capability, collaboration and consideration qualities of supervisors on teachers' professional development.

7.1.3 Impacts of Collaborative, Capable, and Considerate Supervisors

The teachers' emergent reasons unveiled the impact of school supervisors' collaboration, capability, and consideration on their professional development. The qualitative responses by teachers showed that three qualities were preferred by most participating teachers, as explained in Sections 7.1.1 and 7.1.2. The Encouraged-To-Develop category also yielded the top three highest response proportions (17.19%) among the Reason categories (Chapter 6, Section 6.1). This proportion followed those of the Comfortable-With-Process (33.07%), Confident-In-Process (18.49%), and In-Good-Relationship (18.49%) categories. It can be inferred that the combination of collaboration, capability, and consideration qualities would positively affect the teachers' willingness and confidence to improve and change their professional practices.

Such an inference is supported by the studies of Chokepaisarn (2010), Lefevre (2005) Nabhani et al. (2015), and Tubsai (2015) who have reported that supervisors' collaborative practice and consideration for teachers could induce changes in teachers' instructional behaviours (Chokepaisarn, 2010). The capability of supervisors was also perceived by teachers to increase confidence to improve their educational training (Nabhani et al., 2015). Pre-service teachers would also have the enthusiasm to improve their teaching practice when supervised under collaborative behaviours (Tubsai, 2015). This asserts, to some extent, that supervisors' collaboration, capability, and consideration can enhance the teacher's attitude towards professional development.

The supervisor's collaboration, capability, and consideration may concern their effects on the teacher's attitude. The highest response for these quality preferences fell into the Comfortable-With-Process category, which suggests that the three qualities would help teachers

to feel relief and to reduce any nervousness, fear, and stress during the supervision process. Such comfort may allow teachers to be more receptive to any professional improvement ideas proposed in the process. Moreover, collaborative supervisors could pay attention to supervision (Section 7.1.1), which implies commitment to the activity and therefore its objective to improve supervisory practices. Capable supervisors are likely to increase their confidence in the process (Section 7.1.2), which could lead them to realise the feasibility to improve their practice after following any supervisory suggestions. Considerate supervisors would develop a positive supervisory attitude in teacher relations (Section 7.1.2), as well as establish respect and admiration from the teachers. Such feelings would enable teachers to be more responsive towards the supervisors' suggestions. One may assume that the combination of supervisors' collaboration, capability, and consideration qualities can encourage teachers to enhance their professional practices, because it affects their receptiveness to supervisory suggestions, as well as their commitment to, and confidence in, professional development. This assumption is however based on the researcher's reasoning and the study's qualitative evidence. The links among these perceptions require further investigation perhaps through quantitative methodology.

The uncovered impact of collaboration, capability, and consideration qualities on teachers also deepens the notions of transformational school leaders. Such qualities have been emphasised among several qualities for leading an educational organisation in an ever-changing environment. To facilitate change in schools requires leaders to pursue a collaborative relationship with teachers (Astin & Astin, 2000; Mendez-Morse, 1992); to be knowledgeable (Duignan, 2012), skilled, and specialised (Astin & Astin, 2000); and to be compassionate (Astin & Astin, 2000; Duignan, 2012; Watt, 2009) and relatable (Mendez-Morse, 1992) to teachers. Given that teacher supervision is an integral responsibility of school leaders (OECD, 2009), this study provides an insightful understanding of how capable, collaborative, and considerate school leaders can foster change in schools. It reveals that these three qualities of school leaders

could make teachers feel anxiety-free, trusting, and relaxed, as well as supported to change or improve their practices. Changes in teachers' practices would help to mobilise the school's transformation.

This study concludes that the potential of collaboration, capability, and consideration qualities of supervisors can encourage teacher professional development. This inference is congruent with results from previous studies and could be explained through the development of teachers' receptiveness, commitment, and confidence in supervision for professional improvement. This explanation is subjected to further validation from further studies. The potential impact of the supervisor's qualities offers a better understanding of transformational leadership in education. Thai school leaders should be collaborative, capable, and considerate when supervising their in-service teachers, since this could enhance the teachers' continuing professional development. This would have Thai teachers more prepared to be a driving force of the country's reform to improve its education quality. Note that teachers in different cultures from Thailand may not have the same supervisory preference as Thai teachers (Section 7.1.2). The impacts of these supervisors' qualities could thus differ across different socio-cultures. The following section relates to the study's evidence of the school leadership in Thailand's context.

7.1.4 Collaboration and Consideration in Thailand's School Leadership

The teachers' preference for supervision brought forth the importance of Thailand's school supervisors or leaders to be collaborative and considerate. One can assume from this study's evidence that Thai in-service teachers preferred school leaders who are capable, collaborative and considerate. Such leaders would promote a teacher's receptiveness and commitment to leadership activities and encouragement to follow procedures or perform activities. The collaboration and consideration leadership qualities have been well recognised in Thailand's studies, but they are not generally possessed by Thai school leaders or clearly captured in Thailand's standards for school leadership.

The importance of collaborative and considerate school leaders has been acknowledged and detailed in educational administration studies in Thailand. It has been reported that the collaboration quality of Thai school leaders positively affects a school's academic administration (Innara et al., 2015) and student learning achievement (Somboon, 2014). The consideration quality has a positive relationship to a school's learning atmosphere (Boonpeng, 2014) and the performance of school reform (Sittirit et al., 2013). These results from previous studies can be related to the present study. Collaborative and considerate school leaders may reinforce success of the school through enhancement of teachers' receptiveness and commitment to school goals and achievement plans. Various studies on Thailand's educational leadership models have also involved collaboration (Hongwiangchan et al., 2017; Priyakorn et al., 2019) and consideration (Kanokorn et al., 2013; Sawetvorachot & Khanto, 2017) as key components to educational successful. Such models in Thailand's literature have demonstrated the high recognition of collaboration and consideration as essential qualities to be possessed by Thai school leaders.

In reality, there is the critique that Thailand's school leaders are not generally collaborative nor considerate. Some studies have determined that school leaders under some educational authorities in Thailand do perform high levels of collaboration (Innara et al., 2015; Sriputta et al., 2018) and consideration (Boonpeng, 2014; Mukda et al., 2015; Sittirit et al., 2013), but these results are not generalisable to all school leaders in the country. Some of these studies also involved the perception of leaders (Boonpeng, 2014; Sittirit et al., 2013; Sriputta et al., 2018) who are likely to overrate themselves, as they were found to self-report the levels of their instructional leadership role (Hallinger & Lee, 2014), effective leadership role (Karuna et al., 2014), and supportive behaviours (Lohwithee, 2010) higher than their teachers' perceptions. Some Thai school leaders were more restrictive and task-oriented than supportive and socially-oriented (Lohwithee, 2010), and some were expected to improve their collaboration and friendliness towards teachers (Leartprapruet, 2005; Mekkhao, 2014). Thailand is also a strongly

hierarchical society (Hallinger & Kantamara, 2000) where those with less power accept unequally distributed power (Harada, 2017), and organisational leaders tend to be autocratic (Hofstede et al., 2010). There is no consensus in the literature that Thailand's school leaders are generally collaborative and considerate.

The lack of school leaders' collaboration and consideration qualities can be attributed to ambiguous national standards or policies for school leadership. The standards are divided into those of knowledge, experience, and performance (TCT, 2013a). The performance standard does not explicitly represent leaders' roles and functions (as argued in Chapter 3, Section 3.7); it is so broadly stated that leaders' behaviours towards their teachers are not clearly specified, and the qualities of collaboration and consideration are not stipulated. The capability quality, however, seems to be more transparent, as the knowledge and experience standards clearly require school leaders to acquire adequate capabilities and management experience prior to the profession application. The unclear collaboration and consideration practice standards contradict the important impacts of these two qualities.

The study's evidence suggests that collaborative and considerate school leaders would develop teachers' positive attitudes towards school activities and promote their cooperation. This could then lead to a effective implementation of school planning to achieve their goals. It has been assumed that Thailand's school leaders do not possess or practise collaboration and consideration attitudes toward their teachers. The two qualities are also not stated as clearly as the capability quality in Thai school leadership standards, therefore, it is necessary to develop collaboration and consideration qualities in Thai school leaders. The next part of this chapter will address the second research question of the study. The influences of each MBTI personality type on teachers' supervisory behaviour preference are also discussed.

7.2   Research Question Two

How does personality influence the supervisory behaviour preference of Thailand's in-service teachers?

Research Question Two explored the influence of Thailand's in-service teachers' personalities on their supervisory behaviour preference. It was addressed by integrated results of the quantitative and qualitative strands. The quantitative strand concerned the predictive relationship of two variables: (i) MBTI personality domains to the teachers' preferences for supervisory behavioural approaches; and (ii) predictive powers of overall personality domains and other demographics, which were assessed to gauge the degree of personality influence compared with other personal characteristics.

The qualitative strand involved emergent categories from the teachers' open responses and correlational analysis. The emergent categories from content analysis were quantified and the difference of response proportions between the opposite personality types in each domain was estimated for each category. The point-biserial correlation analysis was then applied to estimate how each quantified category correlated with the MBTI personality domains.

The following sections represent and discuss the resultant integration and its evidence on how each MBTI personality domain influences the teachers' preference for supervisory behaviours. Also discussed is the influence of overall personality domains based on the quantitative evidence that places a concern about the use of MBTI personality domains to explore teachers' preferences.

7.2.1   Influence of MBTI Personality Domains on the Teachers' Supervisory Behaviour Preference

The integrated results demonstrated the influence of some MBTI personality domains on the teachers' supervisory behaviour preference. This integration involved the significant predictive relationships from the quantitative source and significant correlational relationships from the

qualitative source. The response proportion difference from the qualitative strand was included to supplement the information where there was a significant predictive relationship but no significant correlation. These related results were categorised according to supervisory responsibility orientations, including Supervisor Responsibility, Mutual Responsibility, and Teacher Responsibility. The comparison of these results is shown in Table 7.2.

Table 7.2

Comparison of Results From Quantitative and Qualitative Strands Based on Teachers' Supervisory Behaviour Preference

Supervisory behaviour orientation	Personality domain	Quantitative strand	Qualitative strand
Supervisor responsibility	E-I	The domain accounted for 1.4% (p = .010) of the variance in the inverse preference for Directive Control approach and 2.2% (p = .001) of that in the Directive Informational approach preference. The I type more likely preferred the Directive Control and Directive Informational approaches than the E type ($\beta_{SBP\_INV\_DC}$ = .122, p = .009; β_{SBP_DI} = -.140, p = .003).	(No significant correlation) To supplement this: The I type a had higher response proportion in the Directive category than the E type by 3.55%. '[I prefer] a supervisor who is providing me with alternative suggestions that can be well practiced … [because it] would make me feel comfortable and ready to address the problem and improve' (case ID070, I type).
	S-N	(No significant results)	(No significant correlation)
	T-F	The domain accounted for 1.1% (p = .027) of the variance in the inverse preference for the Directive Control approach. The teachers of the F type more likely preferred the Directive Control approach than those of the T type ($\beta_{SBP\_INV\_DC}$ = .107, p = .026).	(No significant correlation) To supplement this: The F type a had higher response proportion in the Directive category than the T type by 10.07%. '[I prefer a supervisor] who provides suggestions … [because it] would make me feel comfortable, not pressured, and happy' (case ID018, F type)
	J-P	(No significant results)	(No significant correlation)
Mutual responsibility	E-I	(No significant results)	(No significant correlation)
	S-N	(No significant results)	(No significant correlation)
	T-F	(No significant results)	The T type more likely preferred collaborative supervisory behaviours than the F type (r_{pb} = .139, p = .006).
	J-P	(No significant results)	(No significant correlation)

Supervisory behaviour orientation	Personality domain	Quantitative strand	Qualitative strand
Teacher responsibility	E-I	The domain accounted for 1.7% (p = .005) of the variance in the Nondirective approach preference. The E type more likely preferred the Nondirective approach than the I type (β_{SBP_ND} = .128, p = .007).	(No significant correlation) To supplement this: The E type had a higher response proportion in the Nondirective category than the I type by 2.42%. '[a supervisor] who is open-minded and giving me freedom to think and make decisions … would make me feel more confident in teaching' (case ID173, E type)
	S-N	(No significant results)	(No significant correlation)
	T-F	(No significant results)	The F type more likely preferred nondirective supervisory behaviours than the T type (r_{pb} = -.151, p = .003).
	J-P	(No significant results)	

Note. E-I = Extraversion versus Introversion domain; S-N = Sensing versus Intuition domain; T-F = Thinking versus Feeling domain; J-P = Judging versus Perceiving domain; E = Extraversion; I = Introversion; T = Thinking; F = Feeling; J = Judging; P = Perceiving.

There appeared to be no conflict between the major results from the quantitative and qualitative strands. They yielded no opposite preferences for a supervisory behavioural orientation in any of the personality domains, although they did not provide any evidence of the same relationship between the personality domain and each orientation. The supplement of response proportion differences also accorded with significant results from the quantitative strand. It is arguable that the qualitative results relatively confirmed and extended the quantitative results. The positive influence of MBTI personality types on Thai in-service teachers' supervisory behaviour preference evidenced by the integrated results is demonstrated in Figure 7.1. The Extraversion type impacted on the preference for supervisory behaviours that highlight teacher responsibility such as those in the Nondirective approach. The Introversion type influenced the preference for supervisor responsibility behaviours like those in Directive Control and Directive Informational approaches. The Thinking type affected the preference for supervisory behaviours that emphasise mutual responsibility between teachers and supervisors such as those in the Collaborative approach. The Feeling type influenced the preference for behaviours that focus on

either supervisor or teacher responsibility, as in Directive Control or Nondirective approaches.

The Sensing, Intuition, Judging, and Perceiving types however did not influence the teachers'

supervisory behaviour preference. Discussions about each MBTI personality domain are

provided in subsequent sections.

Figure 7.1

Influence of Teacher Personality Types on Their Preference for Supervisory Behaviours
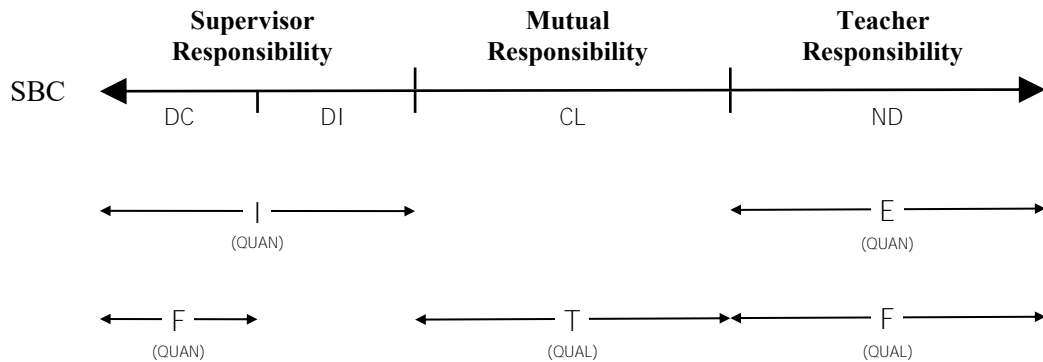
Note. SBC = supervisory behaviour continuum; DC = Directive Control approach; DI = Directive Informational approach; CL = Collaborative approach; ND = Nondirective approach; E = Extraversion type; I = Introversion type; T = Thinking type; F = Feeling type; QUAN = derived from significant results of quantitative strand; QUAL = derived from significant results of qualitative strand.

Extraversion versus Introversion domain

The merged results suggest that the Extraversion versus Introversion domain influenced Thai

in-service teachers' preferences for directive and nondirective supervisory behaviours. The

quantitative results (Chapter 5, Section 5.3.1) showed that the domain accounted for 1.4% of the

variance in the inverse preference for the Directive Control approach ($p = .010$), 2.2% of the

variance in the preference for the Directive Informational approach ($p = .001$), and 1.7% of the

variance in the preference for the Nondirective approach ($p = .005$). The domain had positive

relationships with the inverse preference for the Directive Control approach ($\beta = .122$, $p = .009$)

and the preference for the Nondirective approach ($\beta = .128$, $p = .007$), but it had a negative

relationship with the preference for Directive Informational approach ($\beta = -.140$, $p = .003$). This

suggests that introverted teachers were likely to prefer Directive Control and Directive Informational approaches more so than extraverted teachers, while extraverts tended to prefer the Nondirective approach more that introverts.

These preference inclinations were also supported by the qualitative results (Chapter 6, Section 6.1.1), which yielded a greater proportion of introverts in the Directive category (by 3.55%) and a higher proportion of extraverts in the Nondirective category (by 2.42%). It is hence asserted that the Extraversion versus Introversion domain has an impact on teachers' preferences for directive and nondirective behaviours of supervisors. The extraverts would also have more preference for nondirective supervisory behaviours but less preference for the directive behaviours when compared to the introverts.

The Extraversion versus Introversion domain has the highest influence on the teachers' supervisory behaviour preference among the four MBTI personality domains. The Extraversion versus Introversion domain significantly predicted three out of four approach preferences. The Thinking versus Feeling domain significantly predicted only one approach preference. The Sensing versus Intuition and Judging versus Perceiving domains did not have any significant predictive power for an approach preference. The three predictive powers of the Extraversion versus Introversion domain were also higher than that of the Thinking versus Feeling domain. It is thus assumed that the Extraversion versus Introversion domain has the strongest influence on teachers' preferences when compared with the other three MBTI domains.

The evidence from this study bears some similarity, as well as offers contrast, to previous research in this area, for example, it corroborates the results of Amponsah and Asamani's (2015), Bertsch et al.'s (2017), and Moss and Ngu's (2006) leadership studies. These studies showed that extraverted teachers did not prefer transactional leadership (Amponsah & Asamani, 2015) and that extraverted employees preferred transformational (Moss & Ngu, 2006) and participative (Bertsch et al., 2017) leadership styles. These results are relevant to this study

despite the utilisation of a different personality construct in the Big Five model. Transactional leadership is comparable to directive supervisory behaviours, while transformational and participative leadership resembles supervisory behaviours that are not directive (as argued in Chapter 2, Section 2.6.2). These extraverts' preferences for leadership styles imply their preference for nondirective supervisory behaviours. The study's evidence however contradicts the results of Johnson (1989) who reported no difference in the supervisory behaviour preference between teachers with high scores and those with low scores in the Extraversion and Introversion types, but their sample size was relatively too small (132 teachers) to confirm the results. One may argue that extraverted teachers could have more preference for nondirective supervisory behaviours but less for directive supervisory behaviours than introverted teachers, and vice versa.

The preference of extraverted teachers for nondirective behaviours in supervision and introverted teachers for directive behaviours can be explained by personality type behaviours. Extraverts are attentive to people and things (McGuiness, 2004), sociable, expressive, and willing to take the initiative at work (I. B. Myers, 1998). They are also people of action and practical achievement (I. B. Myers & Myers, 1995) who learn best through trial-and-error (Bayne, 1995). Extraverted teachers may be more proactive during a supervision process than introverts. They probably prefer to state their own problems and to initiate their own solutions through discussions with their supervisors or real situation practices. The Nondirective approach to supervisory behaviours that offers additional teacher responsibility might thus be the preference of extraverted teachers.

Introverts focus their energy on concepts and ideas (McGuiness, 2004) and tend to be private and contained individuals (I. B. Myers, 1998). They are also people of abstract invention who go from consideration to action (I. B. Myers & Myers, 1995). In supervision, introverted teachers might not take the initiative as much as extraverts, when stating a problem or solution;

they possibly prefer to consider the supervisor's ideas before taking action. Directive supervisory behaviours that involve supervisor responsibility, as provided in the Directive Control or Directive Informational approaches, would therefore be the preferred course of action of introverted teachers.

The qualitative evidence also suggested a link of the Extraversion versus Introversion domain to Thai in-service teachers' preferences for a supervisor's characteristics. The domain was found to negatively correlate with the Capable category (r_{pb} = -.120, p = .019 [Chapter 6, Section 6.2]), which attested that introverted teachers would prefer capable supervisors more than extraverted teachers. Typical behaviours of the Introversion type suggest that introverted teachers would prefer supervisors to take the initiative and to explain the problem and/or solution more so than extraverted teachers. Introverted teachers would then expect their supervisor to possess adequate knowledge, experience, or skills to provide such information. Supervisors' capabilities probably are more important from the perspective of introverted teachers than that of extraverted teachers. The Directive Control and Directive Informational approaches were also recommended to be performed when supervisors were more capable than teachers (Glickman et al., 2018), and introverted teachers would have the preference for these two approaches more so than extraverted teachers, as suggested by the quantitative evidence. The teachers' preference for capable supervisors arguably leads to their preference for directive supervisory behaviours, or vice versa . The evidence from the two paradigms seem to support each other.

Sensing versus Intuition domain

Given the integrated results, the Sensing versus Intuition domain did not seem to have any influence on the supervisory behaviour preference of Thai in-service teachers. The quantitative strand and the qualitative strand of this study also did not form any significant result regarding the personality domain. There appeared to be no substantial predictive relationship or

correlation of the domain to the teachers' preference. These results suggest that no relationship was formed between the two variables.

This study's results, however, contradict those of previous studies (Clemente, 1990; Johnson, 1989). Johnson (1989) reported a difference in directive supervision preferences between teachers with high and low scores in the Sensing type; Clemente (1990) found that teachers of the Sensing Judging type likely had a preference for directive supervision; those of the Sensing Perceiving type tended to have a preference for nondirective supervision, and those of the Intuition Thinking type and Intuition Feeling type likely had a preference for collaborative supervision. Clemente's (1990) implied that nondirective supervision might be the preference of Sensing type teachers, while collaborative supervision may be the preference of teachers of the Intuition type. Building on these studies, there seems to be a relationship between the Sensing versus Intuition domain and the teachers' supervisory behaviour preference.

The discrepancy between the current results and those of the two previous studies (Clemente, 1990; Johnson, 1989) could be attributed to the fact that the distribution of the Sensing versus Intuition domain score was skewed in this study's sample. The descriptive information determined that almost all participants were in the Sensing type rather than the Intuition type (about 91% to 9%). The skewness in this sample was much heavier than that in the samples of Clemente's (1990) and Johnson's (1989) studies in the United States, where the proportions of Sensing to Intuition types were approximately 55% to 45% (Clemente, 1990) and 67% to 23% (with 10% unclassified; Johnson, 1989). This may be due to the difference in MBTI preference distributions between Thai and U.S. samples. It has been reported that the percentage of Thai respondents in the Sensing type is more than that of U.S. respondents by about 10% (Schaubhut & Thompson, 2017). A Thai sample therefore likely distributes towards the Sensing type more heavily than an U.S. sample. Such an uneven distribution could affect the

F and *t* statistical tests (Hair et al., 2010), that is, those employed in this study. The Sensing versus Intuition domain may have influenced the teachers' supervisory behaviour preference, but this study cannot sustain the notion. Further research on a larger scale or a more diverse sample with different methodologies needs to be conducted to prove this claim.

Thinking versus Feeling domain

The integrated results confirmed the influence of the Thinking versus Feeling domain on the preference of Thailand's in-service teachers for directive supervisory behaviours. The quantitative results (Chapter 5, Section 5.3.1) showed that the domain could explain 1.1% of the variance in the inverse preference for the Directive Control approach ($p = .027$) with a positive relationship ($\beta = .107$, $p = .026$). The Feeling teachers likely preferred the Directive Control approach more than Thinking teachers. The qualitative results (Chapter 6, Section 6.1.3) also showed a higher response proportion of Feeling teachers in the Directive category than that of Thinking teachers by 10.07%. The evidence from these merged results therefore suggested that the Thinking versus Feeling domain could influence the teachers' preference for directive supervisory behaviours, and Feeling type teachers likely preferred such behaviours more than Thinking types.

The Thinking versus Feeling domain has the second highest influence on the teachers' supervisory behaviour preference among the MBTI domains. The domains had a significant predictive power for one approach preference. The Extraversion versus Introversion domain significantly predicted three approach preferences: (i) Directive Control; (ii) Directive Informational; and (iii) Nondirective. The Sensing versus Intuition and Judging versus Perceiving domains did not significantly predict any approach preference. One may assume that the Thinking versus Feeling domain influenced the teachers' preference higher than the Sensing versus Intuition and Judging versus Perceiving domains, but lower than the Extraversion versus Introversion domain.

The study's evidence on the preference for directive supervisory behaviours of Thinking and Feeling teachers was inconsistent with Johnson's (1989) study, which identified that teachers with high and low scores in the Feeling type did not differ in their supervisory behaviour preference and those with high and low scores in the Thinking type had no difference in their preference for directive behaviours. The study's evidence was based on statistically significant results and a larger sample size (460 participants), which provided more generalisable evidence than that of Johnson's (1989) study (132 participants). Johnson (1989) did mention that 'it is difficult to make generalisations [of their results] back to any larger population' (p. 107). The current study analysed the personality data on an interval scale, while Johnson's (1989) study used an ordinal scale. Interval data provides a more precise measurement than ordinal data (Hair et al., 2010), as well as more meaningful evidence. This study also applied the AHP method that measures preference data more accurately than typical questionnaire methods (Sato, 2009). It is therefore arguable that there is a relationship of teachers' directive supervision preference to Feeling and Thinking types. There was a higher preference for directive supervisory behaviours by teachers of the Feeling type than those of the Thinking type, as determined in this study.

The typical behaviours of Thinking and Feeling types can clarify the preference for directive supervisory behaviours of teachers with these personalities. Feeling individuals make decisions based on personal and social values (I. B. Myers et al., 2009) and they would normally strive for harmony when interacting with others (I. B. Myers et al., 2009) by tending to agree with them (I. B. Myers & Myers, 1995). Thinking individuals make decisions based on logical consequences and can be tough-minded (I. B. Myers et al., 2009); they do not tend to easily believe others' conclusions (I. B. Myers & Myers, 1995). Feeling type teachers may prefer directive supervisory behaviours, as provided in the Directive Control approach, more than Thinking teachers, as they tend to respect their supervisors' values and agree with their ideas.

Teachers of the Thinking type, however, might have less preference for such an approach, as they would rather argue than to agree.

The qualitative evidence also showed that the Thinking versus Feeling domain may influence Thai in-service teachers' preferences for collaborative and nondirective supervisory behaviours. The personality domain was found to have a positive correlation with the Collaborative category (r_{pb} = .139, p = .006) and a negative correlation with the Nondirective category (r_{pb} = -.151, p = .003 [Chapter 6, Section 6.2]). These correlations suggest that teachers of the Thinking type would have more preference for collaborative supervisory behaviours but less for nondirective behaviours than those of the Feeling type. This suggestion is contrary to Johnson's (1989) study, which indicated that teachers with high scores in the Thinking type less likely preferred collaborative supervision than the low score group. It also reported no differing preference for supervisory styles between teachers with high and low scores in the Feeling type. Johnson's (1989) results however had interpretation and generalisation limitations, as discussed in paragraph 3 of this section. The relationships evidenced by this study were stronger, since they were based on a larger sample (384 teachers) with more meaningful data on personality. One can therefore argue that Thinking teachers would prefer collaborative behaviours in supervision, while Feeling teachers would prefer nondirective behaviours.

The Thinking teachers' preference for collaborative supervisory behaviours and Feeling teachers' preference for nondirective behaviours could be explained. Thinking individuals have an analytical learning style (Bayne, 1995); they desire everyone to be treated equally (I. B. Myers et al., 2009). During the supervision process, teachers of the Thinking type probably feel they should take as much responsibility as supervisors and they prefer to acquire mutual results from logical discussions and the sharing of ideas with their supervisors. Supervisory behaviours that emphasis equal responsibility of supervisors and teachers would thus be appropriate for Thinking teachers.

Feeling people are driven by personal likes or dislikes of themselves and others (I. B. Myers et al., 2009). Their learning is enhanced by topics they are interested in (Bayne, 1995) but have difficulty in arranging their ideas (I. B. Myers & Myers, 1995). Teachers of the Feeling type might desire to address, by themselves, the supervision issue that is essential to them but struggle with their thought process. In such an instance, they would prefer nondirective supervisory behaviours that allow them to freely address the problem with help from their supervisor to clearly organise their thoughts. If they are not passionate about a topic, they may have little desire to take responsible in the supervision process. In this case, teachers of the Feeling type probably prefer directive supervisory behaviours, for which they likely have more preference than those of the Thinking type, as suggested by the integrated results.

The qualitative strand also provided evidence on the relationship of the Thinking versus Feeling domain to Thai in-service teachers' preference for benevolent supervisors. The domain had a negative correlation with the Benevolent category (r_{pb} = -.132, p = .009 [Chapter 6, Section 6.2]), which suggests that Feeling teachers are likely to prefer gentle, kind, and sympathetic supervisors more than Thinking teachers. This preference is relatable to Feeling behaviours, as Feeling individuals typically focus on mercy, compassion and relationship (McGuiness, 2004). They need personal attention and desire everyone to be treated as an individual (I. B. Myers et al., 2009). Teachers of the Feeling type would thus prefer benevolent supervisors who treat them as a person and supervise them with kindness, mercy and sympathy.

Judging versus Perceiving domain

The influence of the Judging versus Perceiving domain on supervisory behaviour preferences found in this study was only able to explain the sampled teachers. The domain was found to negatively correlate with the Nondirective (r_{pb} = -.128, p = .012) and Courteous (r_{pb} = -.131, p = .01) categories, but these findings violated the analysis assumption and could not be referred to the population of Thai in-service teachers (Chapter 6, Section 6.2). Nevertheless, they suggested

that the sampled Perceiving type teachers would prefer courteous supervisors and nondirective supervisory behaviours more than those of the Judging type.

The Judging versus Perceiving domain has the third highest influence on the teachers' supervisory behaviour preference compared to other MBTI domains. This study showed that the domain could predict the sampled teachers' preference for one approach. The Extraversion versus Introversion and Thinking versus Feeling domains could predict at least one approach preference of the teacher population, while the Sensing versus Intuition could not predict any approach preference of the sampled teachers. It is therefore assumed that the Judging versus Perceiving domain influences the teachers' preference better than the Sensing versus Intuition domain, but worse than the Extraversion versus Introversion and Thinking versus Feeling domains.

The supervisory preference of the sampled teachers in the Judging versus Perceiving domain is consistent with the results of Clemente (1990) and Hautala (2006). Clemente (1990) reported that teachers of the Sensing Judging type likely had a preference for directive supervision and that those of the Sensing Perceiving type tended to have a preference for nondirective supervision. Her results implied that positive relationships are experienced by the Judging type to teachers' directive supervision preference, and teachers of the Perceiving type to their nondirective supervision preference, despite the paired personality type framework. Hautala's (2006) results also showed that organisational leaders of the Perceiving type more likely practised transformational leadership than those of the Judging type. Transformational leadership is relevant to nondirective supervisory behaviours (Chapter 2, Section 2.6.2). Those who like to perform a certain leadership role possibly prefers to receive it from their superiors. It can be inferred that Perceiving people probably favour nondirective supervision more than Judging people.

The Perceiving teachers' preference for nondirective supervisory behaviours and courteous supervisors can be related to typical behaviours of their personality. Perceiving individuals are typically spontaneous, flexible, and open to change (I. B. Myers, 1998); they want space to form their own decisions (I. B. Myers et al., 2009) and prefer to keep their decisions open as much as possible (I. B. Myers & Myers, 1995). They also normally feel stressed by having to work within timeframes and deadlines (I. B. Myers et al., 2009). Teachers of the Perceiving type may prefer nondirective supervisory behaviours that allow them to work on their own decision-making and problem-solving. This is because nondirective behaviours enable Perceiving type teachers to change their plans more independently than other kinds of supervisory behaviours. Perceiving teachers would also favour courteous supervisors who honour and respect their working style. The nondirective behaviour preference would also impact upon the Perceiving teachers' preference for courteous supervisors. The nondirective supervisory approach allows teachers to take full responsibility in the supervisory discussion (Glickman et al., 2018), that is, they are able to express their ideas and make their own decisions regarding any problematic issue. The Perceiving teacher possibly dislikes a domineering supervisor who tends to control the conversation and tries to influence their decisions, however, they might prefer a courteous supervisor who respects their thoughts and discusses supervisory issue in a humble manner. Building on previous studies and personality type behaviours, one could assume that Thai in-service teachers of the Perceiving type probably have a higher preference for nondirective supervisory behaviours than those of the Judging type, but this assumption cannot be justified by this study.

This study provides evidence of the potential influence of MBTI personality domains on Thailand's in-service teachers' preference for supervisory behaviours and supervisors' characteristics. The Extraversion versus Introversion domain likely has the most influence on the supervisory behaviour preference among other MBTI personality domains, followed by the Thinking versus Feeling domain and the Judging versus Perceiving domain, respectively. The

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Extraversion type would positively influence the Thai in-service teachers' preference for nondirective supervisory behaviours. The Introversion type might positively affect their preference for supervisors who have directive behaviours and capability. The Thinking type likely has a positive influence on the teachers' preference for collaborative behaviours in supervision. Feeling type teachers may have a positive influence on their preference for supervisors who are benevolent and perform either directive or nondirective behaviours. These arguments were related to the existing literature and deemed justifiable.

The evidence in Chapter 7 clarifies the relationship strengths of the teachers' supervisory behaviour preference to the MBTI personality domains and the relationship directions of this preference to the MBTI personality types. These relationship properties have not been clearly identified in previous studies (Clemente, 1990; Johnson, 1989). The next section explains how the teachers' supervisory behaviour preference is influenced by the overall MBTI personality.

7.2.2 Influence of Overall MBTI Personality on Teachers' Supervisory Behaviour Preference

The influence of overall personality domains on Thai in-service teachers' preference for supervisory behaviours was based on the study's quantitative evidence. Multiple regression analysis indicated predictive powers of the overall MBTI personality for the preference for some supervisory behavioural approaches. Teachers' personalities were also found as a better predictor than most of the examined demographics. Such evidence helped to expand the understanding of the relationship between teachers' personalities and their supervisory behaviour preference, and posited a new perspective on the provision of differentiated supervision.

The quantitative evidence asserted that teachers' personalities can predict their preference for a supervisory behavioural approach (Chapter 5, Section 5.3.1). The overall

personality domains could significantly explain approximately 3% of variances in the preferences for Directive Control ($p = .014$) and Directive Information ($p = .010$) approaches. The understanding of teachers' personalities was considered important for implementing the supervision process (DiPaola & Hoy, 2014; Glickman et al., 2018; Sergiovanni, 2009). Very few studies had explored its association with the supervisory behaviour preference; they only reported the difference among personality groups (Clemente, 1990; Johnson, 1989). This study's evidence deepens the understanding of their association by the determination of the predictive relationship and clarification of the relationship strength.

These predictive powers of teachers' personalities also provide an empirical support to the fundamental importance of personality in the differentiation of supervisory efforts for teachers. Such evidence suggests that personality does impact teachers' preference for supervisory behaviours. To provide a suitable supervision approach for one teacher should involve the recognition of the teacher's personality. This puts forth the importance of recognising teachers' personalities in addition to other variables that seem to be more generally stressed. For example, these variables include conceptual levels (Zepeda, 2017), developmental stages (Glickman et al., 2018; McCarthy & Quinn, 2010), instructional expertise and commitment levels (Glickman et al., 2018), professional experiences (DiPaola & Hoy, 2014), and learning styles (Glatthorn, 1984). Teachers' personalities are to be considered by school supervisors when selecting supervisory approaches to address individual differences in teachers.

It was also suggested that personality tends to have more influence on the supervisory behaviour preference of Thai in-service teachers than most of the examined demographics (Chapter 5, Section 5.4). The overall personality domains had an average predictive power for the teachers' preference that was higher than the grade level of teaching, gender, age and experience, and school region, although it was lower than the subject area of expertise and education level. This asserts that teachers' personalities could influence teachers' supervisory

behaviour preference to a greater extent than the grade level of teaching, gender, age and experience, and school region. The teachers' preference for each supervisory behavioural approach was also precisely predicted by the combination of personality and other demographics, which suggests that the teachers' supervisory behaviour preference would be more influenced by multiple personal characteristics than by a single characteristic.

The evidence from this predictive power comparison speculated alternative views to differentiate supervision in response to teachers' personal characteristics. It proposed that teachers' personalities should account for more than their career stages in supervision differentiation. The acknowledgement a teacher's number of years of experience in the teaching profession was recommended for the selection of appropriate approaches to teacher supervision (DiPaola & Hoy, 2014). Studies found that this characteristic is related to teachers' preference for supervision (Akinniyi, 1987; Akkaraputtapong, 2014; Fraser, 1980; Wagner, 1999) and leadership styles (Fish, 2016). Personality was also advocated to be recognised in teacher supervision (DiPaola & Hoy, 2014; Marczely, 2002; Sergiovanni, 2009; Sergiovanni & Starratt, 1993) and it was found to be a factor for the success of supervision implementation (Greene, 1992). This study provides evidence that a teacher's age and years of experience do not influence their supervisory preference as much as personality. One can therefore argue that the recognition of teachers' personalities may provide suitable supervisory styles for individual teachers better than their stage in their career. This does not mean that teachers' personalities should be considered instead of their career stage; it means that school supervisors may need to acknowledge the teacher's personality before considering age and years of experience, as this study provides evidence that the inclusion of other personal characteristics increases the influence on the teachers' supervisory behaviour preference. For instance, directive supervisory behaviours are perhaps suitable for inexperienced teachers (DiPaola & Hoy, 2014) except those of the Extraversion type, who may prefer collaborative or nondirective behaviours.

The subject area of expertise and education level of teachers should also be considered in the selection of supervisory behavioural approaches. This study showed that two characteristics had a stronger predictive power for the teachers' preference than personality. Such evidence suggests the importance of recognising the teachers' subject areas and education levels as much as their personality to address their supervisory behaviour preference. This could be due to teachers in different subject areas with various teaching practices (OECD, 2009) and that teachers' practices likely relate to their learning orientation (Rudowski, 1996). Supervisory behaviours have an impact on the teachers' learning engagement (Zepeda, 2017), and each supervisory behavioural approach provides a certain way of interacting, which teachers can learn. Given that the subject area relates to learning orientation, the influence of the subject field on the teachers' supervisory behaviour preference might be mediated by their learning preference. It has also been documented that teachers' educational qualifications contribute to the level of their self-efficacy (Campbell, 1996; Ross et al., 1996). Teachers with high self-efficacy possibly feel they can deal with their problems independently and might prefer less-directive behaviours from supervisors than those with low self-efficacy. One may assume that the influence of the education level on the teachers' supervisory behaviour preference is mediated by their self-efficacy. It is important to note that all assumptions about these mediated influences require support from empirical evidence, and more studies are required to explore the links among these variables.

This section has discussed the study's evidence that provides a comprehensive understanding of the personality-supervisory behaviour preference relationship in teachers. The evidence underpins the fundamental importance of the recognition of teachers' personalities in the differentiation of supervision that addresses individual differences in teachers. The next section poses a concern about the application of the MBTI personality in the examination of the relationship of teachers' personalities to their supervisory behaviour preference.

7.2.3 MBTI Personality and Teachers' Supervisory Behaviour Preference

One could raise a concern about the application of the MBTI personality framework to explore the relationship of teachers' personalities to their supervisory behaviour preference. Only some MBTI domains appeared to be significantly related to the teachers' preference and their relationship strengths at a low level, which suggested that the MBTI model might not be the best framework to study the subject. To test this assumption requires further studies to utilise other psychological personality constructs and to compare their relationship strengths with those of the MBTI model. Such a comparison would clarify the suitability of the MBTI personality construct and broaden the understanding of the association of the teachers' supervisory behaviour preference with different personality aspects. An alternative to the MBTI model is the Big Five model that scopes personality into five dimensions: (i) Neuroticism; (ii) Extraversion; (iii) Openness to Experience; (iv) Agreeableness; and (v) Conscientiousness (McShane & Glinow, 2013). The Big Five personality dimensions are as much acknowledged as the MBTI personality types (Lundgren et al., 2017); they have been reported to be associated with employees' preferences for their leaders' management style (Amponsah & Asamani, 2015; Bertsch et al., 2017; Moss & Ngu, 2006).

7.3 Recognition of Teachers' Individual Differences in Supervision

The evidence from this study provides another noteworthy contribution to the existing literature, in addition to those related to the research questions, concerning the recognition of teachers' individual difference in supervision.

The reasons for the teachers' preference emerged from their responses related to the acknowledgement of teachers' individual difference in supervision, especially their supervisory preferences. The teachers' qualitative responses regarding their preference mostly fell into the Comfortable-With-Process (33.07%), Confident-In-Process (18.49%), In-Good-Relationship (18.49%), and Encouraged-To-Develop (17.19%) categories (Chapter 6, Section 6.1). This

evidence revealed that providing supervisory conditions in accordance with the preferences of teachers would result in their positive attitude towards the supervision process, supervisors, and themselves. They would feel comfortable with, and confident in, the supervision process, establish a healthy relationship with their supervisors, and feel optimistic about their own professional development. The teachers' positive attitudes about supervision and supervisors may encourage their attention and receptiveness toward supervision and thus enhance its implementation success. These feelings were also assumed to positively impact the teachers' courage to improve their professional practices, as discussed in Section 7.1.3. It can be stated that the provision of teachers' preferred supervision style could increase the process' effectiveness and support teachers' continuous professional development. This implies the necessity to differentiate supervisory approaches in accordance with teachers' individual preference, since there probably is no such approach that is favoured by every teacher. Such an implication corroborates the notion that supervisory approaches should be differentiated to suit individual teachers (Glatthorn, 1984; Glickman et al., 2018; Marczely, 2002; McCarthy & Quinn, 2010; Sullivan & Glanz, 2013; Zepeda, 2017).

School supervisors should also take into an account teachers' cultural norms in supervisory approach differentiation. The study's findings implied that teachers' beliefs about supervision such as their supervisory preference could be influenced by their socio-culture (Section 7.1.2). Teachers may come from a range of cultural backgrounds, especially in countries with high cultural diversity for example Cameroon, Afghanistan, India, United Arab Emirates, and Indonesia (according to the Cultural Diversity scores of Fearon [2003]). Different teachers might have different traditions, norms, and values within themselves that make their views on supervisory behaviours and supervisory relationship differ. Such an impact of culture cannot be overlooked if supervision is to address teachers' individual difference and facilitate their professional growth.

7.4   Summary

This chapter has represented and discussed the study's evidence to address its research questions. Results from the qualitative strands corroborate and amplify those of the quantitative strands. The evidence from integrated results unveil Thai in-service teachers' preference for collaboration, capability, and consideration qualities of supervisors. It also uncovers the impact of these qualities on teacher professional development. Such evidence aligns with the existing literature, extends the notion of transformational leadership in education, and provokes the necessity to develop collaboration and consideration qualities in Thailand's school leaders. The study's evidence discloses the teachers' individual preference for supervisory behaviours based on their personality. This evidence accords with the existing literature, deepens the understanding of the association between personality and supervisory behaviour preference in teachers, and offers alternative perspectives on how to address teachers' individual differences in supervision. This study also emphasises the importance of recognising the teachers' supervisory preference and the possible impact of culture on this preference. The next chapter presents the conclusion of this research study.

CHAPTER 8:
CONCLUSION

This thesis explains the need to comprehensively examine the relationship between personality and the teachers' supervisory behaviour preference, as well as to explore the preference of Thailand's in-service teachers for supervisory behaviours. A convergent mixed methods research design was used to provide an in-depth understanding of the subject. This final chapter begins with the thesis summary and revisits the study's purpose, research questions, and methodology. It then summarises the major findings and discusses their implications for theory and practice. The final part of the chapter details the limitations of the study and recommendations for future research.

8.1   Thesis Summary

The first chapter proposes the research problem as the need for a comprehensive understanding of the association between teachers' personalities and their preference for supervisory behaviours. It also explains the necessity to explore the nationwide perspective of Thailand's in-service teachers on supervisory behaviours. The study's purpose and aims are then introduced, along with a brief explanation about the theoretical framework, research questions, and research methodology. Chapter 1 also details the limitations and significance of this study.

Chapter 2 reviews the existing literature related to the teachers' supervisory behaviour preference and their personality. It begins by reviewing the teacher perspective on the supervisory process that put forth the prominence of educational development. The chapter then highlights that the supervisory behaviour differentiation based on teachers' personal characteristics positively impacts on the success of supervision, teachers' career attitudes, and their professional learning. The review argues that there are four distinct approaches to supervisory behaviours: (i) Directive Control; (ii) Directive Informational; (iii) Collaborative;

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and (iv) Nondirective. This chapter then disputes that the teacher's personality is a promising attribute that correlates with the teachers' supervisory behaviour preference and that more robust research is required for a better understanding of the relationship between the two variables. The MBTI model of dispositional personality was also justified as an appropriate construct to explore the subject.

In Chapter 3, the context of this study is provided, which reviewed Thailand's geography and its basic education system to illustrate the study's background. The country's cultural norms are described, particularly about how they could offer a profound understanding of the teachers' supervisory preference. This chapter then highlights a persistent need to improve the quality and equity in Thailand's education system, despite its attempts at education reform throughout the past century. It also points out that the professional development of Thai in-service teachers is an essential element in the education reform movement, and that their ongoing professional development can be fostered by their leaders through appropriate supervisory behaviours. This leads to reviews on Thailand's in-school supervisory behaviours and school leadership standards that declare the necessity to improve Thai school leaders' supervisory behaviours to extensively investigate the teacher's perspective on in-school supervision, and to redesign the national standards for school leaders.

Chapter 4 details the research design and data analysis procedures applied in this study. A mixed methods research design and the AHP method were employed to provide in-depth information with regard to the studied topic. The chapter then explains and justifies the suitability of asking closed and open questions for the data collection, followed by the validity and reliability of the research instruments. The rationale for the selection of mean calculation, multiple regression analysis, content analysis, and point-biserial correlation analysis were also provided, along with procedures used in these analyses.

Chapter 5 reports the study's results from the quantitative data analyses. It presents the descriptive information of participating teachers, including their demographics and MBTI personality types. Means and standard deviations were calculated to gauge the preference of Thai teachers for supervisory behaviours. Multiple regression models were formulated, analysis assumptions were examined, and model estimates were calculated to explain the predictive relationship of each MBTI personality domain for the teachers' preference for each approach to supervisory behaviours. This chapter also evaluates the predictive powers of the overall personality domain of teachers for each supervisory approach preference in comparison to other demographics variables. Data transformations were applied to remedy the violated assumptions in some models. The summary of quantitative findings is provided at the end of the chapter.

The results from the qualitative data analyses are presented in Chapter 6. The teachers' open-ended responses to the survey were analysed through a concept-driven and data-driven approach to content analysis. The coded materials were quantified to examine the teachers' preference for supervisory behaviours and to assess the differences in supervisory preference among the teachers with different personality types. The point-biserial correlation coefficients were also estimated to gauge the correlations of each MBTI personality domain with the emergent supervisory preference categories. The end of the chapter summarises the qualitative findings.

Chapter 7 discusses the study's evidence in relation to the two research questions. This unveiled the preference of Thai teachers, not only for supervisory behaviours, but also for supervisors' characters, followed by how personality influences their preference. The corroboration and contradiction of this evidence with the existing knowledge base were critiqued. This chapter also discusses the study's contribution to the knowledge of teacher supervision, educational leadership, and Thailand's school leadership.

8.2 Study's Purpose and Research Questions

The preference of Thailand's in-service teachers for supervisory behaviours was not captured, and the relationship of personality to the supervisory behaviour preference of teachers has not been completely clarified. This study therefore sought to investigate the supervisory behaviour preference of Thailand's in-service teachers and to comprehensively explore the relationship between this preference and their personality. It applied a mixed methods design aimed to answer the following two research questions:

1.   What is the preference of Thailand's in-service teachers for supervisory behaviours?

2.   How does personality influence the supervisory behaviour preference of Thailand's in-service teachers?

8.3 Methodology

This study employed a convergent mixed method research design where quantitative and qualitative data were concurrently collected during the survey. The population was Thailand's in-service teachers who taught at the basic education levels from Kindergarten to Year 12. Teachers were sampled through a multistage cluster random sampling process that resulted in 460 participants for the quantitative strand and 384 participants for the qualitative strand. The research survey comprised of the MBTI instrument to measure teachers' personalities and the SBPA was developed by the researcher to gauge their supervisory behaviour preference. The quantitative data were collected through closed questions in conjunction with the AHP method and analysed through mean calculations and multiple regression analysis. The qualitative data were gathered via open-ended questions in the sentence completion form and administrated through content analysis and point-biserial correlation analysis. The qualitative findings were used to verify and extend the quantitative findings.

8.4   Major Findings

This study found that Thailand's in-service teachers prefer supervisors who perform collaborative behaviours, as well as are capable and considerate. The quantitative findings showed that teachers preferred the Collaborative approach to supervisory behaviours compared with the Directive Control, Directive Informational, and Nondirective approaches. The qualitative findings also illustrated that teachers' open responses mostly fell into the Collaborative, Capable, and Considerate categories, however, the Considerate category was an integration of the Friendly and Benevolent categories. The collaboration, capability, and consideration traits of supervisors would allow Thai teachers to feel relaxed and free of anxiety. The collaboration aspect would attract teachers toward the supervision process, whereby a capable leader would bestow them with confidence in the activity, and the consideration quality could help teachers to develop positive feelings toward the supervisory relationship. These optimistic attitudes could then encourage teachers to change or improve their professional practices.

Thai teachers' personalities were also found to influence their preference for supervisory behaviours and supervisors' characters. The overall MBTI personality domain could significantly predict the teachers' preference for supervisory behavioural approaches, despite the small effect size. The Extraversion versus Introversion domain and the Thinking versus Feeling domain were significant predictors for the teachers' supervisory behaviour preference. Extraverted teachers preferred nondirective behaviours more than introverted teachers, while introverted teachers preferred directive behaviours and capable supervisors more than extraverted teachers. Thinking teachers favoured collaborative behaviours more than Feeling teachers, whereas Feeling teachers favoured directive behaviours, nondirective behaviours, and benevolent supervisors more than Thinking teachers. The Judging versus Perceiving domain and the Sensing versus Intuition domain did not have any significant predictive power for the teachers' preference. The Extraversion versus Introversion domain tended to have an influence

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on the teachers' supervisory behaviour preference more than the Thinking versus Feeling domain, the Judging versus Perceiving domain, and the Sensing versus Intuition domain, respectively. Teachers' personalities had a higher predictive power than the grade level of teaching, gender, age and experience, and school region, but less than the subject area of expertise and education level.

8.5 Theoretical Implications

Evidence from this study reflected several theoretical implications for the concept of teacher supervision and school leadership. First, this study confirms the necessity of understanding the links between teachers' individual differences and their supervisory preference to enhance the professional development of each teacher. The study's evidence suggests that supervision with the teachers' preferred supervisory behaviours and supervisors' characteristics would make teachers feel comfortable with, and confident in, the supervision process, as well as optimistic about their relationship with supervisors. Therefore, teachers may be encouraged to change or improve their teaching practices. These positive attitudes could promote the effectiveness of supervision and foster the teachers' ongoing professional development. The knowledge about how the teachers' supervisory preference associates with their attributes would enable school leaders to effectively select supervisory approaches that increase the success rate of supervision and augment teacher professional development.

Second, the study determined the role of one's personality as another element to be recognised in differentiated supervisory behaviours. It was evident that teachers' personalities affected their supervisory behaviour preference and that teachers' professional development would be fostered if their supervisory preferences were addressed. To account for teachers' personalities in the differentiation of their preferred supervisory behaviours, more support for the professional growth of teachers will be provided.

Third, the understanding of the association between teachers' personalities and their supervisory preference if extended. This study measured the teachers' supervisory behaviour preference and personality data using a method that provided a higher level of data measurement accuracy to determine the preferences more clearly than existing research on this topic. The evidence from this study asserted the influence of teachers' personalities on their supervisory behaviour preference. The study determined the predictive relationship along with relationship strengths and directions, as well as expressed the voices of teachers with different personalities on their supervisory preference. Such information has not yet been explicated in previous studies (Clemente, 1990; Johnson, 1989).

Fourth, the study put forth a new perspective on the notion of differentiated supervision. It became evident that teachers' personalities were a significant predictor of their supervisory behaviour preference and their years of experience and age did not have significant predictive power. Teachers' professional experiences were recommended to be recognised in the supervisory style selection (DiPaola & Hoy, 2014) and have been found to be associated with the teachers' supervisory preference (Akinniyi, 1987; Akkaraputtapong, 2014; Fraser, 1980; Wagner, 1999). This study suggests that personality is likely to have a greater impact on the teachers' preference for supervision than their teaching experience.

Fifth, this study uncovered the nationwide perspectives of Thai in-service teachers on in-school supervision, which have never been examined in a Thailand-based study before. The study's evidence asserted that Thai teachers mostly preferred collaborative, capable, and considerate supervisors. These three qualities positively impacted on the teachers' attitudes about school supervision, their supervisors, and their professional development. Collaboration, capability, and consideration can thus be included as elements in future models of school leadership development, teacher supervision, and teacher professional development in Thailand's context.

Last, this study empirically supports the importance of collaboration, capability, and consideration as essential qualities of school leaders and supervisors. The findings suggested that teachers prefer capable, collaborative, and considerate supervisors and that such supervision would develop teachers' positive attitudes towards the supervision process and their supervisors. It was also inferred that these positive feelings could enhance the teachers' motivation to undertake professional development. This would extend the understanding of supervisees' attitudes under such supervisors beyond the pre-service teacher (Tubsai, 2015) and social work student (Lefevre, 2005) to that of in-service teachers. Teacher supervision is the responsibility of school leaders (OECD, 2009). Therefore, this preference highlights the teachers' desire for collaborative, capable, and considerate qualities of school leaders. The unveiled impacts of these qualities also deepen the notions of transformational leadership in education.

8.6   Practical Implications

Several practical implications can be drawn from this study. First, school supervisors who desire to promote the teachers' professional development should provide differentiated teacher supervision that considers the individual teacher's personality in addition to other attributes. It has been generally proposed that supervisors should alter their supervisory styles to suit the teacher's conceptual level (Zepeda, 2017), developmental stage (Glickman et al., 2018; McCarthy & Quinn, 2010), career stage (DiPaola & Hoy, 2014), instructional expertise, commitment level (Glickman et al., 2018), and learning style (Glatthorn, 1984). In contrast, this study foregrounds the influence of personality on the teachers' preference for supervisory behaviours. School supervisors should also recognise teachers' personalities when selecting appropriate supervisory styles for individual teachers. Directive supervisory behaviours may be applied for Introversion teachers, collaborative behaviours seem to suit Thinking teachers, nondirective behaviours might be used for Extraversion teachers, and either directive or nondirective behaviours could be suitable for Feeling teachers.

The findings also uncover a greater influence of personality on the teachers' supervisory behaviour preference than that of the career stage, as in the number of years of teaching experience and age. Teachers' personalities should perhaps be given more priority than their professional experience or career. It has been recommended that the directive supervisory style should be used for teachers who are at the beginning of their teaching profession when they lack teaching experience, while collaborative and nondirective styles are suitable for more experienced teachers (DiPaola & Hoy, 2014). This study suggests that directive supervision is possibly appropriate for experienced teachers of the Introversion type, collaborative supervision may be suitable for inexperienced teachers of the Thinking type, nondirective supervision could be used for novice teachers of the Extraversion type, and directive or nondirective supervision may be used for those of the Feeling type regardless of their career stage.

It is important to note that when an individual teacher prefers more than one supervisory style based on different personality domains, the domain with the stronger influence should be emphasised. For example, a teacher of the Introversion and Thinking type is expected to prefer directive supervision as influenced by the Introversion type, and collaborative supervision as influenced by the Thinking type. The Extraversion versus Introversion domain was found to have a stronger influence on the teachers' supervisory behaviour preference than the Thinking versus Feeling domain. Directive supervision may thus be more suitable for this teacher than collaborative supervision. The strength of personality type preferences should also be considered. An Introvert teacher may prefer the Introversion type almost as much as the Extraversion type but prefer the Thinking type much more than the Feeling type. In such a case, collaborative supervision might be more appropriate.

Second, Thailand's school leaders should be collaborative, capable, and considerate. The study's findings showed that Thai in-service teachers prefer collaborative supervisory behaviours, and most of them tend to favour capable, and considerate supervisors. It was also

inferred that a leader with these three qualities would induce Thai teacher to form positive attitudes toward supervision and their profession development. This suggests the necessity for Thailand's school leaders, whose duties involve teacher supervision, to possess qualities of collaboration, capability, and consideration. They should acquire experience, knowledge, and skills to guide their fellow teachers to improve their professional practice; place an importance on the teachers' ideas and opinions when decision-making or problem-solving; and treat their fellow teachers with friendliness, kindness, mercy, and empathy. The preparation programs for school supervisors or leaders in Thailand should also emphasise and develop these qualities in their students, so that these qualities become successfully implemented in real practice. Thailand's in-service teachers would be willing to work with such school leaders, particularly when being encouraged to develop their professional practice, leading to the enhancement of student learning in Thailand.

Third, Thailand's policy-makers in education should consider a redraft their national's standards for school leaders, especially the performance standard. It is evident that the collaboration and consideration qualities positively impact on Thai teachers' attitudes about their leaders and leadership activities. These two qualities are not explicitly stated in Thailand's principles for school leaders' performance, nor are they are possessed by Thai school leaders. To stipulate the qualities of collaboration and consideration in Thailand's performance standards would facilitate such behaviours in the leaders' practices and stimulate the country's educational leadership programs to improve the performance of pre-service school leaders. This would result in improved efficiency and effectiveness in school leadership that would positively influence improvement and changes in Thai in-service teachers' professional practices.

Fourth, Thai school leaders may distribute their supervisory responsibility to experienced teachers for novice teacher supervision. Experienced teachers could have higher capability of teaching their respective subject and managing classroom, compared to novice

teachers. Collaborative supervision could be effectively implemented, as there is no power relationship between two teachers. Experienced teachers could also be considerate of novice teachers. They may have encountered similar problematic issues and had similar feelings to novice teachers, because they used to be one. Given this study's findings, the novice teachers would be attentive to the supervision process, feel confident in the given suggestions, and develop a good relationship with their supervising teachers. These positive attitudes towards supervision can enhance their professional practice. To delegate supervisory responsibility to experienced teachers would help Thai school leaders to provide supervision that effectively fosters novice teachers' professional development, while the leaders can channel their time and efforts to other school issues.

Finally, to successfully supervise in-service teachers and to facilitate their professional growth, the recognition of their supervisory preference is necessary. It is inferred that if in-service teachers are supervised with their preferred supervisory behaviours and supervisors' characteristics, they would establish a positive attitude towards the supervision process, their supervisors, and their professional development. School supervisors should then consider the teachers' preference for supervisory conditions and provide them with such conditions. If teachers are offered supervision in accordance with their responses to their preference, they would be attentive, cooperative, and encouraged to change or improve their professional practices. This study also suggests that teachers may have a preference for collaborative, capable, and considerate supervisors. School supervisors could thus perform collaborative behaviours and express their consideration for teachers if it is not to differentiate supervisory approaches to suit individual teachers.

8.7   Limitations of the Study

This study has limitations in its findings that need to be interpreted for the reader. First, the study population was Thailand in-service teachers in the basic education system from

kindergarten to the upper secondary level, Year 12 (K to 12). The generalisation of the study's findings is therefore limited to this population of teachers. Their supervisory behaviour preference and its relationship with personality could be different from those of pre-service teachers, higher education teachers, pre-kindergarten teachers, or teachers in other socio-cultural contexts.

Second, this study does not confirm a causal relationship between teachers' personalities and their supervisory behaviour preference. Multiple regression analysis confirmed that the teachers' preference for each supervisory behavioural approach (dependent variables) could be forecasted or predicted by the personality domains (independent variables). The causality of these two variables cannot be inferred, since the independent variables were not experimentally controlled (Field, 2013). To be classified in a certain personality type may or may not cause the preference for a supervisory behavioural approach.

Last, the qualitative findings were analysed from teachers' responses to open-ended questions in a survey, which may have limited the participants' voices with regard to their supervisory preference. As Fink postulated, open questions allow researchers to collect qualitative data in the form of participants' verbatim responses (Fink, 2003), but further questions cannot be asked to gain additional information or to clarify the participants' answers as much as an extended interview (Kronberger & Wagner, 2000). This impeded the researcher's ability to deepen the teachers' responses beyond their original answers. The teachers' perspective on supervision may not have been completely canvassed in this research design.

8.8   Future Research Recommendations

Future studies can address this study's limitations to obtain a better understanding of the teachers' preference for supervisory behaviours. First, other data collection methods may be utilised to investigate the subject matter. Teachers with different personality types may be

interviewed separately, or those with the same personality types be invited to attend a focus group discussion. Such data collection methods would enable the researcher to simultaneously ask additional questions to clarify participants' answers to structured questions. These methods could also provide an opportunity to explore other important issues beyond the researcher's initial objective. By applying an interview or focus group, more in-depth information about the supervisory behaviour preference of teachers with different MBTI personality types could be obtained.

Second, psychological personality constructs other than the MBTI model could be applied as a framework to explore the personality-supervisory behaviour preference relationship in teachers. The results from different conceptual frameworks could be compared with those of this study to identify the suitability of the MBTI construct for the teachers' preference identification. They could also broaden the understanding of the association of the teachers' supervisory behaviour preference with different personality aspects. One such alternative construct is the Big Five model, as disputed in Chapter 7, Section 7.2.3.

Third, further studies can measure other variables that potentially influence the teachers' supervisory behaviour preference along with teachers' personalities. A structural equation model could be employed to map out variable interrelationships upon which an extent of causal inference can be drawn (Hair et al., 2010). For example, these potential variables are, but not limited to professional experience, conceptual level, developmental stage, instructional expertise, and learning style.

Fourth, future research could explore the supervisory behaviour preference and its relationship with personality in teacher groups other than those in basic education, for example pre-service and higher education teachers. The results could be compared with this study's findings to provide a nuanced understanding of the subject, as a wider range of those in the teaching profession would be included. The comparison could ascertain whether the personality

influence on supervisory behaviour preference varies among pre-service, basic education, and higher education teachers. To combine the supervision perspectives of these other teacher groups would also offer further information with regard to the general supervisory behaviour preference of those in a teaching career beyond the perspective of basic education teachers, as in this study.

Fifth, experimental research may be conducted to examine the effects of supervisors' collaboration, capability, and consideration qualities on teachers. Each quality could be an intervention given to an experimental group with outcomes to be compared with that of a control group. Researchers may measure outcomes that are related to teachers' career attitudes and their ongoing professional development. For examples, outcomes may include job satisfaction, improvement in teaching, and changes in instructional practice. Such research would provide strong evidence that firmly supports the impact of collaborative, capable, and considerate supervisors that is implied in this study.

Last, the supervisory behaviour preference of in-service teachers in a sociocultural context that is different than or similar to Thailand could be examined. Future studies may assess whether teachers in other countries with a similar culture to Thailand, that is, ones with high powered differential, strong uncertainty avoidance, or social smoothing relationship orientation, have a similar preference for supervision as Thai teachers and whether they have a different preference. Such explorations would yield empirical information to confirm whether such contextual variables as cultural norms impact on teachers' views about in-school supervision.

8.9 Final Thoughts

The evidence from this study has revealed the influence of teachers' personalities on their supervisory behaviour preference. It provides a comprehensive understanding of the relationship

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of personality to the supervisory behaviour preference among teachers. The relationship strengths and directions were clarified, and teachers' voices were used to confirm and amplify this association. The evidence also supports the significance of teachers' personalities to be acknowledged in the selection of suitable supervisory styles for individual teachers. This offers an alternative perspective for the notion of differentiated supervision. It is also inferred that the recognition of the teachers' individual preference for supervision would promote the supervision's effectiveness and the ongoing professional development of teachers.

This study has further uncovered the nationwide perspective of Thailand's in-service teachers concerning in-school supervision. It asserts that the teachers prefer collaborative, capable, and considerate supervisors. These qualities positively impact upon teachers' attitudes toward the supervision process, their supervisors, and improvement in their professional development. Such findings advocate the necessity for Thai school leaders to possess these three qualities and for Thailand's policymakers to redesign their national standards for school leaders. The findings also contribute to the conceptualisation and implementation of teacher supervision and transformational leadership in education.

School leaders or supervisors should address teachers' individual differences in the implementation of teacher supervision. Teachers' personalities can be considered along with other personal characteristics to perform such supervisory behaviours that suit their individual preferences. Collaborative supervisory behaviours may be used when differentiated supervision is not feasible, since teachers seem to prefer these behaviours. School supervisors also need to have the capability to express consideration for their fellow teachers. The provision of these supervisory conditions would concurrently increase supervision success and enhance teacher professional development.

REFERENCES

Acheson, K. A., & Gall, M. D. (1997). *Techniques in Clinical Supervision of Teachers Preservice and Inservice Application* (4th ed.). Longman.

Adams, D. (2007). *Personality type and leadership approach* (Publication No. 3288853) [Doctoral dissertation, Capella University]. ProQuest Dissertations & Theses Global.

Aiken, L. R. (1999). *Personality assessment: Methods and practices* (3rd ed.). Hogrefe & Huber.

Akinniyi, G. (1987). *Perceptions and preferences of principals and teachers supevisory behavior* (Publication No. 8720447) [Doctoral dissertation, University of Wisconsin-Madison]. ProQuest Dissertations & Theses Global.

Akkaraputtapong, P. (2014). *Patchai thang sathanaphap khong khru thi songphon to khwamtongkan rupbaep kan nithet kan son khong khru rongrian matthayomsueksa nai sangkat samnakngan khanakammakan kansueksa khanphuenthan* [Teachers' characteristic factors influencing instructional supervision model needs of secondary school teachers under the Office of Basic Education Commission] [Master's thesis, Chulalongkorn University]. Chulalongkorn University Intellectual Repository. http://cuir.car.chula.ac.th/handle/123456789/46609

Albudaiwi, D. (2017). Survey: open-ended questions. In M. Allen (Ed.), *The SAGE encyclopedia of communication research methods* (pp. 1716-1717). SAGE. https://doi.org/10.4135/9781483381411

Alexander, L. (2017). *The effect of secondary teacher personality on educational empowerment* (Publication No. 10259190) [Doctoral dissertation, Walden University]. ProQuest Dissertations & Theses Global.

Alhajeri, S. (2011). *Relationships between supervisory behaviors and school climate as perceived by secondary school teachers in the state of Kuwait* (Publication No. 3453897) [Doctoral dissertation, Indiana State University]. ProQuest Dissertations & Theses Global.

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (2014). *Standards for educational and psychological testing*. American Educational Research Association.

Amponsah, M. O., & Asamani, L. (2015). Personality traits of teachers and desired leadership styles. *British Journal of Psychology Research, 3*(5), 1-15. http://www.eajournals.org/wp-content/uploads/Personality-Traits-of-Teachers-and-Desired-Leadership-Styles.pdf

Anderson, H., Fry, S., & Hourcade, J. J. (2014). Career changers as first-year high school teachers. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 87*(4), 149-154.

Andersson, C., & Palm, T. (2017). The impact of formative assessment on student achievement: A study of the effects of changes to classroom practice after a comprehensive

professional development programme. *Learning and Instruction, 49*, 92-102. https://doi.org/10.1016/j.learninstruc.2016.12.006

Anutharun, N., & Romphoree, N. (2009). *Khwam samphan rawang bukkhalikkaphap tam baep MBTI kap phon samrit thang kan rian khong naksueksa khana phayaban sat mahawitthayalai sayam* [Correlation between MBTI personalities and academic achievement of nursing students of Siam University]. www.research-system.siam.edu/2013-12-20-03-57-52/133-2013-12-20-05-58-57

Astin, A. W., & Astin, H. S. (2000). *Leadership reconsidered: engaging higher education in social change*. W.K. Kellogg Foundation. https://files.eric.ed.gov/fulltext/ED444437.pdf

Babbie, E. (2016). *The practice of social research* (14th ed.). Cengage Learning. http://ebookcentral.proquest.com/lib/unsw/detail.action?docID=4458812

Bacharach, S. B., & Mitchell, S. M. (1992). School as a workplace. In M. C. Alkin (Ed.), *Encyclopedia of educational research* (6th ed., Vol. 4, pp. 1167-1168). Macmillan.

Bayne, R. (1995). *The Myers-Briggs Type Indicator: A critical review and practical guide*. Chapman & Hall.

Bayne, R. (2003). Love, money and studying: You and your personality type at university. *Psychologist, 16*(10), 529-531. https://search-proquest-com.wwwproxy1.library.unsw.edu.au/docview/211852525?accountid=12763

Bertsch, A., Nguyen, H. T. H., Alford, A., Baran, W., Reynen, J., Saeed, M., & Ondracek, J. (2017). Exploring the relationship between personality and preferred leadership. *Journal of Leadership, Accountability and Ethics, 14*(1), 32-45. http://www.digitalcommons.www.na-businesspress.com/JLAE/BertschA_Web14_1_.pdf

Block, J. (2010). The Five-Factor Framing of Personality and Beyond: Some Ruminations. *Psychological Inquiry, 21*(1), 2-25. https://doi.org/10.1080/10478401003596626

Bogler, R., & Somech, A. (2004). Influence of teacher empowerment on teachers' organizational commitment, professional commitment and organizational citizenship behavior in schools. *Teaching and Teacher Education, 20*(3), 277-289. https://doi.org/10.1016/j.tate.2004.02.003

Boonpeng, W. (2014). Phawa phunam kan plianplaeng thi mi itthiphon to ongkan haeng kan rianru khong phuborihan sathan sueksa sangkat samnakngan khanakammakan songsoem kansueksa ekkachon krungthepmahanakhon [Study of transformational leadership influence to the learning organization of the school administrators under the Office of the Private Education Commission, Bangkok]. *Kasalongkham Research Journal, 8*(1), 139-150. https://www.tci-thaijo.org/index.php/ksk/article/view/126234/95447

Bot itsara sanoe fuen "sueksanithet" dulae 5-10 rongrian/khon. (2019, May 21). *Thaipost*. https://www.thaipost.net/main/detail/36397

Bouchamma, Y. (2012). Leadership practices in effective schools in disadvantaged areas of Canada. *Education Research International, 2012*, 1-16. https://doi.org/10.1155/2012/712149

Bouchamma, Y., Jiafan, T., April, D., & Basque, M. (2017). Pedagogical supervision: Teachers' characteristics, beliefs, and needs. *International Studies in Educational Administration, 45*(2), 91-115. http://ezproxy.car.chula.ac.th/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=128211866&site=eds-live

Brandon, J., & Derrington, M. L. (2019). Supporting Teacher Growth and Assuring Teaching Quality. In M. L. Derrington & J. Brandon (Eds.), *Differentiated Teacher Evaluation and Professional Learning: Policies and Practices for Promoting Career Growth* (pp. 3-14). Springer International. https://doi.org/10.1007/978-3-030-16454-6_1

Brown, S. (2000). *Effective behavior managers: A study on personality types and pupil control ideology of elementary teachers* (Publication No. 9971806) [Doctoral dissertation, University of La Verne]. ProQuest Dissertations & Theses Global.

Burch, S. (2016). *An examination of teacher perceptions of professional development through the framework of individual personality traits* (Publication No. 10124963) [Doctoral dissertation, Northcentral University]. ProQuest Dissertations & Theses Global.

Burger, J. M. (2011). *Personality* (8th ed.). Wadsworth. https://epdf.pub/personality-eighth-edition-5ea6d264d43c2.html

Burns, R. W., & Badiali, B. J. (2015). When supervision is conflated with evaluation: Teacher candidates' perceptions of their novice supervisor. *Action in Teacher Education, 37*(4), 418-437. https://doi.org/10.1080/01626620.2015.1078757

Burns, R. W., & Yendol-Hoppey, D. (2016). Supervision in professional devleopment schools. In J. Glanz & S. J. Zepeda (Eds.), *Supervision: New perspectives for theory and practice* (pp. 97-128). Rowman & Littlefield.

Burrell, N. A., & Nicolini, K. M. (2017). Scales, open-ended. In M. Allen (Ed.), *The SAGE encyclopedia of communication research methods* (pp. 1558-1559). SAGE. https://doi.org/10.4135/9781483381411

Campbell, J. (1996). A comparison of teacher efficacy for pre and in-service teachers in Scotland and America. *Education, 117*(1). https://link.gale.com/apps/doc/A18960211/AONE?u=chula&sid=AONE&xid=569a163a

Campiranon, K., & Phayakvichien, P. (2016). Thailand. In J. Jafari & H. Xiao (Eds.), *Encyclopedia of tourism* (pp. 935-938). Springer Nature. https://doi.org/10.1007/978-3-319-01384-8

Capraro, R., & Capraro, M. (2002). Myers-Briggs Type Indicator score reliability across studies: A meta-analytic reliability generalization study. *Educational and Psychological Measurement, 62*(4), 590-602. https://doi.org/10.1177/0013164402062004004

Carlyn, M. (1977). An assessment of the Myers-Mriggs Type Indicator [Abstract]. *Journal of Personality Assessment, 41*(5), 461-473. https://www.tandfonline.com/doi/abs/10.1207/s15327752jpa4105_2

Caspi, J., & Reid, W. J. (2002). *Educational supervision in social work: A task-centered model for field instruction and staff development*. Columbia University Press.

Cetinkaya, B. (2006). *Recollected changes in mathematics teachers' beliefs and practices: Perceptions and psychological type preferences* (Publication No. 3242488) [Doctoral dissertation, Syracuse University]. ProQuest Dissertations & Theses Global.

Chamorro-Premuzic, T. (2015). *Personality and individual differences* (3rd ed.). The British Psychological Society and John Wiley & Sons.

Champa, B. (2016). *Phruetikam kan nithet kansueksa khong phuborihan sathan sueksa sangkat samnakngan khet phuenthi kansueksa matthayomsueksa khet 31* [Supervisory behaviors of school administrators under the Secondary Education Service Area Office 31] [Master's thesis, Sukhothai Thammathirat Open University]. Thai Digital Collection.

Chao, C. (2017). Correlation, point-biserial. In M. Allen (Ed.), *The SAGE encyclopedia of communication research methods* (pp. 272-273). SAGE. https://doi.org/10.4135/9781483381411.n100

Che-mudo, N. (2016). *Kan wichai choeng pramoen khrongkan soem sakkayaphap khru son Tadika nai rongrian sam changwat chaidaen phaktai doi chai rupbaep kan pramoen khong kirkpatrick* [An evaluation research of the Teachers Empowerment Project for Tadika Schools in three southern border provinces using Kirkpatrick Evaluation Model] [Master's thesis, Prince of Songkla University]. Thai Digital Collection.

Chokepaisarn, P. (2010). *Phruetikam kan nithet thi songphon to kan plianplaeng pharuetikam kan son khong khru* [Supervisory behaviors affecting the change in teachers' teaching behaviors] [Master's thesis, Chulalongkorn University]. Chulalongkorn University Intellectual Repository. http://cuir.car.chula.ac.th/handle/123456789/33821

Clemente, J. (1990). *Elementary school teacher temperament and satisfaction with the supervision process* (Publication No. 9109250) [Doctoral dissertation, Fordham University]. ProQuest Dissertations & Theses Global.

Clifton, W. (2010). *The relationship between school principals' leadership styles and teacher retention* (Publication No. 3412437) [Doctoral dissertation, Capella University]. ProQuest Dissertations & Theses Global.

Cohen, J., Cohen, P., West, S. G., Aiken, L. S., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Lawrence Erlbaum Associates. http://ebookcentral.proquest.com/lib/unsw/detail.action?docID=1222653

Consulting Psychologists Press. (n.d.). *Comparing the MBTI® Form G & Form M*. https://www.cpp.com/Pdfs/FormM_vs_FormG.pdf

Conti, G., & McNeil, R. (2011). Learning strategy preference and personality type: Are they related? *Journal of Adult Education, 40*(2). https://files.eric.ed.gov/fulltext/EJ991417.pdf

Corbetta, P. (2003). *Social research: Theory, methods and techniques*. SAGE. https://doi.org/10.4135/9781849209922

Creswell, J. W. (2015). *A concise introduction to mixed methods research*. SAGE.

Creswell, J. W., & Clark, V. L. P. (2011). *Designing and conducting mixed methods research* (2nd ed.). SAGE.

Creswell, J. W., & Clark, V. L. P. (2018). *Designing and Conducting Mixed Methods Research* (3rd ed.). SAGE.

Crew, L. R. L. (2016). Personality and mentoring: Stepping off on the right foot. *The Journal of Continuing Education in Nursing, 47*(5), 201-203. https://doi.org/10.3928/00220124-20160419-02

De Raad, B., Barelds, D. P., Levert, E., Ostendorf, F., Mlacić, B., Di Blas, L., Hrebíčková, M., Szirmák, Z., Szarota, P., Perugini, M., Church, A. T., & Katigbak, M. S. (2010). Only three factors of personality description are fully replicable across languages: A comparison of 14 trait taxonomies. *Journal of Personality and Social Psychology,, 98*(1), 160-173. https://doi.org/10.1037/a0017184

Decker, L. E., & Rimm-Kaufman, S. E. (2008). Personality Characteristics and Teacher Beliefs among Pre-Service Teachers. *Teacher Education Quarterly, 35*(2), 45-64. http://www.jstor.org/stable/23479223

DiPaola, M. F., & Hoy, W. K. (2014). *Improving instruction through supervision, evaluation, and professional development*. Information Age.

Dodd, R. (2006). *Preferred supervisory practices of special education supervisors and special education teachers* (Publication No. 3275690) [Doctoral dissertation, Marywood University]. ProQuest Dissertations & Theses Global.

Doong, S.-L. (2002). *Reconstructing political education in Taiwan: A study on perspectives of teacher educators and senior high school teachers of civic/citizenship education* (Publication No. 3041938) [Doctoral dissertation, University of Minnesota]. ProQuest Dissertations & Theses Global.

Döş, İ., & Savaş, A. C. (2015). Elementary school administrators and their roles in the context of effective schools. *SAGE Open, 5*(1). https://doi.org/10.1177/2158244014567400

Drago-Severson, E. (2004). *Helping teachers learn: Principal leardership for adult growth and development*. Corwin Press.

Duangpattra, K. (2002). *Bukkhalikkaphap baep MBTI radap chao arom lae khwamrusuek mi khunkha nai ton eng: sueksa chapho korani borisat utsahakam kan phalit haeng nueng* [Personality types (MBTI), emotional intelligence and self-esteem: A case study of one industrial company] [Master's Thesis, Thammasat University]. TU Digital Collections. http://digital.library.tu.ac.th/tu_dc/frontend/Info/item/dc:116425

Duignan, P. (2012). *Eductional leadership: together creating ethical learning* (2nd ed.). Cambridge University Press.

Dutt, A. K., & Mukhopadhyay, A. (1996). Thailand: Geiographical Analysis. In A. K. Dutt (Ed.), *Southeast Asia: A ten nation region* (pp. 243-266). Kluwer Academic.

Education Supervision Development Center. (n.d.). *Khwam pen ma nuai sueksanithet samnakngan khanakammakan kansueksa khanphuenthan* [Background of Supervisory

Division, Office of the Basic Education Commission]. http://www.esdc.go.th/khwam-pen-ma-khxng-snth

Elliott, E. M., Isaacs, M. L., & Chugani, C. D. (2010). Promoting self-efficacy in early career teachers: A principal's guide for differentiated mentoring and supervision. *Florida Journal of Educational Administration & Policy, 4*(1), 131-146. https://files.eric.ed.gov/fulltext/EJ911436.pdf

Evans, M. (2016). *Principal self-efficacy, teacher perceptions of principal performance, and teacher job satisfaction* (Publication No. 10112530) [Doctoral dissertation, Grand Canyon University]. ProQuest Dissertations & Theses Global.

Fearon, J. D. (2003). Ethnic and Cultural Diversity by Country*. *Journal of Economic Growth, 8*(2), 195-222. https://doi.org/10.1023/A:1024419522867

Field, A. (2013). *Discovering statistics using IBM SPSS Statistics: And sex and drugs and rock 'n' roll* (4th ed.). SAGE.

Fink, A. (2003). *How to ask survey questions* (2nd ed.). SAGE. https://doi.org/10.4135/9781412984393

Fink, A. (2017). *How to conduct surveys: A step-by-step guide* (6th ed.). SAGE.

Fish, R. A. (2016). *A comparison of teacher leadership style preferences among South Carolina educators* [Doctoral dissertation, University of the Cumberlands]. ResearchGate. http://doi.org/10.13140/RG.2.2.13427.73766

Foels, R., Driskell, J. E., Mullen, B., & Salas, E. (2000). The effects of democratic leadership on group member satisfaction: An integration. *Small Group Research, 31*(6), 676-701. https://doi.org/10.1177/104649640003100603

Fraser, K. P. (1980). Supervisory behavior and teacher satisfaction. *The Journal of Educational Administration, 18*(2), 224-231. https://doi.org/10.1108/eb009828

Frey, J. H. (2004). Open-ended question. In M. S. Lewis-Beck, A. Bryman, & T. F. Liao (Eds.), *The SAGE encyclopedia of social science research methods* (pp. 767). SAGE. https://doi.org/10.4135/9781412950589

Fry, G. W. (2018a). Synthesis, rethinking thai education: Paradoxes, trends, challenges, and opportunities. In G. W. Fry (Ed.), *Education in Thailand: An old elephant in search of a new mahout* (pp. 677-709). Springer Nature. https://doi.org/10.1007/978-981-10-7857-6_27

Fry, G. W. (2018b). The Thai context: Historical, cultural, demographic, geographic, economic, and political. In G. W. Fry (Ed.), *Education in Thailand: An old elephant in search of a new mahout* (pp. 33-56). Springer Nature. https://doi.org/10.1007/978-981-10-7857-6_2

Fry, G. W., & Bi, H. (2013). The evolution of educational reform in Thailand: The Thai educational paradox. *Journal of Educational Administration, 51*(3), 290-319. https://doi.org/10.1108/09578231311311483

Furnham, A., Moutafi, J., & Crump, J. (2003). The relationship between the Revised NEO-Personality Inventory and the Myers-Briggs Type Indicator. *Social Behavior and Personality, 31*(6), 577-584. https://doi.org/10.2224/sbp.2003.31.6.577

Gaziel, H. (2009). Teachers' empowerment and commitment at school-based and non-school-based sites. In Zajda J. & Gamage D. (Eds.), *Decentralisation, school-based management, and quality. Globalisation, comparative education and policy research* (Vol. 8, pp. 217-229). Springer Science+Business Media. https://doi.org/10.1007/978-90-481-2703-0_12

Gebhard, J. G. (1984). Models of supervision: Choices. *TESOL Quarterly, 18*(3), 501-514. http://www.jstor.org/stable/3586717

Gerrig, R. J., Zimbardo, P. G., Campbell, A. J., Cumming, S. R., & Wilkes, F. J. (2009). *Psychology and life* (Australian ed.). Pearson.

Gilbreath, B., & Karimi, L. (2012). Supervisor Behavior and Employee Presenteeism. *International Journal of Leadership Studies, 7*(1), 114-131. https://www.regent.edu/acad/global/publications/ijls/new/vol7iss1/IJLS_Vol7Iss1_Gilbreath_pp114-131.pdf

Giordano, P. J. (2008). Personality psychology. In S. F. Davis & W. Buskist (Eds.), *21st century psychology: A reference handbook* (pp. I-402-I-412). SAGE. https://doi.org/10.4135/9781412956321.n43

Glatthorn, A. A. (1984). *Differentiated supervision*. Association for Supervision and Curriculum Development.

Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2018). *Supervision and instructional leadership: A development approach* (10th ed.). Pearson.

Grbich, C. (2013). *Qualitative data analysis: An introduction* (2nd ed.). SAGE.

Greene, M. L. (1992). Teacher supervision as professional development: Does it work? *Journal of Curriculum and Supervision, 7*(2), 131-148. https://pdfs.semanticscholar.org/d83e/1e2a9bc1284712dfad7b07c42912883545eb.pdf

Gregory, R. J. (2007). *Psychological testing: History, principles, and applications* (5th ed.). Allyn & Bacon.

Gutwein, H. (2015). *Myers-Briggs type inventory and alternative school educators* (Publication No. 3700622) [Doctoral dissertation, Indiana State University]. ProQuest Dissertations & Theses Global.

Hafner, J., Keyes, C., & Keyes, J. (n.d.). Thailand. In *Encyclopædia Britannica*. Retrieved November 8, 2019, from https://www.britannica.com/place/Thailand

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis: A Global Perspective* (7th ed.). Pearson.

Hallinger, P. (2018). Thailand's challenge of systemic education reform: Where are the leaders with the "right stuff"? In G. W. Fry (Ed.), *Education in Thailand: An old elephant in*

search of a new mahout (pp. 555-577). Springer Nature. https://doi.org/10.1007/978-981-10-7857-6_22

Hallinger, P., & Kantamara, P. (2000). Leading at the confluence of tradition and globalization: The challenge of change in thai schools. *Asia Pacific Journal of Education, 20*(2), 46-57. https://doi.org/10.1080/02188791.2000.10600182

Hallinger, P., & Lee, M. (2014). Mapping instructional leadership in Thailand: Has education reform impacted principal practice? *Educational Management Administration & Leadership, 42*(1), 6-29. https://doi.org/10.1177/1741143213502196

Harada, Y. (2017). A cultural comparison of business practices in Thailand and Japan with implications for Malaysia. *Cogent Social Sciences, 3*(1), 1370994. https://doi.org/10.1080/23311886.2017.1370994

Hauser, R. (2005). *An investigation into the Myers-Briggs personality types and Keirsey temperaments of elementary school teachers and elementary school teacher/support providers* (Publication No. 3174548) [Doctoral dissertation, Capella University]. ProQuest Dissertations & Theses Global.

Hautala, T. M. (2006). The relationship between personality and transformational leadership. *Journal of Management Development, 25*(8), 777-794.

Hemmabutr, P. (2012). *Konlayut kan nithet phuea phatthana khru mue achip nai khrueakhai kan nithet thi 18* [Supervision strategies for the development of professional teachers in the Supervision Network Area 18] [Doctoral dissertation, Kamphaeng Phet Rajabhat University]. Thai Digital Collection.

Henderson, J. W., Barth, H. A., Heimann, J. M., Moeller, P. W., Shinn, R.-S., Soriano, F. S., Weaver, J. O., & White, E. T. (1971). *Area handbook for Thailand*. U.S. Government Printing Office. https://files.eric.ed.gov/fulltext/ED059143.pdf

Hinton, P. R., McMurray, I., & Brownlow, C. (2004). *SPSS explained*. Routledge.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind*. McGraw Hill.

Hongwiangchan, R., Chuankayan, S., & Wongyounoi, S. (2017). Rupbaep kan phatthana phawa phunam kan plianplaeng nai satawat thi 21 khong phuborihan sathan sueksa khanphuenthan nai khet phaktawantok [A model of the 21st century transformational leadership development of administrators in basic education schools in western region of Thailand]. *Journal of Information, 16*(1), 125-139. https://www.tci-thaijo.org/index.php/oarit/article/view/106017/84031

Hoy, W. K., & Miskel, C. G. (2013). *Educational administration: Theory, research, and practice* (9th ed.). McGraw-Hill.

Hullman, G. A., Planisek, A., McNally, J. S., & Rubin, R. B. (2010). Competence, personality, and self-efficacy: Relationships in an undergraduate interpersonal course. *Atlantic Journal of Communication, 18*(1), 36-49. https://doi.org/10.1080/15456870903340506

Innara, S., Tungkunanan, P., & Boonphak, K. (2015). Baep phawa phunam khong phuborihan sathan sueksa thi songphon to prasitthiphon khong kan borihan ngan wichakan nai

rongrian sangkat sam nak kansueksa krungthepmahanakhon khet lat krabang [The leadership styles of school administrator affecting on the effectiveness of academic administration under the Department of Education, Bangkok Metropolitan]. *Journal of Industrial Education, 14*(3), 530-537. https://www.tci-thaijo.org/index.php/JIE/article/view/122821/93516

Jackson, S. L., Parker, C. P., & Dipboye, R. L. (1996). A comparison of competing models underlying responses to the Myers-Briggs Type Indicator. *Journal of Career Assessment, 4*(1), 99-111. https://doi.org/10.1177/106907279600400107

Jaithaingkul, L. (2013). *Phruet kammakan nithet khong phuborihan sathan sueksa thi songphon to kan chat kitchakam phatthana phurian nai sangkat samnakngan khet phuenthi kansueksa prathomsueksa suphanburi 2* [Supervisory behavior of school administrators affecting student activity performance on school under Suphanburi Primary Educational Service Area Office 2] [Master's thesis, Silpakorn University]. Thai Digital Collection.

Johnson, A. J. (1989). *Temperament and preference for supervision among Oklahoma educators* (Publication No. 9004014) [Doctoral dissertation, Southwestern Oklahoma State University]. ProQuest Dissertations & Theses Global.

Jones, S. (2005). *An analytical study of the correlation between Myers-Briggs personality types and preferred philosophy of adult education of teachers of adult Sunday School classes in select Southern Baptist churches* (Publication No. 3179514) [Doctoral dissertation, New Orleans Baptist Theological Seminary]. ProQuest Dissertations & Theses Global.

Kadushin, A., & Harkness, D. (2002). *Supervision in social work*. Columbia University Press.

Kaeosriha, A. (2015). *Patchai thi songphon to prasitthiphap kan son khong khru phuson laksut prakatsaniyabat wichachip nai rongrian matthayomsueksa sangkat samnakngan khet phuenthi kansueksa khet 32* [Factors affecting intructional efficency of teachers teaching vocational certificate curricular at secondary schools under Secondary Educational Service Area Office 32] [Master's thesis, Buriram Rajabhat University]. Thai Digital Collection.

Kaewkungwal, S. (2001). *Laksana bukkhalikkaphap khong naksueksa thai 6 sakha achip (kotmai, khomphiotoe, phaetthayasat, manutsat, witsawakamsat lae setthasat) chak kan chi wat khong Myers Briggs Type Indicator (MBTI)* [Personality types of Thai undergraduated students in six career choices (laws, computer, medicine, humanities, engineer, and economics) as indicated by The Myers-Briggs Type Indicator (MBTI)]. Department of Psychology, Thammasat University.

Kalargyrou, V., & Woods, R. (2009). What makes a college administrator an effective leader?: An exploratory study. *Journal of Teaching in Travel & Tourism, 9*(1-2), 21-36. https://doi.org/10.1080/15313220903041980

Kalule, L., & Bouchamma, Y. (2013). Teacher supervision practices: What do teachers think? *International Studies in Educational Administration, 40*(3), 91-104. https://eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?vid=1&sid=4e32e2d9-5c52-472c-826d-69f44bb15b52%40sdc-v-sessmgr02

Kanokorn, S., Wallapha, A., & Ngang, T. K. (2013). Indicators of ethical leadership for school principals in Thailand. *Procedia - Social and Behavioral Sciences, 93*, 2085-2089. https://doi.org/10.1016/j.sbspro.2013.10.170

Kaplan, R. M., & Saccuzzo, D. P. (2009). *Psychological testing: Principles, applications, and issues* (7th ed.). Cengage Learning.

Karod, S. (2007). *Khwam samphan rawang phruetikam kan nithet khong phuborihan sathan sueksa kap prasitthiphon khong sathan sueksa samnakngan khet phuenthi kansueksa kanchanaburi khet 2* [The relationship between supervisory behaviors of school administrators and the effectiveness of school under Kanchanaburi Educational Service Area Office 2] [Master's thesis, Silpakorn University]. Thai Digital Collection.

Karuna, S., Kanokorn, S., Sujanya, S., Somjed, S., & Aduldej, T. (2014). Leadership practices of secondary school principals: A cross-national comparison of Thailand U.S. principals. *Procedia - Social and Behavioral Sciences, 112*, 847-852. https://doi.org/10.1016/j.sbspro.2014.01.1241

Kise, J. A. G. (2017). *Differentiated coaching: A framework for helping educators change* (2nd ed.). Corwin Press.

Klinkosz, W., & Iskra, J. (2010). Examination of the Relations of the Myers-Briggs Type Indicator and the Neo–4 Personality Inventory in a Polish Sample. *Psychological reports, 107*(2), 578-586. https://doi.org/10.2466/08.09.Pr0.107.5.578-586

Knowles, M. S., Holton, E. F., & Swanson, R. A. (2011). *The adult learner: The definitive classic in adult education and human resource development* (7th ed.). Elsevier.

Komin, S. (1988). Thai value system and its implication for development in Thailand. In D. Sinha & H. S. R. Kao (Eds.), *Social values and development: Asian perspectives* (pp. 151-174). SAGE.

Kongsakhon, J. (2020, July 16). *Sueksanithet: Khwam pen ma* [Educational supervisors: Background]. Educational Supervision Efficiency Network Center. https://esenc.obec.go.th/?p=98

Kronberger, N., & Wagner, W. (2000). Keywords in context: statistical analysis of text features. In M. W. Bauer & G. Gaskell (Eds.), *Qualitative researching with text, image and sound* (pp. 300-317). SAGE. https://doi.org/10.4135/9781849209731

Kwankijwongthron, P. (2015). *Tuaprae thi songphon to prasitthiphap kan son khong khru sangkat samnakngan khet phuenthi kansueksa matthayomsueksa khet 10* [The variables effecting to teaching efficiency of teachers under Secondary Education Service Area Office 10] [Master's thesis, King Mongkut's Institute of Technology Ladkrabang]. Thai Digital Collection.

Lavrakas, P. J. (2008). Closed-ended question. In P. J. Lavrakas (Ed.), *Encyclopedia of survey research methods* (pp. 97). SAGE. https://doi.org/10.4135/9781412963947

Leartprapruet, C. (2005). *Phruetikam kan nithet khong klum phu nithet phainai sathan sueksa khanphuenthan samnakngan khet bang khae krungthepmahanakhon* [The supervisory behaviors of the groups of supervisors in basic education schools under the office of Bangkok district, the Bangkok metropolitan administration] [Master's thesis, Silpakorn University]. Thai Digital Collection.

Lee, D., McCool, J., & Napieralski, L. (2000). Assessing adult learning preferences using the analytic hierarchy process. *International Journal of Lifelong Education, 19*(6), 548-560. https://doi.org/10.1080/02601370050209078

Lee, J. A. (2017). Measurement scales. In S. G. Rogelberg (Ed.), *The SAGE encyclopedia of industrial and organizational psychology, 2nd edition* (pp. 926-927). SAGE. https://doi.org/10.4135/9781483386874.n318

Lefevre, M. (2005). Facilitating practice learning and assessment: The influence of relationship. *Social Work Education, 24*(5), 565-583. https://doi.org/10.1080/02615470500132806

Lekthum, S. (1992). *Khwam samphan rawang khwam thothoi kap bukkhalikkaphap khong khru prathomsueksa sangkat samnakngan kan prathomsueksa changwat phetchabun* [The relationship between burnout and personality of primary school teacher under the Office of Provincial Primary Education of Petchabun province] [Master's thesis, Naresuan University]. Thai Digital Collection.

Leung, S.-K., & Bond, M. H. (2001). Interpersonal communication and personality: Self and other perspectives. *Asian Journal of Social Psychology, 4*(1), 69-86. https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-839X.00076

Levitt, T. (2011). Myers–Briggs Inventories. In J. S. Kreutzer, J. DeLuca, & B. Caplan (Eds.), *Encyclopedia of Clinical Neuropsychology* (pp. 1694-1696). Springer Nature https://doi.org/10.1007/978-0-387-79948-3_2027

Liang, Y.-H. (2007). *The relationship between personality type and emotional intelligence in a sample of college and university faculty in Taiwan* (Publication No. 3274042) [Doctoral dissertation, Texas A&M University-Kingville]. ProQuest Dissertations & Theses Global.

Lilienfeld, S. O., Lynn, S. J., Namy, L. L., Woolf, N. J., Jamieson, G., Marks, A., & Slaughter, V. (2015). *Psychology: From inquiry to understanding* (S. J. Lynn, L. L. Namy, N. J. Woolf, G. Jamieson, A. Marks, & V. Slaughter, Eds. 2nd ed.). Pearson. https://ebookcentral.proquest.com/lib/unsw/detail.action?docID=5220576

Lochmiller, C. R. (2019). Credibility in instructional supervision: A catalyst for differentiated supervision. In M. L. Derrington & J. Brandon (Eds.), *Differentiated teacher evaluation and professional learning: Policies and practices for promoting career growth* (pp. 83-105). Springer International. https://doi.org/10.1007/978-3-030-16454-6_5

Lohwithee, W. (2010). *The impact of director's leadership style and gender on secondary school climate in Bangkok Metropolis, Thailand* [Doctoral dissertation, Victoria University]. Victoria University Research Repository. http://vuir.vu.edu.au/id/eprint/15994

Loughland, T., & Thompson, G. (2016). The problem of simplification: think-tanks, recipes, equity and 'Turning around low-performing schools' [journal article]. *The Australian Educational Researcher, 43*(1), 111-129. https://doi.org/10.1007/s13384-015-0190-3

Lundgren, H., Kroon, B., & Poell, R. F. (2017). Personality testing and workplace training. *European Journal of Training and Development, 41*(3), 198-221. https://doi.org/10.1108/ejtd-03-2016-0015

Ly, N. A. (2011). *The relationship between personality characteristics and defense styles among elementary and middle school teachers* (Publication No. 3497882) [Doctoral dissertation, Argosy University]. ProQuest Dissertations & Theses Global.

Mahiwan, K. (2001). *Patchai bukkhalikkaphap baep MBTI kap kan rapru prasitthiphap thimngan korani sueksa: thanakhan thaiphanit chamkat (mahachon) samnakngan yai rat yothin* [Perceptions of team effectiveness of Siam Commercial Bank employees according to personality type (MBTI)] [Master's thesis, Thammasat University]. TU Digital Collections. http://digital.library.tu.ac.th/tu_dc/frontend/Info/item/dc:116303

Malikhao, P. (2017). *Culture and communication in Thailand*. Springer Nature. https://doi.org/10.1007/978-981-10-4125-9

Marczely, B. (2002). *Supervision in education: A differentiated approach with legal perspectives*. Scarecrow Press.

Marshall, K. (2013). *Rethinking teacher supervision and evaluation: How to work smart, build collaboration, and close the achievement gap* (2nd ed.). Jossey-Bass.

Marzano, R. J., Frontier, T., & Livingston, D. (2011). *Effective Supervision: Supporting the Art and Science of Teaching*. ASCD.

McAdams, D. P. (1992). The Five-Factor Model in personality: A critical appraisal. *Journal of Personality, 60*(2), 329-361. https://doi.org/10.1111/j.1467-6494.1992.tb00976.x

McCarthy, J., & Quinn, L. F. (2010). Supervision in teacher education. In P. Peterson, E. Baker, & B. McGaw (Eds.), *International encyclopedia of education* (3rd ed., pp. 615-621). Elsevier. https://doi.org/10.1016/B978-0-08-044894-7.00667-9

McGuiness, M. (2004). *You've got personality: An introduction to the personality types described by Carl Jung and Isabel Myers*. MaryMac Books.

McIntire, S. A., & Miller, L. A. (2007). *Foundations of psychological testing: A practical approach* (2nd ed.). SAGE.

McShane, S. L., & Glinow, M. V. (2013). *Organizational behavior: Emerging knowledge, global reality* (6th ed.). McGraw-Hill Irwin.

Meissel, K., Parr, J. M., & Timperley, H. S. (2016). Can professional development of teachers reduce disparity in student achievement? *Teaching and Teacher Education, 58*, 163-173. https://doi.org/10.1016/j.tate.2016.05.013

Meißner, M., & Decker, R. (2009, July 29 - August 1). *An empirical comparison of CBC and AHP for measuring consumer preferences* [Paper presentation]. 10th International Symposium on the Analytic Hierarchy/Network Process, Pittsburgh, Pennsylvania, USA. http://www.isahp.org/2009Proceedings/Final_Papers/49_MeissnerDecker_ComparisonCBCandAHP_ConsumerPreferences_REV_FIN.pdf

Mekkhao, W. (2014). *Phruetikam kan nithet khong phuborihan thi songphon to kan patibatngan khong khru tam mattrathan wichachip khru nai rongrian thi chat kan rian kan son dek thi mi khwambokphrong thang satipanya sangkat samnak borihanngan kansueksa phiset* [Administrators' supervisory behavior affecting teachers' performance according to

teacher professional standards in schools for children with intellectual disabilities under the Bureau of Special Education Administration] [Master's thesis, Nakhon Pathom Rajabhat University]. Thai Digital Collection.

Mendez-Morse, S. (1992). *Leadership characteristics that facilitate school change*. Southwest Educational Development Laboratory. https://files.eric.ed.gov/fulltext/ED370215.pdf

Mertens, D. M., & McLaughlin, J. A. (2004). *Research and evaluation methods in special education*. SAGE. https://doi.org/10.4135/9781412985666

Mette, I. M., Anderson, J., Nieuwenhuizen, L., Range, B. G., Hvidston, D. J., & Doty, J. (2017). The wicked problem of the intersection between supervision and evaluation. *International Electronic Journal of Elementary Education, 9*(3), 709-724. https://www.iejee.com/index.php/IEJEE/article/view/185

Ministry of Education. (n.d.). *The Basic Education Core Curriculum B.E. 2551 (A.D. 2008)*. http://academic.obec.go.th/images/document/1525235513_d_1.pdf

Moss, S., & Ngu, S. (2006). The relationship between personality and leadership preferences. *Current Research in Social Psychology, 11*(6), 70-91. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.409.5783&rep=rep1&type=pdf

Moutafi, J., Furnham, A., & Crump, J. (2003). Demographic and personality predictors of intelligence: a study using the Neo Personality Inventory and the Myers–Briggs Type Indicator. *European Journal of Personality, 17*(1), 79-94. https://doi.org/10.1002/per.471

Mu, E., & Pereyra-Rojas, M. (2017). *Practical decision making: An introduction to the Analytic Hierarchy Process (AHP) using Super Decisions v2*. Springer Nature. https://link.springer.com/book/10.1007%2F978-3-319-33861-3

Mukda, Y., Tawisook, M., & Ratanaolan, T. (2015). Khunnalaksana phunam kan plianplaeng khong phuborihan satri nai rongrian kayai ogat sangkat sam nak kansueksa krungthepmahanakhon [Characteristics of transformation women leadership the expansion schools under the Department of Education Bangkok Metropolitan Administration]. *Journal of Industrial Education, 14*(3), 438-444. https://www.tci-thaijo.org/index.php/JIE/article/view/122514/93246

Myers, D. G. (2013). *Psychology* (10th ed.). Worth. https://epdf.pub/psychology-10th-edition-5ea814950285d.html

Myers, I. B. (1998). *Introduction to TYPE* (6th ed.). Consulting Psychologists Press.

Myers, I. B., McCaulley, M. H., Quenk, N. L., & Hammer, A. L. (2009). *MBTI manual: A guide to the development and use of the Myers-Briggs Type Indicator* (3rd ed.). Consulting Psychologists Press.

Myers, I. B., & Myers, P. B. (1995). *Gifts differing: Understanding personality type*. Davies-Black.

Na Chiangmai, S. (2016). *Autonomy in Thai Universities: English Teachers' Beliefs and Practices* [Doctoral dissertation, University of New South Wales]. UNSWorks. http://unsworks.unsw.edu.au/fapi/datastream/unsworks:41060/SOURCE02?view=true

Nabhani, M., Bahous, R., & Sabra, H. (2015). Teachers' and supervisors' views on clinical supervision: A case study from Lebanon. *The Educational Forum, 79*(2), 116-129. https://doi.org/10.1080/00131725.2014.1002591

Nickens, N. M. (2018a). Measures of central tendency. In B. B. Frey (Ed.), *The SAGE encyclopedia of educational research, measurement, and evaluation* (pp. 1038-1039). SAGE. https://doi.org/10.4135/9781506326139.n422

Nickens, N. M. (2018b). Measures of variability. In B. B. Frey (Ed.), *The SAGE encyclopedia of educational research, measurement, and evaluation* (pp. 1041-1042). SAGE. https://doi.org/10.4135/9781506326139.n422

Office of the Education Council. (2016). *Sathiti kansueksa khong prathet thai pikansueksa 2557-2558* [Thailand education statisics: The academic year 2014-2015]. http://backoffice.onec.go.th/uploads/Book/1497-file.pdf

Office of the Education Council. (2017a). *Education in Thailand*.

Office of the Education Council. (2017b). *Phaen kansueksa haeng chat po so 2560-2579* [The National Scheme of Education B.E. 2560 - 2579]. https://www.bic.moe.go.th/images/stories/EDU2560-2579full.compressed.pdf

Office of the Education Council. (2018). *Sathiti kansueksa khong prathet thai pikansueksa 2559-2560* [Thailand education statisics: The academic year 2016-2017]. http://backoffice.onec.go.th/uploads/Book/1634-file.pdf

Office of The Permanent Secretary, Ministry of Education. (2017). *Sathiti kansueksa pracham pi 2559* [2016 Educational statistics]. http://www.en.moe.go.th/enMoe2017/images/PDF/statistics2559.pdf

Oliver, P. (2010). *Understanding the Research Process*. SAGE. https://doi.org/10.4135/9781446279373

Oliveras-Ortiz, Y., & Simmons, J. A. (2019). Teacher evaluation and differentiated instructional supervision: A tiered approach to promote teacher growth. In M. L. Derrington & J. Brandon (Eds.), *Differentiated teacher evaluation and professional learning: Policies and practices for promoting career growth* (pp. 107-126). Springer International. https://doi.org/10.1007/978-3-030-16454-6_6

Organisation for Economic Co-operation and Development. (2009). *Creating effective teaching and learning environments: First results from TALIS*. https://doi.org/10.1787/9789264068780-6-en.

Organisation for Economic Co-operation and Development. (2016). *Education in Thailand: An OECD-UNESCO perspective, Reviews of national policies for education*. https://doi.org/10.1787/9789264259119-en.

Ornstein, M. (2013). *A companion to survey research*. SAGE. https://doi.org/10.4135/9781473913943

Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (6th ed.). Allen & Unwin.

Pearson, L. C., & Moomaw, W. (2006). Continuing validation of the teaching autonomy scale. *The Journal of Educational Research, 100*(1), 44-51. https://doi.org/10.3200/JOER.100.1.44-51

Pennington, D. (2003). *Essential Personality*. Routledge. https://doi.org/10.4324/9780203784624

Perry, C., & Ball, I. (2004). Teacher subject specialisms and their relationships to learning styles, psychological types and multiple intelligences: implications for course development. *Teacher Development, 8*(1), 9-28. https://doi.org/10.1080/13664530400200211

Philaphan, S. (2016). *Khwam samphan rawang kan nithet phainai kap prasitthiphon kan chat krabuankan rianru khong khru nai rongrian sangkat samnakngan khet phuenthi kansueksa prathomsueksa buriram khet 2* [Relationship between internat supervision and effectiveness of teachers' learning management in schools under the Office of Primary Education Service Area Office 2] [Master's thesis, Buriram Rajabhat University]. Thai Digital Collection.

Pittenger, D. J. (1993). The utility of the Myers-Briggs Type Indicator. *Review of Educational Research, 63*(4), 467-488. https://doi.org/10.2307/1170497

Pittenger, D. J. (2005). Cautionary comments regarding the Myers-Briggs Type Indicator. *Consulting Psychology Journal: Practice and Research, 57*(3), 210-221. https://doi.org/10.1037/1065-9293.57.3.210

Polly, D., McGee, J., Wang, C., Martin, C., Lambert, R., & Pugalee, D. K. (2015). Linking professional development, teacher outcomes, and student achievement: The case of a learner-centered mathematics program for elementary school teachers. *International Journal of Educational Research, 72*, 26-37. https://doi.org/10.1016/j.ijer.2015.04.002

Potentia (Thailand) Co., Ltd. (2020). *Myers-Briggs Type Indicator®*. https://www.potentia.co.th/mbti-ดัชนีวัดรูปแบบบุคลิกภาพ/

Priyakorn, F., Suvarnasara, C., & Pattrawiwat, K. (2019). Leadership model for general education administration in Islamic private schools. *Kasem Bundit Journal (English Edition), 20*, 118-131. https://www.tci-thaijo.org/index.php/jkbu/article/view/173626/125128

Prungchaiyaphum, T. (2018). *Khwam samphan rawang phawa phunam thang wichakan khong phuborihan sathan sueksa kap prasitthiphon kan patibatngan khong khru sangkat samnakngan khet phuenthi kansueksa matthayomsueksa khet 30* [The relationship between administrators' academic leadership and effectiveness of teachers' performance under the Secondary Educational Service Area Office 30] [Master's thesis, Chaiyaphum Rajabhat University]. Thai Digital Collection.

Quenk, N. L. (1993). Personality types or personality traits: What difference does it make? *Bulletin of Psychological Type, 16*(2). https://pdfs.semanticscholar.org/1867/e9e20c94ac37d69ee3ee7f0cc2c2b38e91cc.pdf

Razik, T. A., & Swanson, A. D. (2010). *Fundamental concepts od educational leadership and management* (3rd ed.). Allyn & Bacon.

Redford, L. (1998). *Relationship between teacher's MBTI type and a preferred staff development model as perceived by teachers* (Publication No. 9915185) [Doctoral dissertation, Texas A&M University]. ProQuest Dissertations & Theses Global.

Reiman, A. J., & Thies-Sprinthall, L. (1998). *Mentoring and supervision for teacher development*. Addison Wesley Longman.

Robin, B. R., & Harris, J. B. (1998). Correlates among computer-using teacher educators' beliefs, teaching and learning preferences, and demographics. *Journal of Educational Computing Research, 18*(1), 15-35. https://doi.org/10.2190/at8q-98rf-veth-qyq0

Ross, J. A., Bradley Cousins, J., & Gadalla, T. (1996). Within-teacher predictors of teacher efficacy. *Teaching and Teacher Education, 12*(4), 385-400. https://doi.org/10.1016/0742-051X(95)00046-M

Roulston, K. J. (2008a). Closed question. In L. M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods* (pp. 84). SAGE. https://doi.org/10.4135/9781412963909

Roulston, K. J. (2008b). Open-ended question. In L. M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods* (pp. 582-583). SAGE. https://doi.org/10.4135/9781412963909

Rudowski, R. M. (1996). *Kolb's learning theory and the relationship of learning style preferences and teaching style preferences of extension educators* [Unpublished doctoral dissertation]. Pennsylvania State University.

Saaty, T. L. (2003). Decision-making with the AHP: Why is the principal eigenvector necessary. *European Journal of Operational Research, 145*(1), 85-91. https://doi.org/10.1016/S0377-2217(02)00227-8

Saaty, T. L., & Vargas, L. G. (2012). *Models, methods, concepts & applications of the Analytic Hierarchy Process* (2nd ed.) [PDF file]. Springer Science+Business Media. https://doi.org/10.1007/978-1-4614-3597-6

Sangnapaboworn, W. (2018). The evolution of education reform in Thailand. In G. W. Fry (Ed.), *Education in Thailand: An old elephant in search of a new mahout* (pp. 517-554). Springer Nature. https://doi.org/10.1007/978-981-10-7857-6_21

Sato, Y. (2009, July 29 - August 1). *How to Design a Survey Questionnaire by Employing a Weighting Method* [Paper presentation]. 10th International Symposium on the Analytic Hierarchy/Network Process, Pittsburgh, Pennsylvania, USA. http://www.isahp.org/2009Proceedings/Final_Papers/76_SatoY_QuestionnaireDesign_REV_FIN.pdf

Sawetvorachot, T., & Khanto, S. (2017). Tua bongchi phawa phunam baep buranakan samrap phuborihan rongrian matthayomsueksa sangkat samnakngan khanakammakan kansueksa khanphuenthan [Indicators of integrated leadership for secondary school administrators the Office of Basic Education Commission]. *Journal of Yanasangvorn Research Institute, 8*(2), 166-176. https://www.tci-thaijo.org/index.php/yri/article/view/178276/126775

Schaubhut, N. A., & Thompson, R. C. (2017). *Technical brief for the MBTI® Form M and Form Q assessments: Thai*. Consulting Psychologists Press. https://www.themyersbriggs.com/download/item/5c0b62318c764223b433d5217ff6be79

Schreier, M. (2012). *Qualitative content analysis in practice*. SAGE.

Schreier, M. (2014). Qualitative content analysis. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis* (pp. 170-183). SAGE. https://doi.org/10.4135/9781446282243

Scoles, J., Huxham, M., & McArthur, J. (2014). *Mixed-methods research in education: Exploring students' response to a focused feedback initiative*. SAGE. https://doi.org/10.4135/978144627305013514690

Sechler, P. (2000). *Relationship among science teacher personality characteristics and degree of teacher classroom implementation after in-service workshop* (Publication No. 9982750) [Doctoral dissertation, North Carolina State University]. ProQuest Dissertations & Theses Global.

Sergiovanni, T. J. (2009). *The principalship: A reflective practice perspective* (6th ed.). Allyn & Bacon.

Sergiovanni, T. J., & Starratt, R. J. (1993). *Supervision: A redefinition* (5th ed.). McGraw-Hill.

Sergiovanni, T. J., & Starratt, R. J. (2007). *Supervision: A redefinition* (8th ed.). McGraw-Hill.

Sergiovanni, T. J., Starratt, R. J., & Cho, V. (2014). *Supervision: A redefinition* (9th ed.). McGraw-Hill.

Servaes, J. (2017). A village in the jungle: Culture and communication in Thailand. In P. Malikhao (Ed.), *Culture and communication in Thailand* (pp. 49-69). Springer Nature. https://doi.org/10.1007/978-981-10-4125-9

Shaeffer, S. (2018). Preschool and primary education: Thailand's progress in achieving education for all. In G. W. Fry (Ed.), *Education in Thailand: An old elephant in search of a new mahout* (pp. 93-124). Springer Nature. https://doi.org/10.1007/978-981-10-7857-6_5

Sharma, R. N., & Chandra, S. S. (2003). *General Psychology* (Vol. 2). Atlantic Publishers and Distributors.

Sharma, S., Yusoff, M., Kannan, S., & Baba, S. B. (2011). Concerns of teachers and principals on instructional supervision in three Asian countries. *International Journal of Social Science and Humanity, 1*(3), 214-217. http://ijssh.org/papers/37-H059.pdf

Showers, B., & Joyce, B. (1996). The evolution of peer coaching. *Educational Leadership, 53*(6), 12-16. http://www.ascd.org/publications/educational-leadership/mar96/vol53/num06/The-Evolution-of-Peer-Coaching.aspx

Sims, S., & Jerrim, J. (2020). *TALIS 2018: Teacher working conditions, turnover and attrition: Statistical working paper*. Department for Education. https://dera.ioe.ac.uk/35284/1/Teaching_and_Learning_International_Survey_2018_March_2020.pdf

Siriphonwutthichai, S. (2014). *Phruetikam kan nithet khong phu nithet tam kan rapru lae khwam khatwang khong khru rongrian nai khruea munnithi khana sen kha brian haeng prathet thai* [The supervisory behaviors of supervisors through teachers' perceptions and expectations in the school of St.Gabriel's Foundation of Thailand] [Master's Thesis, Chulalongkorn University]. Chulalongkorn University Intellectual Repository. http://cuir.car.chula.ac.th/handle/123456789/46610

Sittirit, N., Isarapreeda, P., & Sriputtarin, S. (2013). Phawa phunam khong phuborihan thi samphan kap kan damnoenngan patirup kansueksa khong sathan sueksa sangkat samnakngan khet phuenthi kansueksa prathomsueksa buengkan [The school administrators' leadership relating to performance of an educational reform by schools under the Office of Buengkan Primary Education Service Area]. *Nakhon Phanom University Journal, 3*(2), 7-13. https://www.tci-thaijo.org/index.php/npuj/article/view/44556/36904

Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education, 26*(4), 1059-1069. https://doi.org/https://doi.org/10.1016/j.tate.2009.11.001

Somboon, P. (2014). *Khwam samphan rawang phruetikam kan nithet khong phuborihan sathan sueksa kap prasitthiphon khong rongrian sangkat samnakngan khet phuenthi kansueksa matthayomsueksa khet 30* [Relationship between administrators supervisory behaviors and effectiveness in school under the Office of Secondary Educational Service Area 30] [Master's thesis, Khon Kaen University]. Thai Digital Collection.

Songngamsub, A. (1989). *Kan tittam phon kan chai theknik kan nithet baep khlinik nai rongrian thiyu nai khrongkan kan nithet kansueksa phainai rongrian matthayomsueksa kromsamansueksa khet kansueksa 9* [A follow-up study of the use of clinical supervision technique of school supervision project in the secondary schools under the jurisdiction of the Department of General Education, Educational Region Nine] [Master's thesis, Chulalongkorn University]. Thai Digital Collection.

Soontayatron, S. (2014). Thais' coping with sociocultural impacts of tourism development. *Asia Pacific Journal of Tourism Research, 19*(10), 1228-1238. https://doi.org/10.1080/10941665.2013.839458

Sosu, E. M., & Gray, D. S. (2012). Investigating change in epistemic beliefs: An evaluation of the impact of student teachers' beliefs on instructional preference and teaching competence. *International Journal of Educational Research, 53*, 80-92. https://doi.org/https://doi.org/10.1016/j.ijer.2012.02.002

Sriputta, P., Balsiri, N., & Labmala, S. (2018). Khwam samphan rawang phawa phunam kap patchai thi samphan to phawa phunam khong phuborihan sathan sueksa sangkat samnakngan khet phuenthi kansueksa matthayomsueksa khet 1 [The relationship between leadership and factors effecting leadership of school administrators under Secondary Education Office Area 1]. *RMUTP Research Journal Humanities and Social Sciences, 3*(2), 82-92. https://doi.org/10.14456/rjhsrmutp.2018.15

Starratt, R. J. (2003). Supervision of Instruction. In J. W. Guthrie (Ed.), *Encyclopedia of education* (2nd ed., Vol. 7, pp. 2418-2422). Macmillan.

Stein, R. (1985). *The relationship between principal supervisory behavior and teacher burnout* (Publication No. 8511282) [Doctoral dissertation, University of Illinois at Chicago]. ProQuest Dissertations & Theses Global.

Stevens, J. (1996). *Applied multivariate statistics for the social sciences* (3rd ed.). Lawrence Erlbaum Associates.

Stoop, I., & Harrison, E. (2012). Repeated cross-sectional surveys using FTF. In L. Gideon (Ed.), *Handbook of survey methodology for the social sciences* (pp. 249-276). Springer Science+Business Media. https://doi.org/10.1007/978-1-4614-3876-2_15

Sukasem, C. (2001). *Kansueksa khwam samphan rawang bukkhalikkaphap baep MBTI lae patchai suan bukkhon kap patchai chungchai nai kan thamngan khong nak sangkhomsongkhro sangkat kromprachasongkhro krungthepmahanakhon* [Relationship between personality type (MBTI), demographic information and work motivation of social workers (Department of Public Welfare, Bangkok)] [Master's thesis, Thammasat University]. TU Digital Collections. http://digital.library.tu.ac.th/tu_dc/frontend/Info/item/dc:116937

Sullivan, S., & Glanz, J. (2013). *Supervision that improves teaching and learning* (4th ed.). Corwin Press.

Supervision. (n.d.). In *Oxford Learner's Dictionaries*. Retrieved April 22, 2020, from https://www.oxfordlearnersdictionaries.com/definition/english/supervision?q=supervision

Suter, W. N. (2012). *Introduction to educational research: A critical thinking approach* (2nd ed.). SAGE. https://doi.org/10.4135/9781483384443

Tangsthien, N. (2003). *Bukkhalikkaphap baep MBTI khwamsamat nai kan phachoen lae fanfa upasak lae khwamkhriat nai kan thamngan: korani sueksa borisat ekkachon haeng nueng* [Personality types (MBTI), adversity quotient and job stress: A case study of a company] [Master's thesis, Thammasat University]. TU Digital Collections. http://digital.library.tu.ac.th/tu_dc/frontend/Info/item/dc:115805

Tapanya, S. (2012). Thailand. In D. B. Baker (Ed.), *The Oxford handbook of the history of psychology: Global perspectives* (pp. 538-546). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195366556.013.0025

Tasanagorakool, M. (2017). *Patchai choeng sahet khong kan nithet thi mi itthiphon to samatthana khru thi son nai rongrian kayai ogat thang kansueksa khrongkan rongrian pracharat* [Casual factors of educational supervision influencing competenciesof teachers in the opportunity expansion schools under the Pracharath School Project] [Master's thesis, Chulalongkorn University]. Chulalongkorn University Intellectual Repository. http://cuir.car.chula.ac.th/handle/123456789/60222

Teachers Council of Thailand. (2013a). Khobangkhap khuru sapha wa duai mattrathan wichachip po so 2556 [Regulation of the Teachers Council of Thailand on professional standards B.E. 2556]. *Government Gazette, 130/130D.* http://site.ksp.or.th/download.php?site=kspknowledge&SiteMenuID=4201

Teachers Council of Thailand. (2013b). Prakat khanakammakan khuru sapha rueang sara khwamru samatthana lae prasopkan wichachip khong phu prakop wichachip khru

phuborihan sathan sueksa phu borihan kansueksa lae sueksanithet tam khobangkhap khuru sapha wa duai mattrathan wichachip po so 2556 [The Teachers Council of Thailand Board's announcement of the professional knowledge substances, competencies, and experience of Teachers, Educational Institution Administrators, Educational Administrators, and Educational Supervisors based on the regulation of the Teachers Council of Thailand on professional standards B.E. 2556]. *Government Gazette, 130/156D.*
http://site.ksp.or.th/download.php?site=kspknowledge&SiteMenuID=4201

Tesfaw, T. A., & Hofman, R. H. (2014). Relationship between instructional supervision and professional development. *International Education Journal: Comparative Perspectives, 13*(1), 82-99. https://files.eric.ed.gov/fulltext/EJ1035929.pdf

The Myers-Briggs Company. (2020). *History, reliability and validity of the MBTI® instrument.* https://ap.themyersbriggs.com/themyersbriggs-history-reliability-validity-mbti.aspx

Thienchai, S. (2001). *Kansueksa khwam samphan rawang bukkhalikkaphap baep MBTI phruet kammakan phachoen panha lae attra kan khat ngan: sueksa chapho korani borisat ekkachon haeng nueng* [Relationship between MBTI, coping behavior and work absence: A case study of one company] [Master's thesis, Thammasat University]. TU Digital Collections. http://digital.library.tu.ac.th/tu_dc/frontend/Info/item/dc:116309

Thompson, B., & Borrello, G. M. (1986). Construct validity of the Myers-Briggs Type Indicator [Abstract]. *Educational and Psychological Measurement, 46*(3), 745-752. https://journals.sagepub.com/doi/10.1177/0013164486463032

Thongbai, S. (2015). *Kan phatthana samatthana kan son khru phasa thai doi chai krabuankan nithet kan son baep phuean ruam phatthana wichachip khong rongrian nai sun khrueakhai ronthongmonkhol* [Competency development in teaching of Thai language teachers by using cooperative professional development of the schools in Ronthongmonkhol network] [Master's thesis, Phetchaburi Rajabhat University]. Thai Digital Collection.

Timtiampet, S. (1985). *Secondary education in Thailand: Its growth and development* [Doctoral dissertation, Loyola University Chicago]. Loyola eCommons. https://ecommons.luc.edu/luc_diss/2366/

Tischler, L. (1994). The MBTI factor structure [Abstract]. *Journal of Psychological Type, 31*, 24-31. https://psycnet.apa.org/record/1995-19764-001

Traugott, M. W. (2004). Closed-ended questions. In M. S. Lewis-Beck, A. Bryman, & T. F. Liao (Eds.), *The SAGE encyclopedia of social science research methods* (pp. 128-129). SAGE. https://doi.org/10.4135/9781412950589

Tubsai, B. (2015, March 30-31). *Kan nithet baep ruammue: Kan phatthana kan son lae kan rianru doi kan sathon khit khong chumchon haeng kan rianru wichachip* [Collaborative coaching: Improvement of teaching and learning through the reflection of professional learning community] [Paper presentation]. 7th NPRU National Academic Conference, Nakhon Pathom, Thailand. https://publication.npru.ac.th/jspui/handle/123456789/407

Unal, A. (2013). Development and validation of supervisory behaviour description scale. *Educational Research and Reviews, 8*(2), 69-76. https://academicjournals.org/journal/ERR/article-full-text-pdf/9AAA2804226

Van Daal, T., Donche, V., & Maeyer, S. D. (2014). The impact of personality, goal orientation and self-efficacy on participation of high school teachers in learning activities in the workplace. *Vocations and Learning, 7*(1), 21-40. https://doi.org/10.1007/s12186-013-9105-5

Vermunt, J. D., & Endedijk, M. D. (2011). Patterns in teacher learning in different phases of the professional career. *Learning and Individual Differences, 21*(3), 294-302. https://doi.org/10.1016/j.lindif.2010.11.019

Wagner, N. (1999). *Comparing teacher self-efficacy and experience with preferred teacher supervision models for kindergarten through fifth-grade Illinois public school teachers* (Publication No. 9927721) [Doctoral dissertation, Northern Illinois University]. ProQuest Dissertations & Theses Global.

Wanzare, Z. (2013). Skills and attributes of instructional supervisors: Experience from Kenya. *Educational Research and Reviews, 8*(24), 2270-2280. https://doi.org/10.5897/ERR12.057

Watkins, D., & Gioia, D. (2015). *Mixed methods research*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199747450.001.0001

Watt, W. M. (2009). Facilitative social change leadership theory: 10 recommendations toward effective leadership. *Journal of Leadership Education, 8*(2), 50-71. https://doi.org/10.12806/V8/I2/TF1

Wyatt, B., & Promkandorn, S. (2012). A discourse analysis of the Thai experience of 'being krengjai'. *Intercultural Pragmatics, 9*(3), 361-383. https://doi.org/10.1515/ip-2012-0021

Xu, H. (2015). The development of teacher autonomy in collaborative lesson preparation: A multiple-case study of EFL teachers in China. *System, 52*, 139-148. https://doi.org/10.1016/j.system.2015.05.007

Zepeda, S. J. (2017). *Instructional supervision: Applying tools and concepts* (4th ed.). Routledge.

Zepeda, S. J., & Ponticell, J. A. (1998). At cross-purposes: What do teachers need, want, and get from supervision? *Journal of Curriculum and Supervision, 14*(1), 68. https://www-proquest-com.wwwproxy1.library.unsw.edu.au/docview/196372177/fulltextPDF/8C99ECE9913B4132PQ/1?accountid=12763#

APPENDICES

Appendix A – Notification of Ethics Approval (2 pages)

Note: The project title was changed to *The supervisory behaviour preference of Thailand's in-service teachers* after the research project was granted approval.

UNSW
SYDNEY

27-Apr-2018

Dear Dr Anthony Loughland,

Project Title	The Influence of Teachers' Personality on Their Supervisory Behaviour Preference: A Mixed Methods Study
HC No	HC180162
Re	HC180162 Notification of Ethics Approval
Approval Period	27-Apr-2018 - 26-Apr-2023

Thank you for submitting the above research project to the **HREAP B: Arts, Humanities & Law** for ethical review. This project was considered by the **HREAP B: Arts, Humanities & Law** at its meeting on **24-Apr-2018**.

I am pleased to advise you that the **HREAP B: Arts, Humanities & Law** has granted ethical approval of this research project. The following condition(s) must be met before data collection commences:

Conditions of Approval:
N/A

Conditions of Approval - All Projects:

- The Chief Investigator will immediately report anything that might warrant review of ethical approval of the project.
- The Chief Investigator will seek approval from the **HREAP B: Arts, Humanities & Law** for any modifications to the protocol or other project documents.
- The Chief Investigator will notify the **HREAP B: Arts, Humanities & Law** immediately of any protocol deviation or adverse events or safety events related to the project.
- The Chief Investigator will report to the **HREAP B: Arts, Humanities & Law** annually in the specified format and notify the **HREAP B: Arts, Humanities & Law** when the project is completed at all sites.
- The Chief Investigator will notify the **HREAP B: Arts, Humanities & Law** if the project is discontinued before the expected completion date, with reasons provided.
- The Chief Investigator will notify the **HREAP B: Arts, Humanities & Law** of his or her inability to continue as Coordinating Chief Investigator including the name of and contact information for a replacement.

The **HREAP B: Arts, Humanities & Law** Terms of Reference, Standard Operating Procedures, membership and standard forms are available from https://research.unsw.edu.au/research-ethics-and-compliance-support-recs.

If you would like any assistance, or further information, please contact the ethics office on:

P: +61 2 9385 6222, + 61 2 9385 7257 or + 61 2 9385 7007
E: humanethics@unsw.edu.au

Kind Regards,

A/Prof Iva Strnadová

Convenor HREA Panel B: Arts, Humanities and Law

This HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research (2007)*. The processes used by this HREC to review multi-centre research proposals have been certified by the National Health and Medical Research Council.

Appendix B – Letter of Invitation for the School (Thai version – 2 pages)

School of Education
UNSW Arts & Social Sciences

UNSW
SYDNEY

[INSERT date]

นายปัญญา อัครพุทธพงศ์
คณะครุศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
254 ถนนพญาไท แขวงวังใหม่
เขตปทุมวัน กรุงเทพมหานคร 10330

เรื่อง ขอความอนุเคราะห์ในการเก็บข้อมูลงานวิจัย

เรียน ผู้อำนวยการโรงเรียน

หัวข้องานวิจัย: อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี

ข้าพเจ้านายปัญญา อัครพุทธพงศ์ นักศึกษาปริญญาเอกด้านศึกษาศาสตร์จากมหาวิทยาลัยนิวเซาท์เวลส์ เครือรัฐออสเตรเลีย ขอเรียน
ให้ท่านทราบเกี่ยวกับงานวิจัยของข้าพเจ้า ซึ่งโรงเรียนของท่านมีโอกาสในการเข้าร่วมเป็นส่วนหนึ่งในการให้ข้อมูลได้ งานวิจัยนี้
ดำเนินการภายใต้การควบคุมของภาควิชาศึกษาศาสตร์ มหาวิทยาลัยนิวเซาท์เวลส์ นครซิดนีย์ โดยข้าพเจ้ามีความประสงค์จะขอ
ความอนุเคราะห์ในการเก็บข้อมูลงานวิจัยจากครูภายในโรงเรียนของท่าน

งานวิจัยนี้มีจุดมุ่งหมายเพื่อศึกษาเกี่ยวกับความสัมพันธ์ระหว่างลักษณะบุคลิกภาพของครูกับความชื่นชอบในพฤติกรรมการนิเทศที่ครู
คาดหวังจะได้รับจากผู้นิเทศ

ความเข้าใจอย่างลึกซึ้งเกี่ยวกับความสัมพันธ์ดังกล่าวจะเป็นประโยชน์ต่อผู้บริหารโรงเรียนหรือผู้นิเทศในการปรับพฤติกรรมการนิเทศ
ของตนเองที่มีต่อครูให้เหมาะสมกับความแตกต่างระหว่างบุคคลของครู ซึ่งจะนำไปสู่การนิเทศที่ยกระดับการพัฒนาทางวิชาชีพของครู
เป็นรายบุคคลอย่างมีประสิทธิภาพ

การเข้าร่วมงานวิจัยนี้เป็นไปตามความสมัครใจ โดยกลุ่มเป้าหมายของงานวิจัยนี้คือ ครูประจำการณ์ในระบบการศึกษาขั้นพื้นฐานของ
ประเทศไทย ทั้งนี้โรงเรียนของท่านสามารถเข้าร่วมงานวิจัยนี้ได้สองทาง คือ อนุญาตให้ข้าพเจ้าเข้าไปดำเนินการเก็บข้อมูลในโรงเรียน
และ/หรือ ให้ความอนุเคราะห์ประชาสัมพันธ์แบบสอบถามงานวิจัย

หากโรงเรียนของท่านยินดีให้ข้าพเจ้าเข้าไปดำเนินการด้วยตนเอง ข้าพเจ้าจะขอเข้าไปเก็บข้อมูลในโรงเรียนของท่านในวันและเวลาที่
โรงเรียนของท่านสะดวก และขอชี้แจงรายละเอียดเกี่ยวกับงานวิจัยนี้แก่ครูในโรงเรียนของท่าน จากนั้นรบกวนให้ครูตอบ
แบบสอบถามตามความสมัครใจ ซึ่งการชี้แจงและการตอบแบบสอบถามจะใช้เวลาประมาณ 10 นาที และ 30 นาที ตามลำดับ

ในกรณีที่โรงเรียนของท่านสะดวกในการประชาสัมพันธ์แบบสอบถามงานวิจัย ข้าพเจ้าจะขอความอนุเคราะห์ให้โรงเรียนประชาสัมพันธ์
URL และ QR code สำหรับการเข้าทำแบบสอบถามออนไลน์ (ตามเอกสารแนบ) ให้แก่ครูในโรงเรียนของท่านผ่านช่องทางการสื่อสาร
ของโรงเรียน เพื่อให้ครูเข้าร่วมตอบแบบสอบถามงานวิจัยนี้ได้ตามความสมัครใจ

หากท่านต้องการข้อมูลเพิ่มเติม หรือโรงเรียนของท่านยินดีให้ความอนุเคราะห์ โปรดติดต่อ:

ชื่อ:	นายปัญญา อัครพุทธพงศ์
อีเมล:	panya.a@chula.ac.th หรือ p.akkaraputtapong@student.unsw.edu.au
เบอร์โทรศัพท์:	(+66) 86 890 6876 (ประเทศไทย), (+61) 411 044 601 (ออสเตรเลีย)

การเข้าร่วมงานวิจัยนี้เป็นไปตามความสมัครใจ โรงเรียนของท่านไม่จำเป็นต้องเข้าร่วม การตัดสินใจไม่เข้าร่วมงานวิจัยนี้จะไม่มี
ผลกระทบใด ๆ ต่อความสัมพันธ์ของโรงเรียนของท่านกับมหาวิทยาลัยนิวเซาท์เวลส์

งานวิจัยนี้ผ่านการคัดกรองและอนุมัติโดยคณะกรรมการด้านจริยธรรมการวิจัยมนุษย์แห่งมหาวิทยาลัยนิวเซาท์เวลส์ หากท่านมี
ข้อร้องเรียนหรือข้อสงสัยเกี่ยวกับงานวิจัยนี้ โปรดติดต่อคณะกรรมการทางอีเมล humanethics@unsw.edu.au หรือเบอร์โทรศัพท์
(+61) 2 9385 6222 (ออสเตรเลีย) โดยอ้างอิงหมายเลข HC180162.

ด้วยความเคารพอย่างสูง,

นายปัญญา อัครพุทธพงศ์
นักศึกษาปริญญาเอก
มหาวิทยาลัยนิวเซาท์เวลส์

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เอกสารประชาสัมพันธ์งานวิจัย

หัวข้องานวิจัย: อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี

"ขอความอนุเคราะห์คุณครูผู้สอนในระดับการศึกษาขั้นพื้นฐานของประเทศไทย ร่วมให้ข้อมูลงานวิจัย"

ช่องทางการเข้าร่วมงานวิจัยและตอบแบบสอบถาม

QR Code

URL
https://goo.gl/9tT88S

เมื่อสิ้นสุดแบบสอบถามคุณครูจะได้ทราบ "ลักษณะบุคลิกภาพของตนเอง" พร้อมคำอธิบายจุดแข็งและจุดด้อยของลักษณะบุคลิกภาพดังกล่าว อีกด้วย

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Appendix C – Letter of Invitation for the School (English version – 2 pages)

School of Education
UNSW Arts & Social Sciences

UNSW
SYDNEY

[INSERT date]

Panya Akkaraputtapong
254 Phayathai Road, Wang Mai
Pathumwan, Bangkok 10330

To   School Director,

Research Study Title: The Influence of Teachers' Personality on Their Supervisory Behaviour Preference: A Mixed Methods Study

I am Panya Akkaraputtapong, a PhD candidate in Education at University of New South Wales, Australia. I am writing to let you know about my research study that your school have the option to take part in. The research is being conducted under the supervision of the School of Education, UNSW Sydney. I am contacting you because I would like to ask for the permission to collect the research data from the school teachers.

This research is being done to learn more about the relationship of teachers' personality to their preference for supervisory behaviour.

The reason we want to know more about this relationship is that its understanding will help school leaders or supervisors to alter their behaviour when supervising teachers more responsively to teachers' individual difference, which leads to an effective supervision that enhances the professional development of individual teachers.

Taking part in this research study is optional. I am looking for people who want to take part in this research and who are:
- In-service teachers in Thailand's basic education system

There are two approaches to the research data collection through which your school may choose to participate. One is that permitting me to perform the data collection at your school. The other is that allowing me to advertise the research survey. If you allow me to perform the data collection at your school, I would:
- Visit the school at your school convenience
- Ask the school teachers to volunteer to participant in the research
- Have the volunteering teachers respond to a survey which will take around 30 to 40 minutes

Alternatively, if you agree on the survey advertisement, I would ask for your support to advertise the online survey access (via URL and QR code) to the school teachers via the school communication channels, so that they can voluntarily participate in the research.

If you would like more information or are interested in being part of the research study please contact:

Name:	Panya Akkaraputtapong
Email:	Panya.a@chula.ac.th or p.akkaraputtapong@student.unsw.edu.au
Phone:	(+66) 86 890 6876 (Thailand), (+61) 411 044 601 (Australia)

Taking part in this research study is voluntary. Your school may choose not to take part. If you decide that your school does not take part in this research, your decision will not affect your school's relationship with The University of New South Wales

This research has been reviewed and approved by The University of New South Wales Human Research Ethics Committee. If you have any complaints or concerns about the research study please email humanethics@unsw.edu.au or phone (+61) 2 9385 6222 (Australia) quoting the following number HC180162.

Yours sincerely,

Panya Akkaraputtapong
PhD Candidate
UNSW

Letter of Invitation   HREC Approval Number: HC180162
Participant group   Version dated: 28 May 2018

School of Education
UNSW Arts & Social Sciences

Research Advertisement

Research Study Title: The Influence of Teachers' Personality on Their Supervisory Behaviour Preference: A Mixed Methods Study

"Requesting for the participation of in-service teachers in Thailand's basic education system"

Research Survey Access Channels

QR Code

URL
https://goo.gl/9tT88S

**At the end of survey, the participants will know *"their personality types"* and the general potential behaviours each type possesses.*

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Appendix D – Participant Information Statement and Consent Form
(Thai version – 4 pages)

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SYDNEY

ข้อมูลเบื้องต้นสำหรับผู้เข้าร่วมงานวิจัยและหนังสือแสดงความยินยอมเข้าร่วมงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี
ดร.โทนี่ ลาฟแลนด์, ดร.ฮวา เหวียน และ นายปัญญา อัครพุทธพงศ์

1. **งานวิจัยนี้เกี่ยวข้องกับอะไร**
   งานวิจัยนี้มีจุดประสงค์เพื่อสำรวจผลกระทบของลักษณะบุคลิกภาพของครูที่มีต่อความชื่นชอบพฤติกรรมการนิเทศ
   รูปแบบต่าง ๆ ที่อยากจะได้รับจากผู้นิเทศ ท่านได้รับเชิญเข้าร่วมงานวิจัยนี้เนื่องจากโรงเรียนของท่านได้รับการสุ่ม
   เลือกเป็นกลุ่มตัวอย่างของงานวิจัย

2. **ผู้วิจัยคือใคร**
   งานวิจัยนี้ดำเนินการโดย ดร.โทนี่ ลาฟแลนด์ ดร.ฮวา เหวียน และนายปัญญา อัครพุทธพงศ์ ภายใต้การควบคุม
   ของภาควิชาศึกษาศาสตร์ คณะศิลปศาสตร์และสังคมศาสตร์ มหาวิทยาลัยนิวเซาท์เวลส์ เครือรัฐออสเตรเลีย

3. **เกณฑ์การคัดเลือกผู้เข้าร่วมงานวิจัยเป็นอย่างไร**
   ก่อนที่ท่านจะตัดสินใจเข้าร่วมงานวิจัยนี้ เรามีความจำเป็นต้องยืนยันว่าท่านสามารถเข้าร่วมงานวิจัยนี้ได้ โดย
   งานวิจัยนี้ต้องการผู้เข้าร่วมที่เป็นครูประจำการณ์ในระบบการศึกษาขั้นพื้นฐานของประเทศไทยเท่านั้น

4. **ข้าพเจ้าจำเป็นต้องเข้าร่วมงานวิจัยนี้หรือไม่**
   การเข้าร่วมงานวิจัยเป็นไปตามความสมัครใจ หากท่านไม่ประสงค์จะร่วมงานวิจัยนี้ ท่านไม่จำเป็นต้องเข้าร่วม
   หากท่านตัดสินใจเข้าร่วมงานวิจัยนี้แล้วเปลี่ยนใจในภายหลัง ท่านสามารถถอนตัวจากงานวิจัยนี้ได้ตลอดเวลา

   หากท่านตัดสินใจเข้าร่วมงานวิจัยนี้ เราจะขอให้ท่าน:
   - อ่านข้อมูลเหล่านี้อย่างละเอียดและซักถามเมื่อจำเป็น
   - ลงนามและนำส่งเอกสารแสดงความยินยอมเข้าร่วมงานวิจัย หากท่านตัดสินใจเข้าร่วม
   - รับสำเนาเอกสารแสดงความยินยอมสำหรับเก็บไว้

5. **การเข้าร่วมงานวิจัยนี้จะต้องทำอะไรบ้าง และมีความเสี่ยงหรือไม่**
   หากท่านตัดสินใจเข้าร่วมงานวิจัยนี้ เราจะขอให้ท่านตอบแบบสอบถาม ซึ่งประกอบด้วยคำถามที่ใช้วัดลักษณะ
   บุคลิกภาพของท่านและระดับความชื่นชอบรูปแบบพฤติกรรมการนิเทศต่าง ๆ ที่ท่านอยากจะได้รับจากผู้นิเทศ
   การตอบแบบสอบถามใช้เวลาประมาณ 20 ถึง 30 นาที

   เราคาดหวังว่าแบบสอบถามนี้จะไม่ก่อให้เกิดผลเสียหรือความไม่สบายใด ๆ อย่างไรก็ดี หากท่านเกิดความรู้สึก
   ลำบากใจระหว่างการความร่วมงานวิจัยนี้ ท่านสามารถแจ้งผู้วิจัยเพื่อขอความช่วยเหลือได้เมื่อมีความจำเป็น โดย
   ข้อมูลสำหรับการติดต่ออยู่ส่วนล่างของเอกสารนี้

6. **การเข้าร่วมงานวิจัยนี้มีประโยชน์อย่างไร**
   ข้อมูลจากการวิจัยนี้จะเป็นประโยชน์ต่อความเข้าใจอย่างลึกซึ้งเกี่ยวกับความสัมพันธ์ระหว่างบุคลิกภาพของครูและ
   ความชื่นชอบในการรับการนิเทศ ซึ่งจะนำไปสู่การสร้างแบบจำลองการนิเทศที่เพื่อยกระดับการพัฒนาทางวิชาชีพ
   ของครูเป็นรายบุคคลได้อย่างมีประสิทธิภาพ นอกจากนี้ผู้เข้าร่วมงานวิจัยยังมีโอกาสได้ทราบลักษณะบุคลิกภาพ
   ของตนเองพร้อมกับข้อมูลพฤติกรรมทั่วไปที่เกี่ยวข้องกับลักษณะบุคลิกภาพของตนอีกด้วย

7. **ข้อมูลเกี่ยวกับตัวข้าพเจ้าจะได้รับการดำเนินการอย่างไร**
   การลงนามในเอกสารแสดงความยินยอมเข้าร่วมงานวิจัยเป็นการแสดงว่าท่านยินยอมให้ผู้วิจัยเก็บข้อมูลเกี่ยวกับ
   ตัวท่านสำหรับงานวิจัยนี้ ข้อมูลของท่านจะถูกเก็บไว้เป็นเวลา 2 ปี หลังจากกระบวนการเก็บข้อมูลเสร็จสิ้น เราจะ
   เก็บข้อมูลเหล่านั้นแบบไม่ระบุตัวตนในระบบ ResData ของมหาวิทยาลัยนิวเซาท์เวลส์ และเครื่องคอมพิวเตอร์
   ส่วนตัวที่ป้องกันด้วยการเข้ารหัส

   นักวิจัยของมหาวิทยาลัยนิวเซาท์เวลส์ทุกคนจะต้องเก็บรักษาข้อมูลงานวิจัยของตนในระบบข้อมูลของ
   มหาวิทยาลัยที่ชื่อว่า ResData เมื่อข้อมูลเหล่านั้นจะคงอยู่ในระบบแบบถาวรในลักษณะที่ไม่สามารถระบุตัวตนของ

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ข้อมูลเบื้องต้นสำหรับผู้เข้าร่วมงานวิจัยและหนังสือแสดงความยินยอมเข้าร่วมงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี
ดร.โทนี่ ลาฟแลนด์, ดร.ฮวา เหวียน และ นายปัญญา อัครพุทธพงศ์

ผู้ให้ข้อมูลได้ ข้อมูลของท่านจำถูกวิเคราะห์เพื่อตรวจสอบความสัมพันธ์ระหว่างสองตัวแปรของงานวิจัยนี้และ
เข้าถึงได้โดยผู้วิจัยเท่านั้น

ข้อมูลที่ท่านให้จัดเป็นข้อมูลส่วนบุคคลตามข้อบัญญัติเกี่ยวกับการป้องกันข้อมูลส่วนตัวและข้อมูลส่วนบุคคล ค.ศ.
1998 ของรัฐนิวเซาท์เวลส์ เครือรัฐออสเตรเลีย (the Privacy and Personal Information Protection Act 1998
(NSW)) ท่านมีสิทธิเข้าถึงข้อมูลส่วนบุคคลที่ถูกเก็บไว้โดยมหาวิทยาลัย สิทธิในการเรียกร้องให้มีการตรวจสอบ
และแก้ไขข้อมูลดังกล่าว และสิทธิในการร้องเรียนในกรณีที่มีการกระทำที่ขัดต่อหลักการป้องกันข้อมูลใน
ข้อบัญญัติข้างต้น ท่านสามารถศึกษาข้อมูลเพิ่มเติมเกี่ยวกับการป้องกันข้อมูลส่วนบุคคลของมหาวิทยาลัยได้จาก
แผนการจัดการความเป็นส่วนตัว มหาวิทยาลัยนิวเซาท์เวลส์

8. **ข้าพเจ้าจะทราบผลการวิจัยนี้ได้อย่างไรและเมื่อไหร่**
   ผู้วิจัยประสงค์จะตีพิมพ์และ/หรือรายงานผลการวิจัยในหลายช่องทาง ข้อมูลทั้งหมดจะถูกตีพิมพ์โดยไม่ระบุตัวตน
   ของท่าน หากท่านประสงค์จะได้รับสำเนาผลการวิจัย ท่านสามารถแจ้งที่อยู่อีเมล (email address) ให้ผู้วิจัยใน
   เอกสารแสดงความยินยอมเข้าร่วมงานวิจัยหน้าถัดไป เราจะใช้ข้อมูลที่อยู่นี้เพื่อส่งผลการวิจัยให้ท่านเท่านั้น

9. **จะเกิดอะไรขึ้นถ้าข้าพเจ้าถอนตัวจากงานวิจัยนี้**
   แม้ท่านจะยินยอมเข้าร่วมงานวิจัยนี้แล้ว แต่ท่านสามารถถอนตัวได้ตลอดเวลาโดยการกรอกเอกสารถอดตัวจาก
   งานวิจัยซึ่งถูกเตรียมไว้ท้ายเอกสารนี้ หรือแจ้งให้ผู้วิจัยทราบว่าท่านไม่ประสงค์เข้าร่วมวิจัยแล้ว การตัดสินใจของ
   ท่านในการเข้าร่วมหรือถอนตัวจากงานวิจัยนี้จะไม่มีผลกระทบใด ๆ ต่อความสัมพันธ์ของท่านกับมหาวิทยาลัยนิว
   เซาท์เวลส์

   หากท่านประสงค์จะถอนตัวจากงานวิจัยนี้ ผู้วิจัยจะไม่เก็บข้อมูลใด ๆ เพิ่มเติมจากท่าน ข้อมูลของท่านจะไม่ถูก
   นำมาใช้ในงานวิจัย และผู้วิจัยจะทำลายข้อมูลทุกอย่างเกี่ยวกับตัวท่านที่ถูกเก็บไว้ระหว่างที่ท่านเข้าร่วมงานวิจัยนี้

10. **หากข้าพเจ้ามีข้อสงสัยเกี่ยวกับงานวิจัยนี้ ข้าพเจ้าควรทำอย่างไร**
    หากท่านต้องการข้อมูลเพิ่มเติมเกี่ยวกับงานวิจัยนี้ หรือท่านมีปัญหาใด ๆ ที่อาจจะเกี่ยวเนื่องมาจากการเข้าร่วมงาน
    วิจัยนี้ ท่านสามารถติดต่อผู้วิจัยได้ตามข้อมูลด้านล่าง

ติดต่อผู้วิจัย

ชื่อ	นายปัญญา อัครพุทธพงศ์
ตำแหน่ง	ผู้ดำเนินการวิจัย
เบอร์โทรศัพท์	(+66) 86 890 6876 (ประเทศไทย) หรือ (+61) 411 034 601 (ออสเตรเลีย)
ที่อยู่อีเมล	p.akkaraputtapong@student.unsw.edu.au

หากข้าพเจ้ามีข้อร้องเรียนหรือข้อกังวลใจเกี่ยวกับงานวิจัยนี้ ข้าพเจ้าต้องอย่างไร
หากท่านมีข้อร้องเรียนในเรื่องใดก็ตามเกี่ยวกับงานวิจัยหรือวิธีการดำเนินการของงานวิจัยนี้ โปรดติดต่อผู้
ประสานงานด้านมนุษยธรรมของมหาวิทยาลัยนิวเซาท์เวลส์ (UNSW Human Ethics Coordinator)

ติดต่อเพื่อร้องเรียน

ตำแหน่ง	Human Research Ethics Coordinator
เบอร์โทรศัพท์	(+61) 2 9385 6222 (ออสเตรเลีย)
ที่อยู่อีเมล	humanethics@unsw.edu.au
หมายเลขอ้างอิง	HC180162

School of Education UNSW Arts & Social Sciences	UNSW SYDNEY

ข้อมูลเบื้องต้นสำหรับผู้เข้าร่วมงานวิจัยและหนังสือแสดงความยินยอมเข้าร่วมงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี
ดร.โทนี่ ลาฟแลนด์, ดร.ฮวา เหวียน และ นายปัญญา อัครพุทธพงศ์

เอกสารแสดงความยินยอมเข้าร่วมงานวิจัย - ผู้เข้าร่วมงานวิจัยแสดงความยินยอมด้วยตนเอง

ปฏิญญาของผู้เข้าร่วมงานวิจัย

☐ ข้าพเจ้าทราบดีว่ากำลังถูกขอให้แสดงความยินยอมเข้าร่วมงานวิจัยนี้;
☐ ข้าพเจ้าได้อ่านข้อมูลเบื้องต้นสำหรับผู้เข้าร่วมงานวิจัยซึ่งใช้ภาษาที่ข้าพเจ้าเข้าใจแล้ว;
☐ ข้าพเจ้าเข้าใจวัตถุประสงค์และความเสี่ยงของงานวิจัยนี้
☐ ข้าพเจ้ายินยอมให้นำข้อมูลเกี่ยวกับตัวข้าพเจ้าจากการเก็บข้อมูลครั้งนี้ไปใช้ตามจุดประสงค์ของงานวิจัยนี้เท่านั้น;
☐ ข้าพเจ้ามีโอกาสซักถามเกี่ยวกับงานวิจัยนี้และพึงพอใจกับคำตอบที่ได้รับ;
☐ ข้าพเจ้ายินยอมที่จะเข้าร่วมงานวิจัยนี้อย่างสมัครใจ และทราบดีว่าข้าพเจ้าสามารถถอนตัวได้ตลอดเวลาระหว่าง
การวิจัย ซึ่งการถอนตัวนี้จะไม่มีผลกระทบใด ๆ ต่อความสัมพันธ์ของข้าพเจ้ากับสถาบันและ/หรือผู้วิจัยตามที่ระบุ
ชื่อไว้ก่อนหน้า;
☐ (ถ้ามี) ข้าพเจ้าประสงค์จะได้รับสำเนาผลการวิจัยครั้งนี้ทางอีเมล โดยข้าพเจ้าได้แจ้ง<u>ชื่อและที่อยู่อีเมล</u>ไว้ด้านล่างนี้
และขอให้ใช้ที่อยู่ดังกล่าวสำหรับวัตถุประสงค์ดังกล่าวเท่านั้น;

ชื่อ: _____

ที่อยู่อีเมล: _____

☐ ข้าพเจ้าทราบดีว่าข้าพเจ้าจะได้รับสำเนาเอกสารแสดงความยินยอมนี้สำหรับเก็บไว้

ลายมือชื่อผู้เข้าร่วมงานวิจัย

ชื่อผู้เข้าร่วมงานวิจัย (ตัวบรรจง)	
ลายมือชื่อผู้เข้าร่วมงานวิจัย	
วัน เดือน ปี	

ปฏิญญาของผู้วิจัย*
☐ ข้าพเจ้าได้ให้คำอธิบายด้วยวาจาเกี่ยวกับงานวิจัยนี้ กิจกรรมและความเสี่ยงของงานวิจัย และข้าพเจ้าเชื่อว่า
ผู้เข้าร่วมงานวิจัยเข้าใจคำอธิบายดังกล่าวแล้ว

ลายมือชื่อผู้วิจัย*

ชื่อผู้วิจัย (ตัวบรรจง)	
ลายมือชื่อผู้วิจัย	
วัน เดือน ปี	

⁺สมาชิกในทีมวิจัยที่มีคุณสมบัติเหมาะสมจะต้องอธิบายเกี่ยวกับงานวิจัยและข้อมูลต่าง ๆ ที่เกี่ยวข้อง

หมายเหตุ: ทุกฝ่ายที่ลงนามในเอกสารแสดงความยินยอมจะต้องระบุวันที่ตนลงนามด้วย

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ข้อมูลเบื้องต้นสำหรับผู้เข้าร่วมงานวิจัยและหนังสือแสดงความยินยอมเข้าร่วมงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี
ดร.โทนี่ ลาฟแลนด์, ดร.ฮวา เหวียน และ นายปัญญา อัครพุทธพงศ์

แบบการขอถอนตัวจากการเข้าร่วมงานวิจัย

ข้าพเจ้ามีความประสงค์จะ**ถอนความยินยอม**เข้าร่วมร่วมงานวิจัยตามที่ระบุไว้ข้างต้น และเข้าใจดีว่าการถอนตัวนี้จะ**ไม่มีผลกระทบ**ใด ๆ กับความสัมพันธ์ระหว่างข้าพเจ้ากับมหาวิทยาลัยนิวเซาท์เวลส์ ในการนี้ข้าพเจ้าต้องการถอนข้อมูลต่าง ๆ ที่ข้าพเจ้าให้ไว้ตามจุดประสงค์ของงานวิจัยนี้ด้วย

ลายมือชื่อผู้เข้าร่วมงานวิจัย

ชื่อผู้เข้าร่วมงานวิจัย (ตัวบรรจง)	
ลายมือชื่อผู้เข้าร่วมงานวิจัย	
วัน เดือน ปี	

ข้อมูลการถอนตัวในส่วนนี้ต้องถูกนำส่ง:

หัวหน้าทีมวิจัย:	ดร.โทนี่ ลาฟแลนด์ (Tony Loughland)
ที่อยู่อีเมล:	tony.loughland@unsw.edu.au
เบอร์โทรศัพท์:	(+61) 2 9385 8390 (ออสเตรเลีย)
ที่อยู่:	School of Education Level 1 John Goodsell Building UNSW Australia Sydney, NSW 2052 Australia

Appendix E – Participant Information Statement and Consent Form
(English version – 5 pages)

School of Education UNSW Arts & Social Sciences	UNSW SYDNEY

PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM

The Influence of Teachers' Personality on Their Supervisory Behavioural Preference: A Mixed Methods Study
Tony Loughland, Hoa Nguyen, and Panya Akkaraputtapong

1. **What is the research study about?**
   You are invited to take part in this research study. The research study aims to investigate the effects of teachers' personality on their preferences for supervisory behavioural approaches. You have been invited because your school has been randomly selected to be the research sample.

2. **Who is conducting this research?**
   The study is being carried out by the following researchers: Tony Loughland, Hoa Nguyen, and Panya Akkaraputtapong, School of Education, Faculty of Arts and Social Sciences, University of New South Wales, Australia

3. **Inclusion/Exclusion Criteria**
   Before you decide to participate in this research study, we need to ensure that it is ok for you to take part. The research study is looking recruit people who meet the following criteria:
   - Thailand's in-service teachers in basic education system

4. **Do I have to take part in this research study?**
   Participation in this research study is voluntary. If you do not want to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the study at any stage.

   If you decide you want to take part in the research study, you will be asked to:
   - Read the information carefully (ask questions if necessary);
   - Sign and return the consent form if you decide to participate in the study;
   - Take a copy of this form with you to keep.

5. **What does participation in this research require, and are there any risks involved?**
   If you decide to take part in the research study, we will ask you to complete a paper-based questionnaire. The questionnaire will ask you questions to determine your personality types and measure your preferences for different supervisory behavioural approaches. It should take approximately 20 to 30 minutes to complete.

   We don't expect this questionnaire to cause any harm or discomfort, however if you experience feelings of distress as a result of participation in this study you can let the research team know and they will provide you with assistance. [Alternatively lists of contact details are provided below to assist you if necessary].

6. **What are the possible benefits to participation?**
   The information we get from this research study will contribute to a more comprehensive understanding of the relationship between teachers' personality and their supervisory preference, leading to the establishment of an effective supervision model that enhances the professional development of individual teachers. Moreover, the participants will have an opportunity to know their personality types and the general potential behaviours each type possesses.

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PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM

The Influence of Teachers' Personality on Their Supervisory Behavioural Preference: A Mixed Methods Study
Tony Loughland, Hoa Nguyen, and Panya Akkaraputtapong

7. What will happen to information about me?
By signing the consent form you consent to the research team collecting and using information about you for the research study. Your data will be kept for a period of 2 years after the collection process. We will store information about you in an non-identifiable format at UNSW ResData respiratory and a personal computer secured by a password.

Researchers at UNSW are required to store their any aggregated data in the UNSW data repository, this is a system called ResData. Once the aggregated data is deposited into this repository it will be retained in this system permanently. It will, however, be retained in a format where your identity will not be known.

Your information will only be used for analysing the relationship between the interested variables and it will be disclosed only to the conducting researchers.

The information you provide is personal information for the purposes of the Privacy and Personal Information Protection Act 1998 (NSW). You have the right of access to personal information held about you by the University, the right to request correction and amendment of it, and the right to make a compliant about a breach of the Information Protection Principles as contained in the PPIP Act. Further information on how the University protects personal information is available in the *UNSW Privacy Management Plan*.

8. How and when will I find out what the results of the research study are?
The research team intend to publish and/or report the results of the research study in a variety of ways. All information published will be done in a way that will not identify you.

If you would like to receive a copy of the results you can let the research team know by adding your email address within the consent form. We will only use these details to send you the results of the research.

9. What if I want to withdraw from the research study?
If you do consent to participate, you may withdraw at any time. You can do so by completing the 'Withdrawal of Consent Form' which is provided at the end of this document. Alternatively you can ring the research team and tell them you no longer want to participate. Your decision not to participate or to withdraw from the study will not affect your relationship with UNSW Sydney.

If you decide to leave the research study, the researchers will not collect additional information from you. Any identifiable information about you will be withdrawn from the research project. The research team will destroy any information about you that was collected during your participation in the study.

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PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM

The Influence of Teachers' Personality on Their Supervisory Behavioural Preference: A Mixed Methods Study
Tony Loughland, Hoa Nguyen, and Panya Akkaraputtapong

10. What should I do if I have further questions about my involvement in the research study?

If you require further information regarding this study or if you have any problems which may be related to your involvement in the study, you can contact the following member of the research team:

Research Team Contact

Name	Panya Akkaraputtapon
Position	Student investigator
Telephone	(+66) 86 890 6876 (Thailand) or (+61) 411 034 601 (Australia)
Email	p.akkaraputtapong@student.unsw.edu.au

What if I have a complaint or any concerns about the research study?

If you have a complaint regarding any aspect of the study or the way it is being conducted, please contact the UNSW Human Ethics Coordinator:

Complaints Contact

Position	Human Research Ethics Coordinator
Telephone	(+ 61) 2 9385 6222 (Australia)
Email	humanethics@unsw.edu.au
HC Reference Number	HC180162

School of Education UNSW Arts & Social Sciences	**UNSW** S Y D N E Y

PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM

The Influence of Teachers' Personality on Their Supervisory Behavioural Preference: A Mixed Methods Study
Tony Loughland, Hoa Nguyen, and Panya Akkaraputtapong

Consent Form – Participant providing own consent

Declaration by the participant

☐ I understand I am being asked to provide consent to participate in this research study;
☐ I have read the Participant Information Sheet or someone has read it to me in a language that I understand;
☐ I understand the purposes, study tasks and risks of the research described in the study;
☐ I provide my consent for the information collected about me to be used for the purpose of this research study only.
☐ I have had an opportunity to ask questions and I am satisfied with the answers I have received;
☐ I freely agree to participate in this research study as described and understand that I am free to withdraw at any time during the study and withdrawal will not affect my relationship with any of the named organisations and/or research team members;
☐ I would like to receive a copy of the study results via email or post, I have provided my details below and ask that they be used for this purpose only;

Name: _____

Email Address: _____

☐ I understand that I will be given a signed copy of this document to keep;

Participant Signature

Name of Participant (please print)	
Signature of Research Participant	
Date	

Declaration by Researcher*

☐ I have given a verbal explanation of the research study, its study activities and risks and I believe that the participant has understood that explanation.

Researcher Signature*

Name of Researcher (please print)	
Signature of Researcher	
Date	

+An appropriately qualified member of the research team must provide the explanation of, and information concerning the research study.

Note: All parties signing the consent section must date their own signature.

School of Education
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PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM

The Influence of Teachers' Personality on Their Supervisory Behavioural Preference: A Mixed Methods Study
Tony Loughland, Hoa Nguyen, and Panya Akkaraputtapong

Form for Withdrawal of Participation

I wish to **WITHDRAW** my consent to participate in this research study described above and understand that such withdrawal **WILL NOT** affect my relationship with The University of New South Wales. In withdrawing my consent, I would like any information which I have provided for the purpose of this research study withdrawn.

Participant Signature

Name of Participant (please print)	
Signature of Research Participant	
Date	

The section for Withdrawal of Participation should be forwarded to:

CI Name:	Tony Loughland
Email:	tony.loughland@unsw.edu.au
Phone:	(+61) 2 9385 8390 (Australia)
Postal Address:	School of Education Level 1 John Goodsell Building UNSW Australia Sydney, NSW 2052 Australia

Appendix F – Research Survey (Thai version – 9 pages)

แบบสอบถามงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี   UNSW
SYDNEY

(ส่วนที่ 1)

ข้อมูลพื้นฐานของผู้ตอบแบบสอบถาม

คำชี้แจง: โปรดเลือก (✓) และ/หรือ เติมคำตอบที่ตรงกับตัวท่าน

1. **เพศ:**   ○ ชาย   ○ หญิง

2. **อายุ:**   [   ]   ปี *(โปรดใส่ตัวเลข)*

3. **ประสบการณ์การสอน:**   [   ]   ปี *(โปรดใส่ตัวเลข)*

4. **ระดับการศึกษาสูงสุด:**

   ○ ปริญญาตรี   ○ ปริญญาโท   ○ ปริญญาเอก

5. **กลุ่มวิชาที่มีความเชี่ยวชาญ:**

   ○ ภาษาไทย   ○ สังคมศึกษา ศาสนาและวัฒนธรรม

   ○ คณิตศาสตร์   ○ ศิลปะและดนตรี

   ○ วิทยาศาสตร์   ○ สุขศึกษาและพลศึกษา

   ○ ภาษาต่างประเทศ   ○ การงานพื้นฐานอาชีพและเทคโนโลยี

   ○ อื่น ๆ   [   ]   *(โปรดระบุ)*

6. **ระดับชั้นที่สอน:** *(หากท่านสอนมากกว่าหนึ่งระดับชั้น โปรดระบุระดับชั้นที่มีชั่วโมงสอนมากที่สุดในหนึ่งสัปดาห์)*

   ○ ปฐมวัย   ปีที่ [   ]   *(โปรดใส่ตัวเลข)*

   ○ ประถมศึกษา   ปีที่ [   ]   *(โปรดใส่ตัวเลข)*

   ○ มัธยมศึกษา   ปีที่ [   ]   *(โปรดใส่ตัวเลข)*

7. **ที่ตั้งของโรงเรียน:**

   ○ ภาคกลาง   ○ ภาคเหนือ   ○ ภาคใต้

   ○ ภาคตะวันออก   ○ ภาคตะวันตก   ○ ภาคตะวันออกเฉียงเหนือ

   ○ อื่น ๆ   [   ]   *(โปรดระบุ)*

8. **ข้อมูลติดต่อ:** *(ในกรณีที่ท่านยินดีให้ความร่วมมือหากมีการสัมภาษณ์เพิ่มเติมเท่านั้น)*

   ที่อยู่อีเมล   [   ]

แบบสอบถามงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี **UNSW**

(ส่วนที่ 2)

แบบสอบถามเกี่ยวกับบุคลิกภาพตามแบบ MBTI

คำชี้แจง: โปรดใส่เครื่องหมาย X ทับตัวอักษรที่ตรงกับ ความรู้สึกและการกระทำตามปกติ ของท่านมากที่สุดเพียงตัวเลือกเดียวในแต่ละข้อ

1. ปกติท่านเป็นคน
    a. เข้ากับผู้อื่นได้ดี
    b. ค่อนข้างเงียบและระมัดระวังตัว

2. ถ้าท่านเป็นครู ท่านต้องการสอนวิชาที่เกี่ยวกับ
    a. ข้อเท็จจริง
    b. ทฤษฎี

3. ส่วนใหญ่ท่านมักจะปล่อยให้
    a. ความรู้สึกของท่านอยู่เหนือเหตุผล
    b. เหตุผลอยู่เหนือความรู้สึก

4. ถ้าท่านจะไปไหนสักแห่งตลอดทั้งวัน ท่านมักจะ
    a. วางแผนไว้ก่อนว่าจะทำอะไรบ้าง
    b. ไปเลยทันที

5. เมื่อท่านอยู่ในกลุ่มผู้คน ท่านมักจะ
    a. เข้าร่วมวงสนทนากับทั้งกลุ่ม
    b. คุยกับเขาทีละคน

6. ท่านมักเข้าได้ดีกับคนประเภทใด
    a. คนที่มีจินตนาการ
    b. คนที่มองโลกตามที่เป็นจริง

7. ท่านจะรู้สึกภูมิใจถ้าถูกเรียกว่าเป็นคน
    a. รู้สึกอย่างไรก็แสดงอย่างนั้น
    b. คนที่มีเหตุผล คงเส้นคงวา

8. ท่านชอบทำสิ่งใด
    a. จัดเตรียมงานเลี้ยง การนัดหมายหรือจัดเตรียมการต่าง ๆ ล่วงหน้าเสมอ
    b. ทำสิ่งที่มีอิสระ ไม่ผูกมัดหรือกำหนดเวลาแน่นอน อะไรสนุกก็ชอบทำ

9. เวลาอยู่ในคนหมู่มาก ท่านมักจะ
    a. แนะนำตนเองกับผู้อื่น
    b. รอให้ผู้อื่นมาแนะนำตัวกับท่านก่อน

10. ท่านต้องการให้ผู้อื่นมองว่าท่านเป็น
    a. นักปฏิบัติ
    b. นักคิด

11. ท่านมักจะเป็นคนที่ให้คุณค่ากับเรื่องใด
    a. ความรู้สึกมากกว่าเหตุผล
    b. เหตุผลมากกว่าความรู้สึก

12. ท่านมักจะประสบผลสำเร็จในเรื่องใดมากกว่ากัน
    a. จัดการกับเหตุการณ์เฉพาะหน้า และมองออกว่าควรทำอย่างไร
    b. ทำตามแผนงานที่วางไว้อย่างรัดกุมทุกขั้นตอน

13. ท่านมักจะเป็นคนที่
    a. มีเพื่อนสนิทมาก ๆ ไม่กี่คน
    b. มีเพื่อนที่คบอย่างผิวเผินจำนวนมาก

14. ท่านจะชื่นชมบุคคลที่
    a. ไม่ทำตัวเด่น
    b. มีเอกลักษณ์เป็นของตัวเองโดยไม่สนใจว่าจะเด่นหรือไม่

15. ท่านรู้สึกว่าเป็นความผิดที่เลวร้ายมากถ้าท่าน
    a. เป็นคนที่ไม่เห็นอกเห็นใจผู้อื่น
    b. เป็นคนไม่มีเหตุผล

16. การทำตามตารางเวลาที่กำหนดไว้เป็นสิ่งที่ท่านรู้สึก
    a. ชื่นชอบ   b. อึดอัด

17. ในหมู่เพื่อนฝูงท่านมักเป็นคนที่
    a. รู้เรื่องต่าง ๆ ช้ากว่าคนอื่น   b. ใครทำอะไรท่านรู้ไปหมด

18. ท่านต้องการมีเพื่อนแบบใดมากกว่ากัน
    a. ผู้ที่มีความคิดใหม่ ๆ อยู่เสมอ   b. ติดดิน ไม่เพ้อฝัน

19. ท่านต้องการทำงานกับหัวหน้าแบบใดมากกว่ากัน
    a. มีใจเมตตา   b. มีความยุติธรรม

20. การวางแผนการล่วงหน้าว่าควรจะต้องทำอะไรบ้างในช่วงวันสุดสัปดาห์เป็นสิ่งที่ท่านคิดว่า
    a. จะทำ
    b. น่าเบื่อ
    c. รู้สึกกดดัน อึดอัด

21. ท่านสามารถ
    a. พูดกับใครก็ได้นานเท่าใดก็ได้
    b. พูดได้มากกับคนบางคนหรือบางสถานการณ์เท่านั้น

22. ในการอ่านหนังสือเพื่อความเพลิดเพลิน ท่านชอบอ่านเรื่อง
    a. แปลกแหวกแนว   b. เขียนตรงไปตรงมา

23. ท่านคิดว่าการแสดงออกแบบใดแย่มากกว่ากัน
    a. ให้ความเป็นมิตรหรืออบอุ่นมากเกินไป   b. ไม่อบอุ่นเป็นมิตร

24. *(สำหรับข้อนี้ท่านสามารถตอบได้ถึง 2 คำตอบ ถ้าตรงกับความรู้สึกของท่านทั้งสองข้อ)*: ในการทำงานประจำวันของท่าน
    a. ท่านจะสนุกกับงานที่เร่งด่วนและแข่งกับเวลา
    b. ไม่ชอบทำงานที่อยู่ภายใต้ภาวะที่กดดัน
    c. วางแผนล่วงหน้าจะได้ไม่ต้องทำงานอยู่ภายใต้ภาวะกดดัน

25. ใครก็ตามที่พบปะกับท่านสามารถบอกได้ว่าท่านสนใจในเรื่องอะไร
    a. ในทันทีที่คุยกับท่านในครั้งแรก   b. หลังจากรู้จักท่านเป็นอย่างดีแล้วเท่านั้น

26. ในการทำสิ่งใด ๆ ก็ตามท่านมักจะ
    a. ทำในสิ่งที่คนทั่วไปยอมรับ   b. คิดหาวิธีการทำของตนเอง

27. ท่านมักจะเป็นคนที่ระมัดระวังเรื่องใดมากกว่ากัน
    a. ความรู้สึกของผู้อื่น   b. สิทธิของผู้อื่น

28. เมื่อท่านมีงานพิเศษที่จะต้องทำ ท่านมักชอบที่จะ
    a. จัดทำระบบงานอย่างรอบคอบก่อนเริ่มทำงาน
    b. ทำไปและเรียนรู้ไปในเวลาเดียวกัน

29. ท่านมักจะ
    a. แสดงความรู้สึกออกมาอย่างเปิดเผย   b. เก็บความรู้สึกไว้กับตนเอง

30. ในการดำเนินชีวิตท่านมักจะ
    a. เป็นผู้ริเริ่มทำสิ่งใหม่ ๆ   b. อนุรักษ์แบบแผนเดิมไว้

31. ท่านพอใจคำใดมากกว่ากัน
    a. อ่อนโยน   b. หนักแน่น

32. ถ้าท่านรู้ตัวล่วงหน้าว่าท่านจะต้องทำอะไร ที่ไหน เมื่อไหร่ ท่านคิดว่า
    a. เป็นการดีที่จะได้มีเวลาวางแผนให้พร้อม
    b. ไม่ค่อยพอใจที่จะต้องมีภาระผูกพันมากเกินไป

33. ท่านสามารถบอกได้เลยว่าท่านเป็นคน
    a. กระตือรือร้นมากกว่าคนทั่วไป   b. กระตือรือร้นน้อยกว่าคนอื่น

34. ใครคือคนที่ควรได้รับคำชื่นชมมากกว่ากัน
    a. คนที่มีสายตากว้างไกล   b. คนที่มีสามัญสำนึก

35. ท่านพอใจคำใดมากกว่ากัน
    a. การใช้ความคิด   b. การใช้ความรู้สึก

36. ท่านเป็นคนที่
    a. ชอบทำอะไรในนาทีสุดท้าย
    b. ถ้าต้องทำอะไรในนาทีสุดท้ายจะทำให้ท่านเครียด

37. เมื่ออยู่ในงานเลี้ยงท่านจะ
    a. บางครั้งรู้สึกเบื่อ   b. สนุกสนานทุกครั้ง

38. ท่านคิดว่าความสามารถอย่างใดสำคัญกว่ากัน ระหว่าง
    a. มองเห็นความเป็นไปได้ของสถานการณ์ต่าง ๆ
    b. ปรับตัวเข้ากับสถานการณ์ตามที่เป็นจริง

39. ท่านพอใจคำใดมากกว่ากัน
    a. การโน้มน้าวด้วยคำพูด   b. การสัมผัสเข้าถึงจิตใจ

40. ท่านคิดว่าการทำงานตามหน้าที่ประจำเป็น
    a. วิธีที่สะดวกในการทำงาน   b. สิ่งที่จำเป็นต้องอดทน

41. เมื่อมีอะไรใหม่ ๆ ที่กำลังเป็นที่นิยม ท่านจะ
    a. รีบลองเป็นคนแรก ๆ   b. ไม่ค่อยสนใจมากนัก

42. ท่านมักจะ
    a. สนับสนุนในวิธีการที่เคยสำเร็จ
    b. วิเคราะห์หาข้อบกพร่องและแก้ไขปัญหาที่เกิดขึ้น

43. ท่านพอใจคำใดมากกว่ากัน
    a. วิเคราะห์วิจารณ์   b. เห็นอกเห็นใจ

44. ถ้าท่านต้องการจะทำหรือหาซื้ออะไรเล็ก ๆ น้อย ๆ ท่านมักจะ
    a. ลืมบ่อย ๆ จนกระทั่งไม่ทันการณ์
    b. จดลงกระดาษเพื่อเตือนความจำ
    c. ดำเนินการได้เลย โดยไม่ต้องมีใครเตือน

45. ท่านเป็นบุคคลแบบใด
    a. ง่ายต่อการรู้จัก   b. ยากต่อการรู้จัก

46. ท่านพอใจคำใดมากกว่ากัน
    a. ข้อเท็จจริง   b. ความคิดเห็น

47. ท่านพอใจคำใดมากกว่ากัน
    a. ความยุติธรรม   b. ความเมตตาปราณี

48. กรณีใดที่ท่านคิดว่าท่านปรับตัวได้ยากกว่า
    a. งานประจำวัน   b. งานที่เปลี่ยนแปลงตลอดเวลา

49. เมื่อตกอยู่ในสถานการณ์ที่เก้อเขิน น่าอาย ท่านมักจะ
    a. เปลี่ยนเรื่องสนทนา
    b. ทำให้เป็นเรื่องตลก
    c. ใช้เวลาอีกหลายวันกว่าจะนึกได้ว่าควรทำอย่างไร

50. ท่านพอใจคำใดมากกว่ากัน
    a. ข้อความ   b. แนวคิด

51. ท่านพอใจคำใดมากกว่ากัน
    a. ความเมตตา   b. การเห็นเหตุการณ์ล่วงหน้า

52. เมื่อท่านต้องเริ่มงานชิ้นใหญ่ที่ต้องทำให้สำเร็จภายใน 1 สัปดาห์ ท่านจะทำดังนี้
    a. ใช้เวลาจดบันทึกสิ่งที่ต้องทำ และจัดลำดับความสำคัญของงาน
    b. ลงทำงานเลยทันที

53. ท่านคิดว่าคนที่ใกล้ชิดท่านจะเข้าใจความรู้สึกของท่าน
    a. แทบทุกเรื่อง   b. เฉพาะเรื่องที่ท่านบอก

54. ท่านพอใจคำใดมากกว่ากัน
    a. ทฤษฎี   b. ความแน่นอน

55. ท่านพอใจคำใดมากกว่ากัน
    a. ผลประโยชน์   b. คำอวยพร

56. ในการทำงานให้สำเร็จท่านจะเลือกวิธีใด
    a. ทำเนิ่น ๆ จะได้มีเวลาสำรองไว้   b. ทำเมื่อจวนตัว

57. เมื่อท่านอยู่ในงานสังสรรค์ ท่านมักชอบที่จะ
    a. ช่วยเจ้าภาพเพื่อทำให้งานสนุกสนาน
    b. ให้แต่ละคนหาความสนุกด้วยวิธีของตนเอง

58. ท่านพอใจคำใดมากกว่ากัน
    a. การตีความตามตัวอักษร   b. การใช้อุปมาอุปไมย

59. ท่านพอใจคำใดมากกว่ากัน
    a. มุ่งมั่น   b. อุทิศตน

60. ถ้ามีใครถามท่านว่าในตอนเข้าวันเสาร์ท่านจะทำอะไรบ้าง ท่านคิดว่าท่านจะ
    a. บอกได้ทันที
    b. บอกรายการที่จะทำมากเกินกว่าที่จะทำได้
    c. บอกไม่ได้ต้องรอดูเหตุการณ์ก่อน

61. ท่านพอใจคำใดมากกว่ากัน
    a. เต็มใจ   b. เงียบเฉย

62. ท่านพอใจคำใดมากกว่ากัน
    a. จินตนาการ   b. ข้อเท็จจริง

แบบสอบถามงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี

63. ท่านพอใจคำใดมากกว่ากัน
    a. ใจคอหนักแน่น   b. จิตใจอ่อนโยน

64. ท่านเห็นว่างานประจำที่ท่านทำอยู่ทุกวันนี้ ส่วนมากเป็นงานที่
    a. สบายดีอยู่แล้ว   b. น่าเบื่อ

➢ *ตั้งแต่ข้อ 65 ถึง 94 ให้ท่านพิจารณาว่าในแต่ละข้อท่านพอใจคำใดมากกว่ากัน*

65.	a.	สำรวม	b.	ช่างพูด
66.	a.	ลงมือทำ	b.	สร้างสรรค์
67.	a.	ผู้ไกล่เกลี่ย	b.	ผู้พิพากษา
68.	a.	กำหนดตารางเวลา	b.	ไม่มีแผน
69.	a.	สงบเงียบ	b.	มีชีวิตชีวา
70.	a.	รับรู้เร็ว	b.	สนใจอย่างจริงจัง
71.	a.	อ่อน	b.	แข็ง
72.	a.	เป็นระบบ	b.	ตามสบาย
73.	a.	พูด	b.	เขียน
74.	a.	การผลิต	b.	การออกแบบ
75.	a.	ให้อภัย	b.	อดกลั้น
76.	a.	เป็นระบบ	b.	เป็นธรรมชาติ
77.	a.	สมาคม	b.	อยู่ตามลำพัง
78.	a.	รูปธรรม	b.	นามธรรม
79.	a.	ใคร	b.	อะไร
80.	a.	กระตุ้น	b.	ตัดสิน
81.	a.	งานเลี้ยง	b.	โรงภาพยนตร์
82.	a.	สร้าง	b.	คิดค้น
83.	a.	ไม่วิพากษ์วิจารณ์	b.	วิพากษ์วิจารณ์
84.	a.	ตรงเวลา	b.	ตามสบาย
85.	a.	ฐาน	b.	ยอด
86.	a.	ระมัดระวัง	b.	ไว้วางใจ
87.	a.	การเปลี่ยนแปลง	b.	คงอยู่ถาวร
88.	a.	ทฤษฎี	b.	ประสบการณ์
89.	a.	เห็นด้วย	b.	อภิปราย
90.	a.	เป็นระเบียบ	b.	ง่าย ๆ
91.	a.	เครื่องหมาย	b.	สัญลักษณ์
92.	a.	รวดเร็ว	b.	รอบคอบ
93.	a.	ยอมรับ	b.	เปลี่ยนแปลง
94.	a.	รู้	b.	ไม่รู้

แบบสอบถามงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี

(ส่วนที่ 3)
แบบประเมินความชื่นชอบรูปแบบพฤติกรรมการนิเทศ

ตอนที่ 1: เปรียบเทียบสถานการณ์

คำชี้แจง: โปรดอ่านบทนำและสถานการณ์ต่าง ๆ ที่ระบุไว้ จากนั้นประเมินว่าท่านมีความชื่นชอบแต่ละสถานการณ์
อย่างไร เมื่อเปรียบเทียบกับสถานการณ์อื่น

หมายเหตุ: "ผู้นิเทศ" ในที่นี้หมายถึง บุคลากรภายในโรงเรียนที่มีหน้าที่ปรับปรุงและพัฒนาทางวิชาชีพของครู
เช่น ผู้อำนวยการ หัวหน้างาน ครูที่มีประสบการณ์สูง เป็นต้น

บทนำ

ช่วงเวลาหลังเลิกเรียนของโรงเรียน ในขณะท่าน (ครู) นั่งอยู่ที่โต๊ะทำงาน ผู้นิเทศปรากฏตัวที่หน้าประตูห้อง และท่านเชิญให้เขาเข้ามาในห้อง ผู้นิเทศถามท่านว่า "เป็นอย่างไรบ้าง" ท่านหันมองที่กองการบ้านของนักเรียน ห้องหนึ่ง และประเมินว่าการบ้านหลายชิ้นสะท้อนให้เห็นถึงความไม่เข้าใจของนักเรียน ท่านตอบผู้นิเทศว่า "ผม/ ดิฉันกลุ้มใจกับการสอนห้องเรียนนี้จริง ๆ นักเรียนมีระดับความสามารถแตกต่างกันมาก" จากนั้นท่านเพิ่มเติมอีกว่า "นักเรียนบางคนมีปัญหาด้านระเบียบวินัย ซึ่งพฤติกรรมของพวกเขาทำให้การเรียนการสอนไม่ต่อเนื่อง"

หลังจากการสนทนาเพิ่มเติมร่วมกับผู้นิเทศ ท่านตกลงให้ผู้นิเทศเข้าชมการสอนของท่านในห้องเรียน ดังกล่าวเพื่อสังเกตว่าเกิดอะไรขึ้น ตามด้วยการประชุมเพื่อพูดคุยเกี่ยวกับการสังเกตการสอนครั้งนี้

หลายวันผ่านไป หลังจากการสังเกตการสอน ผู้นิเทศได้วิเคราะห์ข้อมูลและกำลังประชุมหลังการสังเกตการ สอนกับท่าน...

การประชุมหลังการสังเกตการสอนเกิดขึ้นใน 4 สถานการณ์ต่อไปนี้:

สถานการณ์ A	สถานการณ์ B
ผู้นิเทศนำเสนอสิ่งที่เขาสังเกตได้ในห้องเรียน พร้อมทั้งขอให้ท่านบอกสิ่งที่ท่านเห็นว่าเกิดขึ้น ท่าน และผู้นิเทศรับฟังคำตอบของกันและกัน และหลังจาก ที่ร่วมกันระบุปัญหาได้ชัดเจนแล้ว แต่ละคนอาจ นำเสนอความคิดเห็นของตนเกี่ยวกับปัญหาดังกล่าว จากนั้นท่านและผู้นิเทศทำงานและตัดสินใจร่วมกัน เพื่อกำหนดเป้าหมายและการดำเนินการเพื่อแก้ไข ปัญหานั้น กล่าวคือ "*ผู้นิเทศและท่านกำหนดแนว ทางการแก้ไขปัญหาร่วมกัน*"	ผู้นิเทศรับฟังท่านแสดงความคิดเห็นเกี่ยวกับสิ่งที่ เกิดขึ้นในห้องเรียน ผู้นิเทศส่งเสริมให้ท่านวิเคราะห์ ปัญหาให้ครอบคลุมมากขึ้น และถามคำถามเพื่อให้ ท่านเข้าใจสภาพปัญหาได้อย่างชัดเจน จากนั้นผู้นิเทศ จะขอให้ท่านระบุรายละเอียดการดำเนินการเพื่อแก้ไข ปัญหาดังกล่าว โดยที่ผู้นิเทศยินดีที่จะให้ความ ช่วยเหลือเมื่อท่านต้องการ กล่าวคือ "*ท่านกำหนดแนว ทางการแก้ไขปัญหาด้วยตนเอง โดยมีผู้นิเทศคอย ช่วยเหลือ*"
สถานการณ์ C	สถานการณ์ D
ผู้นิเทศแบ่งปันสิ่งที่เขาสังเกตพบในห้องเรียนกับ ท่านและบอกท่านถึงสิ่งสำคัญที่ต้องได้รับการปรับปรุง โดยที่ท่านมีโอกาสให้ข้อมูลเพิ่มเติมในสิ่งสังเกตพบ ดังกล่าวและการแปลความหมายเกี่ยวกับสิ่งเหล่านั้น ของผู้นิเทศ จากนั้นผู้นิเทศจะแจกแจงทางเลือกใน การปฏิบัติเพื่อปรับปรุงแก้ไขปัญหานั้นอย่างละเอียด จากประสบการณ์และความรู้ของเขา โดยที่ท่านเป็นผู้ พิจารณาและเลือกวิธีที่ท่านเห็นว่าเหมาะสม กล่าวคือ "*ผู้นิเทศเสนอการแก้ไขปัญหาหลายแนวทางให้ท่าน เลือกนำไปปฏิบัติ*"	ผู้นิเทศนำเสนอความคิดเห็นของเขาเกี่ยวกับ สถานการณ์ที่เกิดขึ้นในห้องเรียน และขอให้ท่านยืนยัน หรือทบทวนแก้ไขความคิดเห็นนั้น จากนั้นผู้นิเทศจะ เป็นผู้ระบุปัญหาและเสนอแนวทางที่ท่านควรปฏิบัติ เพื่อปรับปรุงแก้ไขปัญหานั้น ผู้นิเทศอาจสาธิตวิธีการ ดังกล่าวในห้องเรียนให้ท่านชมหรือบอกให้ท่านเข้า สังเกตการสอนของครูท่านอื่นที่ปฏิบัติวิธีการนั้นได้ดี ทั้งนี้ท่านได้รับการชื่นชมเมื่อปฏิบัติตามที่ผู้นิเทศชี้แนะ กล่าวคือ "*ผู้นิเทศกำหนดแนวทางการแก้ไขปัญหา อย่างชัดเจนให้ท่านนำไปปฏิบัติ*"

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แบบสอบถามงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี   UNSW
SYDNEY

➢ *ในฐานะที่ท่านเป็นครูผู้รับการนิเทศ โปรดพิจารณาว่าสถานการณ์การนิเทศที่เป็นคู่ต่อไปนี้ ในแต่ละคู่สถานการณ์*
ให้ท่านเลือก (✓) สถานการณ์ที่ชื่นชอบมากกว่า พร้อมทั้งระบุว่าชื่นชอบมากกว่าในระดับใด หรือเลือก (✓)
"ชื่นชอบไม่ต่างกัน" ในกรณีที่ชื่นชอบสถานการณ์ทั้งคู่เท่ากัน

1. สถานการณ์ A (ผู้นิเทศและท่านกำหนดแนวทางการแก้ไขปัญหาร่วมกัน) **และ**
    สถานการณ์ B (ท่านกำหนดแนวทางการแก้ไขปัญหาด้วยตนเอง โดยมีผู้นิเทศคอยช่วยเหลือ)
    – ท่านชื่นชอบสถานการณ์ใดมากกว่ากัน
        ○ A   ○ B   ○ ชื่นชอบไม่ต่างกัน
    – ในกรณีที่ท่านชื่นชอบสถานการณ์หนึ่งมากกว่า ท่านชื่นชอบมากกว่าในระดับใด
        ○ เล็กน้อย   ○ ปานกลาง   ○ มาก   ○ อย่างยิ่ง

2. สถานการณ์ A (ผู้นิเทศและท่านกำหนดแนวทางการแก้ไขปัญหาร่วมกัน) **และ**
    สถานการณ์ C (ผู้นิเทศเสนอการแก้ไขปัญหาหลายแนวทางให้ท่านเลือกนำไปปฏิบัติ)
    – ท่านชื่นชอบสถานการณ์ใดมากกว่ากัน
        ○ A   ○ C   ○ ชื่นชอบไม่ต่างกัน
    – ในกรณีที่ท่านชื่นชอบสถานการณ์หนึ่งมากกว่า ท่านชื่นชอบมากกว่าในระดับใด
        ○ เล็กน้อย   ○ ปานกลาง   ○ มาก   ○ อย่างยิ่ง

3. สถานการณ์ A (ผู้นิเทศและท่านกำหนดแนวทางการแก้ไขปัญหาร่วมกัน) **และ**
    สถานการณ์ D (ผู้นิเทศกำหนดแนวทางการแก้ไขปัญหาอย่างชัดเจนให้ท่านนำไปปฏิบัติ)
    – ท่านชื่นชอบสถานการณ์ใดมากกว่ากัน
        ○ A   ○ D   ○ ชื่นชอบไม่ต่างกัน
    – ในกรณีที่ท่านชื่นชอบสถานการณ์หนึ่งมากกว่า ท่านชื่นชอบมากกว่าในระดับใด
        ○ เล็กน้อย   ○ ปานกลาง   ○ มาก   ○ อย่างยิ่ง

4. สถานการณ์ B (ท่านกำหนดแนวทางการแก้ไขปัญหาด้วยตนเอง โดยมีผู้นิเทศคอยช่วยเหลือ) **และ**
    สถานการณ์ C (ผู้นิเทศเสนอการแก้ไขปัญหาหลายแนวทางให้ท่านเลือกนำไปปฏิบัติ)
    – ท่านชื่นชอบสถานการณ์ใดมากกว่ากัน
        ○ B   ○ C   ○ ชื่นชอบไม่ต่างกัน
    – ในกรณีที่ท่านชื่นชอบสถานการณ์หนึ่งมากกว่า ท่านชื่นชอบมากกว่าในระดับใด
        ○ เล็กน้อย   ○ ปานกลาง   ○ มาก   ○ อย่างยิ่ง

5. สถานการณ์ B (ท่านกำหนดแนวทางการแก้ไขปัญหาด้วยตนเอง โดยมีผู้นิเทศคอยช่วยเหลือ) **และ**
    สถานการณ์ D (ผู้นิเทศกำหนดแนวทางการแก้ไขปัญหาอย่างชัดเจนให้ท่านนำไปปฏิบัติ)
    – ท่านชื่นชอบสถานการณ์ใดมากกว่ากัน
        ○ B   ○ D   ○ ชื่นชอบไม่ต่างกัน
    – ในกรณีที่ท่านชื่นชอบสถานการณ์หนึ่งมากกว่า ท่านชื่นชอบมากกว่าในระดับใด
        ○ เล็กน้อย   ○ ปานกลาง   ○ มาก   ○ อย่างยิ่ง

6. สถานการณ์ C (ผู้นิเทศเสนอการแก้ไขปัญหาหลายแนวทางให้ท่านเลือกนำไปปฏิบัติ) **และ**
    สถานการณ์ D (ผู้นิเทศกำหนดแนวทางการแก้ไขปัญหาอย่างชัดเจนให้ท่านนำไปปฏิบัติ)
    – ท่านชื่นชอบสถานการณ์ใดมากกว่ากัน
        ○ C   ○ D   ○ ชื่นชอบไม่ต่างกัน
    – ในกรณีที่ท่านชื่นชอบสถานการณ์หนึ่งมากกว่า ท่านชื่นชอบมากกว่าในระดับใด
        ○ เล็กน้อย   ○ ปานกลาง   ○ มาก   ○ อย่างยิ่ง

แบบสอบถามงานวิจัย

อิทธิพลของลักษณะบุคลิกภาพของครูต่อความชื่นชอบพฤติกรรมการนิเทศ: การวิจัยแบบผสมวิธี

ตอนที่ 2: แบบบรรยายความคิดเห็น

คำชี้แจง: โปรดบรรยายความคิดเห็นของท่านโดยการเติมย่อหน้าต่อไปนี้ให้สมบูรณ์

ผม/ดิฉัน ชอบที่จะได้รับการนิเทศเพื่อการปรับปรุงและพัฒนาทางวิชาชีพของตนเองจาก**ผู้นิเทศที่** ....

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และปฏิบัติต่อ ผม/ดิฉัน โดย ....

....

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....

เนื่องจากผู้นิเทศลักษณะดังกล่าวทำให้ ผม/ดิฉัน **รู้สึก** ....

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*********(สิ้นสุดแบบสอบถาม)*********

Appendix G – Research Survey (English version – 9 pages)

Research Survey

The Influence of Teachers' Personality on Their Supervisory Behaviour Preference:
A Mixed Methods Study

UNSW SYDNEY

(SECTION 1)

Demographic Information

Instruction: Please choose (✓) and/or fill in the answer that matches your background information

1. **Gender:** ○ Male   ○ Female

2. **Age:** [   ] years old *(fill a number)*

3. **Years of teaching experience:** [   ] years *(fill a number)*

4. **Education Level:**

   ○ Bachelor's degree   ○ Master's degree   ○ Doctoral degree

5. **Subject area of expertise:**

   ○ Thai language   ○ Social studies, religion, and culture

   ○ Mathematics   ○ Arts and music

   ○ Science   ○ Health and physical Education

   ○ Foreign language   ○ Career and technology

   ○ Other [   ] *(please specify)*

6. **Grade level of teaching:** *(if you teach more than one level, please identify the level you spend the most hours teaching in a week)*

   ○ Kindergarten   Level [   ] *(fill a number)*

   ○ Primary   Level [   ] *(fill a number)*

   ○ Secondary   Level [   ] *(fill a number)*

7. **School Region:**

   ○ Central   ○ Northern   ○ Southern

   ○ Eastern   ○ Western   ○ North-eastern

   ○ Other [   ] *(please specify)*

8. **Contact details:** *(Only if you are willing to involve in a further interview)*

   Email Address [   ]

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(SECTION 2)

MBTI Personality Assessment

Instruction: In each item, please choose (x) the answer that best suits your feeling and regular behaviour

1. You are usually ...

   a. friendly to others   b. quite quiet and careful

2. If you were a teacher, you would want to teacher a subject related to ...

   a. facts   b. theories

3. Most often, you let …

   a. your feeling above reasons   b. reasons above your feeling

4. If you are going somewhere for a whole day, you usually …

   a. make a plan of what to do first   b. go there immediately

5. When you with a group of people, you often …

   a. join the group conversation   b. talk to each person at a time

6. What kind of people do you usually get along with?

   a. People with imagination

   b. People who look at the world as it really is

7. You will feel proud, if you are called as a person who …

   a. express whatever you feel   b. are reasonable and invariable

8. Which do you like to do?

   a. Always preparing a party, making the appointments, or preparing everything ahead

   b. Doing things freely without obligation or strict timing, doing what is fun

9. When you are in a big group of people, you usually …

   a. introduce yourself to others

   b. wait for others to introduce themselves to you

10. You want others see you as a ...

    a. practitioner   b. thinker

11. You often value ...

    a. feeling more than reasons   b. reasons more than feeling

12. Which are you more likely to accomplish?

    a. Dealing with sudden incidents and know what is supposed to be done

    b. Following a plan in which every step is laid out

13. Usually, you have ...

    a. few close friends   b. many superficial friends

14. You appreciate a person who ...

    a. does not stand out

    b. has a unique identity, regardless of whether or not it is dominant.

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15. You will feel bad, if you ...

    a. do not sympathise with others   b. are unreasonable

16. Following the scheduled time at work makes you feel ...

    a. pleased   b. uncomfortable

17. Among friends, you are more likely to ...

    a. know things later than others   b. know what others do

18. What kind of friend do you prefer?

    a. Creative   b. Humble and realistic

19. You prefer working with a boss who ...

    a. has mercy   b. is fair

20. Planning ahead of what to do during the weekend is what you think ...

    a. you will do

    b. boring

    c. uncomforting and pressuring

21. You can ...

    a. talk to anyone as long as possible

    b. talk a lot only to some people or in some situations

22. To read book for enjoyment, you like to read a book that is ...

    a. unconventional   b. straightforward

23. Which expression you think is worse?

    a. Giving too much friendliness and warmness

    b. Being not friendly or warm

24. *(For this question, you can choose up to two answers if they suit you)* During your daily

    work, you ...

    a. enjoy urgent work to be conducted against time

    b. do not like working under pressure

    c. plan thinks ahead without having to work under pressure

25. Anyone who meets with you can tell what you are interested in ...

    a. immediately after talking to you at the first time

    b. only after knowing you very well

26. When doing something, you often ...

    a. do what is generally accepted   b. find out your own way

27. Which are you more cautious about?

    a. Feeling of others   b. Right of others

28. When you have a special job to do, you usually like to ...

    a. carefully prepare the working system before starting

    b. do it and learn at the same time

29. You are more likely to ...

    a. openly express your feeling   b. keep your feeling to yourself

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30. In your way of life, you often ...

    a. innovate things   b. conserve the originals

31. Which word do you prefer?

    a. Gently   b. Firmly

32. If you know in advance what you need to do and when and where to do it, you will feel ...

    a. pleased as you will have time to prepare

    b. not quite pleased as you are obligated to do it

33. You can say that you are ...

    a. more enthusiastic than general people

    b. less enthusiastic than general people

34. Who should be more complimented?

    a. Those with vision   b. Those with common sense

35. Which word do you prefer?

    a. Thinking   b. Feeling

36. You are one of those who ...

    a. like to do things in the last minute

    b. will feel stressful when doing things in the last minute

37. When you are in a party, you ...

    a. sometimes feel bored   b. always have fun

38. Which ability you think is more important?

    a. Seeing possibility of various situations

    b. Adapting to situations as they really are

39. Which word do you prefer?

    a. Convincing   b. Mind-touching

40. You think that doing routine work is ...

    a. a convenient way to do work   b. what you have to tolerate

41. When there is something new and popular, you will ...

    a. be one of the first to try   b. not be very interested

42. You are more likely to ...

    a. support the way that was once successful

    b. find out the defects and solve the problems

43. Which word do you preferred?

    a. Critique   b. Sympathise

44. When you want to buy miscellaneous things, you usually ...

    a. forget until it is too late

    b. note on paper for reminder

    c. can do it without anyone reminding

45. Which kind of person are you?

    a. Easy to get to know   b. Hard to get to know

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46. Which word do you prefer?
   a. Facts   b. Opinions

47. Which word do you prefer?
   a. Justice   b. Compassion

48. What do you think is more difficult for you to adapt to?
   a. Daily work   b. Ever-changing work

49. When you are in an embarrassing situation, you tend to ...
   a. change to subject
   b. make it become a joke
   c. take several days to figure out what to do

50. Which word do you prefer?
   a. Statement   b. Concept

51. Which word do you prefer?
   a. Mercy   b. Anticipation

52. When you have to do an important job that needs to be completed within a week, you will ...
   a. make a list of what to do and prioritise the tasks
   b. start working immediately

53. You think people close to you will understand your feeling about ...
   a. almost everything   b. only the things you tell them

54. Which word do you prefer?
   a. Theory   b. Certainty

55. Which word do you prefer?
   a. Benefit   b. Blessing

56. To accomplish a job, you like to do it ...
   a. sooner to have spare time   b. when the deadline is imminent

57. At a party, you usually like to ...
   a. help the host to make it fun
   b. let each participant find their own way of having fun

58. Which word do you prefer?
   a. Interpretation   b. Analogy

59. Which word do you prefer?
   a. Determined   b. Devoted

60. If someone ask what you will do on Saturday morning, you think you ...
   a. can tell them immediately
   b. tell the list of to-do things which cannot be all done
   c. cannot tell as it depends on the situation

61. Which word do you prefer?
   a. Willing   b. Silent

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62. Which word do you prefer?
    a. Imagination   b. Fact
63. Which word do you prefer?
    a. Steady   b. Gentle
64. You think that the routine jobs you are doing these days mostly are ...
    a. fine   b. boring

From 65 to 94, choose the word(s) that you prefer

65.	a.	Composed	b.	Talkative
66.	a.	Practise	b.	Create
67.	a.	Negotiator	b.	Judge
68.	a.	Scheduled	b.	Spontaneous
69.	a.	Peaceful	b.	Lively
70.	a.	Quickly receive	b.	Seriously attend
71.	a.	Soft	b.	Hard
72.	a.	Systematic	b.	Leisurely
73.	a.	Speak	b.	Write
74.	a.	Production	b.	Design
75.	a.	Forgive	b.	Tolerate
76.	a.	Systematic	b.	Natural
77.	a.	Association	b.	Isolation
78.	a.	Concrete	b.	Abstract
79.	a.	Who	b.	What
80.	a.	Urge	b.	Decide
81.	a.	Party	b.	Cinema
82.	a.	Built	b.	Invent
83.	a.	Not criticise	b.	Criticise
84.	a.	Punctual	b.	Leisurely
85.	a.	Base	b.	Top
86.	a.	Careful	b.	Trust
87.	a.	Change	b.	Persistence
88.	a.	Theory	b.	Experience
89.	a.	Agree	b.	Debate
90.	a.	Orderly	b.	Simple
91.	a.	Sign	b.	Symbol
92.	a.	Speedy	b.	Cautious
93.	a.	Accept	b.	Change
94.	a.	Known	b.	Unknown

(SECTION 3)

Supervisory Behaviour Preference Assessment

Part 1: Scenario Comparison

Instruction: Please read the introduction and scenarios provided. And then, rate how much you would prefer being in each scenario comparing to the others.

Note: Supervisors here refer to school individuals who are responsible for improving teachers' professional practices, for examples, school leaders and/or experienced teachers.

<u>Introduction</u>

The school day has just ended for students at Whichway School. Just as you (the teacher) sits down at the desk, the supervisor appears at the door and you invite the supervisor in. "How is everything going?" the supervisor asks. Looking at the large stack of papers to correct, you predict many of them will reflect that the students did not understand the work. "It's very frustrating working with this class. They have such a wide range of ability!" Then you mention another source of frustration "Some of the students are discipline problems and their behaviour results in class disruption."

After further discussion, you and the supervisor agree that the supervisor will come into the classroom to observe what is going on, followed by a conference to discuss the classroom visit.

A few days later, after you have been observed in the classroom and the supervisor analysed the collected information, you are having the post conference with the supervisor.

The followings are alternative scenarios:

Scenario A	Scenario B
The supervisor presents what he saw in the classroom and ask for your perceptions. Both of you listen to each other's responses. After clarifying the problem, each of you may propose ideas. Finally, you two agree on what is to be done in the classroom. You two will mutually identify an objective and agree to an action plan that you both will work together to carry out. *"The plan is for both of you to make."*	The supervisor listens to you discussing what was going on in the classroom. You are encouraged to analyse the problem further, and asked questions to make sure you are clear about your view of the problem. Finally, the supervisor asks you to determine and detail the actions you will take and find out if he might be of further help. *"The plan is yours to make."*
Scenario C	Scenario D
The supervisor shares his observations with you and tell you what he believes to be the major focus for improvement. You are asked for input into the observations and interpretation. Based on his own experience and knowledge, the supervisor carefully delineates what he believes are alternative actions to improve the classroom and ask you to consider and select from the options. *"The plan to follow is chosen by you from the supervisor's suggestions."*	The supervisor presents his beliefs about the situation and asks you to confirm or revise the interpretation. After identifying the problem, the supervisor offers directions to you on what should be done and how to proceed. The supervisor may go into the classroom to demonstrate what he is telling you to do or tell you to observe another teacher who does well in this particular area. You are praised and rewarded for *"following the given assignment."*

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➤ In each scenario comparison below, please select (✓) the scenario you prefer and indicate how it is preferred to the other. Or, select (✓) "indifferent" when both scenarios are equally preferred.

1. Scenario A (The plan is for both you and the supervisor to make) and Scenario B (The plan is yours to make)
   – Which scenario do you prefer?
     ○ A   ○ B   ○ indifferent
   – In case a scenario is preferred, how is it preferred to the other?
     ○ weakly   ○ considerably   ○ strongly   ○ absolutely

2. Scenario A (The plan is for both you and the supervisor to make) and Scenario C (The plan to follow is chosen by you from the supervisor's suggestions)
   – Which scenario do you prefer?
     ○ A   ○ C   ○ indifferent
   – In case a scenario is preferred, how is it preferred to the other?
     ○ weakly   ○ considerably   ○ strongly   ○ absolutely

3. Scenario A (The plan is for both you and the supervisor to make) and Scenario D (You follow the assignment given by the supervisor)
   – Which scenario do you prefer?
     ○ A   ○ D   ○ indifferent
   – In case a scenario is preferred, how is it preferred to the other?
     ○ weakly   ○ considerably   ○ strongly   ○ absolutely

4. Scenario B (The plan is yours to make) and Scenario C (The plan to follow is chosen by you from the supervisor's suggestions)
   – Which scenario do you prefer?
     ○ B   ○ C   ○ indifferent
   – In case a scenario is preferred, how is it preferred to the other?
     ○ weakly   ○ considerably   ○ strongly   ○ absolutely

5. Scenario B (The plan is yours to make) and Scenario D (You follow the assignment given by the supervisor)
   – Which scenario do you prefer?
     ○ B   ○ D   ○ indifferent
   – In case a scenario is preferred, how is it preferred to the other?
     ○ weakly   ○ considerably   ○ strongly   ○ absolutely

6. Scenario C (The plan to follow is chosen by you from the supervisor's suggestions) and Scenario D (You follow the assignment given by the supervisor)
   – Which scenario do you prefer?
     ○ C   ○ D   ○ indifferent
   – In case a scenario is preferred, how is it preferred to the other?
     ○ weakly   ○ considerably   ○ strongly   ○ absolutely

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Part 2: Narrative Form

Instruction: Please complete the paragraph below based on your personal thinking.

For the improvement of my professional practices, I would like to be supervised by a supervisor

who is ....

....

....

....

....

And **treats me by** ....

....

....

....

....

Because this kind of supervisor would **make me feel** ....

....

....

....

....

********(End of the survey)********